K–5 Math

EDITION 1

ENGLISH

Grade 1
Module 5

IDENTIFYING, COMPOSING, AND PARTITIONING SHAPES

TEACHER EDITION

Teacher Edition

K–5 Math Grade 1 Module 5

IDENTIFYING, COMPOSING, AND PARTITIONING SHAPES

Acknowledgment

Thank you to all the Texas educators and stakeholders who supported the review process and provided feedback. These materials are the result of the work of numerous individuals, and we are deeply grateful for their contributions.

Notice

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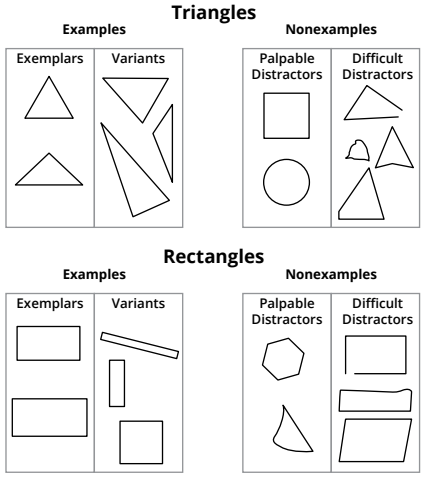
Grade 1 • Module 5

Identifying, Composing, and Partitioning Shapes

OVERVIEW

Throughout the year, students have explored part–whole relationships in many ways, such as their work with number bonds, strip diagrams, and the relationship between addition and subtraction. In Module 5, students consider part–whole relationships through a geometric lens.

In Topic A, students identify the defining parts, or attributes, of two-and three-dimensional shapes, building on their kindergarten experiences of sorting, analyzing, comparing, and creating various two-and three-dimensional shapes and objects (**1.6A, 1.6B, 1.6D, 1.6E**). Using straws, students begin the exploration by creating and describing two-dimensional shapes without naming them. This encourages students to attend to and clarify a shape's defining attributes. In the following lessons, students name two-and three-dimensional shapes and find them in pictures and in their environment. New shape names are added to the students' repertoire, including *rhombus, cone*, *hexagon* and *rectangular prism*.



Exemplars are the typical visual prototypes of the shape category.

Variants are other examples of the shape category.

Palpable distractors are nonexamples with little or no overall resemblance to the exemplars.

Difficult distractors are visually similar to examples but lack at least one defining attribute.

To support students with the vocabulary they encounter in this topic, formal and informal terms are paired during instruction. For example, the term corners is paired with the term vertices. Students are responsible for using formal terms such as vertex/vertices, and side(s), when they identify two-dimensional shapes and describe their attributes (**1.6D**). When identifying squares and a rectangles, students will describe the angles as square corners. In these instances, corner does not refer to the vertex, which is the point where two sides meet. Instead, corner refers to the angle. In later grades the informal term square corner will be paired with the formal term right angle. Students are responsible for using formal geometric language such as face, edge, and vertex/vertices when identifying three-dimensional shapes and describing their attributes (**1.6E**).

In Topic B, students combine shapes to create a new whole: a composite shape (**1.6C, 1.6F**). Students identify the name of the composite shape as well as the names of each shape that forms it. Students see that another shape can be added to a composite shape so that the composite shape becomes part of an even larger whole.

In Topic C, students relate geometric figures to equal parts and name the parts as halves and fourths (or quarters) (**1.6G, 1.6H**). For example, students now see that a rectangle can be partitioned into two equal triangles (whole to part) and that the same triangles can be recomposed to form the original rectangle (part to whole). Students see that as they create more parts, decomposing the shares from halves to fourths, the parts get smaller.

The module closes with Topic D, in which students apply their understanding of halves (**1.6G, 1.6H**) to tell time to the hour and half hour (**1.7E**). Students construct simple clocks and begin to understand the hour hand, then the minute hand, and then both together. Throughout each lesson, students read both digital and analog clocks to tell time.

Throughout Module 5, students continue daily fluency with addition and subtraction, preparing for Module 6, where they will add within 100 and ensure their proficiency with the grade-level fluency goal of sums and differences within 10.

Collaboratively Troubleshooting Student Misconceptions

It is common for students to make mistakes as they build their understanding of new or difficult concepts. As noted in the Program and Implementation Guide, *collaborative troubleshooting* is a routine to help teachers address students' misconceptions. The three steps to collaborative troubleshooting are

(1) surface student thinking;

(2) validate what the student did right; and

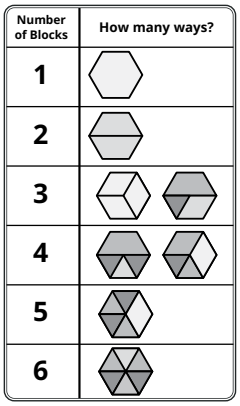
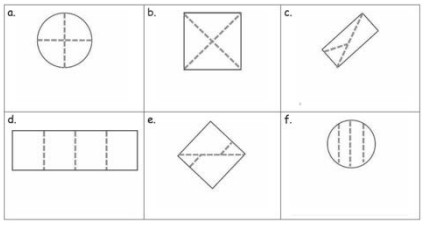
(3) bridge to a better understanding.

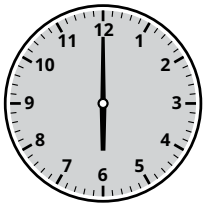
The following table presents teachers with guidance on how to collaboratively troubleshoot misconceptions with students. The first three columns of the table outline misconceptions that commonly arise in this module, reasons why students may have the misconceptions, and associated TEKS. Teachers can use this information to help them decide which questions to ask students to surface thinking and to validate what the students understood or did correctly.

The last column of the table provides instructional strategies and sample guided questions that can support students as they build on what they already know and bridge to a better understanding.

Note: Teachers can also refer to the sample teacher–student dialogue in the "Collaboratively Troubleshooting Student Misconceptions" section of the Grade 1 Course Guide for additional guidance on implementing the three-step routine.

Topic	TEKS	Student Misconception	How to Bridge to a Better Understanding
Topic A	1.6C	Students think rectangles are squares (e.g., "Rectangles have square corners, so they are squares.")	Show two rectangles and a rhombus. Ensure one of the rectangles is a square. Have students discuss their defining attributes and chart them to compare. If needed, ask the following questions: ▪ Does the shape have 4 straight sides? ▪ Does the shape have 4 square corners? ▪ Does the shape have 4 sides that are the same length?

Topic	TEKS	Student Misconception	How to Bridge to a Better Understanding
Topic B	1.6F	Students misunderstand that the area of the targeted shape and the area of the newly created shape are equal. (e.g., "I used 6 triangles to make a hexagon. My partner used 2 red shapes to make a hexagon. My hexagon is bigger because I used more shapes.")	Notice how using pattern blocks to compose the same size hexagon in various ways helps students see that the area covered is the same.  Have students compose new shapes on top of original shapes. As students replace larger shapes with smaller shapes, they can see that the area of the newly composed shape is the same, even if different polygons are used.
Topic C	1.6G	Students do not understand that fractional parts of the same whole must be equal in area (e.g., "I can divide a circle into fourths by drawing four vertical lines.")	Notice how using pattern blocks to place equal parts on top of each other can help prove that they are equal in area.  Alternatively, having students fold paper that is cut into different shapes helps students to see when fractional parts are unequal.

Topic	TEKS	Student Misconception	How to Bridge to a Better Understanding
Topic D	1.7E	Students misidentify the hour and minute hands, confusing how to read each one, and/or not understanding what each hand measures (e.g., "The clock shows half past 6 because the hands are making a half-circle.")	Encourage students to manipulate the hands on the clock to switch between the hour and half past the hour.  *Show me 6:00*  *Show me 6:30* Ask questions such as, "What happens to the hour hand when you move from 6 o'clock to half past 6?"

Focus Grade Level Standards

Geometry and Measurement

The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:

1.6A classify and sort regular and irregular two-dimensional shapes based on attributes using informal geometric language;

1.6B distinguish between attributes that define a two-dimensional or three-dimensional figure and attributes that do not define the shape;

1.6C create two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons;

1.6D identify two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons and describe their attributes using formal geometric language;

1.6E identify three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), and triangular prisms, and describe their attributes using formal geometric language;

1.6F compose two-dimensional shapes by joining two, three, or four figures to produce a target shape in more than one way if possible;

1.6G partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words;

1.6H identify examples and non-examples of halves and fourths.

Geometry and Measurement

The student applies mathematical process standards to select and use units to describe length and time. The student is expected to:

1.7E tell time to the hour and half hour using analog and digital clocks.

Foundational Standards

The student is expected to:

K.6A identify two-dimensional shapes, including circles, triangles, rectangles, and squares as special rectangles;

K.6B identify three-dimensional solids, including cylinders, cones, spheres, and cubes, in the real world;

K.6C identify two-dimensional components of three-dimensional objects;

K.6E classify and sort a variety of regular and irregular two- and three-dimensional figures regardless of orientation or size;

K.6F create two-dimensional shapes using a variety of materials and drawings.

TEKS Mathematical Process Standards

The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

1.1A apply mathematics to problems arising in everyday life, society, and the workplace;

1.1B use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

1.1E create and use representations to organize, record, and communicate mathematical ideas.

Overview of Module Topics and Lesson Objectives

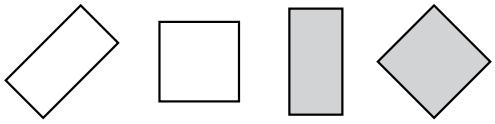
TEKS	ELPS		Topics and Objectives		Days
1.6A **1.6B** **1.6C** **1.6D** **1.6E**	1.F 2.B 2.C 2.E 2.I 3.A 3.E 3.J 4.F 4.G 5.G	A	**Attributes of Shapes** Lesson 1: Lesson 2: Lesson 3: Lessons 4–5: Lesson 6:	 Classify shapes based on defining attributes using examples, variants, and non-examples. Find and name two-dimensional shapes including rhombus and a square as a special rectangle, based on defining attributes of sides and corners. Create two-dimensional figures. Classify and sort two-dimensional shapes. Find and name three-dimensional shapes including cone and rectangular prism, based on defining attributes of faces and points.	6
1.6C **1.6D** **1.6E** **1.6F**	1.C 2.B 2.E 2.I 3.A 3.D 3.E 3.J 4.G 5.B	B	**Part–Whole Relationships Within Composite Shapes** Lesson 7: Lesson 8: Lesson 9:	 Create composite shapes from two-dimensional shapes. Compose a new shape from composite shapes. Create a composite shape from three-dimensional shapes and describe the composite shape using shape names and positions.	3
1.6G **1.6H**	1.C 2.B 2.D 2.E 2.I 3.A 3.E 4.G 5.B	C	**Halves and Quarters of Rectangles and Circles** Lesson 10: Lessons 11–12:	 Name and count shapes as parts of a whole, recognizing relative sizes of the parts. Partition shapes and identify halves and quarters of circles and rectangles.	3
1.6G **1.6H** **1.7E**	1.E 2.C 2.H 2.I 3.A 3.E 3.G 4.B	D	**Application of Halves to Tell Time** Lesson 13: Lessons 14–16:	 Construct a paper clock by partitioning a circle and tell time to the hour. Recognize halves within a circular clock face and tell time to the half hour.	4
			End-of-Module Assessment Task: Topics A–D		2
Total Number of Instructional Days					**18**

Terminology

A Spanish cognate is included when the term has a similar meaning and spelling in English. Not every term in this module has a Spanish cognate.

New or Recently Introduced Terms

- **Attributes** (*Atributos*): the things you can see about an object, such as the number of sides and corners, or vertices

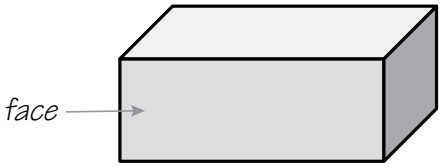


4 straight sides, 4 corners , or vertices

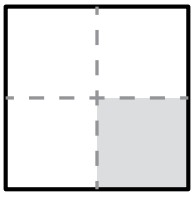
- **Composite shape**: a shape that is made up of other shapes

- **Digital** (*Digital*) **clock**: an electronic clock that shows the hour and minutes with numbers

- **Face**: a flat part of a three-dimensional solid

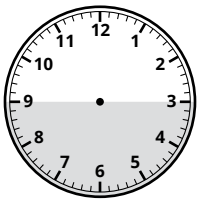


- **Fourth of**: 1 out of 4 equal parts

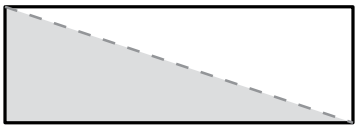


- **Fourths**: the pieces of a shape that is cut into 4 equal parts

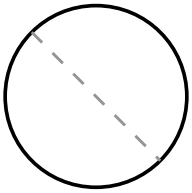
- **Half hour**: 30 minutes



- **Half of**: 1 out of 2 equal parts



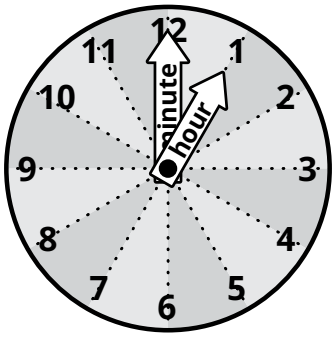
- **Halves**: the pieces of a shape that is cut into 2 equal parts



- **Half past**: a way to say the time is 30 minutes past a given hour; the minute hand is halfway around the clock.

Half past 10 o'clock

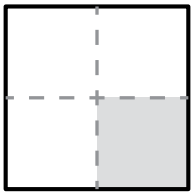
- **Hour** (*Hora*): a unit of time measuring 60 minutes
- **Hour hand**: the short hand on the clock that tracks hours
- **Minute** (*Minuto*): a unit of time measuring 60 seconds
- **Minute hand**: the long hand on the clock that tracks minutes



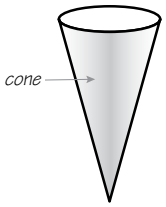
- **O'clock**: a way to say time to the exact hour, with no additional minutes

1 o'clock

- **Quarter of** (*Cuarto de*): 1 out of 4 equal parts



- **Three-dimensional** (*Tridimensional*) **shapes**: solid shapes with faces, edges, and corners or vertices.
  - **Cone** (*Cono*): a three-dimensional shape with only 1 circle face and 1 point



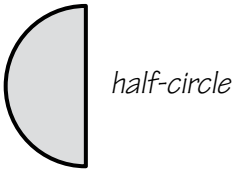
  - **Rectangular prism** (*Prisma rectangular*): a three-dimensional shape with 6 rectangle faces

rectangular prism

  - **Triangular prism** (*Prisma triangular*): a three-dimensional shape with 2 triangle faces and 3 rectangle faces

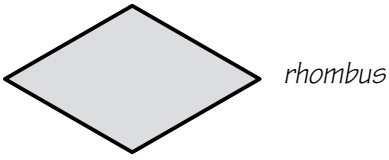
triangular prism

- **Two-dimensional shapes**: flat, closed shapes
  - **Half-circle**: a half of a whole circle; it has 1 straight side and a curved line



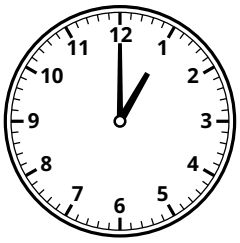
  - **Quarter-circle** (*Cuarto de círculo*): a fourth of a whole circle; it has 2 straight sides and a curved line

  - **Rhombus** (*Rombo*): a closed shape with 4 straight sides that are all the same length

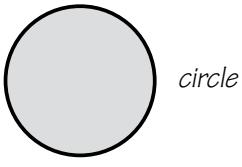


Familiar Terms and Symbols[1]

- **Clock**: a tool used to tell time

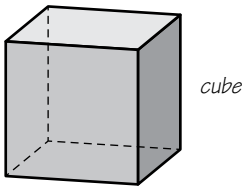


- Shape names (two-dimensional and three-dimensional) from Kindergarten:
  - **Circle** (*Círculo*): a closed, round, curved shape; the space from the middle to the curve is always the same

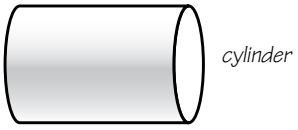


[1] These are terms and symbols students have seen previously.

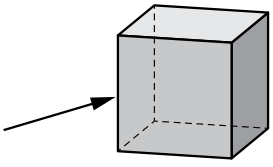
- **Cube** (*Cubo*): a three-dimensional shape with 6 square faces



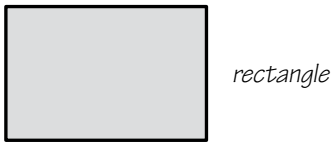
- **Cylinder** (*Cilindro*): a three-dimensional shape with 2 circle faces that are the same size and that is curved around the side



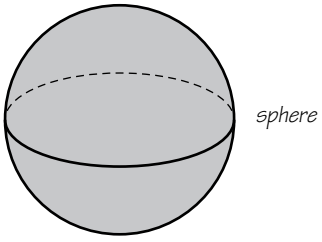
- **Edge:** the place where two faces meet



- **Rectangle** (*Rectángulo*): a closed shape with 4 straight sides and 4 square corners

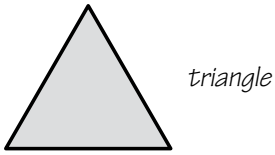


- **Sphere** (*Esfera*): a three-dimensional shape that is shaped like a ball and has no flat faces

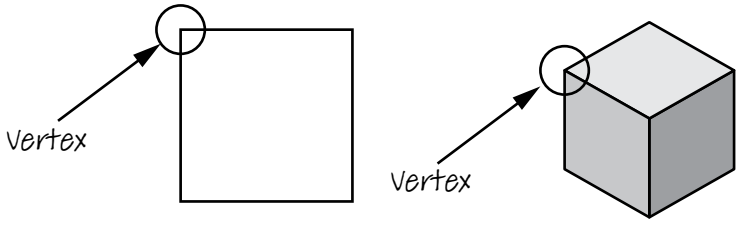


- **Square**: a special rectangle with 4 sides and 4 square corners; all the sides are the same length

- **Triangle** (*Triángulo*): a closed shape with 3 straight sides and 3 corners, or vertices



- **Vertex** (*Vértice*): a point where the sides meet in a two-dimensional shape and the point where the edges meet in a three-dimensional shape; vertices is the plural form of vertex



Suggested Tools and Representations

- Pattern blocks
- Square tiles
- Straws
- Student clocks, preferably with gears that can provide the appropriate hour-hand alignment
- Three-dimensional shape models (commercially produced or commonly found examples) including cube, cone, cylinder, rectangular prism, and sphere

Topic A

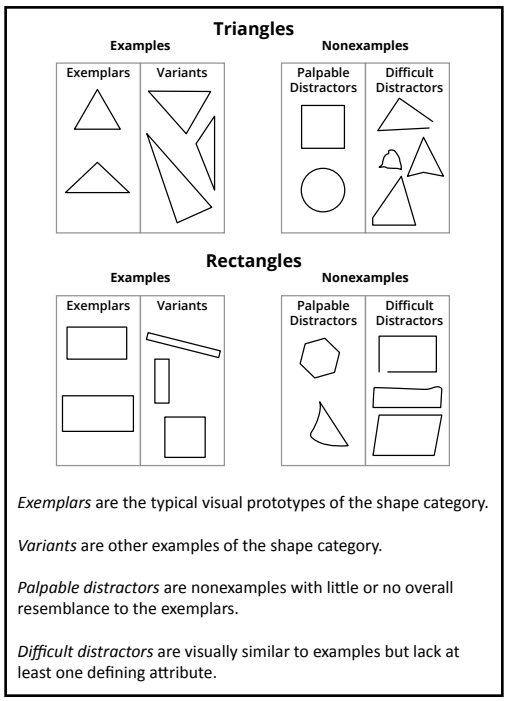
Attributes of Shapes

1.6A, 1.6B, 1.6C, 1.6D, 1.6E

Focus Standards:		1.6A	Classify and sort regular and irregular two-dimensional shapes based on attributes using informal geometric language.
		1.6B	Distinguish between attributes that define a two-dimensional or three-dimensional figure and attributes that do not define the shape.
		1.6C	Create two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons.
		1.6D	Identify two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons and describe their attributes using formal geometric language.
		1.6E	Identify three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), and triangular prisms, and describe their attributes using formal geometric language.
Instructional Days:		6	
Coherence	**-Links from:**	GK–M2	Two-Dimensional and Three-Dimensional Shapes
	-Links to:	G2–M8	Time, Shapes, and Fractions as Equal Parts of Shapes

In Module 5, students build on their exploration and knowledge of shapes from Kindergarten. In Topic A, students identify the defining attributes of individual shapes. In this topic, students encounter many new formal terms. To support students in developing formal geometric language, formal terms are paired with informal terms throughout the instruction in this topic. For example, the term vertex/vertices is paired with the term corner/corners.

In Lesson 1, students use straws cut at various lengths to create and then classify shapes. A list of the attributes that are common to a set of shapes is created. As students create a new shape with their straws, they decide if it has all the listed attributes. The names of these shapes are intentionally omitted during this lesson to encourage students to use precise language as they describe each shape. In this way, students attend to, and clarify, a shape's defining attributes (**1.6A, 1.6B, 1.6D**). For instance, rather than describing a shape as a triangle, students describe it as having three sides and three corners. As students sort the shapes as examples and non-examples, they do the



Exemplars are the typical visual prototypes of the shape category.

Variants are other examples of the shape category.

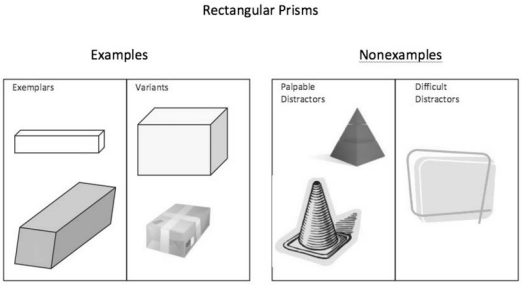
Palpable distractors are nonexamples with little or no overall resemblance to the exemplars.

Difficult distractors are visually similar to examples but lack at least one defining attribute.

thoughtful work that is depicted in the image of triangles and rectangles at a first-grade level. Students are introduced to the term *attributes* during this lesson and continue to use the new vocabulary throughout the lessons that follow.

In Lesson 2, students connect defining attributes to the classification name. Along with circle, triangle, rectangle, and hexagon students learn the rhombus.

In Lesson 3, students will use what they learned in Lessons 1 and 2 to create two-dimensional shapes (**1.6C**). Students will complete their connection of shape names and attributes as they build each shape using yarn. In Lessons 4 and 5, students will classify and sort regular and irregular two-dimensional shapes using informal geometric language, such as corner/corners, rather than vertex/vertices. (**1.6A**).



In Lesson 6, defining attributes of three-dimensional shapes are explored (**1.6E**). Along with the three-dimensional shape names learned in Kindergarten (*sphere*, *cube*, and *cylinder*), students expand their vocabulary to include cone and rectangular prism. Students are presented with models of three- dimensional shapes as well as real life examples to sort and classify based on defining attributes. Students complete sentence frames that help to distinguish defining attributes from non-defining attributes. For example, "A [can] is in the shape of the [cylinder]. It has circles at the ends just like all cylinders. This cylinder is made of metal, but some cylinders are not."

A Teaching Sequence Toward Proficiency in Attributes of Shapes

Objective 1: Classify shapes based on defining attributes using examples, variants, and non-examples. (Lesson 1)

Objective 2: Find and name two-dimensional shapes including rhombus and a square as a special rectangle, based on defining attributes of sides and corners. (Lesson 2)

Objective 3: Create two-dimensional figures. (Lesson 3)

Objective 4: Classify and sort two-dimensional shapes. (Lessons 4–5)

Objective 5: Find and name three-dimensional shapes including cone and rectangular prism, based on defining attributes of faces and points. (Lesson 6)

Lesson 1

Objective: Classify shapes based on defining attributes using examples, variants, and non-examples.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Fluency Practice (15 minutes)

- Grade 1 Fluency Sprint **1.3D** (10 minutes)
- Make it Equal: Addition Expressions **1.5E** (5 minutes)

NOTES ON FLUENCY:

Throughout the module, teachers are encouraged to make appropriate adjustements to fluency activities to account for varying student needs.

Grade 1 Fluency Sprint (10 minutes)

Materials: (S) Fluency Sprint

Note: For the remainder of the year, a portion of each lesson is devoted to either Fluency Sprints or Fluency Practice Sets. When Sprints are suggested, choose a Fluency Sprint that meets students' needs. All five Fluency Sprints are provided at the end of this lesson and are described below for reference. Prepare class sets or save the masters for later use because they are not included in future lessons.

With each Sprint, notice how many problems most of the class is able to complete; discuss and celebrate improvement as students progress toward fluency. Quadrants 1, 2, and 3 of each Sprint target addition and subtraction within 10, while Quadrant 4 of the Sprint sometimes extends beyond this content.

Fluency Sprint List:

- Addition Sprint 1 (Targets addition and missing addends.)
- Addition Sprint 2 (Targets the most challenging addition within 10.)
- Subtraction Sprint (Targets subtraction.)
- Fluency Sprint: Totals of 5, 6, and 7 (Develops understanding of the relationship between addition and subtraction.)
- Fluency Sprint: Totals of 8, 9, and 10 (Develops understanding of the relationship between addition and subtraction.)

Make it Equal: Addition Expressions (5 minutes)

Materials: (S) Numeral cards including one "=" card and two "+" cards (Fluency Template)

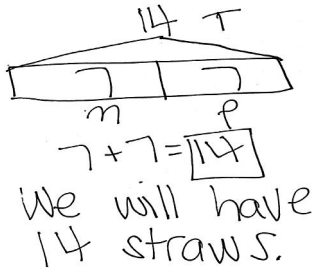
Note: This activity builds fluency with Grade 1's addition facts and promotes an understanding of equality.

Assign students partners of equal ability. Students arrange numeral cards from 0 to 10, including the extra 5. Place the "=" card between the partners. Write four numbers on the board (e.g., 9, 5, 5, 1). Partners take the numeral cards that match the numbers written to make two equivalent expressions (e.g., 5 + 5 = 9 + 1).

Suggested sequences: 5, 5, 9, 1; 0, 1, 9, 10; 10, 8, 2, 0; 8, 7, 3, 2; 5, 3, 5, 7; 3, 6, 7, 4; and 2, 4, 6, 8.

Application Problem (5 minutes)

Today, everyone will get 7 straw pieces to use in our lesson. Later, you will use your pieces and your partner's pieces together. How many straw pieces will you have to use when you and your partner join them together?



NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Today, students are introduced to the straw kit that is used throughout Module 5. Since students have not worked with the straw pieces, show the class what the straw pieces look like before they begin the Application Problem.

Note: Today's Application Problem is a *join with total unknown* problem type. Some students may have difficulty determining the second addend since it is not directly stated in the problem. When working with students who are having difficulty, ask these prompting questions: *Can you draw something? What can you draw? What does your drawing show you?* During the Debrief, invite students to explain how they solved the problem.

Concept Development (30 minutes)

Materials: (T) Chart paper, document camera, open- and closed-shape images (Template 1), square corner tester (Template 2) (S) Blank paper, straw kit (see note), ruler

Notes:

- Prepare the square corner tester by cutting out the L shape from the template.
- Prepare a straw kit for each student. Coffee straws are recommended because they do not roll as easily, but any straws will work. Each kit is made from six straws: 2 full-length straws, 1 straw cut into ¼ and ¾ lengths, 2 straws cut into ½ lengths, and 1 straw cut into ¼ lengths (see diagram on following page).

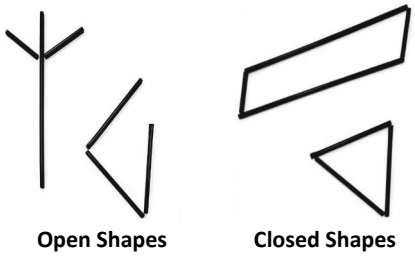
- The ruler is used for drawing straight lines. These straw kits will be used again in a later lesson.
- Check shape posters and any shape resources that are used to ensure that they show the shapes and names accurately.

Have students sit at their desks or tables with their materials.

T: Today, we will be making all kinds of shapes with these straws. Take two minutes to explore the pieces and see what you can make. Keep the straws flat on your desk.

T: (While students explore and create shapes, circulate and notice how they engage with the materials. Do not discuss shape names with students at this time but rather focus on the defining attributes, such as number of straight sides, the number of corners, and the length of the sides. During Lesson 2, names are added to the sets of attributes.)

T: (Project open- and closed-shape images.) Some of you created designs that are open, like this (point to the design labeled *Open Shapes*), and some of you created designs that are closed, like this (point to the design labeled *Closed Shapes*). Think back to what you learned in Kindergarten. Can you remember what the difference is between an open shape (point to the image) and a closed shape (point to the image)?



S: A closed shape is one that has no opening to get out if you were inside the lines. → There's an inside and an outside for a closed shape. → Both ends of every straw touch another straw.

T: Who has an example of an open shape to show us?

S: (Share.)

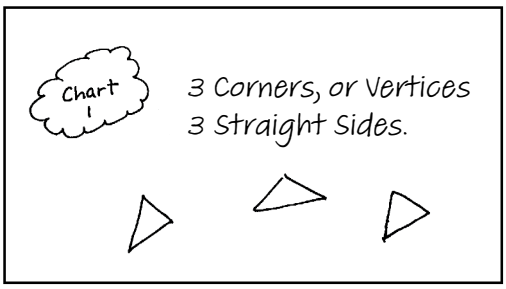
T: Who has an example of a closed shape to show us?

S: (Share.)

T: Today, we'll be making closed shapes, so try to make sure you keep your straws touching at the ends when we make our shapes. If you have an open shape right now, make a new shape so that you have a closed one.

T: (Look for a student who created a three-sided shape, and place the configuration under the document camera.) Let's look at this shape. How would you describe it?

S: It has three straight sides. → The straws come together at three points. → It has three corners. → The sides are different lengths. (Or, the sides are the same length, depending on the shape displayed.)



NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Consider making an anchor chart with visuals for the formal term side/sides and vertex/vertices paired with informal terms such as corner/corners. The terms corners and vertices are paired during instruction. The formal terms will be used on Problem Sets, Exit Tickets, Homework, and assessments when applicable. The anchor chart will support students, including some emergent bilingual students, who are not yet proficient with this new vocabulary.

T: Great! Some of you made big shapes and some of you made small shapes. Attributes like the size and color of your shapes are not important when describing shapes. Attributes such as the number of sides and number of corners are what define the shape. (Write 3 Straight Sides and 3 Corners, or Vertices at the top of the chart paper.) Use your straws to create this exact same shape on top of your blank paper.

S: (Create the shape with straws.)

T: (As students do this, ask questions to draw attention to the length of the sides so that students are creating the same exact congruent shape.)

T: Let's record the shape. Draw a dot at the corners where each set of straws meet. Remember a corner is where two sides meet. Another name for a corner is vertex. When we have more than one corner, or vertex, we can say corners, or vertices.

T/S: (Draw dots.)

T: (Demonstrate as you describe the process.) Now, move your straws away. Line up your ruler so that two dots are touching the side of the ruler. We can touch one dot with our pencil and draw a very straight line to the next dot. You try it.

S: (Draw a straight line connecting the dots.)

T: Great job! Let's do the same thing to draw all three sides of our shape.

S: (Complete the drawing.)

T: (Put the shape back under the document camera.) Does anyone else have a shape that is made with three straight sides and three corners, or vertices?

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Some students find visual discrimination challenging, particularly when the attributes are at more refined levels. Encourage students to persevere. Have students touch the corners or line up the straws as methods to concretely confirm the attributes discussed.

Repeat the process at least four times to create and record various combinations of three straight sides and three corners.

T: (Point to the shapes on the chart.) Shapes come in many sizes and colors. When we are trying to find the name of a shape, are attributes like the color or size important?

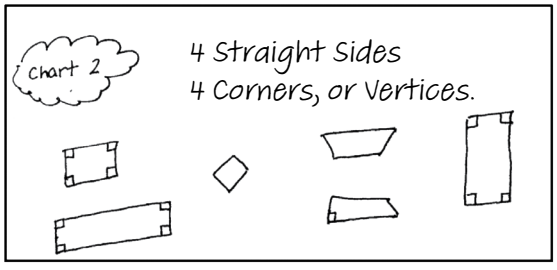
S: No.

T: All of these shapes have two important **attributes**, or characteristics, in common. What are they?

S: All of the shapes have three straight sides and three corners.

T: We could also say these shapes have 3 vertices. Vertices is another name for corners.

T: When we want to name a shape, some of the important attributes are the number of straight sides and the number of corners, or vertices. Let's make a new chart with shapes that have a different attribute. Let's make different shapes that all have four straight sides and four corners, or vertices. Turn over your paper so you can record the shapes on the other side.



Write *4 Corners, or Vertices* and *4 Straight Sides* at the top of a new piece of chart paper. Repeat the process from above at least four times, being sure to include shapes such as two rectangles of varied lengths, a square, and at least one quadrilateral. To prepare for tomorrow's lesson, ensure students understand the difference between defining

attributes (characteristics that help name a shape) and nondefining attributes (characteristics that are irrelevant when naming a shape, such as size and color).

T: Now, combine your straws with your partner. Can you come up with other shapes with four corners, or vertices and four straight sides that we did not record on our list?

S: (Work with a partner and create shapes such as squares and rhombuses.)

Continue the process of adding these shapes to the chart and having students record the shapes.

T: Let's look at Chart 2. All of these shapes have four straight sides and four corners, or vertices. Some of the corners are a special kind, called a square corner. They form this shape. (Hold up and trace the edge of the square corner tester.) Let's use the square corner tester to find square corners on these four-sided, four-cornered shapes. (Use the tester, placing a square in the corner of each square corner.)

T: Think back to the shapes you made earlier. What closed shapes did you make that would *not* fit with one of our charts? We'll make a separate chart for these.

T/S: (Share shapes with five or more straight sides. As students share, create a final chart. Draw each shape, and write its specific attributes next to it.)

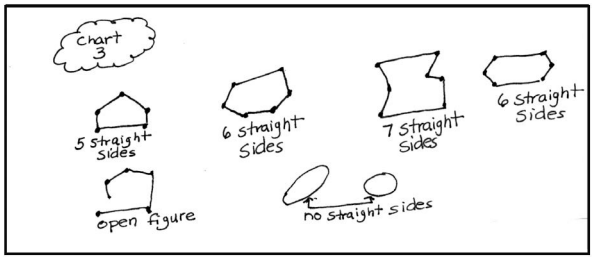
T: This paper shows shapes with five straight sides, six straight sides, and even seven straight sides. I want to draw a shape on here that has no straight sides. Who would like to add a shape on here that has no straight sides?

S: (Adds an oval or circle to the chart.)

T: Let's add one open figure, or shape, to the chart as well. (Student adds an open figure.)

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

When identifying squares and rectangles the term square corner is used as an informal term for right angles which is introduced in later grades. In these instances, corner is not referring to the vertex or the point where two sides meet. Instead, it is referring to right angles, therefore square corner is not paired with vertex/vertices. Square corners are defining attributes for both rectangles and squares in addition to the number of sides and vertices.



Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes.

For some classes, it may be appropriate to adjust the assignment by specifying which problems students should work on first. With this option, let the purposeful sequencing of the Problem Set guide the selections so that problems continue to be scaffolded. Balance word problems with other problem types to ensure a range of practice.

Student Debrief (10 minutes)

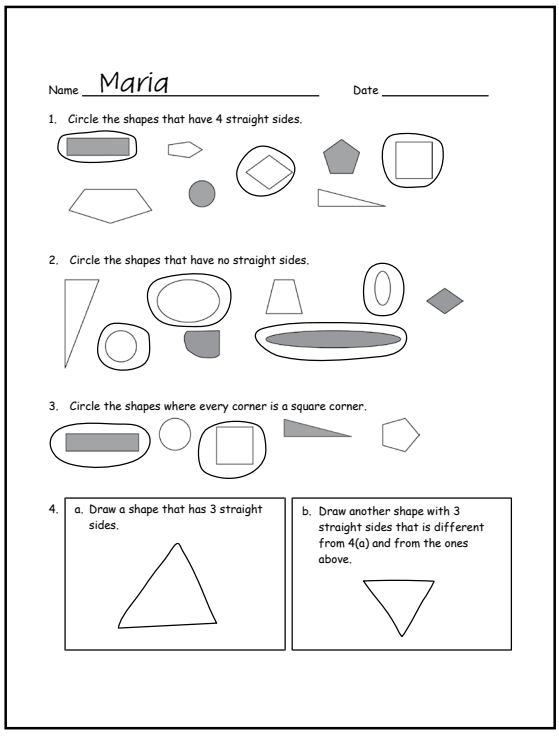
Lesson Objective: Classify shapes based on defining attributes using examples, variants, and non-examples.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion. In preparation for tomorrow's lesson, elicit conversation to ensure students understand the difference between defining and non-defining attributes of shapes.

- Look at Problem 1. Which shapes did you choose? Which shapes did not have the **attribute** of having 4 straight sides?
- Look at Problem 4. Compare your shapes to those on our chart. Which shapes look exactly the same? Did anyone draw a shape that is not already represented on our chart?
- Look at Problem 5. Which attributes, or characteristics, are the same for all of the shapes? Which attributes are different among the shapes in Group A?
- What does it mean to share an attribute of a shape?
- When we are identifying shapes, is the color of the shape important?
- Which attributes are most important when describing shapes? (e.g., color, number of corners/vertices, types of corners, size, number of straight sides)
- Look at your Application Problem and share your solution with a partner. How did your straws help you create different shapes today? Can you make a shape with four straight sides and only three corners? What would that look like? (Students may put two sides next to each other, essentially making a longer line out of two of the four straws. If this is done, let students know this can be considered one side that uses two straws.)


Name Maria Date

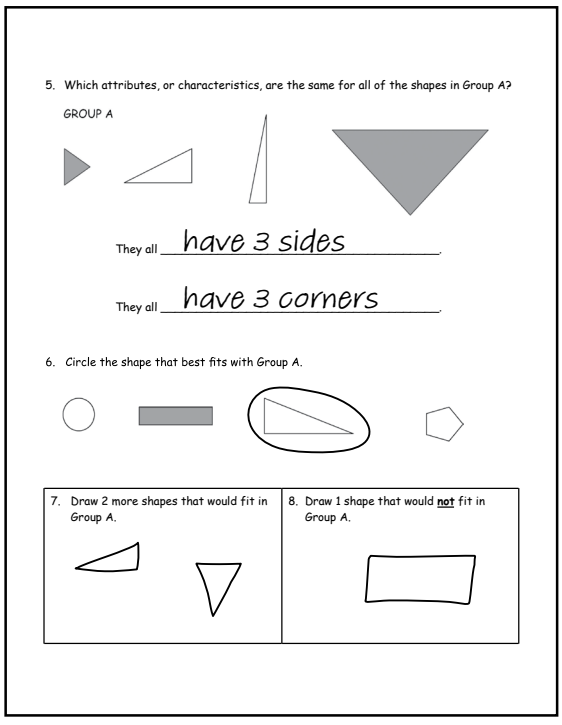
1. Circle the shapes that have 4 straight sides.

2. Circle the shapes that have no straight sides.

3. Circle the shapes where every corner is a square corner.

4. a. Draw a shape that has 3 straight sides.

b. Draw another shape with 3 straight sides that is different from 4(a) and from the ones above.


5. Which attributes, or characteristics, are the same for all of the shapes in Group A?

GROUP A

They all have 3 sides.

They all have 3 corners.

6. Circle the shape that best fits with Group A.

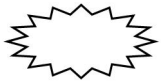
7. Draw 2 more shapes that would fit in Group A.

8. Draw 1 shape that would **not** fit in Group A.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

A

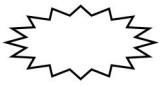
Number Correct: 

Name _____ Date _____

*Write the unknown number. Pay attention to the symbols.

1.	4 + 1 = _____	16.	4 + 3 = _____
2.	4 + 2 = _____	17.	_____ + 4 = 7
3.	4 + 3 = _____	18.	7 = _____ + 4
4.	6 + 1 = _____	19.	5 + 4 = _____
5.	6 + 2 = _____	20.	_____ + 5 = 9
6.	6 + 3 = _____	21.	9 = _____ + 4
7.	1 + 5 = _____	22.	2 + 7 = _____
8.	2 + 5 = _____	23.	_____ + 2 = 9
9.	3 + 5 = _____	24.	9 = _____ + 7
10.	5 + _____ = 8	25.	3 + 6 = _____
11.	8 = 3 + _____	26.	_____ + 3 = 9
12.	7 + 2 = _____	27.	9 = _____ + 6
13.	7 + 3 = _____	28.	4 + 4 = _____ + 2
14.	7 + _____ = 10	29.	5 + 4 = _____ + 3
15.	_____ + 7 = 10	30.	_____ + 7 = 3 + 6

B

Number Correct: 

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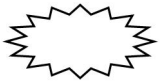
1.	5 + 1 = _____	16.	2 + 4 = _____
2.	5 + 2 = _____	17.	_____ + 4 = 6
3.	5 + 3 = _____	18.	6 = _____ + 4
4.	4 + 1 = _____	19.	3 + 4 = _____
5.	4 + 2 = _____	20.	_____ + 3 = 7
6.	4 + 3 = _____	21.	7 = _____ + 4
7.	1 + 3 = _____	22.	4 + 5 = _____
8.	2 + 3 = _____	23.	_____ + 4 = 9
9.	3 + 3 = _____	24.	9 = _____ + 5
10.	3 + _____ = 6	25.	2 + 6 = _____
11.	_____ + 3 = 6	26.	_____ + 6 = 9
12.	5 + 2 = _____	27.	9 = _____ + 2
13.	5 + 3 = _____	28.	3 + 3 = _____ + 4
14.	5 + _____ = 8	29.	3 + 4 = _____ + 5
15.	_____ + 3 = 8	30.	_____ + 6 = 2 + 7

A

Number Correct: 

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*Write the unknown number. Pay attention to the equal sign.

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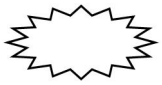
2.	6 + 2 = _____	17.	_____ = 4 + 5
3.	7 + 2 = _____	18.	6 + 3 = _____
4.	4 + 3 = _____	19.	3 + 6 = _____
5.	5 + 3 = _____	20.	_____ = 2 + 6
6.	6 + 3 = _____	21.	2 + 7 = _____
7.	_____ = 6 + 2	22.	_____ = 3 + 4
8.	_____ = 2 + 6	23.	3 + 6 = _____
9.	_____ = 7 + 2	24.	_____ = 4 + 5
10.	_____ = 2 + 7	25.	3 + 4 = _____
11.	_____ = 4 + 3	26.	13 + 4 = _____
12.	_____ = 3 + 4	27.	3 + 14 = _____
13.	_____ = 5 + 3	28.	3 + 6 = _____
14.	_____ = 3 + 5	29.	13 + _____ = 19
15.	_____ = 3 + 4	30.	19 = _____ + 16

B

Number Correct: 

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3.	6 + 3 = _____	18.	5 + 4 = _____
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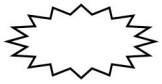
5.	7 + 2 = _____	20.	_____ = 2 + 7
6.	5 + 4 = _____	21.	2 + 6 = _____
7.	_____ = 4 + 3	22.	_____ = 3 + 4
8.	_____ = 3 + 4	23.	4 + 5 = _____
9.	_____ = 5 + 3	24.	_____ = 3 + 6
10.	_____ = 3 + 5	25.	2 + 7 = _____
11.	_____ = 6 + 2	26.	12 + 7 = _____
12.	_____ = 2 + 6	27.	2 + 17 = _____
13.	_____ = 7 + 2	28.	4 + 5 = _____
14.	_____ = 2 + 7	29.	14 + _____ = 19
15.	_____ = 7 + 2	30.	19 = _____ + 15

A

Number Correct: 

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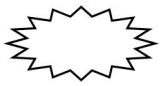
2.	6 - 2 = _____	17.	8 - 6 = _____
3.	6 - 3 = _____	18.	7 - 3 = _____
4.	10 - 1 = _____	19.	7 - 4 = _____
5.	10 - 2 = _____	20.	8 -4 = _____
6.	10 - 3 = _____	21.	9 - 4 = _____
7.	7 - 2 = _____	22.	9 - 5 = _____
8.	8 - 2 = _____	23.	9 - 6 = _____
9.	9 - 2 = _____	24.	9 - _____ = 6
10.	7 - 3 = _____	25.	9 - _____ = 2
11.	8 - 3 = _____	26.	2 = 8 - _____
12.	10 - 3 = _____	27.	2 = 9 - _____
13.	10 - 4 = _____	28.	10 - 7 = 9 - _____
14.	9 - 4 = _____	29.	9 - 5 = _____ - 3
15.	8 - 4 = _____	30.	_____ - 6 = 9 - 7

B

Number Correct: 

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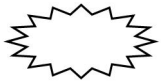
2.	5 - 2 = _____	17.	6 - 4 = _____
3.	5 - 3 = _____	18.	8 - 3 = _____
4.	10 - 1 = _____	19.	8 - 5 = _____
5.	10 - 2 = _____	20.	8 - 6 = _____
6.	10 - 3 = _____	21.	9 - 3 = _____
7.	6 - 2 = _____	22.	9 - 6 = _____
8.	7 - 2 = _____	23.	9 - 7 = _____
9.	8 - 2 = _____	24.	9 - _____ = 5
10.	6 - 3 = _____	25.	9 - _____ = 4
11.	7 - 3 = _____	26.	4 = 8 - _____
12.	8 - 3 = _____	27.	4 = 9 - _____
13.	5 - 4 = _____	28.	10 - 8 = 9 - _____
14.	6 - 4 = _____	29.	8 - 6 = _____ - 7
15.	7 - 4 = _____	30.	_____ - 4 = 9 - 6

A

Number Correct: 

Name _____ Date _____

*Write the unknown number. Pay attention to the symbols.

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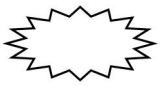
2.	3 + _____ = 5	17.	6 - 3 = _____
3.	5 - 3 = _____	18.	6 = _____ + 3
4.	5 - 2 = _____	19.	2 + 5 = _____
5.	_____ + 2 = 5	20.	5 + _____ = 7
6.	1 + 5 = _____	21.	7 - 2 = _____
7.	1 + _____ = 6	22.	7 - 5 = _____
8.	6 - 1 = _____	23.	7 = _____ + 5
9.	6 - 5 = _____	24.	3 + 4 = _____
10.	_____ + 5 = 6	25.	4 + _____ = 7
11.	4 + 2 = _____	26.	7 - 4 = _____
12.	2 + _____ = 6	27.	7 = _____ + 3
13.	6 - 2 = _____	28.	3 = 7 - _____
14.	6 - 4 = _____	29.	7 - 5 = _____ - 4
15.	_____ + 4 = 6	30.	_____ - 3 = 7 - 4

B

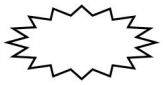
Number Correct: 

Name _____ Date _____

*Write the unknown number. Pay attention to the symbols.

1.	1 + 4 = _____	16.	3 + 3 = _____
2.	4 + _____ = 5	17.	6 - 3 = _____
3.	5 - 4 = _____	18.	6 = _____ + 3
4.	5 - 1 = _____	19.	2 + 4 = _____
5.	_____ + 1 = 5	20.	4 + _____ = 6
6.	5 + 2 = _____	21.	6 - 2 = _____
7.	5 + _____ = 7	22.	6 - 4 = _____
8.	7 - 2 = _____	23.	6 = _____ + 4
9.	7 - 5 = _____	24.	3 + 4 = _____
10.	_____ + 2 = 7	25.	4 + _____ = 7
11.	1 + 5 = _____	26.	7 - 4 = _____
12.	1 + _____ = 6	27.	7 = _____ + 4
13.	6 - 1 = _____	28.	4 = 7 - _____
14.	6 - 5 = _____	29.	6 - 4 = _____ - 5
15.	_____ + 5 = 6	30.	_____ - 2 = 7 - 3

A

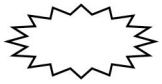
Number Correct: 

Name _____ Date _____

*Write the unknown number. Pay attention to the symbols.

1.	5 + 5 = _____	16.	2 + 6 = _____
2.	5 + _____ = 10	17.	8 = 6 + _____
3.	10 - 5 = _____	18.	8 - 2 = _____
4.	9 + 1 = _____	19.	2 + 7 = _____
5.	1 + _____ = 10	20.	9 = 7 + _____
6.	10 - 1 = _____	21.	9 - 7 = _____
7.	10 - 9 = _____	22.	8 = _____ + 2
8.	_____ + 9 = 10	23.	8 - 6 = _____
9.	1 + 8 = _____	24.	3 + 6 = _____
10.	8 + _____ = 9	25.	9 = 6 + _____
11.	9 - 1 = _____	26.	9 - 6 = _____
12.	9 - 8 = _____	27.	9 = _____ + 3
13.	_____ + 1 = 9	28.	3 = 9 - _____
14.	4 + 4 = _____	29.	9 - 5 = _____ - 6
15.	8 - 4 = _____	30.	_____ - 7 = 8 - 6

B

Number Correct: 

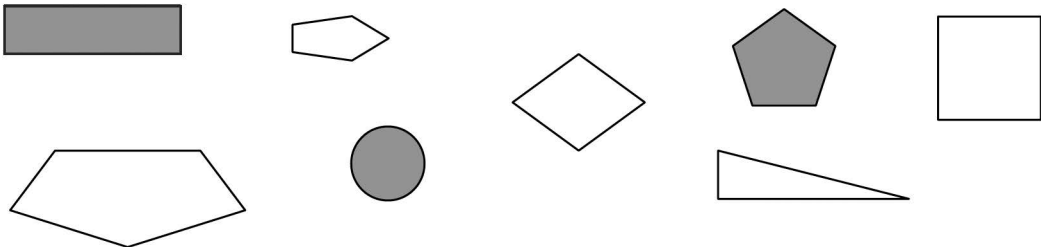
Name _____ Date _____

*Write the unknown number. Pay attention to the symbols.

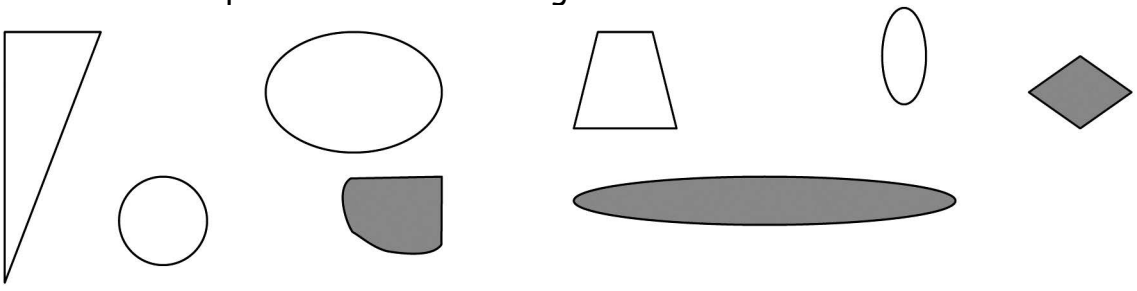
1.	9 + 1 = _____	16.	3 + 5 = _____
2.	1 + _____ = 10	17.	8 = 5 + _____
3.	10 - 1 = _____	18.	8 - 3 = _____
4.	10 - 9 = _____	19.	2 + 6 = _____
5.	_____ + 9 = 10	20.	8 = 6 + _____
6.	1 + 7 = _____	21.	8 - 6 = _____
7.	7 + _____ = 8	22.	2 + 7 = _____
8.	8 - 1 = _____	23.	9 = _____ + 2
9.	8 - 7 = _____	24.	9 - 7 = _____
10.	_____ + 1 = 8	25.	4 + 5 = _____
11.	2 + 8 = _____	26.	9 = 5 + _____
12.	2 + _____ = 10	27.	9 - 5 = _____
13.	10 - 2 = _____	28.	5 = 9 - _____
14.	10 - 8 = _____	29.	9 - 6 = _____ - 5
15.	_____ + 8 = 10	30.	_____ - 6 = 9 - 7

Name _____ Date _____

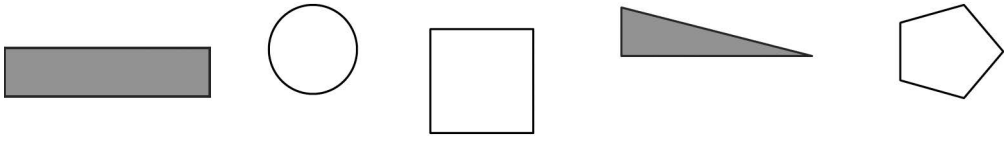
1. Circle the shapes that have 4 straight sides.



2. Circle the shapes that have no straight sides.



3. Circle the shapes where every corner is a square corner.

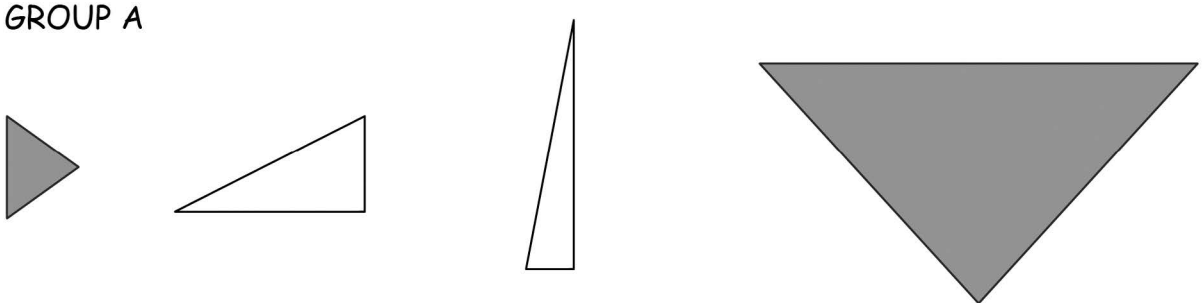


4. a. Draw a shape that has 3 straight sides.

b. Draw another shape with 3 straight sides that is different from 4(a) and from the ones above.

5. Which attributes, or characteristics, are the same for all of the shapes in Group A?

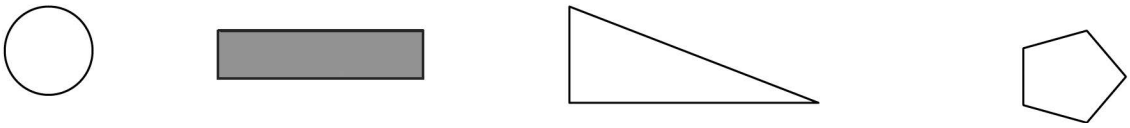
GROUP A



They all _____.

They all _____.

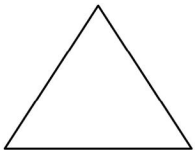
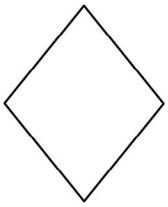
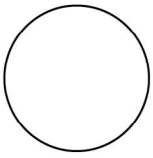
6. Circle the shape that best fits with Group A.



7. Draw 2 more shapes that would fit in Group A.	8. Draw 1 shape that would **not** fit in Group A.

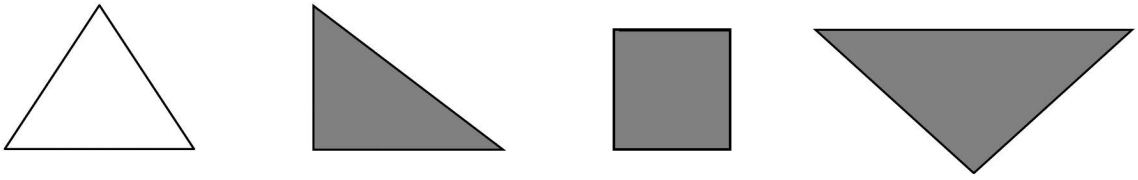
Name _____ Date _____

1. How many vertices and straight sides does each of the shapes below have?

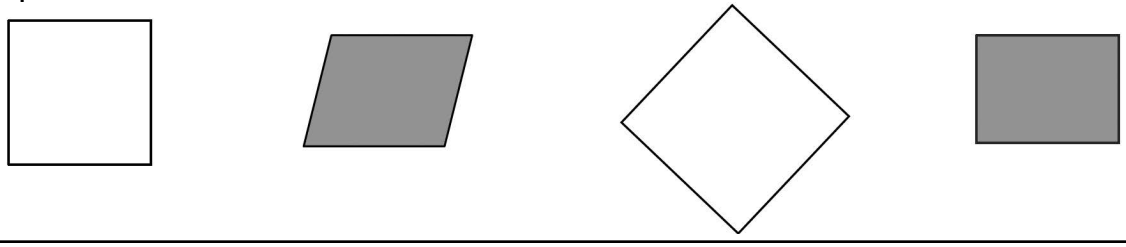
a.	b.	c.
		
_____ vertices _____ straight sides	_____ vertices _____ straight sides	_____ vertices _____ straight sides

2. Look at the sides and vertices of the shapes in each row.

a. Cross off the shape that does not have the same number of sides and vertices.

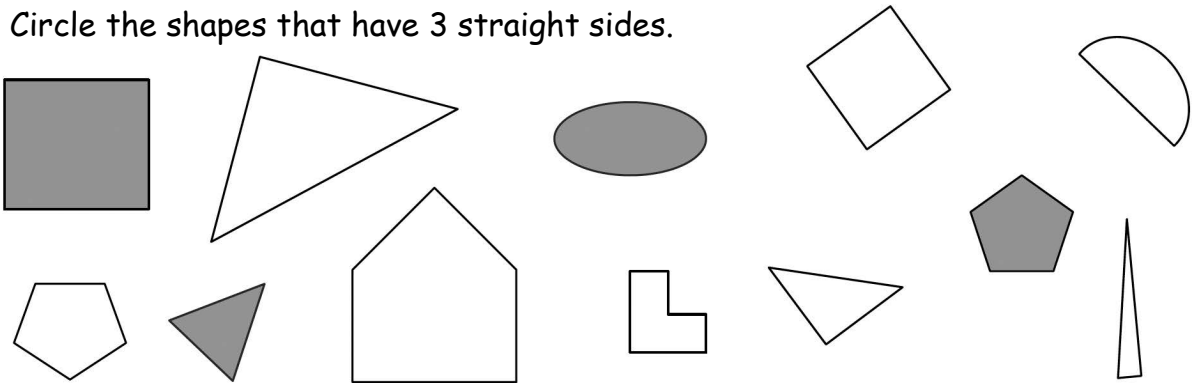


b. Cross off the shape that does not have the same kind of vertices as the other shapes.

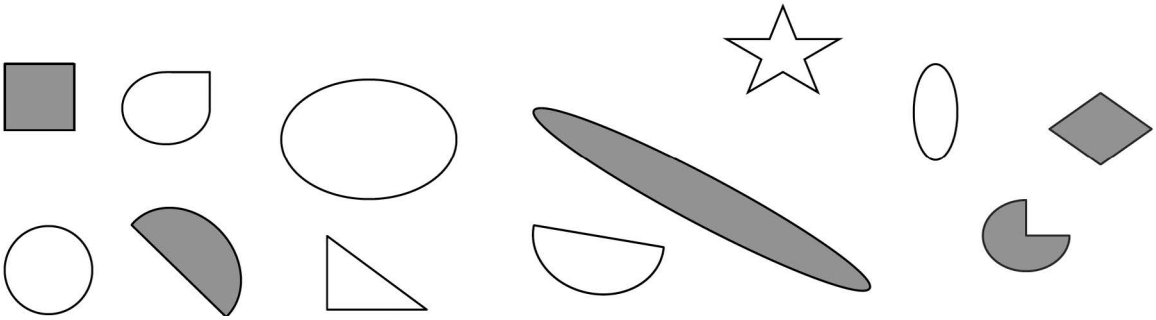


Name _____ Date _____

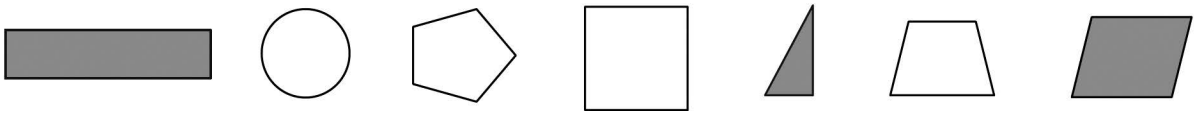
1. Circle the shapes that have 3 straight sides.



2. Circle the shapes that have no vertices.



3. Circle the shapes that have only square corners.

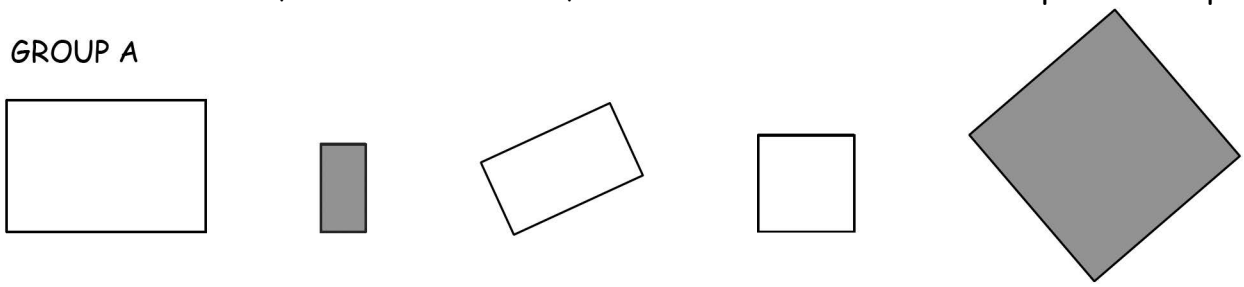


4. a. Draw a shape that has 4 straight sides.

b. Draw another shape with 4 straight sides that is different from 4(a) and from the ones above.

5. Which attributes, or characteristics, are the same for all of the shapes in Group A?

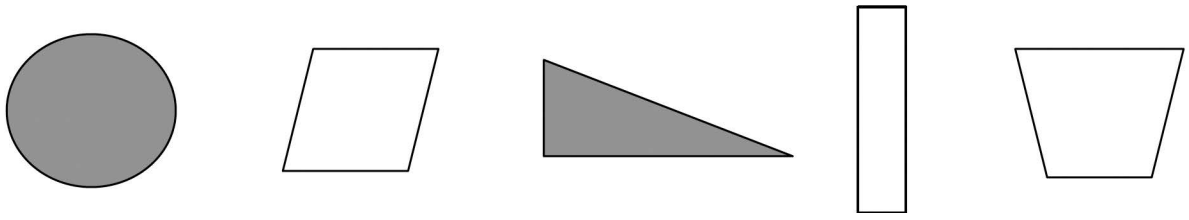
GROUP A



They all _____.

They all _____.

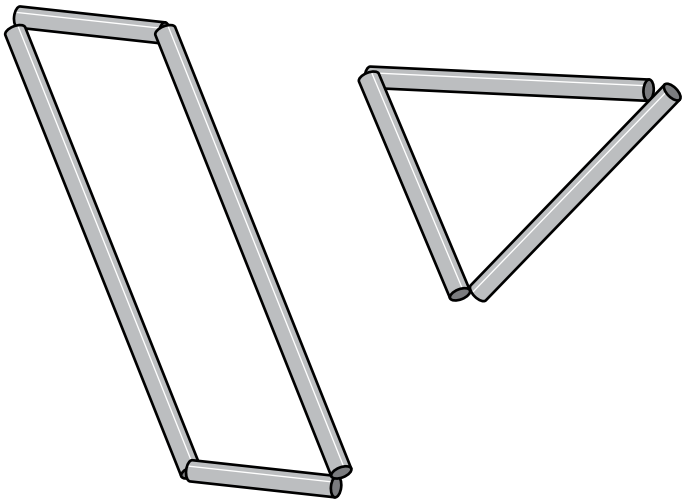
6. Circle the shape that best fits with Group A.



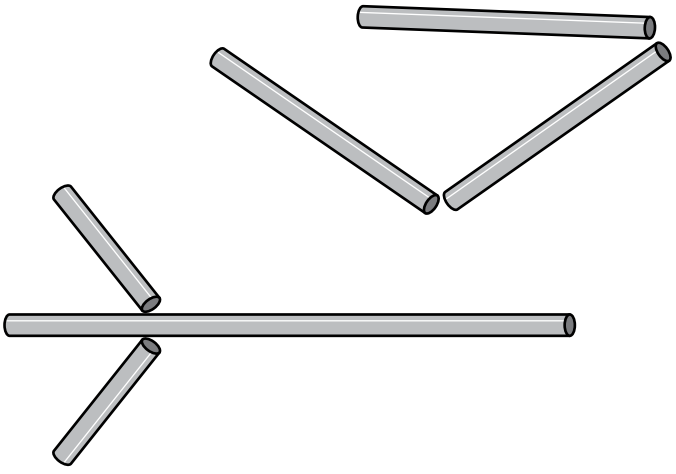
7. Draw 2 more shapes that would fit in Group A.	8. Draw 1 shape that would **not** fit in Group A.

0	1	2	3
4	5	6	7
8	9	10	5
=	+	+	−
−			

numeral cards



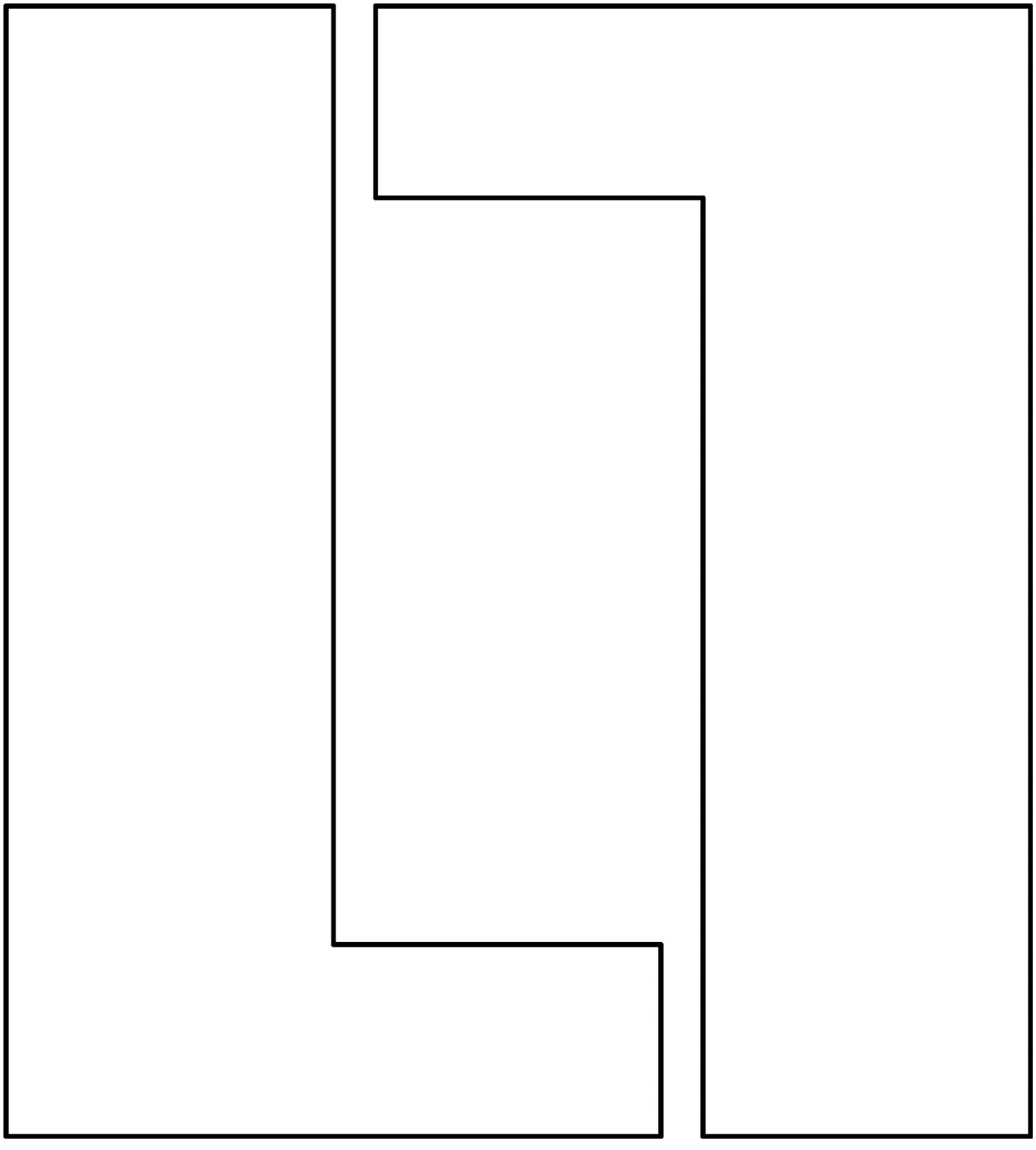
Closed Shapes



Open Shapes

open- and closed-shape images

Print on cardstock, and cut out each of the two square corner testers.



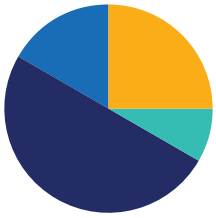
square corner tester

Lesson 2

Objective: Find and name two-dimensional shapes including rhombus and a square as a special rectangle, based on defining attributes of sides and corners.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (15 minutes)

- Grade 1 Fluency Sprint **1.3D** (10 minutes)
- Make It Equal: Subtraction Expressions **1.5E** (5 minutes)

Grade 1 Fluency Sprint (10 minutes)

Materials: (S) Fluency Sprint (Lesson 1 Fluency Sprint)

Note: Based on the needs of the class, select a Sprint from Lesson 1. Consider the options below:

1. Re-administer the previous lesson's Sprint.
2. Administer the next Sprint in the sequence.
3. Differentiate. Administer two different Sprints. Simply have one group do a counting activity on the back of the Sprint while the other group corrects the second Sprint.

Make It Equal: Subtraction Expressions (5 minutes)

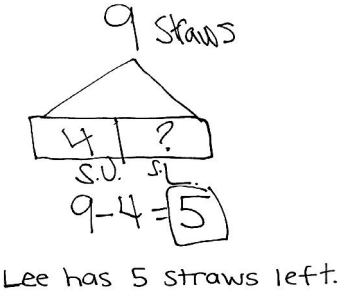
Materials: (S) Numeral cards (Lesson 1 Fluency Template), one "=" card, two "–" cards

Note: This activity builds fluency with subtraction within 10 and promotes an understanding of equality.

Assign students partners of similar skill or ability level. Students arrange numeral cards from 0 to 10, including the extra 5. Place the "=" card between the partners. Write four numbers on the board (e.g., 9, 10, 2, 1). Partners take the numeral cards that match the numbers written to make two equivalent subtraction expressions (e.g., 10 – 9 = 2 – 1). Students can be encouraged to make another sentence of equivalent expressions for the same set of cards as well (e.g., 10 – 2 = 9 – 1). Encourage students to find examples that result in an answer other than 1 = 1, as in the previous example.

Suggested sequence: 10, 9, 2, 1; 2, 10, 3, 9; 4, 5, 9, 10; 10, 8, 7, 9; 7, 10, 9, 6; and 2, 4, 10, 8.

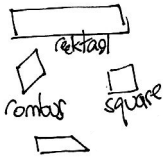
Application Problem (5 minutes)



Lee has 9 straws. He uses 4 straws to make a shape. How many straws does he have left to make other shapes?

Extension: What possible shapes could Lee have created? Draw the different shapes Lee might have made using 4 straws. Label any shapes whose name you know.

Note: Today's Application Problem uses a familiar context that was established during Lesson 1 of the module. Through the extension, students have the opportunity to apply the previous lesson and generate prior knowledge that is useful for today's objective.



Concept Development (30 minutes)

Materials: (T) Charts from Lesson 1, shape description cards (Template), tape (S) Straw kit, 10 additional straws per person, square corner tester (Lesson 1 Template 2), shape description cards (Template)

Note: The description of each shape is consistent with mathematical descriptions used throughout the K–12 continuum of instructional materials. Below are some clarifying comments about each shape mentioned in this lesson.

Triangle: A triangle can be described based on its three sides or its three corners, or vertices.

Rectangle: A rectangle is a quadrilateral with four square corners. The length of each side is not a defining attribute. For this reason, a square is a type of rectangle. While some rectangles have two short sides and two longer sides, that is not a requirement or defining attribute of a rectangle.

Rhombus: A rhombus is a quadrilateral with four sides of the same length. The definition does not depend on the measure of its angles. For this reason, a square is also a special type of rhombus that has right angles, or square corners.

Square: A square is a special shape that is both a rectangle and a rhombus since it is a quadrilateral with four square corners and four sides of the same length.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Highlight the critical vocabulary for some emergent bilingual students throughout the lesson. Key vocabulary words—*characteristic* and *attribute*—were introduced in Lesson 1. Without understanding these words, some emergent bilingual students may struggle with the first few lessons of this module. Spend some extra time relating the words while describing the classroom for students so that students see the relationship between describing shapes and other things in their environment.

T: Yesterday, you made all of these shapes with your straws. (Show the charts from Lesson 1.) Today, we're going to name them based on their attributes, or characteristics. (Hold up the triangle card.) The word *triangle* actually describes something about the shape! Listen carefully—*tri* means three, and *angle* is what gives us corners, or vertices. So, when we say *triangle,* we're saying it has three corners. Which can we label as triangles?

S: The ones on the first chart. (Students point to the triangles.)

T: Are they all triangles? Tell me about each one.

Students explain or touch each of the three corners or vertices of each shape to confirm that they are all triangles. Ensure that students point out that all the triangles also have three straight sides. Tape the triangle description card under the triangles.

T: Let's try another card. (Hold up the hexagon card.) A **hexagon** is a shape with six straight sides. Do we have any hexagons on our chart?

S: (Point to the two hexagons on Chart 3.) Yes, these shapes have six straight sides!

T: (Tape the card on the chart near the hexagons.) Do we have any other hexagons on these charts?

S: No!

Move to the rectangle and square description cards.

T: A rectangle is a shape with four square corners. Do we have any rectangles on our chart? Use your square corner tester to check.

S: (Point to any rectangles on the charts, and explain why they fit the description.)

T: (Ensure that students include the squares as shapes that fit the description. Add the rectangle cards under the shapes.) Do any of these rectangles have another name you know?

S: Yes! The square.

T: Yes, a square is a type of special rectangle with four straight sides of equal length. (Tape a square card under the rectangle card.)

T: A **rhombus** is a shape with four straight sides of equal length. Do we have any rhombuses?

S: (Point to shapes with four straight sides of equal length, including the shape that is already labeled with *square* and *rectangle*.)

T: (As students explain how each shape fits the description, tape the description card below the drawing.) Yes, a square is a special kind of rectangle, and it is also a special kind of rhombus. Squares are pretty special!

T: Now, you're ready to play Make the Shape with your partner. Here's how to play:

- Each pair gets a stack of shape description cards and places 10 additional straws in their straw kit.
- Turn over a card. Use your straws to make that shape, and put the card below your shape.
- Take turns until one player has used all of his straws.
- If you have more time, shuffle up the cards, and take turns trying to pick the cards that match the shapes you've made.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)

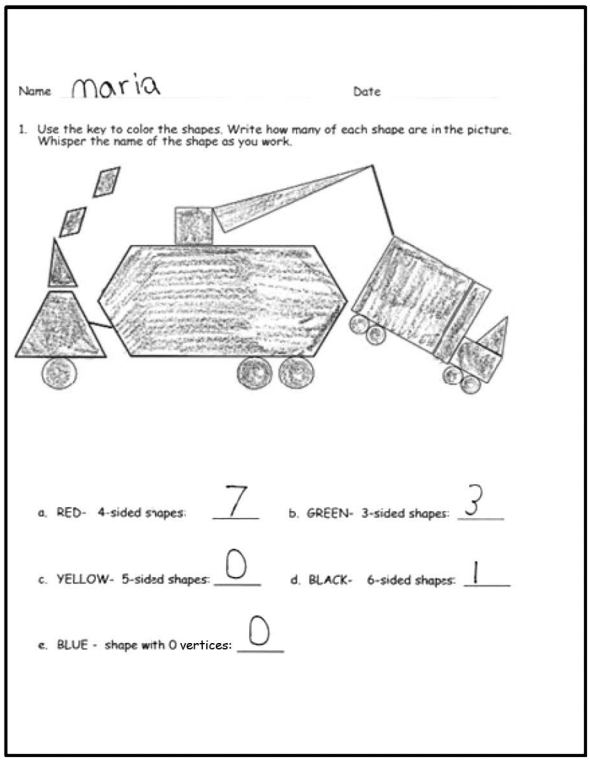
Lesson Objective: Find and name two-dimensional shapes including rhombus and a square as a special rectangle, based on defining attributes of sides and corners.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problem 1. Which shapes were the most challenging to count or find? Which shapes were the simplest? Explain your thinking.

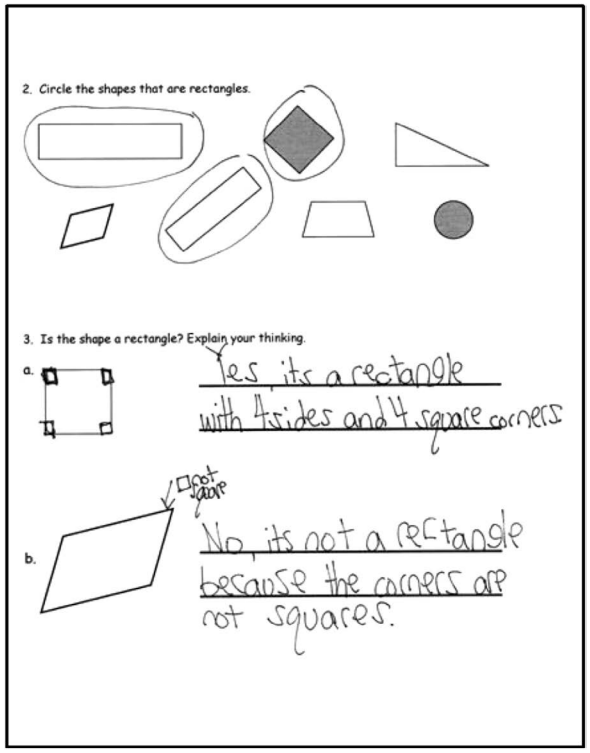

Name Maria Date

1. Use the key to color the shapes. Write how many of each shape are in the picture. Whisper the name of the shape as you work.

a. RED- 4-sided shapes: 7 b. GREEN- 3-sided shapes: 3

c. YELLOW- 5-sided shapes: 0 d. BLACK- 6-sided shapes: 1

e. BLUE - shape with 0 vertices: 0


2. Circle the shapes that are rectangles.

3. Is the shape a rectangle? Explain your thinking.

a. Yes, its a rectangle with 4 sides and 4 square corners

b. Not a rhombus

No, its not a rectangle because the corners are not squares.

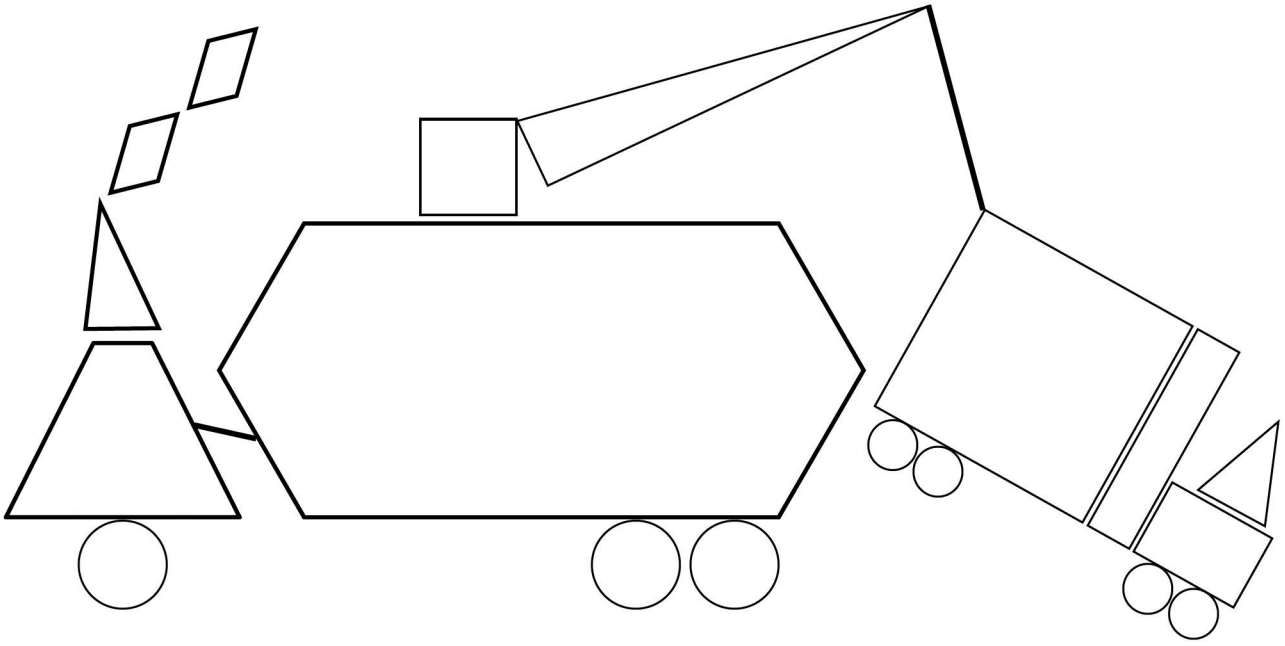
- Which four-sided shapes are squares? Which are **rhombuses**? Which are rectangles? (Note that a square is a type of rectangle *and* a type of rhombus.) How many sides do **hexagons** have?
- What name can we use for the three-sided shapes? What name can we use for the six-sided shapes? What name can we use for all of the shapes with no corners or vertices, in this picture?
- In Problem 1, what do the shapes look like when they are joined in this way?
- Look at Problem 2. Explain why you chose each shape that is a rectangle. Explain why the other shapes are *not* rectangles.
- Look at Problem 3(b). How is the shape in Problem 3(b) like a rectangle? How is it different from a rectangle? What other shapes have similar attributes to the shape in Problem 3(b)? How are they similar, and how are they different? Explain your thinking.
- What shape names did we use today? Name the attributes or characteristics that are important to each shape.
- Look at the Application Problem. What shape or shapes might Lee have created?
- How did your fluency work go today? How do you practice?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

1. Use the key to color the shapes. Write how many of each shape are in the picture. Whisper the name of the shape as you work.



a. RED—4-sided shapes: _____

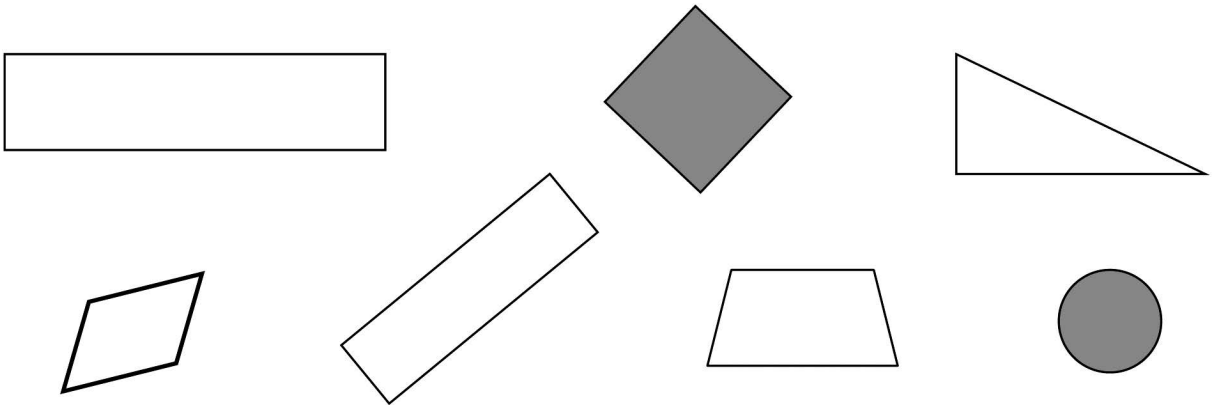
b. GREEN—3-sided shapes: _____

c. YELLOW—5-sided shapes: _____

d. BLACK—6-sided shapes: _____

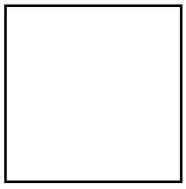
e. BLUE—shapes with no vertices: _____

2. Circle the shapes that are rectangles.

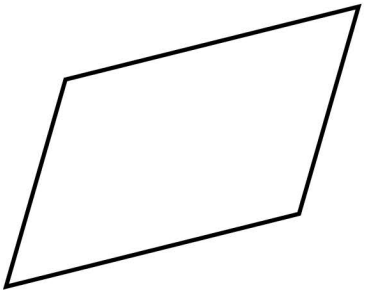


3. Is the shape a rectangle? Explain your thinking.

a.

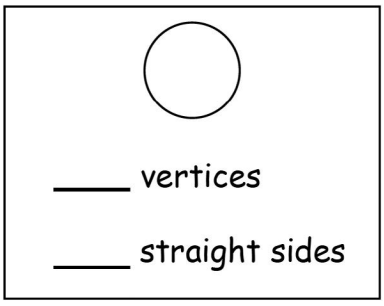


b.



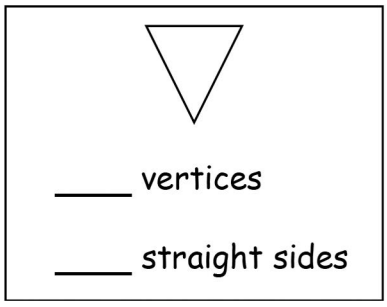
Name _____ Date _____

Write the number of vertices and sides that each shape has. Then, match the shape to its name. Remember that some special shapes may have more than one name.

1. 

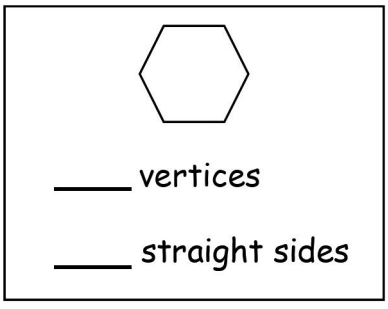
____ vertices

____ straight sides

2. 

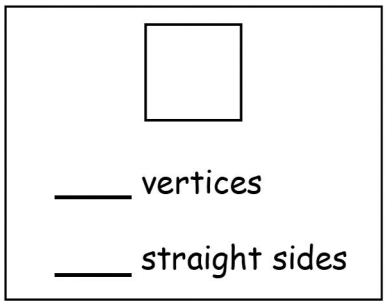
____ vertices

____ straight sides

3. 

____ vertices

____ straight sides

4. 

____ vertices

____ straight sides

triangle

circle

rectangle

hexagon

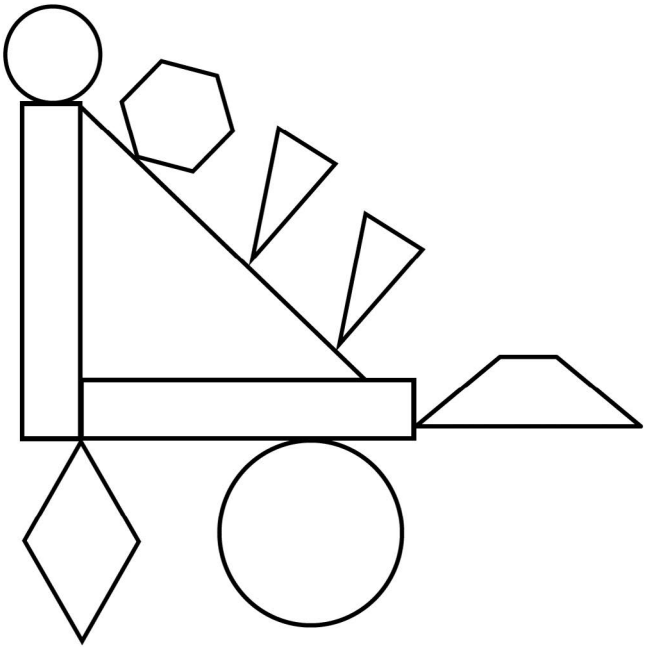
square

rhombus

Name _____ Date _____

1. Color the shapes using the key. Write the number of shapes you colored on each line.

Key	
RED 3 straight sides:	_____
BLUE 4 straight sides:	_____
GREEN 6 straight sides:	_____
YELLOW 0 straight sides:	_____



2.

a. A **triangle** has ____ straight sides and ____ vertices.

b. I colored ____ triangles.

3.

a. A **hexagon** has ____ straight sides and ____ vertices.

b. I colored ____ hexagon.

4.

a. A **circle** has ____ straight sides and ____ vertices.

b. I colored ____ circles.

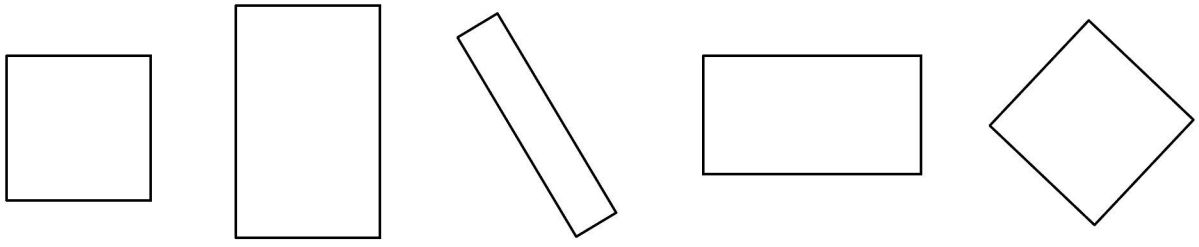
5.

a. A **rhombus** has ____ straight sides that are equal in length and ____ vertices.

b. I colored ____ rhombus.

6. A **rectangle** is a closed shape with 4 straight sides and 4 square corners.

a. Cross off the shape that is NOT a rectangle.

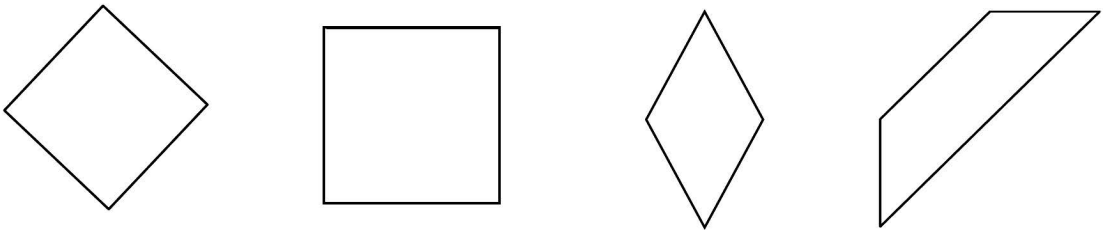


b. Explain your thinking: _____

_____

7. A **rhombus** is a closed shape with 4 straight sides of the same length.

a. Cross off the shape that is NOT a rhombus.



b. Explain your thinking: _____

_____

hexagon closed shape with 6 straight sides	**rectangle** closed shape with 4 straight sides and 4 square corners
square closed shape with 4 straight sides of the same length and 4 square corners	**triangle** closed shape with 3 straight sides
rhombus closed shape with 4 straight sides of the same length	

shape description cards

Lesson 3

Objective: Create two-dimensional figures.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(35 minutes)
Student Debrief	(5 minutes)
Total Time	**(60 minutes)**

Fluency Practice (15 minutes)

- Grade 1 Fluency Sprint **1.3D** (10 minutes)
- Make it Equal: Addition Expressions **1.5E** (5 minutes)

Grade 1 Fluency Sprint (10 minutes)

Materials: (S) Fluency Sprint (Lesson 1 Fluency Sprint)

Note: Based on the needs of the class, select a Sprint from Lesson 1. Consider the options below:

1. Re-administer the previous lesson's Sprint.
2. Administer the next Sprint in the sequence.
3. Differentiate. Administer two different Sprints. Simply have one group do a counting activity on the back of the Sprint while the other group corrects the second Sprint.

Make it Equal: Addition Expressions (5 minutes)

Materials: (S) Numeral cards including one "=" card and two "+" cards (Fluency Template)

Note: This activity builds fluency with Grade 1's addition facts and promotes an understanding of equality.

Assign students partners of equal ability. Students arrange numeral cards from 0 to 10, including the extra 5. Place the "=" card between the partners. Write four numbers on the board (e.g., 9, 5, 5, 1). Partners take the numeral cards that match the numbers written to make two equivalent expressions (e.g., 5 + 5 = 9 + 1).

Suggested sequences: 6, 5, 10, 1; 1, 2, 8, 9; 10, 8, 3, 1; 8, 7, 2, 1; 6, 3, 5, 8; 2, 6, 7, 3; and 3, 4, 7, 8.

Application Problem (5 minutes)

Materials: Shape description cards from Lesson 2 (Template)

T: Yesterday, we learned about several different shapes and their attributes. I am going to point to one of our shape description cards from yesterday, and you will go on a hunt to find this shape in our classroom. When you find the shape, stand by it.

Point to a shape description card. Once students are standing by a shape matching the card, ask several students to explain how they know their shape correctly matches the card. Repeat several times using different shape description cards.

Note: This Application Problem serves as a review of shapes and their attributes in preparation for today's Concept Development.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

To support students, including some emergent bilingual students, with using the names and attributes of shapes, display and maintain a pictorial word wall. Include the name, pictures or drawings, and defining attributes of each shape introduced. Also consider including formal terms paired with informal terms to support students that may not be proficient with the vocabulary.

Concept Development (35 minutes)

Materials: (T) Chart paper (S) Straw kit from Lesson 1, string or yarn

Prepare a shape chart by partitioning chart paper into 5 sections. Label the sections: triangles, rectangles, circles, rhombuses, and hexagons.

Place a 4–8-inch piece of yarn in each student's straw kit from Lesson 1. Distribute kits to students.

T: Yesterday, we learned about different two-dimensional shapes and their attributes. Today, we will build some of these shapes using your straw kit. Let's start by building a triangle. What attributes do all triangles have?

S: Closed shape. → 3 straight sides. → 3 corners.

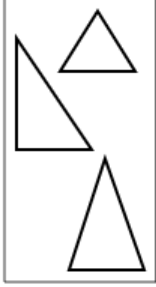
T: Take out your straws and build some triangles.

S: (Students build one or more triangles using a variety of straw lengths.)

T: Turn to a partner. Compare your triangles. What is the same? What is different?

S: (Partners discuss.)

T: (Record drawings of several triangles on the shape chart.) The class built many different types of triangles. I recorded some on our chart. Do all our triangles look the same?

Triangles	Rectangles	Circles	Rhombuses	Hexagons
				

S: No. This triangle has all 3 sides the same length. This one has sides that are all different lengths. Some are big and some are small.

T: What is the same about all the triangles on our chart?

S: They all have 3 straight sides and 3 vertices.

T: Yes. All triangles have 3 straight sides and 3 corners, or vertices. However, they can come in many colors and sizes. They can have same side lengths or different side lengths.

Repeat the above steps for rectangles. For this part of the lesson, squares will be included within the category of rectangles.

T: What attributes do all rectangles have?

S: 4 sides and 4 square corners.

T: How can we test to make sure a corner is square?

S: We can use the corner of a book, a ruler, or a piece of paper.

T: Great! Now, use your straw kit to build as many rectangles as you can.

S: (Students build one or more rectangles using a variety of straws.)

T: (Record drawings of several students' rectangles on the shape chart. Be sure to record a special rectangle with 4 equal sides.) The class built many different rectangles. I recorded some on our class chart. Do all these rectangles look exactly the same?

S: No. Some have different side lengths and some have the same side lengths. Some are big and some are small.

T: Exactly! Rectangles can be big or small. They can have 4 equal side lengths or 2 different side lengths. As long as they have 4 straight sides and 4 square corners, they are called rectangles. What do we call special rectangles that have 4 equal sides?

S: Squares.

T: (Label the squares on the class chart.)

Repeat the above steps for the remaining shapes on the class chart. When building circles, students should notice they will need to use the yarn rather than straws.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

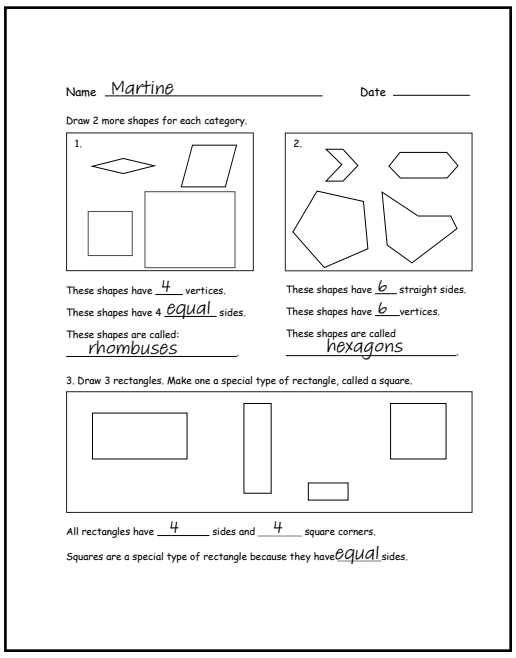
Distribute the Problem Set and rulers to students.

Have students draw shapes for each category. They may use their rulers to ensure sides are straight and rectangles and squares have square corners. Walk around the room to support those students who need help.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Offer alternative materials if using the straws, string, or ruler presents a fine motor challenge for students. For example, bendable chenille stems may be simpler to manipulate than a string. A sturdy wooden block may be more efficient to grasp and can be used as an alternative to a ruler.

Additionally, consider pairing students to assist each other with the materials. One student can help hold the straws in place while the other student places new straws.



Name Martine Date

Draw 2 more shapes for each category.

1.

2.

These shapes have 4 vertices.
These shapes have 4 equal sides.
These shapes are called: rhombuses

These shapes have 6 straight sides.
These shapes have 6 vertices.
These shapes are called hexagons

3. Draw 3 rectangles. Make one a special type of rectangle, called a square.

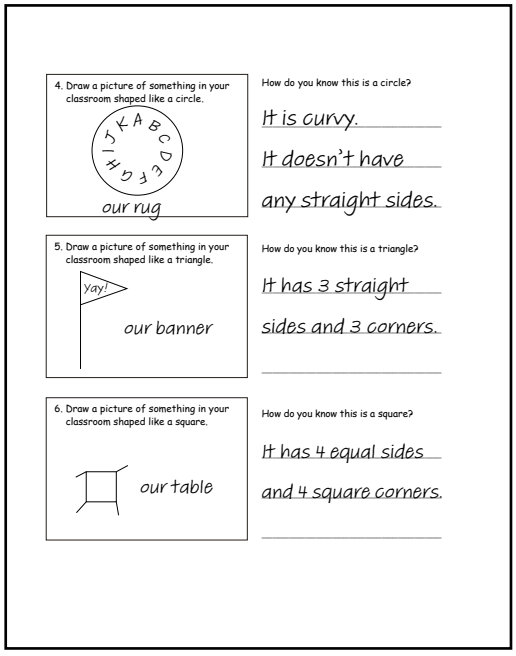
All rectangles have 4 sides and 4 square corners.
Squares are a special type of rectangle because they have equal sides.

Student Debrief (5 minutes)

Lesson Objective: Create two-dimensional figures.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.



Any combination of the questions below may be used to lead the discussion.

- Which shapes were simplest to draw? Why?
- How are all your rectangles the same? How are they different?
- What are attributes that all circles must have?
- Are color and size important attributes when drawing a shape?
- What are the important attributes we need to think about when drawing a shape?

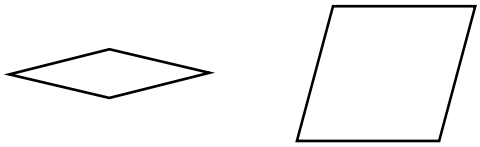
Exit Ticket (5 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

Draw 2 more shapes for each category.

1.



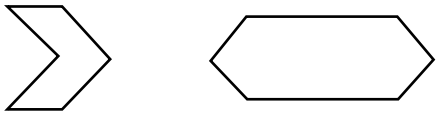
These shapes have _____ vertices.

These shapes have 4 _____ sides.

These shapes are called:

_____.

2.



These shapes have ____ straight sides.

These shapes have _____vertices.

These shapes are called

_____.

3. Draw 3 rectangles. Make one a special type of rectangle, called a square.

All rectangles have _____ sides and _____ square corners.

Squares are a special type of rectangle because they have _____sides.

4. Draw a picture of something in your classroom shaped like a circle.

How do you know this is a circle?

_____

_____

_____

5. Draw a picture of something in your classroom shaped like a triangle.

How do you know this is a triangle?

_____

_____

_____

6. Draw a picture of something in your classroom shaped like a square.

How do you know this is a square?

_____

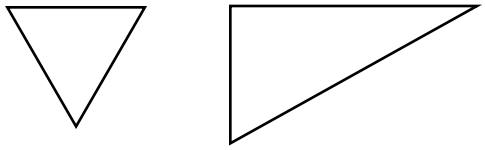
_____

_____

Name _____ Date _____

Draw 2 more shapes for each category.

1.



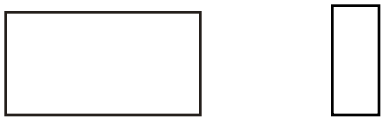
These shapes have ___ straight sides.

These shapes have ____ vertices.

These shapes are called

_____.

2.



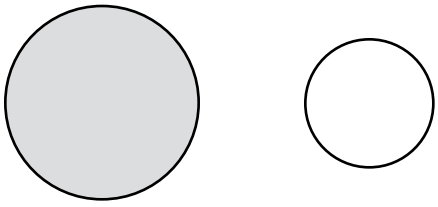
These shapes have ___ straight sides.

These shapes have ____ square corners.

These shapes are called

_____.

3. Draw 2 more shapes for this category.



These shapes have _____ straight sides.

These shapes are _____.

Name _____ Date _____

1. Draw a picture of a square.

How do you know this is a square?

_____

_____

_____

2. Draw a picture of a hexagon.

How do you know this is a hexagon?

_____

_____

_____

3. Draw a picture of a triangle.

How do you know this is a triangle?

_____

_____

_____

Lesson 4

Objective: Classify and sort two-dimensional shapes.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(35 minutes)
Student Debrief	(5 minutes)
Total Time	**(60 minutes)**

Fluency Practice (15 minutes)

- Grade 1 Fluency Sprint **1.3D** (10 minutes)
- Make it Equal: Subtraction Expressions **1.5E** (5 minutes)

Grade 1 Fluency Sprint (10 minutes)

Materials: (S) Fluency Sprint (Lesson 1 Fluency Sprint)

Note: Based on the needs of the class, select a Sprint from Lesson 1. Consider the options below:

1. Re-administer the previous lesson's Sprint.
2. Administer the next Sprint in the sequence.
3. Differentiate. Administer two different Sprints. Simply have one group do a counting activity on the back of the Sprint while the other group corrects the second Sprint.

Make it Equal: Subtraction Expressions (5 minutes)

Materials: (S) Numeral cards (Lesson 1 Fluency Template), one "=" card, two "–" cards

Note: This activity builds fluency with subtraction within 10 and promotes an understanding of equality.

Assign students partners of similar skill or ability level. Students arrange numeral cards from 0 to 10, including the extra 5. Place the "=" card between the partners. Write four numbers on the board (e.g., 9, 10, 2, 1). Partners take the numeral cards that match the numbers written to make two equivalent subtraction expressions (e.g., 10 – 9 = 2 – 1). Students can be encouraged to make another sentence of equivalent expressions for the same set of cards as well (e.g., 10 – 2 = 9 – 1). Encourage students to find examples that result in an answer other than 1 = 1, as in the previous example.

Suggested sequences: 10, 9, 2, 1; 2, 10, 3, 9; 4, 5, 9, 10; 10, 8, 7, 9; 7, 10, 9, 6; and 2, 4, 10, 8.

Application Problem (5 minutes)

T: Draw a shape on your white board to match this description: a closed shape with 4 straight sides and 4 corners, or vertices.

Once everyone is finished, talk to your partner. Discuss:

- What is the same about both of your shapes?
- What is different?
- What is the name of each partner's shape?

Note: This Application Problem serves as review from yesterday's lesson, in which students constructed two-dimensional shapes. This problem also lays the groundwork for today's lesson as students begin sorting shapes into categories based on common attributes.

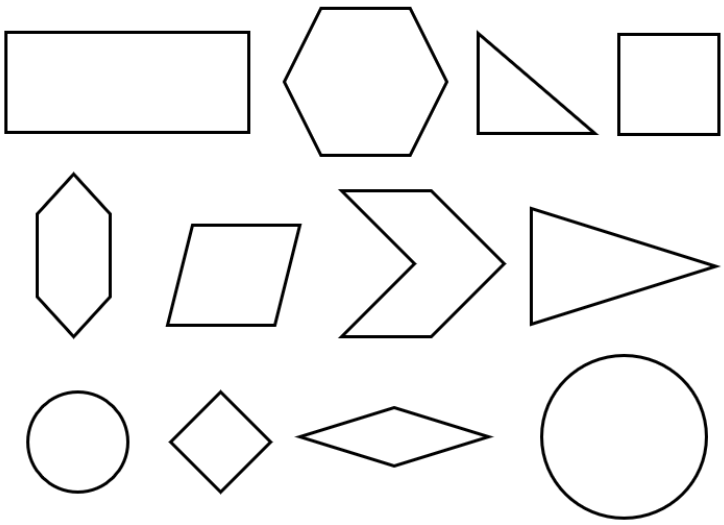
NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Consider offering alternative materials or supplies if drawing straight sides with a pencil presents a fine motor challenge for students. For example, students can use straws of different lengths from the straw kit, chenille stems, or rulers as alternative ways to create shapes with straight sides.

Concept Development (35 minutes)

Preparation:

- Create a four-column chart with the labels *0 Straight Sides, 3 Straight Sides, 4 Straight Sides,* and *6 Straight Sides.*
- Cut apart the shapes from the paper shapes template (see below).



Materials: (T) Bag of paper shapes (Template), four-column chart

Use the four-column chart to sort paper shapes (Template) by number of sides.

T: We have been talking about many different types of two-dimensional shapes. What are some of the shapes we have discussed?

S: Circle. → Triangle. → Rectangle. → Square. → Rhombus. → Hexagon.

T: We've also learned to look at a shape's attributes in order to name it. One attribute is size. Does size help us name a shape?

S: No.

T: Another attribute is color. Does color help us name a shape?

S: No.

T: What are some attributes that help us name a shape?

S: The number of straight sides. → The number of corners. → Equal sides. → Square corners.

T: Today we will work on naming shapes by their attributes and sorting shapes into groups based on shared attributes.

T: (Ask for a volunteer to take a shape out of the bag.) Student A, please take a shape out of this bag. Look at the shape's attributes and try to name it. You may call on a friend to help if needed.

S: I know it's a square because it has 4 equal sides and 4 square corners.

T: Great! As we name the shapes in this bag, we are going to place them on our chart. (Display the four-column chart and read the headings aloud.) Class, where should we put our square?

S: 4 Straight Sides.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

To support students, including some emergent bilingual students, with naming shapes by their attributes, consider providing the following sentence frames and starters:

- My shape has …
- I see ____ corners and ____ straight sides.
- I already know …

Continue to have volunteers take the remaining shapes out of the bag and name them. Then, have the class chorally state which column to place the shape in.

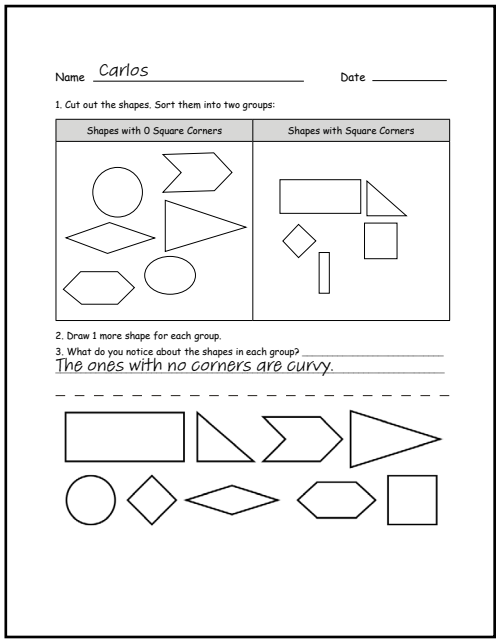
T: Now that we have sorted our shapes into groups, look our chart. Talk to a partner about what you notice.

S: There are only 2 shapes with 0 straight sides and a lot of shapes with 4 straight sides. → Shapes in the same group can still look really different.

T: Why do you think there are so many shapes in our *4 Straight Sides* group?

S: That group has rectangles, squares, and rhombuses!

T: We just sorted shapes by the number of straight sides, but there are many different ways to sort shapes. We will continue to sort during our Problem Set and again in tomorrow's lesson.


Name Carlos Date

1. Cut out the shapes. Sort them into two groups:

Shapes with 0 Square Corners	Shapes with Square Corners

2. Draw 1 more shape for each group.

3. What do you notice about the shapes in each group?

The ones with no corners are curvy.

Problem Set (10 minutes)

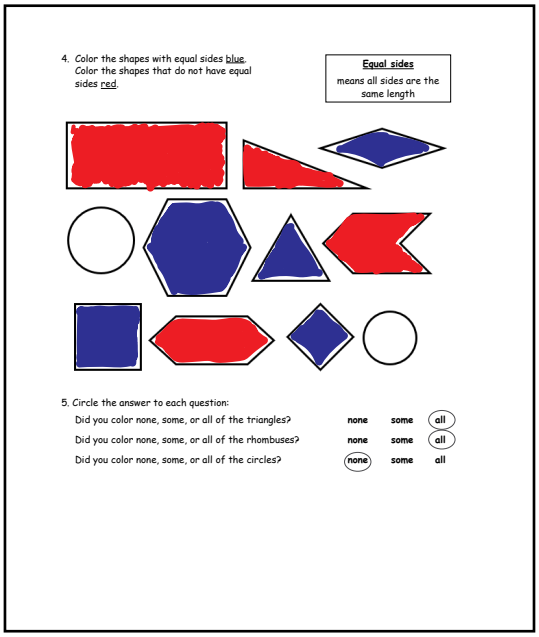
Students should do their personal best to complete the Problem Set within the allotted time.

Distribute the Problem Set, scissors, and glue to students. Students may also need a ruler or other tool to determine if shapes have square corners.

Have students complete all parts of the Problem Set. Walk around the room to support those students who need help.

Note: On Problem 1, the category *Shapes with Square Corners* includes any shape containing one or more square corners (e.g., a right triangle).

Student Debrief (5 minutes)



Lesson Objective: Classify and sort two-dimensional shapes.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What new (or significant) math vocabulary did we use today to communicate precisely?
- How were your shapes with square corners the same? How were they different?
- Look at Problem 1. What did you notice about the shapes in each group? Do the shapes in the first group all have the same name? Do the shapes in the second group all have the same name?
- Look at Problem 5. If we were to put more rhombuses on this page, do you think you would need to color them red or blue? Why?
- Look at Problem 5. If we were to put more triangles on this page, do you think you would need to color them red or blue? Why?

Exit Ticket (5 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

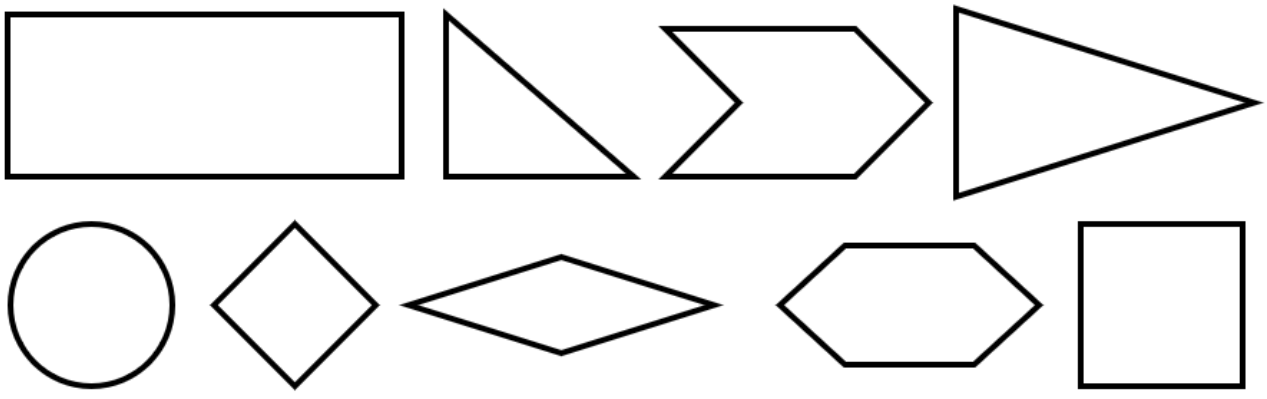
1. Cut out the shapes. Sort them into two groups:

Shapes with 0 Square Corners	Shapes with Square Corners

2. Draw 1 more shape for each group.

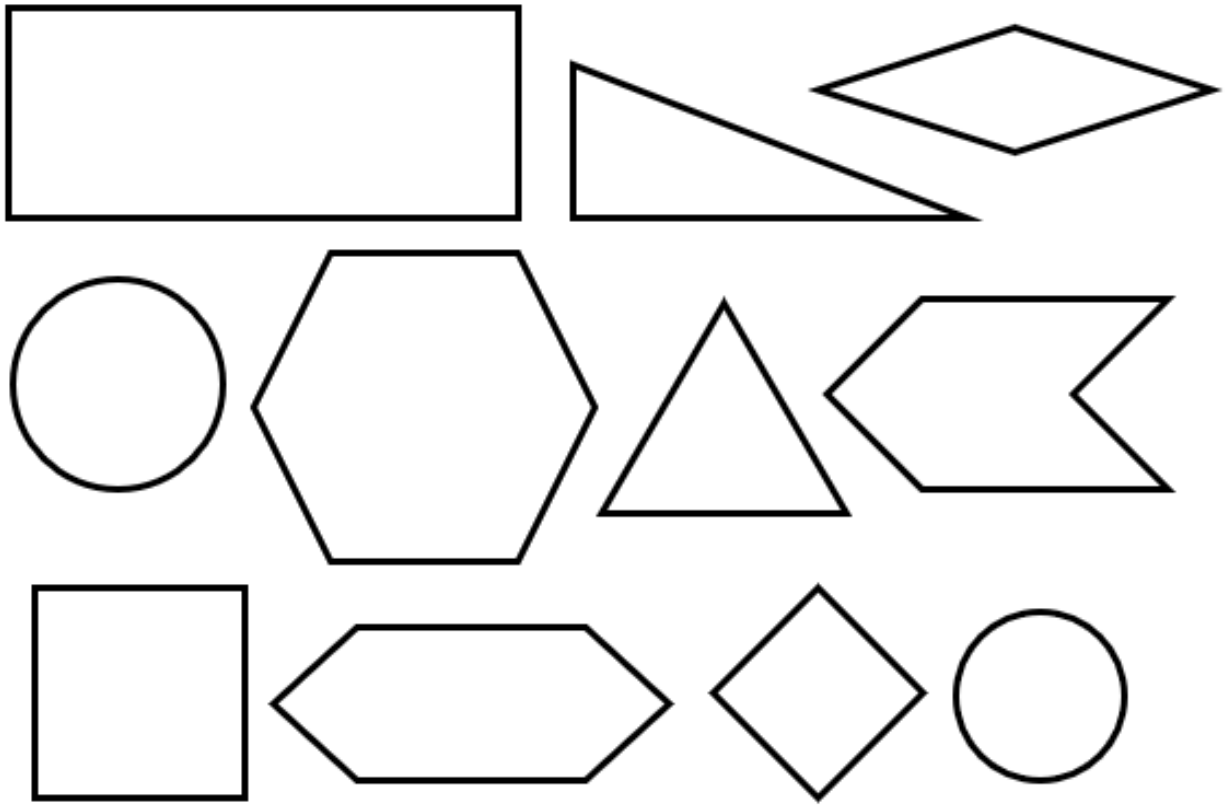
3. What do you notice about the shapes in each group? _____

_____



4. Color the shapes with equal sides blue. Color the shapes that do not have equal sides red.

Equal sides
means all sides are the same length

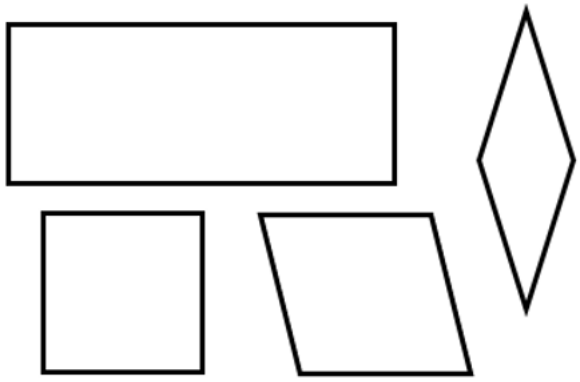
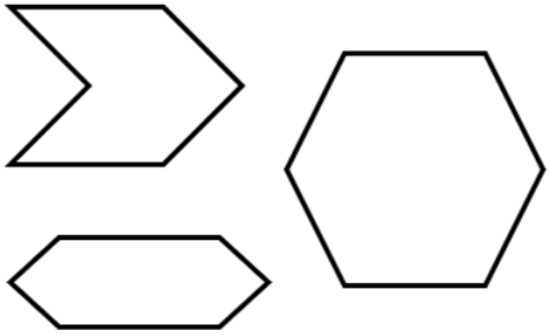


5. Circle the answer to each question:

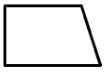
Did you color none, some, or all of the triangles?	**none**	**some**	**all**
Did you color none, some, or all of the rhombuses?	**none**	**some**	**all**
Did you color none, some, or all of the circles?	**none**	**some**	**all**

Name _____ Date _____

Thanh sorted her shapes into two groups.

Group 1	Group 2
	

1. Thanh doesn't know where to put this last shape.

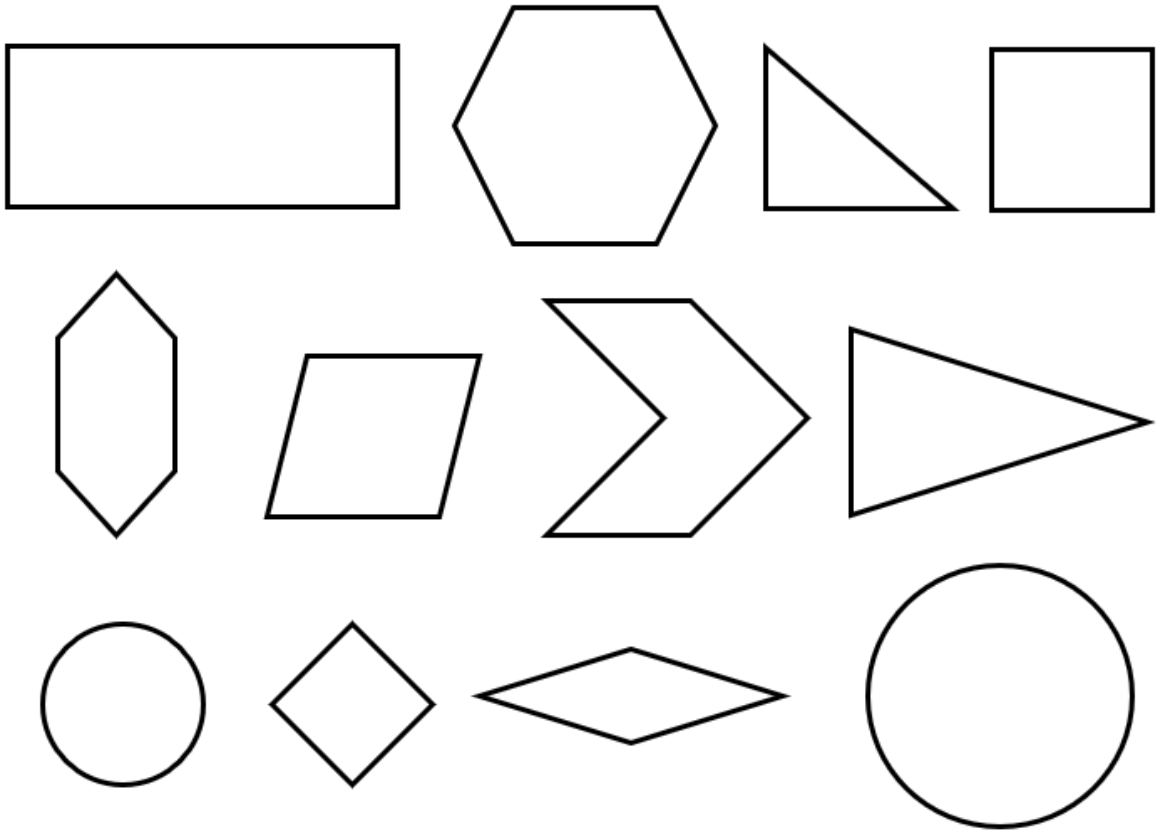


Where should Thanh put this shape? (Circle one.) **Group 1** **Group 2**

2. Draw 1 more shape for each group.

Name _____ Date _____

1. Color the shapes with three vertices blue.
   Color the shapes with four vertices red.

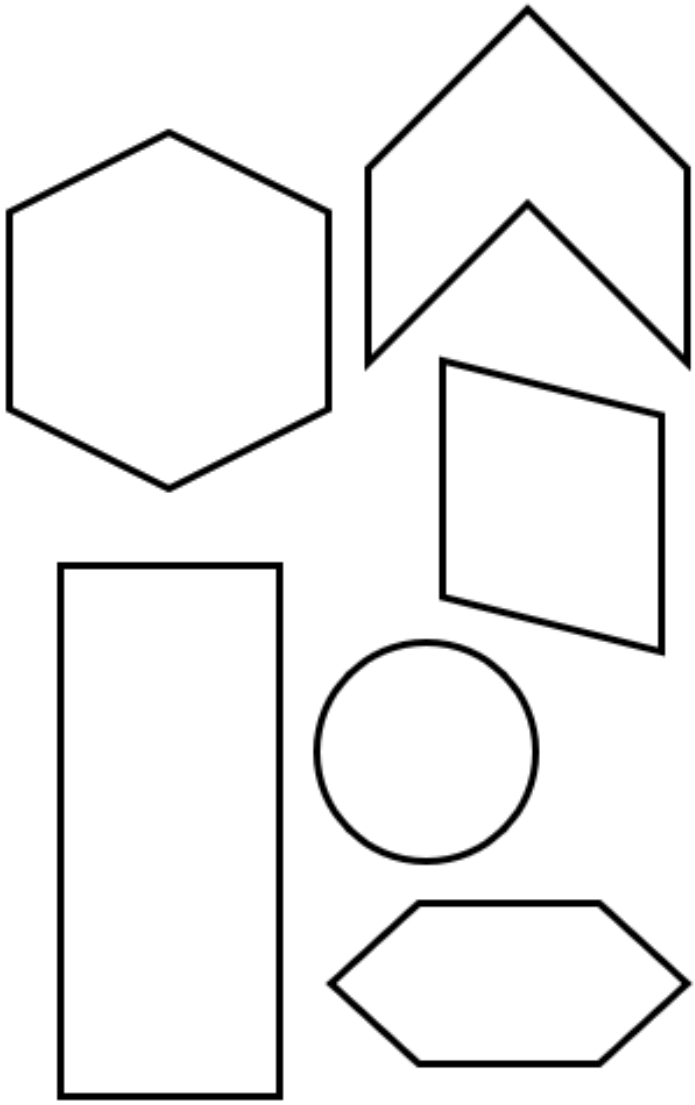


2. What is the name of the shapes you colored blue?

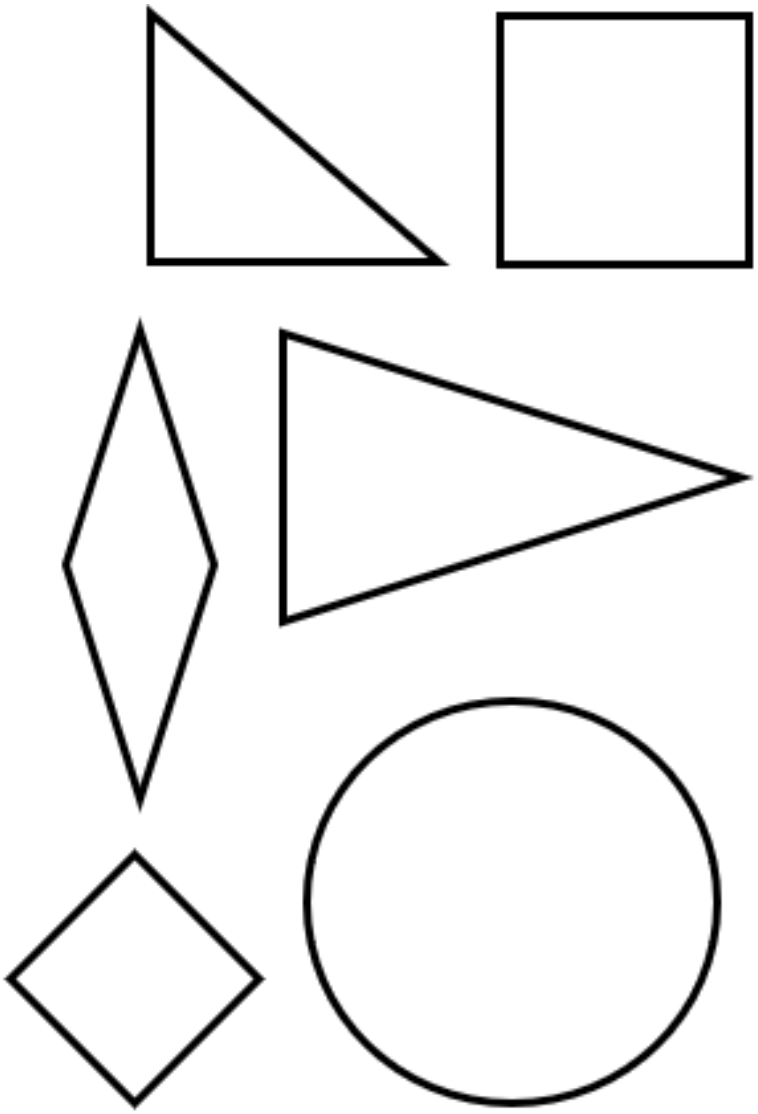
_____

3. What are the names of the shapes you colored red?

_____



paper shapes to be used during Concept Development



paper shapes to be used during Concept Development

Lesson 5

Objective: Classify and sort two-dimensional shapes.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(35 minutes)
Student Debrief	(5 minutes)
Total Time	**(60 minutes)**

Fluency Practice (15 minutes)

- Grade 1 Fluency Sprint **1.3D** (10 minutes)
- Make it Equal: Subtraction Expressions **1.5E** (5 minutes)

Grade 1 Fluency Sprint (10 minutes)

Materials: (S) Fluency Sprint (Lesson 1 Fluency Sprint)

Note: Based on the needs of the class, select a Sprint from Lesson 1. Consider the options below:

1. Re-administer the previous lesson's Sprint.
2. Administer the next Sprint in the sequence.
3. Differentiate. Administer two different Sprints. Simply have one group do a counting activity on the back of the Sprint while the other group corrects the second Sprint.

Make it Equal: Subtraction Expressions (5 minutes)

Materials: (S) Numeral cards (Lesson 1 Fluency Template), one "=" card, two "–" cards

Note: This activity builds fluency with subtraction within 10 and promotes an understanding of equality.

Assign students partners of similar skill or ability level. Students arrange numeral cards from 0 to 10, including the extra 5. Place the "=" card between the partners. Write four numbers on the board (e.g., 9, 10, 2, 1). Partners take the numeral cards that match the numbers written to make two equivalent subtraction expressions (e.g., 10 – 9 = 2 – 1). Students can be encouraged to make another sentence of equivalent expressions for the same set of cards as well (e.g., 10 – 2 = 9 – 1). Encourage students to find examples that result in an answer other than 1 = 1, as in the previous example.

Suggested sequences: 10, 8, 3, 1; 3, 10, 4, 9; 5, 6, 9, 10; 10, 7, 6, 9; 8, 6, 3, 1; and 0, 2, 10, 8.

Application Problem (5 minutes)

Materials: (T) Bag of paper shapes (Template from yesterday's lesson)

Have a volunteer take two shapes out of the bag of paper shapes from yesterday's lesson. Partners turn to discuss how the shapes are the same and how they are different. Possible responses include, but are not limited to:

Similarities:

- They are both closed.
- They both have __ straight sides.
- They both have __ corners.
- They are both _____ (e.g., circles).

Differences:

- One has __ sides, and the other has __ sides.
- One has __ corners, and the other has __ corners.
- One has equal sides, and the other doesn't.
- One is a _____ (e.g., circle), and the other is a _____ (e.g., square).

Repeat activity as time allows.

Note: The purpose of this activity is to draw attention to common attributes among shapes. This lays the groundwork for students to generate their own rules for sorting shapes during today's Concept Development.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

To support students' discussion of similarities and differences, provide sentence frames (e.g., "The square and the triangle are the same because they both have…"; "The square and the triangle are different because the square has ___ and the triangle has ___."). Support students in using attribute words such as sides and corners by gesturing to those attributes on each shape and modelling the words as needed.

Concept Development (35 minutes)

Materials: (T) Bag of paper shapes from yesterday's lesson (S) Bag of paper shapes (Template)

Prior to the lesson, cut apart a set of paper shapes (Template) for each pair of students.

Part 1: Sorting Shapes

T: Partners, take out your shapes and arrange them in front of you.

T: I see a lot of shapes on your desk! I see squares, circles, rhombuses, and so many other shapes. (Point to a square.) How do you know this shape is a square?

S: It's a square because it has 4 square corners and 4 equal sides.

T: Exactly! A shape doesn't change when we turn or flip it. Even sideways, it is still a square.

T: Do you think we could sort the shapes on your desk? Take a few minutes to look at your shapes with your partner and think about the attributes some of these shapes have in common. This will help us name our rule for sorting.

T: Does anyone have a sorting rule for us to try?

S: We could put all the shapes with curves in one group and the shapes with straight sides in the other group.

T: Good! Let's try. (Allow time for sorting; circulate to ensure accuracy.)

T: Did anyone think of a different rule for sorting?

S: Shapes with equal sides and shapes that don't have equal sides.

T: (Continue the sorting exercises and discussion for several minutes. Circulate to observe correct use of vocabulary and accuracy in grouping.)

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Students who need more support, including some emergent bilingual students, may benefit from using a sorting mat while they are sorting shapes by attributes. Consider providing a two-column paper mat with a visual included at the top of each column. For example, when sorting shapes with curves and shapes with straight sides, provide a mat with a picture of a curved line at the top of one column and a straight line at the top of the other. Students can reference these visuals as they sort the shapes into the appropriate columns.

Part 2: Guess My Rule

T: (Display a group of rhombuses and a group of 4-sided shapes that are not rhombuses.) Now, I will sort some shapes into groups. You will try to guess my sorting rule. Look at my shapes. Tell a partner a rule I could have used for sorting.

S: (Discuss with partners.)

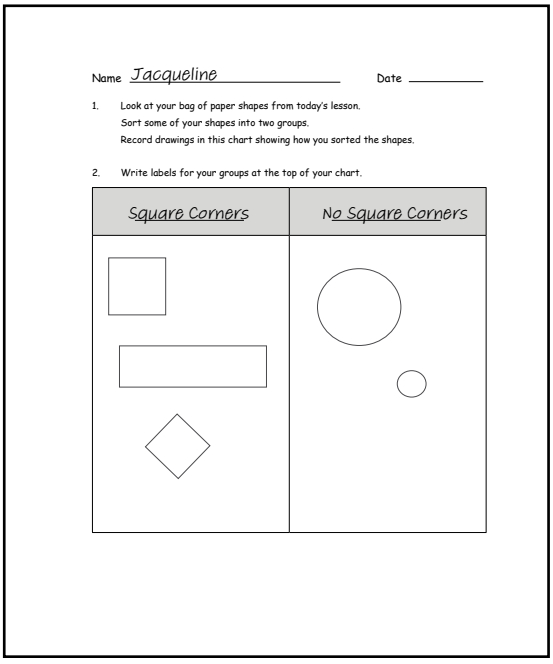
T: What sorting rule might I have used?

S: Equal sides and unequal sides. → Rhombuses and not rhombuses.

T: Yes, either of those rules work. Let's try again. (Display a group of shapes with one or more square corners and a group of shapes with no square corners.) Look at my shapes. Tell a partner a rule I could have used for sorting.

S: One group has square corners and one group doesn't.

If time allows, have partners play Guess My Rule with each other. One partner sorts some of their shapes into two groups, and the other partner guesses the sorting rule. Reverse roles and repeat.


Name Jacqueline Date _____

1. Look at your bag of paper shapes from today's lesson.
   Sort some of your shapes into two groups.
   Record drawings in this chart showing how you sorted the shapes.

2. Write labels for your groups at the top of your chart.

Square Corners	No Square Corners

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute the Problem Set to students.

Have students complete all parts of the Problem Set. Walk around the room to support those students who need help.

Note: For Problem 1, partners will take a turn sorting their paper shapes from today's lesson. While one partner works on their sort, the other partner may complete Problems 3–6 on the Problem Set.

Student Debrief (5 minutes)

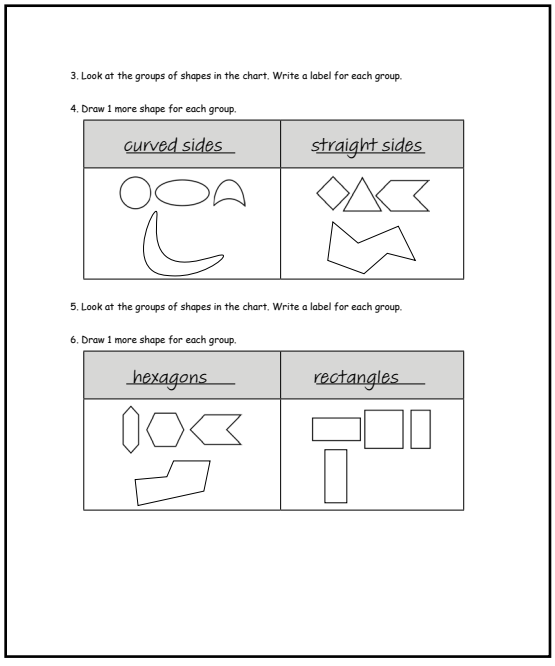
Lesson Objective: Classify and sort two-dimensional shapes.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What are some attributes of the shapes you worked with today?
- What ways did you find to sort shapes?
- Look at Problem 5. What did you notice about the shapes in each group? Do the shapes in the first group all have the same name? Do the shapes in the second group all have the same name?
- How did our Application Problem relate to today's Problem Set?


3. Look at the groups of shapes in the chart. Write a label for each group.

4. Draw 1 more shape for each group.

curved sides	straight sides

5. Look at the groups of shapes in the chart. Write a label for each group.

6. Draw 1 more shape for each group.

hexagons	rectangles

Exit Ticket (5 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

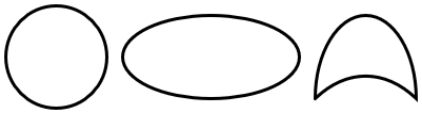
1. Look at your bag of paper shapes from today's lesson.
   Sort some of your shapes into two groups.
   Record drawings in this chart showing how you sorted the shapes.

2. Write labels for your groups at the top of your chart.

_____	_____

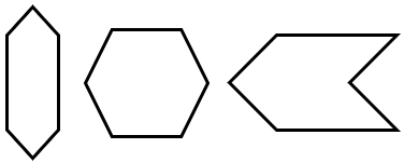
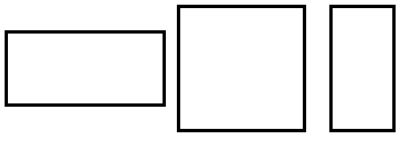
3. Look at the groups of shapes in the chart. Write a label for each group.

4. Draw 1 more shape for each group.

_____	_____
	

5. Look at the groups of shapes in the chart. Write a label for each group.

6. Draw 1 more shape for each group.

_____	_____
	

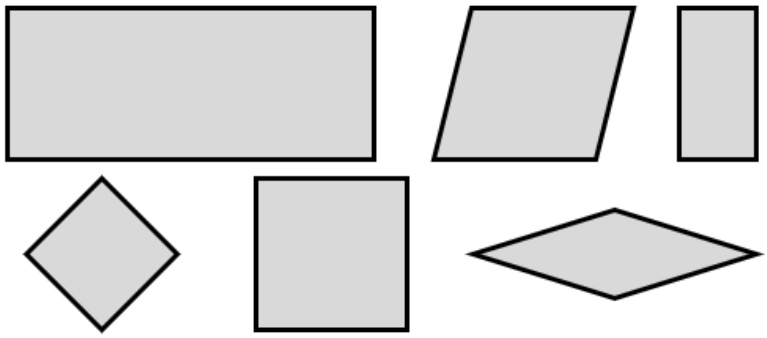
Name _____ Date _____

1. Cut out the shapes and sort them into 2 groups. Glue them onto the chart.

_____	_____

2. Write labels for each group.

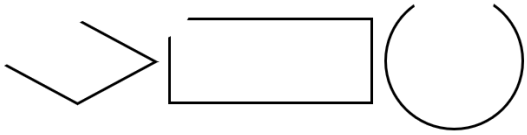
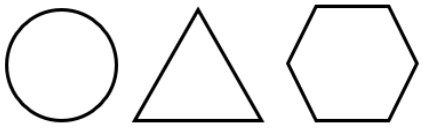
3. Draw another shape for each group.



Name _____ Date _____

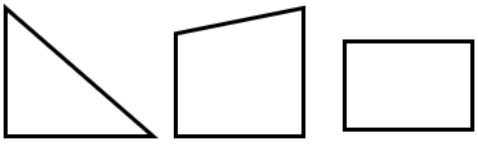
1. Look at the groups of shapes in the chart. Write a label for each group.

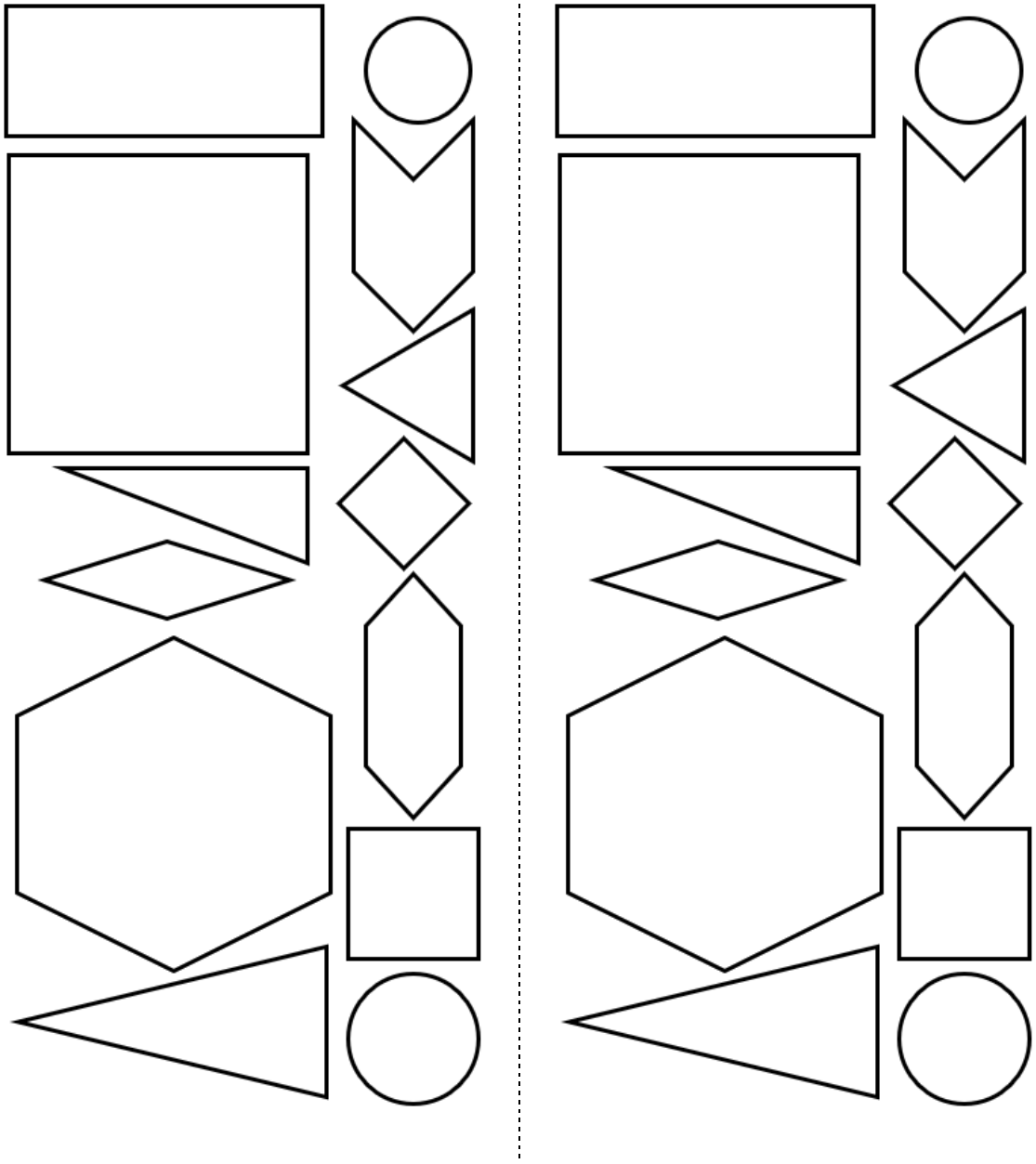
2. Draw 1 more shape for each group.

_____	_____
	

3. Look at the groups of shapes in the chart. Write a label for each group.

4. Draw 1 more shape for each group.

_____	_____
	



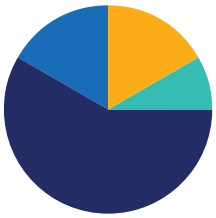
paper shapes to be used during Concept Development (Template contains 2 sets of shapes.)

Lesson 6

Objective: Find and name three-dimensional shapes including cone and rectangular prism, based on defining attributes of faces and points.

Suggested Lesson Structure

Fluency Practice	(10 minutes)
Application Problem	(5 minutes)
Concept Development	(35 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (10 minutes)

- Grade 1 Fluency Differentiated Practice Sets **1.3D** (5 minutes)
- Count by 10 or 1 with Dimes and Pennies **1.4A, 1.4C** (5 minutes)

Grade 1 Fluency Differentiated Practice Sets (5 minutes)

Materials: (S) Fluency Practice Sets

Note: This activity assesses students' progress toward proficiency with the required addition fluency for Grade 1 students. Give the appropriate Practice Set to each student. Students who completed all of the questions correctly on their most recent Practice Set should be given the next level of difficulty. All other students should try to improve their scores on their current level.

Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for students who finish early, or tell them to practice make ten addition and subtraction on the back of their papers. When time runs out, collect and correct any Practice Sets that are completed.

Count by 10 or 1 with Dimes and Pennies (5 minutes)

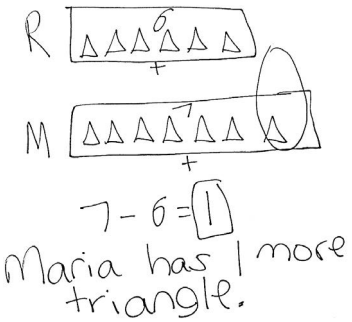
Materials: (T) 10 dimes and 10 pennies

Note: This fluency activity uses dimes and pennies as abstract representations of tens and ones to help students become familiar with coins while simultaneously providing practice with counting forward and backward by 10 or 1.

- First minute: Place and take away dimes in a 5-group formation as students count along by 10.
- Second minute: Begin with 2 pennies. Ask how many ones there are. Instruct students to start at 2 and add or subtract 10 while placing and taking away dimes.
- Third minute: Begin with 2 dimes. Ask how many tens there are. Instruct students to begin at 20 and add or subtract 1 while placing and taking away pennies.

Application Problem (5 minutes)

Rose draws 6 triangles. Maria draws 7 triangles. How many more triangles does Maria have than Rose?



Note: Let students know that today's problem is a little different from past problems because today they are comparing Rose's triangles with Maria's. Suggest that they draw two different strips with the same endpoint on the left, so that they can compare the two numbers more efficiently. While circulating, support students in aligning their shapes and bars to assist in solving this *compare with difference unknown* problem type.

Concept Development (35 minutes)

Materials: (T) Set of three-dimensional shapes (sphere, cone, cube, rectangular prism, triangular prism, and cylinder), three-dimensional shapes found around home or school, three-dimensional shape description cards (Template), tape

Note: If a kit of three-dimensional shapes is not readily available, then common three-dimensional shapes can be gathered as suggested below:

- Spheres: balls (e.g. tennis balls) and marbles
- Cylinders: oatmeal containers, soup cans
- Cubes: large dice, gift boxes with 6 square faces
- Rectangular prisms: tissue boxes, crayon boxes
- Triangular prisms: candy containers (e.g. Toblerone chocolates)
- Cones: ice cream cones, party hats

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Be sure to have a pictorial word wall in the classroom that is accessible for students. The wall should include the following words at this point in the module: *side, vertex/vertices, circle, hexagon, rectangle, rhombus, square, triangle, cone, cube, cylinder, rectangular prism,* and *sphere.* Spending some time learning these words would be helpful to all students, especially learning the word *cylinder,* whose spelling can be confusing. Also include describing the attributes for three-dimensional solids, including *face, edge,* and *vertex*.

Before the lesson, place examples of three-dimensional figures around the room. Gather students in the meeting area in a semicircle.

T: (Place one example of each three-dimensional shape on the floor.) Today, we are going to talk about three-dimensional shapes, like these. What do you know about three-dimensional shapes?

S: They are not flat. → They have different faces or surfaces. → They are solid. → That one is called a cube. (Points to the cube.) → You can touch them on different sides.

T: Great! Yes, three-dimensional shapes have faces (touch each face on a cube), and they have different types of corners, vertices, or points (touch the vertices). They also have edges (point to an edge). An edge is the place where two faces meet. Often they are solid and can be called **three-dimensional solids**. There are lots of three-dimensional shapes around our room. Some look just like the materials we have here, and some look different. Can anyone think of an item in the room that looks like these?

S: Our party hat on the teddy bear looks like that one. (Points to the cone.) → That one looks like our dice. (Points to the cube.) → That one looks like the container for our alphabet game! (Points to the cylinder.)

T: Find one item in the room that is three-dimensional—an object that has faces, edges, and vertices, not a flat two-dimensional shape. You have 30 seconds. Walk, find your item, and bring it to the carpet.

S: (Search the room, and bring back one item each to the carpet.)

T: Point to a face on your three-dimensional object. Remember a face is a flat part of your object. Whisper the face's shape name.

S: (Points to one of the faces and whispers the face's shape name.)

T: Point to an edge on your three-dimensional object. Remember an edge is where two faces meet.

S: (Point to an edge on their object.)

T: Point to the vertex on your object. Remember the vertex is the point where two edges meet.

S: (Points to a vertex on their object.)

T: (Place cube in the middle of the meeting area.) Someone told us the name of this shape earlier (point to a cube). Who remembers the name of this shape?

S: A cube!

T: What are the attributes, or characteristics, that make this a cube?

S: It has six faces, and every face is a square. (Ask the student to demonstrate this using the cube, and then tape the appropriate shape description card to the cube.)

T: (Place the cube on the carpet.) Let's count the faces of the cube. Track the number with your fingers. The bottom. How many faces is that?

S: One!

T: The top. How many now?

S: Two!

T: Now, let's go around the cube.

S: The side closest to me. How many is that?

S: Three!

T: The side to its right?

S: Four!

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

The terms face, edge, and vertex are familiar terms from Grade K. Consider making an anchor chart including visuals to support students who need more support, including some emergent bilingual students. Later in the lesson new shape names are introduced, consider adding them to the anchor chart.

Keep going around systematically. Count again to increase students' proficiency.

T: Look at your items. Who brought a cube to the meeting area?

S: (Students show their items.)

T: Let's check. Count the faces of the cube with your partner. (Pause.) Does your cube have six faces?

S: (Count the faces.) Yes.

T: Are all six faces squares?

S: Yes.

Note: A cube is a special type of rectangular prism. On the Problem Set, some students will not notice that the die could also be considered a rectangular prism. As students are ready for this increased complexity, this can be discussed during the Debrief.

Repeat this process with students who believe they have a cube. Some students will answer no to one or both of the questions. Explain that the item must have both attributes to be a cube. If they answer yes to one of the two questions, discuss how the object is like a cube in one way but unlike a cube in another way.

T: How are all of these cubes alike?
S: They all have six square faces.
T: How are they different from each other?
S: Some of them are made of paper. → One of them is made of plastic. → That one is yellow. → The tissue box is empty on the inside, but the dice are not.
T: (Hold up the rectangular prism.) This is a **rectangular prism**. A rectangular prism also has six faces, but let's check. Does it have six faces? (Count with students.)
S: Yes.
T: What shape are the faces?
S: They are all rectangles. → Some faces are squares, but all squares are special rectangles.
T: The attributes of a rectangular prism are that they have six faces, and all of the faces are rectangles. Remember, squares are special rectangles, so some of your faces might be squares. Who has a rectangular prism in front of them?
T: (Hold up the triangular prism.) This is a **triangular prism**. How is the triangular prism different from the rectangular prism?
S: Some of the faces are triangles. Only some of the faces are rectangles. Two of the faces are triangles, and three of the faces are rectangles.
T: The attributes of a triangular prism are that they have five faces, and two of the faces are triangles. Even though some of the faces are rectangles, we still call this a triangular prism.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Students may need some extra practice identifying shapes correctly based on attributes. Listening to others talk about shapes helps students who may need more support, including some emergent bilingual students, understand and acquire language pertaining to this topic.

Like the process of checking each cube, repeat this process with students who believe they have a rectangular prism. If they answer yes to one of the two questions, discuss how the object is like a rectangular prism in one way but unlike a rectangular prism in another way. Ask students which attributes are common to all of the objects and which attributes are found only on some of the objects.

Repeat the process with a cylinder (one circular or oval face or space on each end and one curved side), a **cone** (one circular or oval face or space and one curved side that comes to a point at the other end), and a sphere (one curved surface with no flat faces).

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Students may or may not notice that the die is considered a cube and a rectangular prism. Challenge students who are ready to find the shape that could be called by two names.

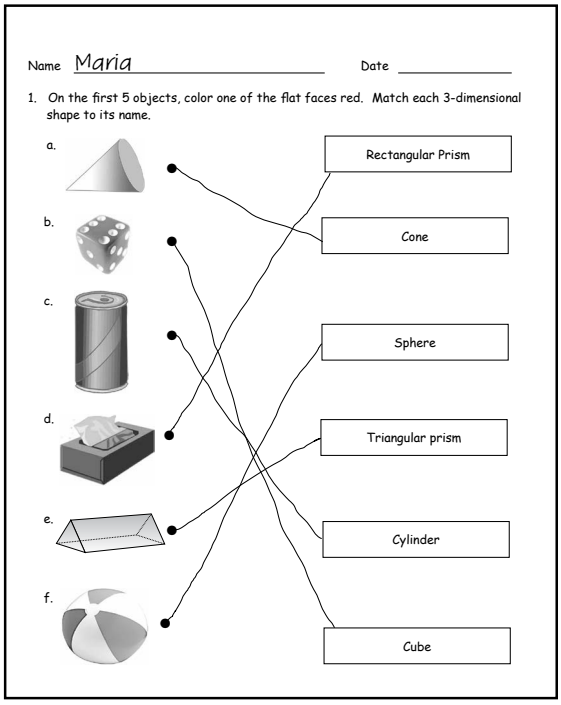
Student Debrief (10 minutes)

Lesson Objective: Find and name three-dimensional shapes including cone and rectangular prism, based on defining attributes of faces and points.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problem 1. Which face did you color on each three-dimensional shape? How did coloring the face help you find the matching shape name?
- Look at Problem 2. Which materials from around the room could you add to each column on the chart? How are the items that are all spheres similar to each other? How are they different? Which attribute is the most important for naming the objects as spheres? (Repeat with each shape.)
- How are the party hat and paper towel roll different from the cylinder and cone in our three-dimensional shapes?
- What are the names of the three-dimensional shapes that we used today? Tell your partner the important attributes of each shape. (Cubes, spheres, **cones**, **rectangular prisms**, triangular prisms, and cylinders.)
- Look at your Application Problem. How did you solve this problem? Share drawings and strategies for solving each question.
- Think about today's Fluency Practice. What part of today's fluency activities is simpler for you now than when we first learned about it? Explain what is simpler for you now.

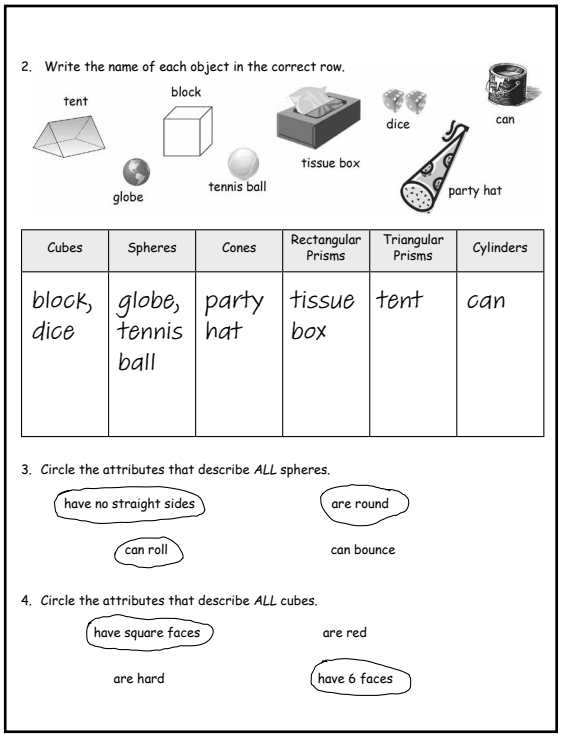


Name Maria Date

1. On the first 5 objects, color one of the flat faces red. Match each 3-dimensional shape to its name.

a. b. c. d. e. f.

Rectangular Prism
Cone
Sphere
Triangular prism
Cylinder
Cube



2. Write the name of each object in the correct row.

tent, block, dice, can, globe, tennis ball, tissue box, party hat

Cubes	Spheres	Cones	Rectangular Prisms	Triangular Prisms	Cylinders
block, dice	globe, tennis ball	party hat	tissue box	tent	can

3. Circle the attributes that describe *ALL* spheres.

have no straight sides, are round, can roll, can bounce

4. Circle the attributes that describe *ALL* cubes.

have square faces, are red, are hard, have 6 faces

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

My Addition Practice

1. 6 + 0 = ___	11. 7 + 1 = ___	21. 5 + 3 = ___
2. 0 + 6 = ___	12. ___ = 1 + 7	22. ___ = 5 + 4
3. 5 + 1 = ___	13. 3 + 3 = ___	23. 6 + 4 = ___
4. 1 + 5 = ___	14. 3 + 4 = ___	24. 4 + 6 = ___
5. 6 + 1 = ___	15. ___ = 3 + 5	25. ___ = 4 + 4
6. 1 + 6 = ___	16. 6 + 3 = ___	26. 3 + 4 = ___
7. 6 + 2 = ___	17. 7 + 3 = ___	27. 5 + 5 = ____
8. 5 + 2 = ___	18. ___ = 7 + 2	28. ___ = 4 + 5
9. 2 + 5 = ___	19. 2 + 7 = ___	29. 3 + 7 = ___
10. 2 + 4 = ___	20. 2 + 8 = ___	30. ___ = 3 + 6

Today, I finished _____ problems.

Name _____ Date _____

My Missing Addend Practice

1. 6 + ___ = 6	11. 3 + ___ = 6	21. 4 + ___ = 7
2. 0 + ___ = 6	12. 4 + ___ = 8	22. 7 = 3 + ___
3. 5 + ___ = 6	13. 10 = 5 + ___	23. 2 + ___ = 7
4. 4 + ___ = 6	14. 5 + ___ = 9	24. 2 + ___ = 8
5. 0 + ___ = 7	15. 5 + ___ = 7	25. 9 = 2 + ___
6. 6 + ___ = 7	16. 8 = 5 + ___	26. 2 + ___ = 10
7. 1 + ___ = 7	17. 5 + ___ = 9	27. 10 = 3 + ___
8. 7 + ___ = 8	18. 8 + ___ = 10	28. 3 + ___ = 9
9. 1 + ___ = 8	19. 7 + ___ = 10	29. 4 + ___ = 9
10. 6 + ___ = 8	20. 10 = 6 + ___	30. 10 = 4 + ___

Today, I finished _____ problems.

I solved _____ problems correctly.

Name _____ Date _____

My Related Addition and Subtraction Practice

1. 5 + ___ = 6	11. 7 + ___ = 10	21. 4 + ___ = 8
2. 1 + ___ = 6	12. 10 - 7 = ___	22. 8 - 4 = ___
3. 6 - 1 = ___	13. 5 + ___ = 7	23. 4 + ___ = 7
4. 9 + ___ = 10	14. 7 - 5 = ___	24. 7 - 4 = ___
5. 1 + ___ = 10	15. 5 + ___ = 8	25. 5 + ___ = 9
6. 10 - 9 = ___	16. 8 - 5 = ___	26. 9 - 5 = ___
7. 5 + ___ = 10	17. 4 + ___ = 6	27. 6 + ___ = 9
8. 10 - 5 = ___	18. 6 - 4 = ___	28. 9 - 6 = ___
9. 8 + ___ = 10	19. 3 + ___ = 6	29. 4 + ___ = 7
10. 10 - 8 = ___	20. 6 - 3 = ___	30. 7 - 4 = ___

Today, I finished _____ problems.

I solved _____ problems correctly.

Name _____ Date _____

My Subtraction Practice

1. 6 - 0 = ___	11. 6 - 3 = ___	21. 8 - 4 = ___
2. 6 - 1 = ___	12. 7 - 3 = ___	22. 8 - 3 = ___
3. 7 - 1 = ___	13. 9 - 3 = ___	23. 8 - 5 = ___
4. 8 - 1 = ___	14. 10 - 8 = ___	24. 9 - 5 = ___
5. 6 - 2 = ___	15. 10 - 6 = ___	25. 9 - 4 = ___
6. 7 - 2 = ___	16. 10 - 4 = ___	26. 7 - 3 = ___
7. 9 - 2 = ___	17. 10 - 5 = ___	27. 10 - 7 = ___
8. 10 - 10 = ___	18. 7 - 6 = ___	28. 9 - 7 = ___
9. 10 - 9 = ___	19. 7 - 5 = ___	29. 9 - 6 = ___
10. 10 - 7 = ___	20. 6 - 4 = ___	30. 8 - 6 = ___

Today, I finished _____ problems.

I solved _____ problems correctly.

Name _____ Date _____

My Mixed Practice

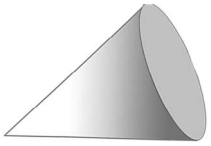
1. 4 + 2 = ___	11. 2 + ___ = 6	21. 8 - 5 = ___
2. 2 + ___ = 6	12. 6 - 2 = ___	22. 3 + ___ = 8
3. 6 = 3 + ___	13. 6 - 4 = ___	23. 8 = ___ + 5
4. 2 + 5 = ___	14. 5 + ___ = 7	24. ___ + 2 = 9
5. 7 = 5 + ___	15. 7 - 5 = ___	25. 9 = ___ + 7
6. 4 + 3 = ___	16. 7 - 4 = ___	26. 9 - 2 = ___
7. 7 = ___ + 4	17. 7 - 3 = ___	27. 9 - 7 = ___
8. 8 = ___ + 4	18. 8 = 6 + ___	28. 9 - 6 = ___
9. 4 + 5 = ___	19. 8 - 2 = ___	29. 9 = ___ + 4
10. 9 = ___ + 4	20. 8 - 6 = ___	30. 9 - 6 = ___

Today, I finished _____ problems.

I solved _____ problems correctly.

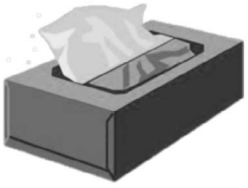
Name _____ Date _____

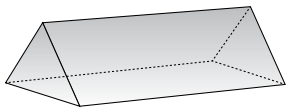
1. On the first 5 objects, color one of the flat faces red. Match each 3-dimensional shape to its name.

a. 

b. 

c. 

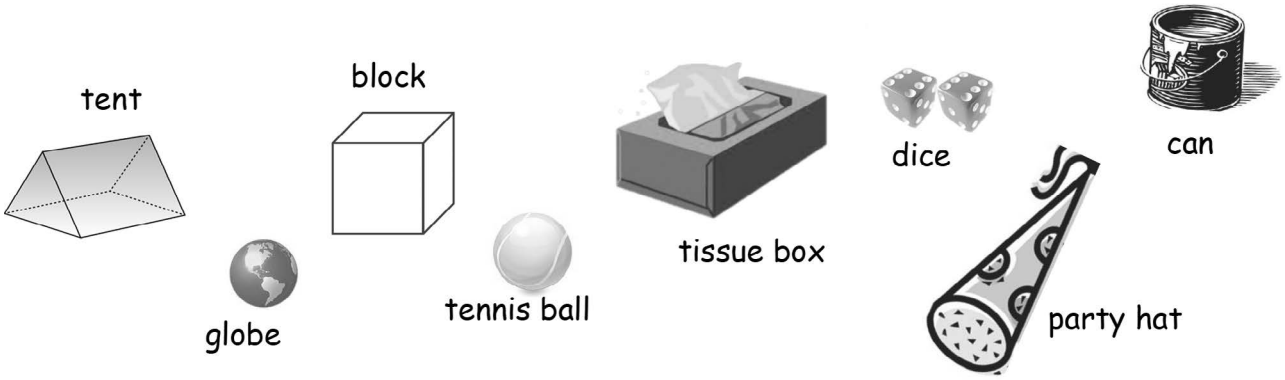
d. 

e. 

f. 

Rectangular Prism
Cone
Sphere
Triangular prism
Cylinder
Cube

2. Write the name of each object in the correct row.



Cubes	Spheres	Cones	Rectangular Prisms	Triangular Prisms	Cylinders

3. Circle the attributes that describe *ALL* spheres.

have no straight sides

are round

can roll

can bounce

4. Circle the attributes that describe *ALL* cubes.

have square faces

are red

are hard

have 6 faces

Name _____ Date _____

Circle true or false. Write one sentence to explain your answer. Use the word bank if needed.

Word Bank

faces	circle	square
sides	rectangle	point

1.

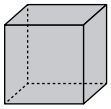
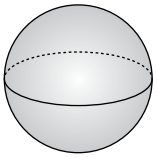
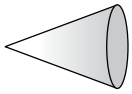
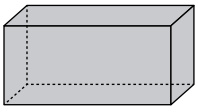
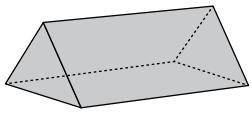
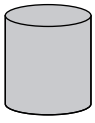
This can is a cylinder. True or False

2.

This juice box is a cube. True or False

Name _____ Date _____

1. Go on a scavenger hunt for 3-dimensional shapes. Look for objects where you live that would fit in the chart below. Try to find at least two objects for each shape.

Cubes 				
Spheres 				
Cones 				
Rectangular Prisms 				
Triangular Prisms 				
Cylinders 				

2. Choose one object from each row. Explain how you know that object belongs in that row. Use the word bank if needed.

Word Bank

faces	circle	square	five	roll	six
sides	rectangle	triangle	point	flat	

a. I put the _____ in the cube row because _____.

b. I put the _____ in the cylinder row because _____.

c. I put the _____ in the sphere row because _____.

d. I put the _____ in the cone row because _____.

e. I put the _____ in the rectangular prism row because _____.

f. I put the _____ in the triangular prism row because _____.

cone 3-dimensional shape with only one circle or oval face and one point	**cube** 3-dimensional shape with 6 square faces
cylinder 3-dimensional shape with 2 circle or oval faces that are the same size	**rectangular prism** 3-dimensional shape with 6 rectangle faces
sphere 3-dimensional shape with no flat faces	**triangular prism** 3-dimensional shape with 2 triangle faces and 3 rectangle faces

three-dimensional shape description cards

Topic B

Part–Whole Relationships Within Composite Shapes

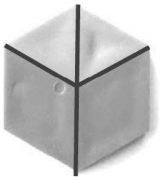
1.6C, 1.6D, 1.6E, 1.6F

Focus Standards:		1.6C	Create two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons.
		1.6D	Identify two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons and describe their attributes using formal geometric language.
		1.6E	Identify three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), and triangular prisms, and describe their attributes using formal geometric language.
		1.6F	Compose two-dimensional shapes by joining two, three, or four figures to produce a target shape in more than one way if possible.
Instructional Days:		3	
Coherence	**-Links from:**	GK–M2	Two-Dimensional and Three-Dimensional Shapes
	-Links to:	G2–M8	Time, Shapes, and Fractions as Equal Parts of Shapes

In Topic B, students combine shapes to form composite shapes, which in turn get larger as they add yet more shapes. As students work toward the objectives within the topic, they informally explore relationships between parts and wholes.

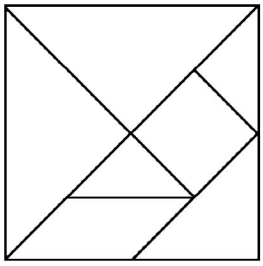
Lessons 7 and 8 build on students' knowledge of attributes of shapes to create composite shapes. In Lesson 7, students create composite shapes (hexagons and rectangles) from triangles, squares, and rectangles. The students recognize that the same composite shape (whole) can be made from a variety of shapes (parts). For example, a hexagon might be made by composing six triangles.

1 hexagon



2 triangles and
2 rhombuses

Students also use square tiles to see that a large rectangle can have many combinations of smaller rectangles within it.



In Lesson 8, students begin by identifying the hidden shapes within a large square as they cut the seven tangram pieces from this special rectangle. Students use the pieces to form new shapes from composite shapes, including recomposing the original square. Students explore the variety of ways they can compose new shapes by positioning pieces alongside composite shapes.

For example, students can not only form a larger triangle from two right triangles, but they can also use the shapes to form two composite triangles and push them together to make the original tangram square. Students also see how the same shapes can form different composite shapes. For instance, the same two right triangle pieces that formed a larger triangle can also be repositioned to form a square or parallelogram.

In Lesson 9, students extend their exploration of parts and wholes to three-dimensional shapes. Students create and hide composite shapes and describe the shape to a partner using attributes and positional words. The partner listens and attempts to create the same composite shape. In this way, students attend to the parts within the whole of their created shape and continue to develop clear, precise language.

A Teaching Sequence Toward Proficiency in Part–Whole Relationships Within Composite Shapes

Objective 1: **Create composite shapes from two-dimensional shapes. (Lesson 7)**

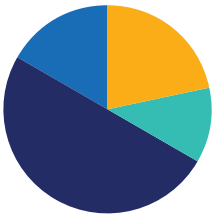
Objective 2: **Compose a new shape from composite shapes. (Lesson 8)**

Objective 3: **Create a composite shape from three-dimensional shapes and describe the composite shape using shape names and positions. (Lesson 9)**

Lesson 7

Objective: Create composite shapes from two-dimensional shapes.

Suggested Lesson Structure



Fluency Practice	(13 minutes)
Application Problem	(7 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Fluency Practice (13 minutes)

- Grade 1 Fluency Differentiated Practice Sets **1.3D** (5 minutes)
- Number Bond Addition and Subtraction **1.3D** (5 minutes)
- Shape Flash **1.6D, 1.6E** (3 minutes)

Grade 1 Fluency Differentiated Practice Sets (5 minutes)

Materials: (S) Fluency Practice Sets (Lesson 6 Fluency Practice Sets)

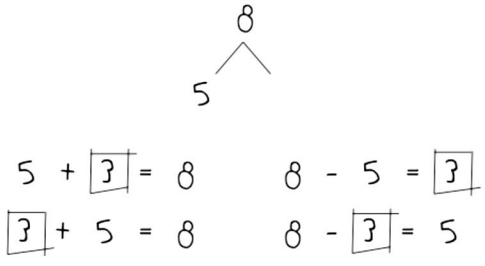
Note: Give the appropriate Practice Set to each student. Students who are repeating a set should be motivated to try to improve their performance.

Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for early finishers, or tell them to practice make ten addition and subtraction on the back of their papers. When time runs out, collect and correct any Practice Sets that are completed.

Number Bond Addition and Subtraction (5 minutes)

Materials: (S) Personal white board, 1 die per pair

Note: This fluency activity addresses Grade 1's fluency of sums and differences through 10 and strengthens understanding of the relationship between addition and subtraction.



- Assign partners of equal ability and an appropriate range of numbers for each pair.
- Allow partners to choose a number for their whole greater than or equal to 6 and roll the die to determine one of the parts.

- Both students write two addition and two subtraction sentences with a box for the unknown number in each equation and solve for the missing number.
- They then exchange boards and check each other's work.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Some students may find this fluency activity challenging or need more time to finish the problems. Scaffold tasks by carefully selecting the number of problems to be completed for certain partners. Give students who need a challenge a pair of dice, and have them choose a whole equal to or greater than 12 and roll the dice to find one of the parts.

Shape Flash (3 minutes)

Materials: (T) Two-dimensional shape flash cards (Fluency Template), three-dimensional shapes used in Lesson 6

Note: This fluency activity reviews the attributes and names of two-dimensional (rhombus, square, rectangle, triangle) and three-dimensional (cone, cube, cylinder, sphere, rectangular prism, triangular prism) shapes. For three-dimensional shapes, hold up a sample of the shape, rather than a picture of the shape. As soon as students are ready to visualize, flash the shape instead. Flash a shape card or a three-dimensional shape for three seconds. Ask a question to review an attribute or a vocabulary word students learned over the past few lessons. Pause long enough to provide thinking time, and then snap to signal students to answer.

Alternate between flashing a two-dimensional shape flash card or a three-dimensional shape. For three-dimensional shapes, ask questions such as the ones listed below:

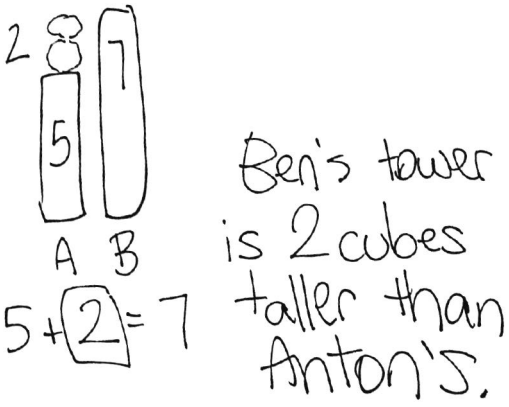
- What's it called?
- How many faces did you see?
- How many points did this shape have?
- How many faces were square?
- Was the shape open or closed?

Application Problem (7 minutes)

Anton made a tower 5 cubes high. Ben made a tower 7 cubes high. How much taller is Ben's tower than Anton's?

Note: If students needed extra support with the *compare with difference unknown* problem in Lesson 6, use a guided approach. Have students follow the steps outlined below:

- Read the story's first two sentences.
- Draw and label a picture.



- Analyze their drawing. *Who has the taller tower? How many more cubes does Anton need to have a tower as tall as Ben's?*
- Read the question: *How much taller is Ben's tower than Anton's?*
- Reflect on their peers' work. Show two students' drawings and strategies using the document camera, and invite them to explain how they solved the problem.

Concept Development (30 minutes)

Materials: (T) Pattern blocks, chart paper, colored marker (S) Pattern blocks (set of 1–2 hexagons, 6 squares, 6–10 triangles, 2–4 red shapes, 2–4 blue rhombuses, 2–4 tan rhombuses), personal white board (optional)

Note: Students use the same set of pattern blocks during Lesson 10. It may be useful for students to place a set in their personal toolkit. Tell students that pattern blocks are actually three-dimensional solids that the class will use to create two-dimensional shapes. For example, when a student traces the yellow shape, he gets a two-dimensional hexagon on the paper.

Distribute materials, and have students seated at their desks or tables.

T: For the next few days, we will be using pattern blocks to learn more about shapes. Take two minutes to explore the kinds of shapes you can make using these materials.

As students explore, walk around and take note of examples that can be used during the lesson. If available, use a camera that can be plugged in to display images on the board to take pictures of any compositions that might be useful, or have students compose shapes on their personal white boards to share with the class.

T: What shapes do the pattern blocks come in?
S: Hexagons. → Squares. → Triangles. → Two different types of rhombuses.
T: Do we have any rectangles?
S: A square is a special kind of rectangle!
T: You're right. We DO have a special kind of rectangle in the square. The square is also a special kind of rhombus, so we actually have three types of rhombuses.
T: Most of you made lots of bigger shapes, or **composite shapes**, by putting the pieces together. Try to make a larger rectangle using your squares.
S: (Use squares of varying number to make a rectangle.)
T: How did you make a larger rectangle?
S: I put two squares next to each other. → I used all of my squares to make it really long.
T: I'm going to record the composite shapes that you are making. (Draw on chart paper while describing.) One person used two squares to make this size rectangle. Another person used four squares. (Quickly label the inside of each shape with the part, such as square. Label the outside of the shape with the word *rectangle.*) This whole rectangle is made of four parts that are squares. (Trace the whole rectangle with the colored marker.) Great!

T: Let's move all of our blocks to the side and take out the hexagon. (Wait.)

T: Many of you made this same hexagon shape using other pieces. Try this again. Cover the hexagon with other shapes so that you make the exact same shape with other parts. (Give students 30 seconds or more to create a hexagon shape using parts.)

2 triangles and 2 rhombuses

T: Tell your partner what parts you used to make the hexagon.

S: I used six triangles. → I used two red shapes. → I used three blue rhombuses.

T: Did anyone use different types of parts to make the hexagon?

S: I used two rhombuses and two triangles. → I used one red shape and three triangles. → I used four triangles and one rhombus.

T: Is there only one way to make one whole hexagon?

S: No!

Repeat the process with other composite shapes that can be named, such as the following: a large triangle, a large rhombus, and a large square.

T: Now, move your pieces to the side again, and take out all of your square pieces. Make a rectangle with two rows of squares using all of your pieces. (Wait as students assemble the rectangle.)

T: How many small squares are in this rectangle?

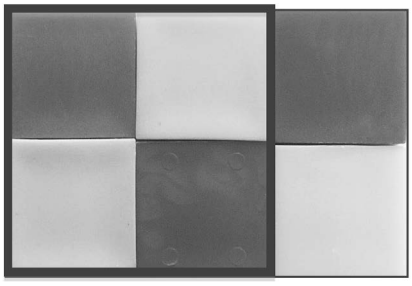
S: Six squares. (Touch while counting the small squares together.)

T: Now, look closely. How many larger squares can you find hiding in the rectangle? Talk with a partner to decide. (Give students 20 to 30 seconds to look for the two larger squares.)

T: Where did you find a larger square?

S: The first four squares joined make a larger square. → If you start at the other end, you can make a square with the last four squares.

T: Great job! You can make six little squares from this rectangle, or you can make one large square using this side of the rectangle. (Point to or slide over the section on the left that forms a large square to help students visualize. Then, slide this large square back.) You can also make one large square using *this* side of the rectangle. (Point to or slide over the section on the right that forms a large square to help students visualize. Then, slide this large square back.)



NOTES ON MULTIPLE MEANS OF REPRESENTATION:

There are many directions to follow during this part of the lesson. Be sure to guide some students who find the directions challenging, including some emergent bilingual students. These students could benefit from visual cues or possibly from working with a partner at this time.

T: How many squares did we find all together?

S: Eight squares!

T: Although our composite shape of this rectangle is made of six squares, there are also larger squares composed of the smaller squares. Great detective work!

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first. Some problems do not specify a method for solving.

Student Debrief (10 minutes)

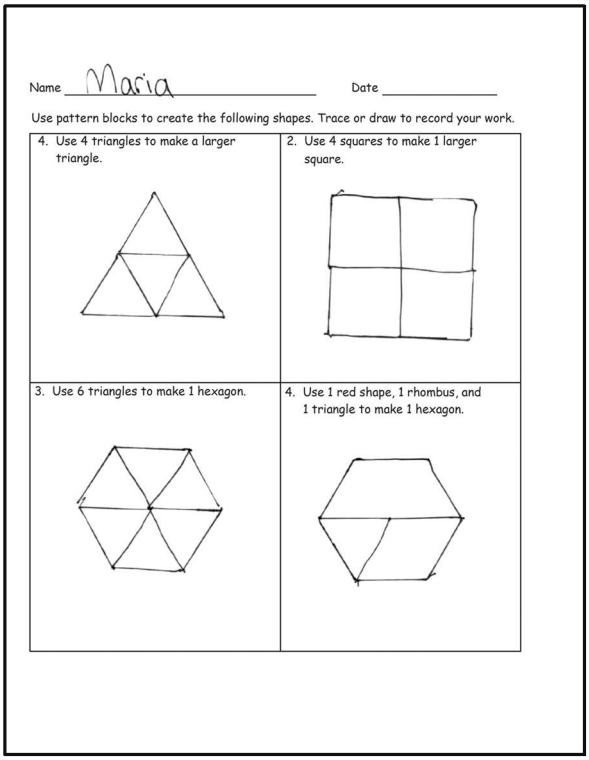
Lesson Objective: Create composite shapes from two-dimensional shapes.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Compare Problem 1 and Problem 3. What do you notice?
- Look at Problem 4. How could your shape from Problem 3 help you come up with a new way to make a hexagon using the pattern blocks?
- Look at Problem 6. How many people found at least 20 squares? 22 squares? 25 squares? Can you find more squares than you have found so far? Work with a partner to share the squares you found and see if there are more that you can find together.



Name Maria Date

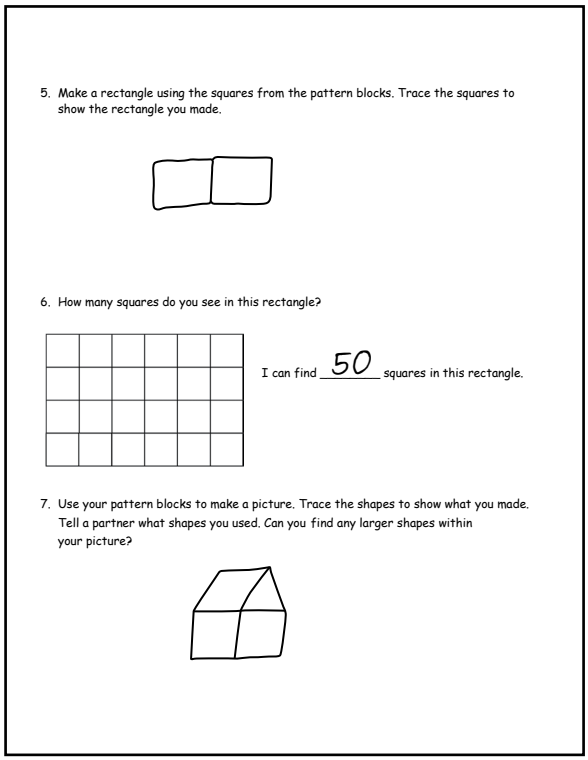
Use pattern blocks to create the following shapes. Trace or draw to record your work.

4. Use 4 triangles to make a larger triangle.

2. Use 4 squares to make 1 larger square.

3. Use 6 triangles to make 1 hexagon.

4. Use 1 red shape, 1 rhombus, and 1 triangle to make 1 hexagon.



5. Make a rectangle using the squares from the pattern blocks. Trace the squares to show the rectangle you made.

6. How many squares do you see in this rectangle?

I can find 50 squares in this rectangle.

7. Use your pattern blocks to make a picture. Trace the shapes to show what you made. Tell a partner what shapes you used. Can you find any larger shapes within your picture?

- Look at the picture you made in Problem 7. What **composite shapes**, or larger shapes made from smaller shapes, can you name within your picture? What smaller shapes were used to make these larger shapes?
- Think about today's Fluency Practice. Name at least one addition problem that slows you down. Does anyone have a way to know that fact more efficiently?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

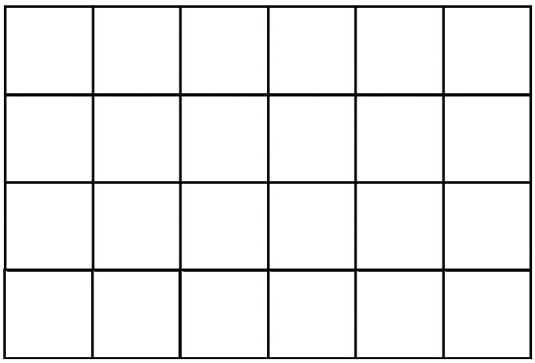
Name _____ Date _____

Use pattern blocks to create the following shapes. Trace or draw to record your work.

1. Use 4 triangles to make a larger triangle.	2. Use 4 squares to make 1 larger square.
3. Use 6 triangles to make 1 hexagon.	4. Use 1 red shape, 1 rhombus, and 1 triangle to make 1 hexagon.

5. Make a rectangle using the squares from the pattern blocks. Trace the squares to show the rectangle you made.

6. How many squares do you see in this rectangle?



I can find _____ squares in this rectangle.

7. Use your pattern blocks to make a picture. Trace the shapes to show what you made. Tell a partner what shapes you used. Can you find any larger shapes within your picture?

Name _____ Date _____

Use pattern blocks to create the following shapes. Trace or draw to show what you did.

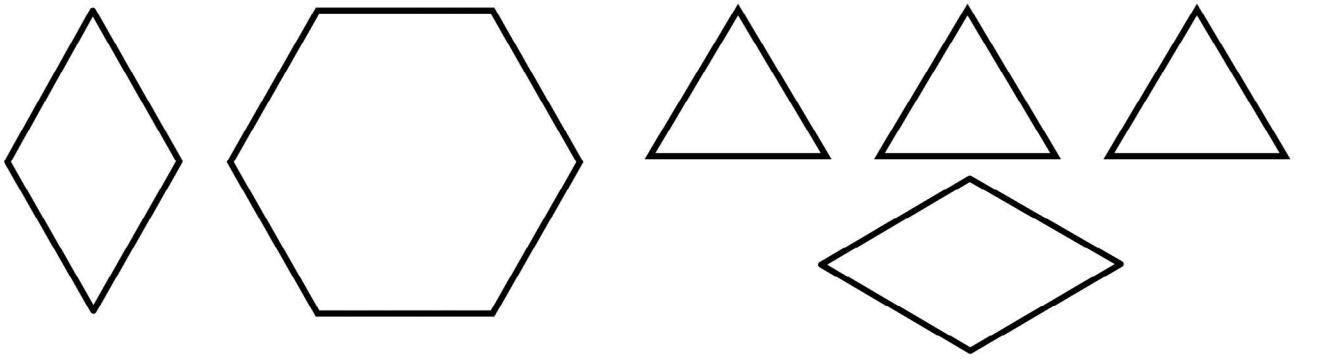
1. Use 3 rhombuses to make a hexagon.	2. Use 1 hexagon and 3 triangles to make a large triangle.

Name _____ Date _____

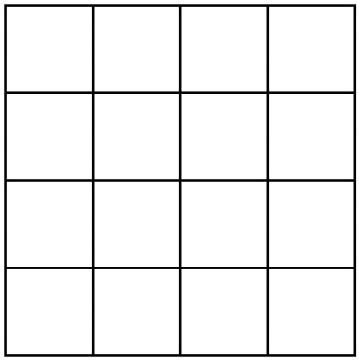
Cut out the pattern block shapes from the bottom of the page. Color them to match the key, which is different from the pattern block colors in class. Trace or draw to show what you did.

Hexagon—red	Triangle—blue	Rhombus—yellow

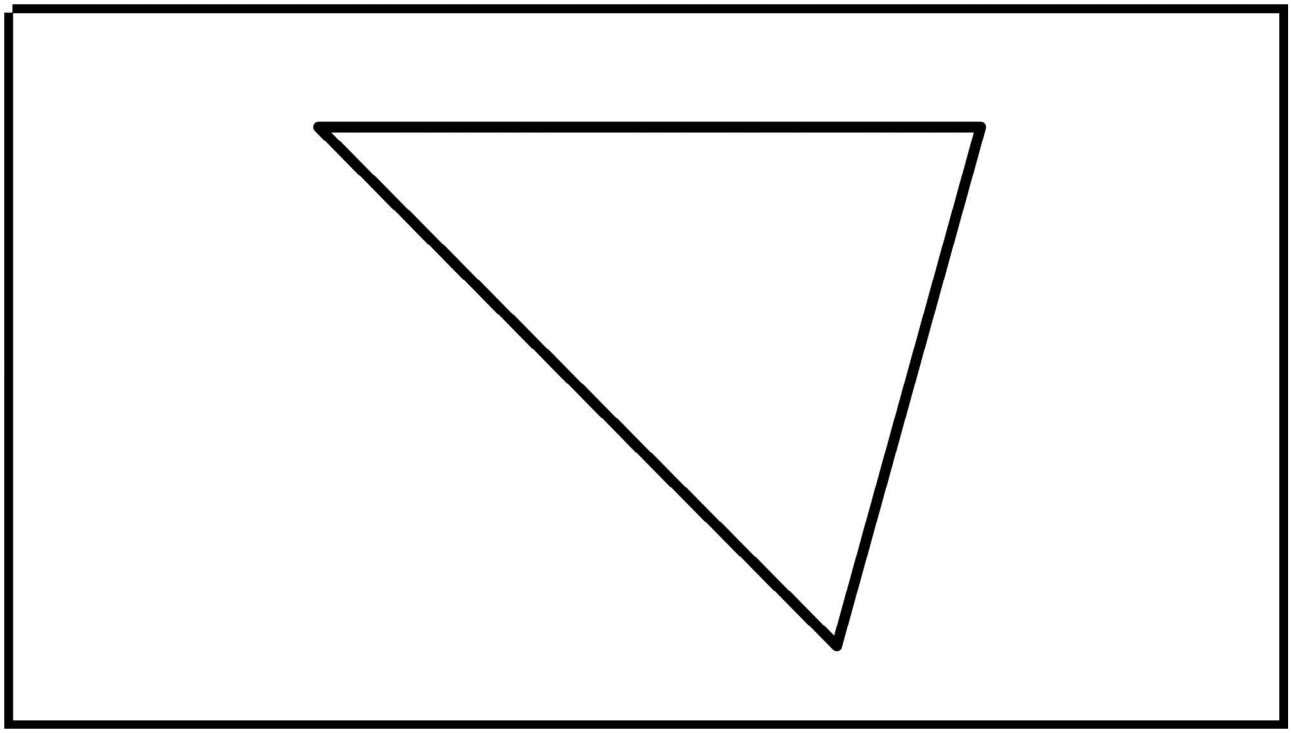
1. Use 2 triangles and a rhombus to make a larger triangle.	2. Use 2 triangles and 2 rhombuses to make a hexagon.

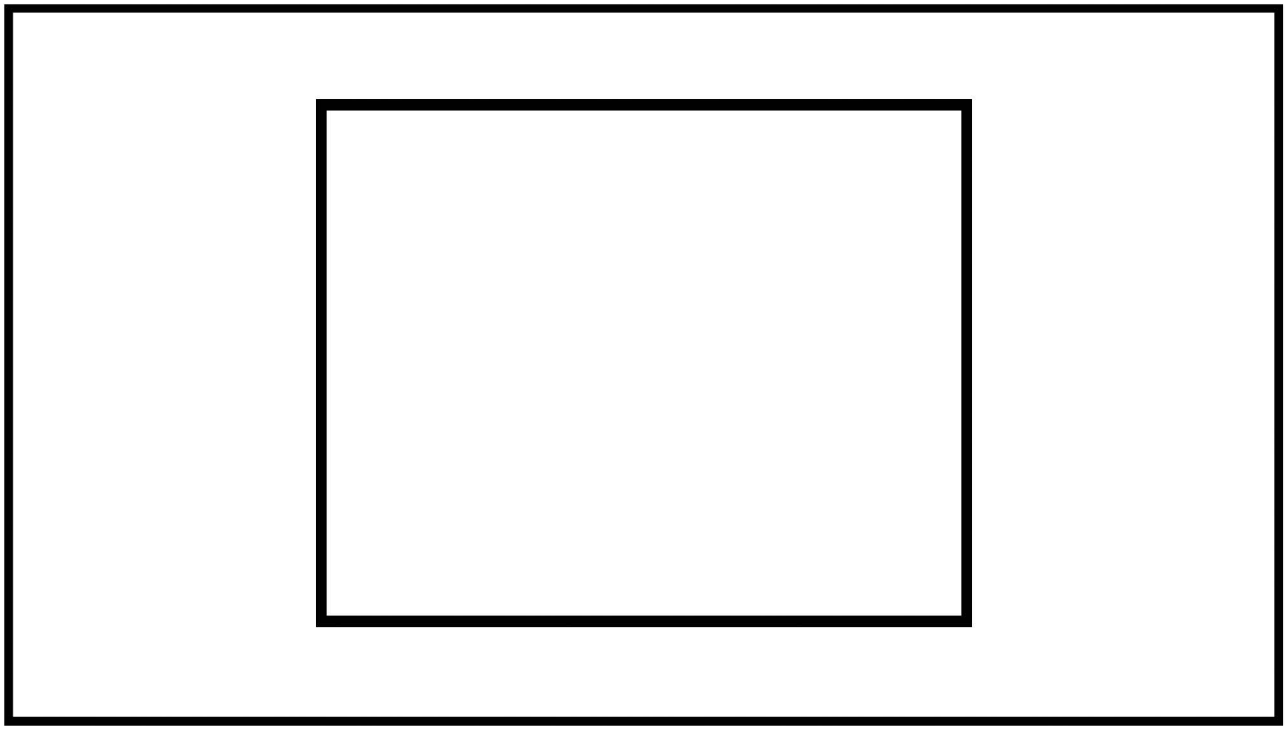


3. How many squares do you see in this large square?

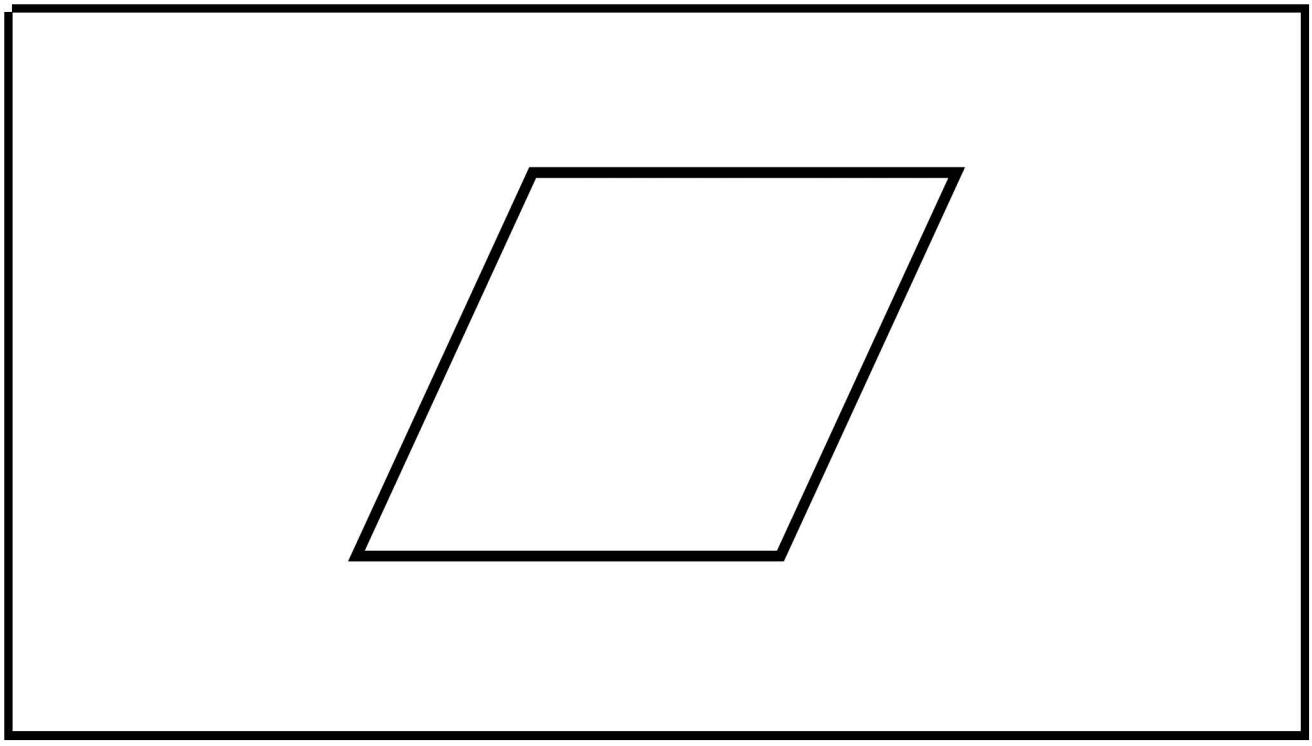


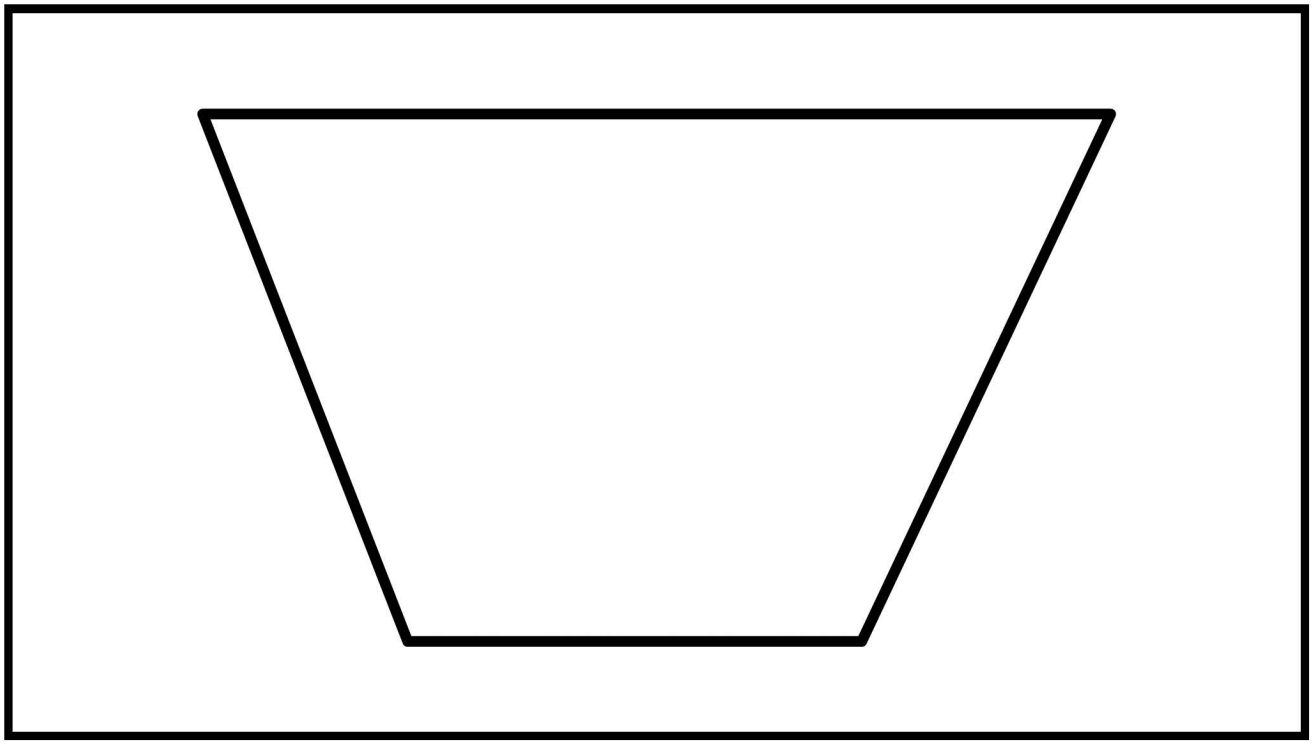
I can find _____ squares in this rectangle.



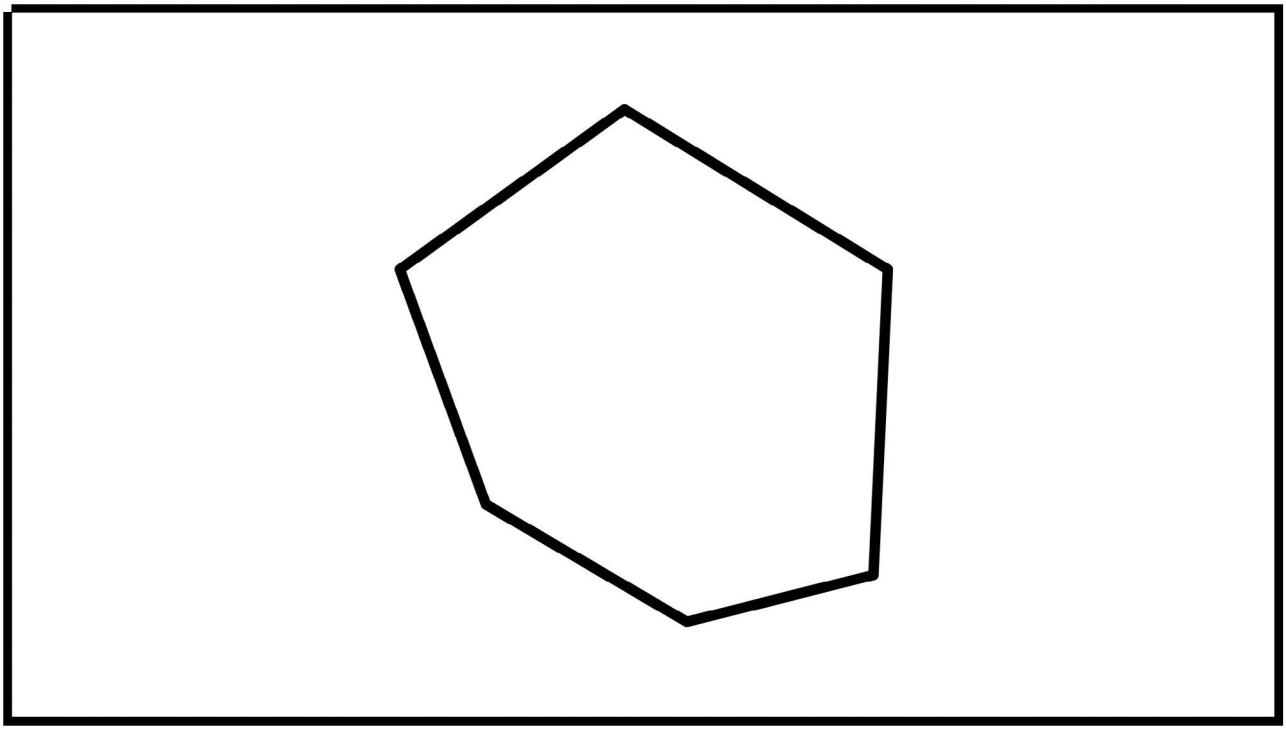


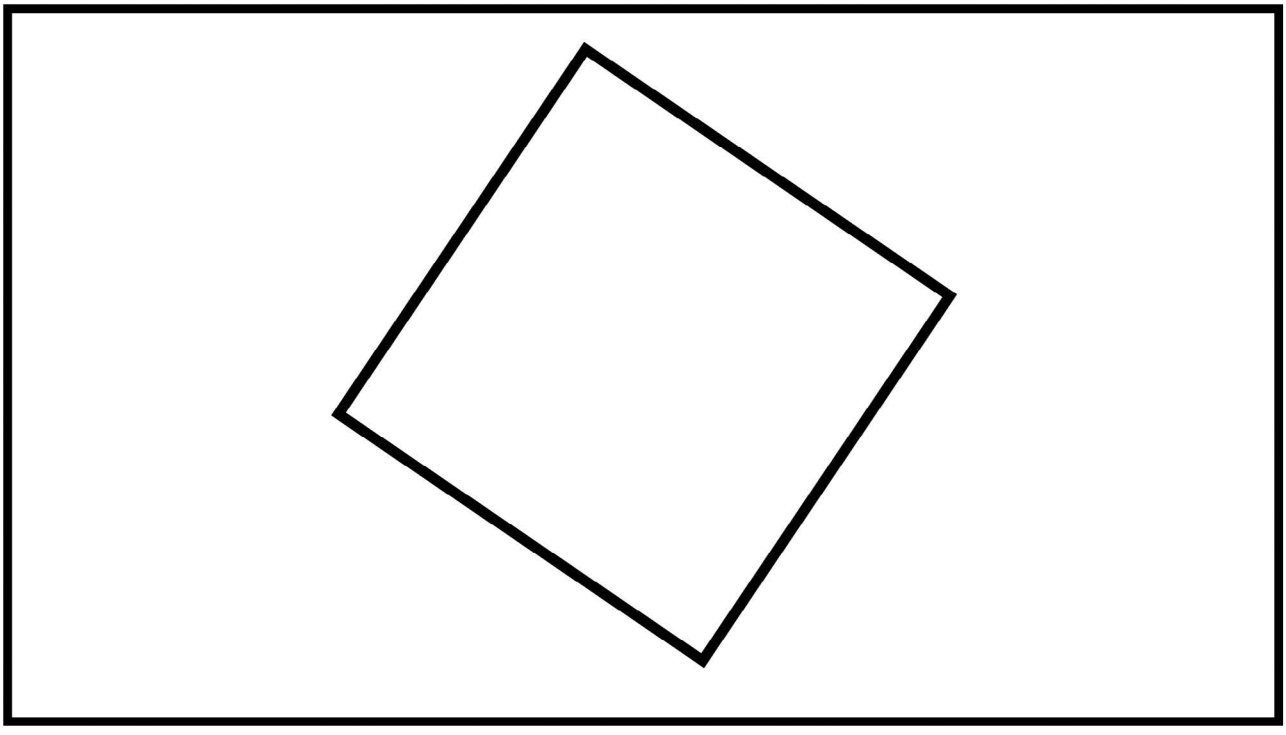
two-dimensional shape flash cards



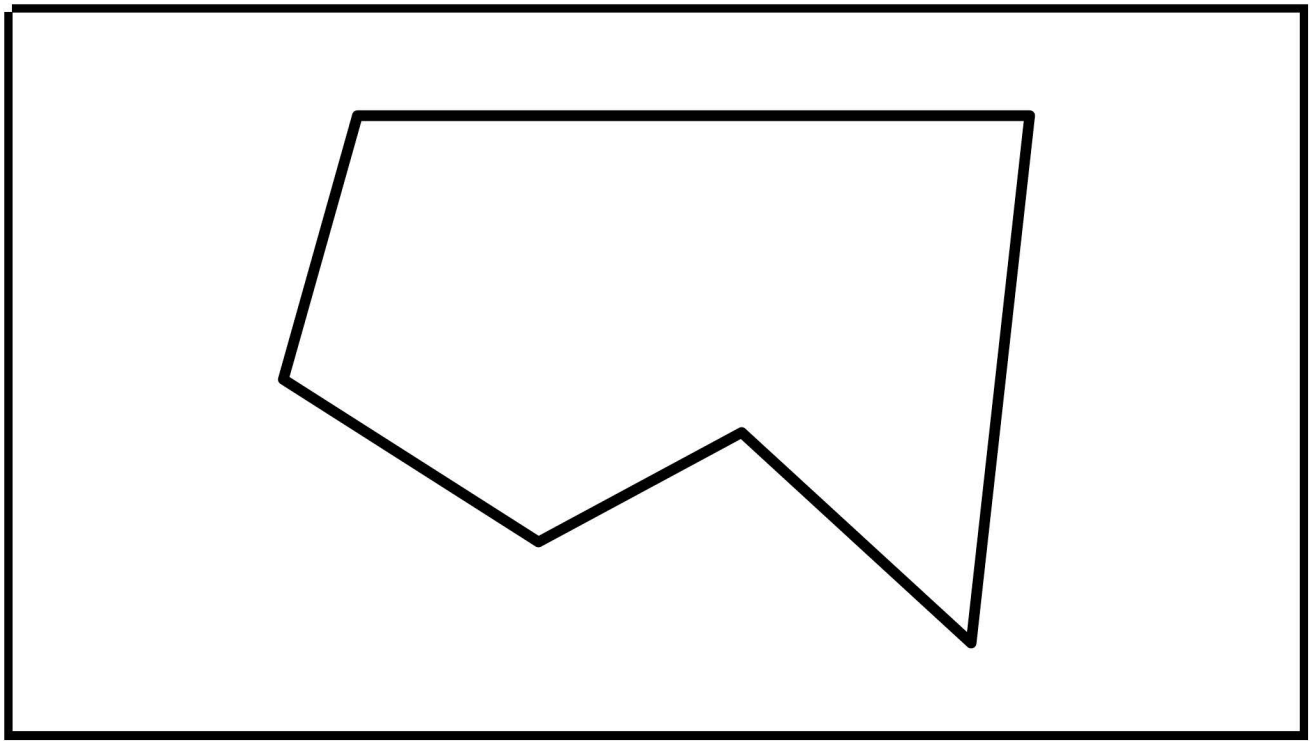


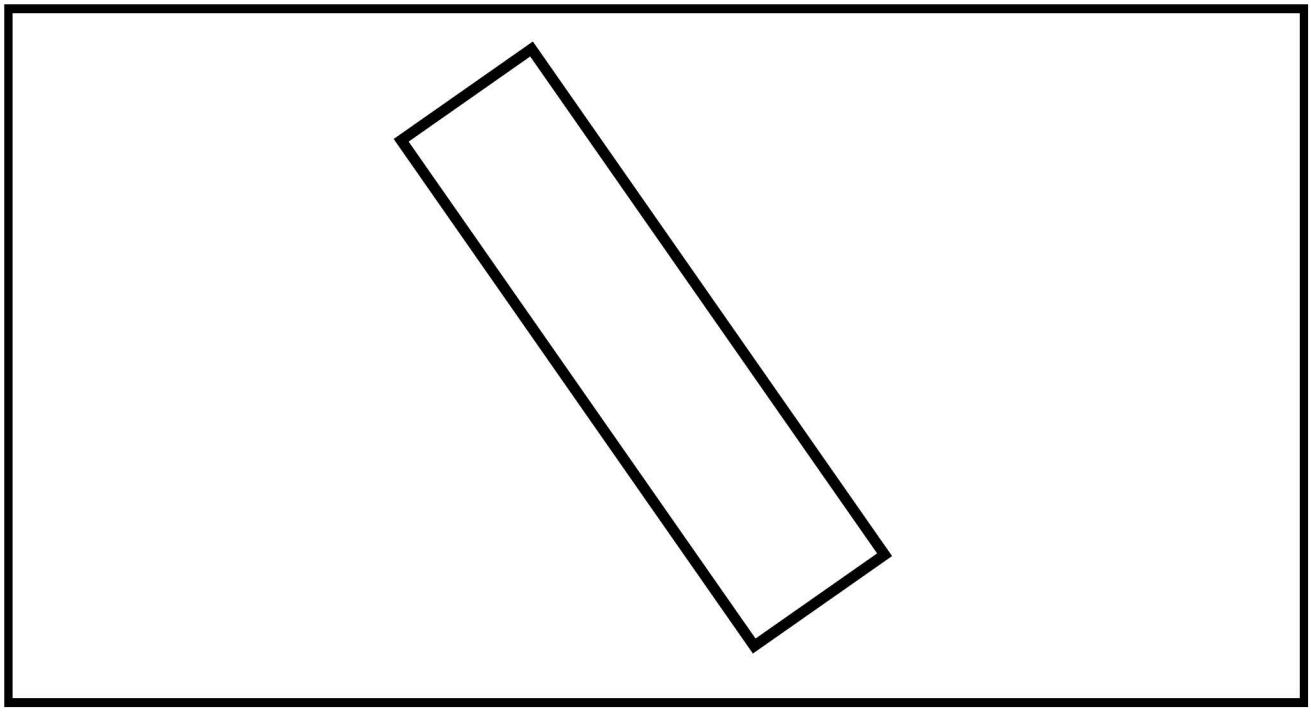
two-dimensional shape flash cards





two-dimensional shape flash cards





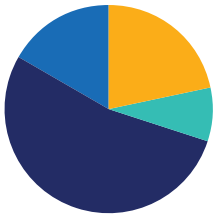
two-dimensional shape flash cards

Lesson 8

Objective: Compose a new shape from composite shapes.

Suggested Lesson Structure

Fluency Practice	(13 minutes)
Application Problem	(5 minutes)
Concept Development	(32 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (13 minutes)

- Grade 1 Fluency Sprint **1.3D** (10 minutes)
- Shape Flash **1.6D, 1.6E** (3 minutes)

Grade 1 Fluency Sprint (10 minutes)

Materials: (S) Fluency Sprint (Lesson 1 Fluency Sprint)

Note: Choose an appropriate Sprint, based on the needs of the class. Motivate students to monitor and appreciate their own progress. As students work, observe the areas where they slow down or get stuck. Pay attention to the strategies students use.

Fluency Sprint List:

- Addition Sprint 1 (Targets addition and missing addends.)
- Addition Sprint 2 (Targets the most challenging addition within 10.)
- Subtraction Sprint (Targets subtraction.)
- Fluency Sprint: Totals of 5, 6, and 7 (Develops understanding of the relationship between addition and subtraction.)
- Fluency Sprint: Totals of 8, 9, and 10 (Develops understanding of the relationship between addition and subtraction.)

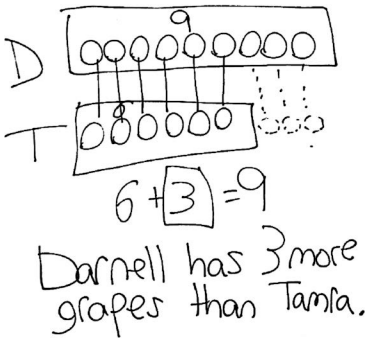
Shape Flash (3 minutes)

Materials: (T) Two-dimensional shape flash cards (Lesson 7 Fluency Template), three-dimensional shapes used in Lesson 6

Note: This fluency activity reviews the attributes and names of two-dimensional and three-dimensional shapes. For three-dimensional shapes, consider displaying the shape as students answer the questions. As soon as students are ready to visualize, flash the shape instead. Repeat Shape Flash from Lesson 7.

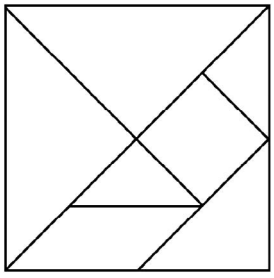
Application Problem (5 minutes)

Darnell and Tamra are comparing their grapes. Darnell's vine has 9 grapes. Tamra's vine has 6 grapes. How many more grapes does Darnell have than Tamra?



Note: This *compare with difference unknown* problem continues to engage students in the same type of problem using different contexts and a larger difference between the numbers. If necessary, remind students that they are comparing Darnell's grapes and Tamra's grapes. When comparing two numbers, it is best to use double strip diagrams, which more clearly support visualizing the difference between the two quantities.

Concept Development (32 minutes)



Materials: (T) Tangram (Template), scissors (S) Tangram (Template), scissors

Note: This lesson uses tangrams. If time allows, consider sharing the origin of the tangram or read *Grandfather Tang's Story* by Ann Tompert. Of the 7 individual pieces within a tangram, there is one shape that is not part of the Grade 1 Standards for Geometry: parallelogram. For this reason, the attributes of a parallelogram are not discussed in this lesson. Students are introduced to the shape name as a way to discuss the pieces being used as they create composite shapes.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Some students may need support cutting their tangram sheets. Precut some of the sheets, or, as the rest of the class is cutting, assist certain students.

Have students store their tangram pieces in their personal toolkits to be used during future lessons.

Cut out the large square from the tangram sheet to be used by the teacher. Distribute the materials to students, seated at their desks or tables.

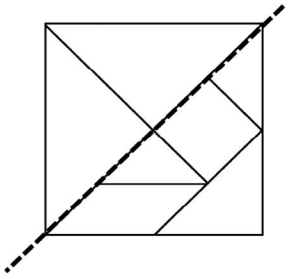
T: Today, we will be cutting out our shapes from this one large shape. What is this shape? (Hold up the tangram backward, so students do not see all of the lines within the square.)

S: A square.

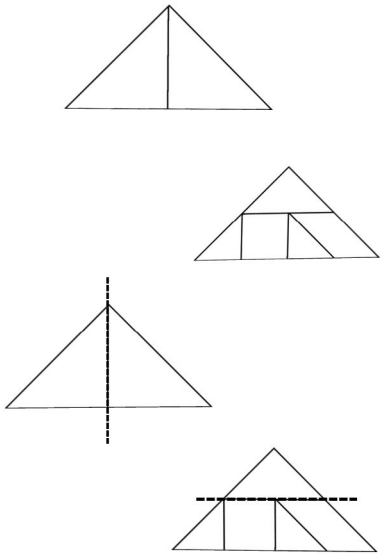
T: Cut out the large square from your piece of paper. (Wait as students cut.)

T: Look how I folded my paper down the diagonal line that goes through the middle of the square. (Fold paper.) What do you see on one side?

S: A triangle!



T: Cut out this triangle on your paper as I cut out my triangle. (Cut out the triangle as students cut out the triangle.)
T: How many pieces do you have now?
S: Two pieces!
T: What is the shape of each piece?
S: They are both triangles!
T: Both of these triangles are made of smaller parts. What parts do you see in this triangle? (Hold up the triangle made of two triangles.)
S: That triangle is made of two smaller triangles.
T: What parts do you see in this triangle? (Hold up the other triangle.)
S: I see two small triangles and one bigger triangle. → I see a square. → I see another shape. It kind of looks like a rhombus, but the sides don't look like they are the same length.
T: You are right. That shape (point to the parallelogram) is not quite a rhombus. A rhombus is a special parallelogram that has equal straight sides. When the shape is like this, where all pairs of opposite sides are equal, it is called a parallelogram. Do you see how this pair is not the same length as this pair? One pair is long, and the other is shorter, so it cannot be called a rhombus. We just call it a parallelogram.
T: Let's cut apart the two triangles that make this first large triangle. (Fold the larger triangle in half to show the two smaller triangles, and cut. Students do the same.)
T: Put your two triangles you cut apart to the side. Take the largest triangle on your table, and place it in front of you like mine. (Place the longest side as the base.) Let's cut off this little triangle at the top. (Students and teacher all cut off the top triangle.)
T: Now, let's cut apart all of the last pieces. (Cut and circulate as students are cutting.)
T: Put your pieces back to form the large square we started with. (Allow students ample time to position the pieces. Make every effort not to interfere as students work at positioning the shapes during this sequence of the lesson. Encourage students to persevere, providing the least direction possible. For students who finish quickly, have them shuffle their pieces and try to make new shapes.)



NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Arranging shapes to create specific composite shapes and then recomposing the pieces into different shapes can be challenging for some students. Be sure to give students who are coordinating their visual and motor skills more time to use models or work with a partner.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

To give some students more proficiency practice, including some emergent bilingual students, create an anchor chart with examples of each shape in the tangram set.

T: Great job! These seven pieces that form a large square are called a tangram. You can make lots of different and interesting shapes by combining some or all of the parts. Let's use just the two largest triangles. Put all the other pieces to the side. (Wait as students move pieces.)

T: If I leave these pieces the way they were, what shape do they make when they are together?

S: A large triangle!

T: Move the shapes around, and see if you can make another shape using the same pieces. (Circulate as students work individually or with a partner.)

T: What shape did you make?

S: I made a square. → I made a parallelogram.

T: With your partner, take two or three of the same tangram pieces, and try to each make a different shape using the same pieces. Here's a hint: You may want to flip over your pieces, turn them, or slide them around to make the new shapes.

After students have worked with their partners for two or three minutes, have pairs share one of the various composite shapes they made.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first. Some problems do not specify a method for solving.

Student Debrief (10 minutes)

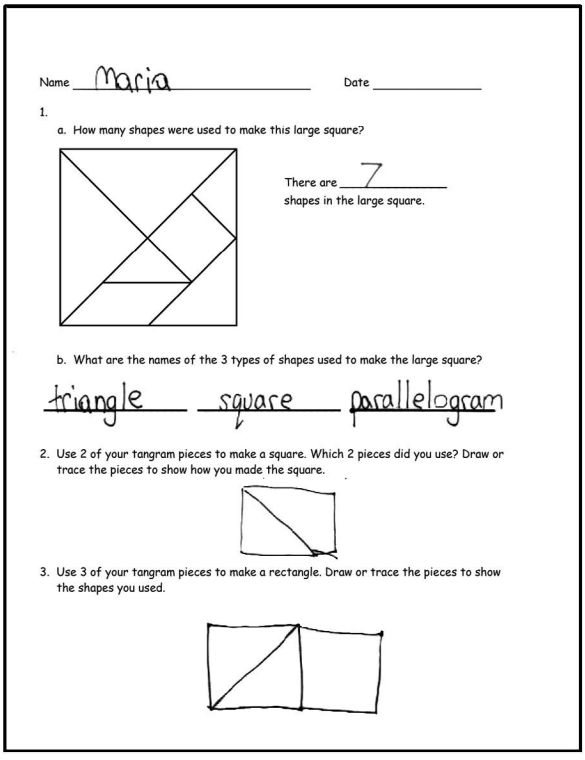
Lesson Objective: Compose a new shape from composite shapes.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Which shapes are used to make the large square we call a tangram? Which smaller shapes can be seen inside the tangram square?
- Look at Problem 2. Share how you made a square. Could you have used other tangram pieces to make the square?


Name Maria Date

1.

a. How many shapes were used to make this large square?

There are 7 shapes in the large square.

b. What are the names of the 3 types of shapes used to make the large square?

triangle square parallelogram

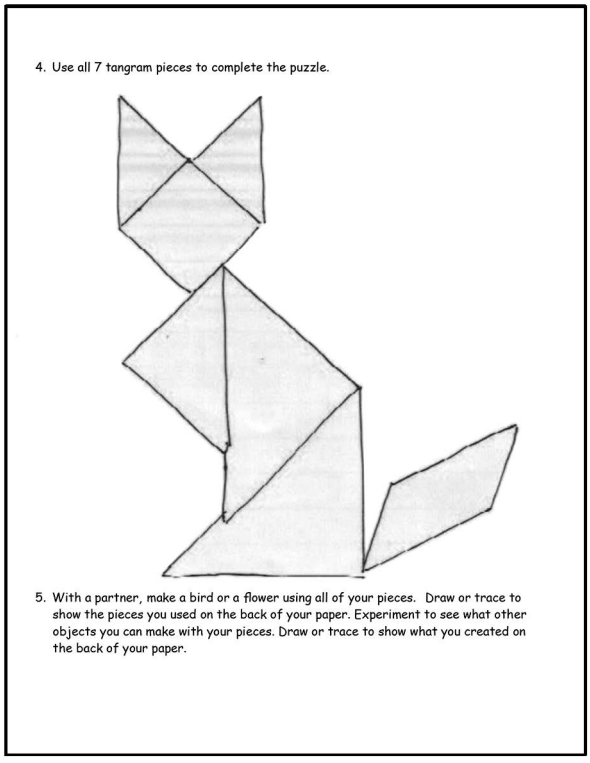
2. Use 2 of your tangram pieces to make a square. Which 2 pieces did you use? Draw or trace the pieces to show how you made the square.

3. Use 3 of your tangram pieces to make a rectangle. Draw or trace the pieces to show the shapes you used.

- Look at Problem 3. Share how you made a rectangle with 3 pieces. Could you have made a rectangle with fewer pieces? Demonstrate your solution. Compare the similarities and differences.
- How did you cover the picture in Problem 4? Did everyone use the same pieces in the same places? Why or why not?
- Think about today's Fluency Practice. Did you get better at a *slow-me-down* problem today? Did you do anything to make that happen?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



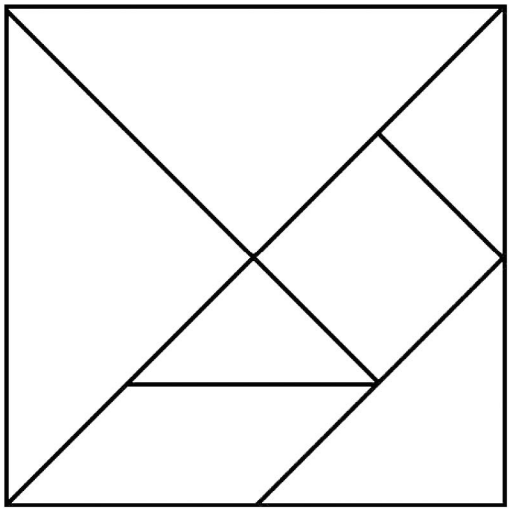
4. Use all 7 tangram pieces to complete the puzzle.

5. With a partner, make a bird or a flower using all of your pieces. Draw or trace to show the pieces you used on the back of your paper. Experiment to see what other objects you can make with your pieces. Draw or trace to show what you created on the back of your paper.

Name _____ Date _____

1.

a. How many shapes were used to make this large square?



There are _____ shapes in the large square.

b. What are the names of the 3 types of shapes used to make the large square?

_____ _____ _____

2. Use 2 of your tangram pieces to make a square. Which 2 pieces did you use? Draw or trace the pieces to show how you made the square.

3. Use 3 of your tangram pieces to make a rectangle. Draw or trace the pieces to show the shapes you used.

4. Use all 7 tangram pieces to complete the puzzle.

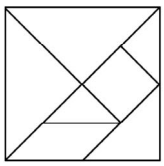
5. With a partner, make a bird or a flower using all of your pieces. Draw or trace to show the pieces you used on the back of your paper. Experiment to see what other objects you can make with your pieces. Draw or trace to show what you created on the back of your paper.

Name _____ Date _____

Use words or drawings to show how you can make a larger shape with 3 smaller shapes. Remember to use the names of the shapes in your example.

Name _____ Date _____

1. Cut out all of the tangram pieces from the separate piece of paper you brought from school. It looks like this:



2. Tell a family member the name of each shape.

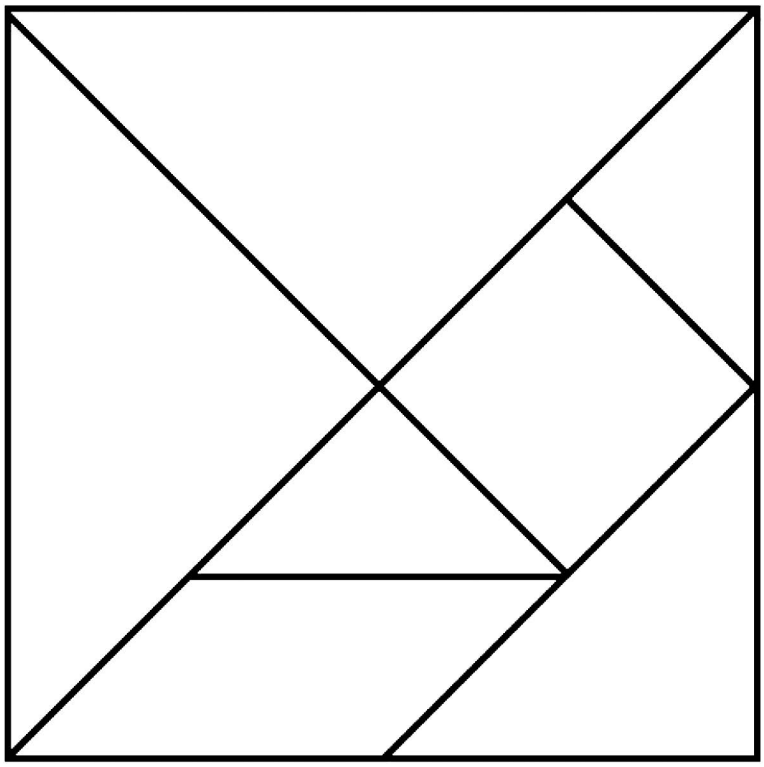
3. Follow the directions to make each shape below. Draw or trace to show the parts you used to make the shape.

   a. Use 2 tangram pieces to make 1 triangle.

   b. Use 2 triangles to make a rhombus.

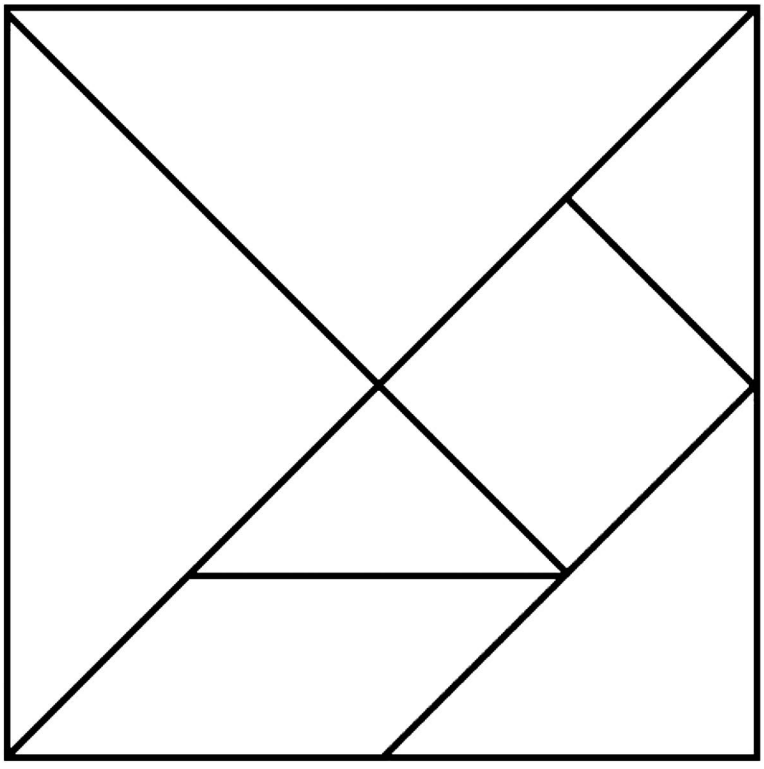
   c. Use 2 triangles to make a square.

4. Make an animal with all of your pieces. Draw or trace to show the pieces you used. Label your drawing with the animal's name.



One tangram is to be used during class.

The other tangram is to be sent with the homework.

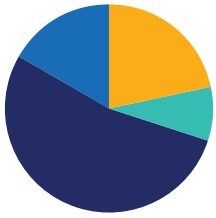


tangram

Lesson 9

Objective: Create a composite shape from three-dimensional shapes and describe the composite shape using shape names and positions.

Suggested Lesson Structure



Fluency Practice	(13 minutes)
Application Problem	(5 minutes)
Concept Development	(32 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Fluency Practice (13 minutes)

- Grade 1 Fluency Sprint **1.3D** (10 minutes)
- Coin Drop **1.4A, 1.4C** (3 minutes)

Grade 1 Fluency Sprint (10 minutes)

Materials: (S) Fluency Sprint (Lesson 1 Fluency Sprint)

Note: Based on the needs of the class, select a Fluency Sprint. Consider the options below:

- Re-administer the previous lesson's Sprint.
- Administer the next Sprint in the sequence.
- Differentiate. Administer two different Sprints. Simply have one group do a counting activity on the back of the first Sprint as the other group corrects the second Sprint.

Coin Drop (3 minutes)

Materials: (T) 4 dimes, 10 pennies, can

Note: In this activity, students practice adding and subtracting ones and tens.

T: (Hold up a penny.) Name my coin.
S: A penny.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Encourage students to set goals for improvement on Sprints and Fluency Practice Sets. Provide scaffolds, strategies, and opportunities for practice to help students reach their personal goals.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

After playing Coin Drop with pennies and then dimes, mix the pennies and dimes so students have to add based on the changing value of the coin. This challenges students and keeps them listening for what comes next.

T: How much is it worth?

S: 1 cent.

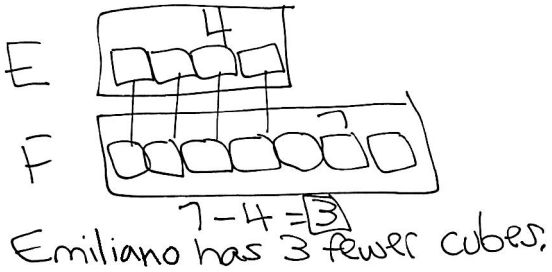
T: Listen carefully as I drop pennies in my can. Count along in your minds.

Drop in some pennies, and ask how much money is in the can. Take out some pennies, and show the class. Ask how much money is still in the can. Continue adding and subtracting pennies for a minute or so. Then, repeat the activity with dimes.

Application Problem (5 minutes)

Emiliano lined up 4 yellow cubes in a row. Fran lined up 7 blue cubes in a row. Who has fewer cubes? How many fewer cubes does that student have?

Note: Today's Application Problem continues to provide the opportunity for students to work with *compare with difference unknown* problem types. For the past few days, students have looked at questions that asked *how many more.* Today's question incorporates the challenging vocabulary word *fewer.* Consider giving examples of the word *fewer* prior to having students solve the problem.



Concept Development (32 minutes)

Materials: (T) Three-dimensional solids including cubes, cones, rectangular prisms, triangular prisms, spheres, and cylinders; 1 large privacy folder (S) Sets of three-dimensional shapes, large privacy folder (1 per pair)

Note: This lesson works best with ample materials for each set of students. If a set of three-dimensional solids is not readily available, use a collection of reused or recycled materials such as those listed in Lesson 6.

On a table or desk, behind a privacy folder, gather the teacher's set of three-dimensional shapes so that students cannot see the shapes as the teacher picks them up to build. Distribute the materials to students, seated at their desks or tables. Place one additional sample of each shape on the floor or table in front of the class for students who need visual reminders of each shape.

T: I am going to build a three-dimensional structure but hide it behind this folder. Listen to my description, and try to build the same shape at your desk.

T: (Slowly describe the structure, providing time for students to build while the teacher explains each shape's placement.)

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

While describing the composite structure students are to build, consider giving them visual cues for certain words. Otherwise, some students may not be able to keep up with the directions. Some students will benefit from directional cues or seeing the shape they are supposed to place on their desks.

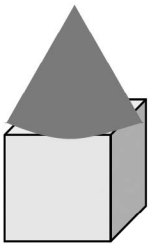
T: I am putting...
- A cube on the table.
- A cone on top of the cube so that the circular face is touching the top of the cube.

T: Do you think your structure looks like my structure? Share what you built with your partner.

S: (Discuss choices.)

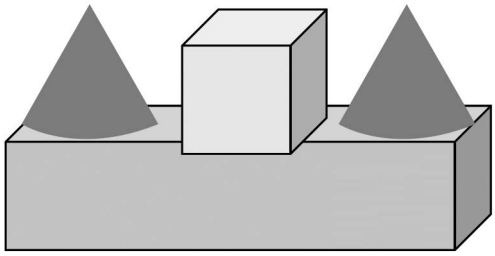
T: (Remove the privacy folder to reveal the structure.)
Were you correct?

S: Yes! (Allow students a moment to adjust their structures if they were not correct.)



Repeat the process, building a structure with three components, such as the following:

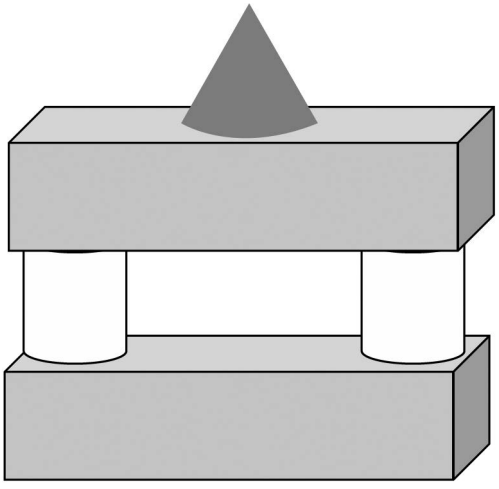
T: I am putting...
- A rectangular prism with the longest face touching the table.
- A cube on top of the prism, directly in the middle.
- Two cones on top of the prism, one on each end.



Repeat the process a third time, as described below:

T: (Slowly describe the structure, providing time for students to build while explaining each shape's placement.)

T: I am putting...
- A rectangular prism with the longest face touching the table.
- A cylinder on top of the prism all the way to the right, with the circular face touching the prism.
- A cylinder on top of the prism all the way to the left, with the circular face touching the prism.
- A rectangular prism on top of these cylinders so that it touches both cylinders.
- A cone right in the center of this rectangular prism, with the circular face touching the prism.



T: Let me repeat my description. As I do, look at your structure, and decide if you have everything where you want it. (Repeat the description as students check the structures they have created.)

T: Who is convinced they have the same structure that I have? Explain why you think you are correct.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Students, including some emergent bilingual students, may benefit from having an anchor chart with the following examples:

cube

cone

rectangular prisms

triangular prism

sphere

cylinder

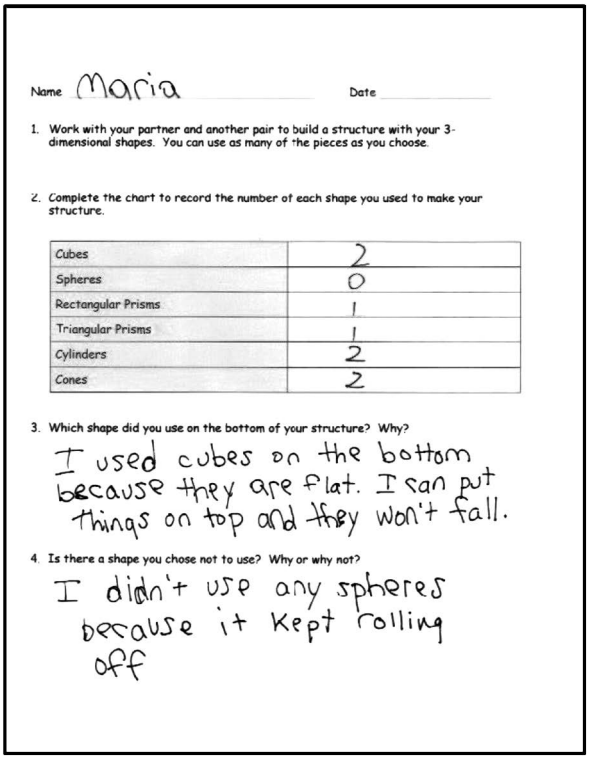
S: (Use reasoning, along with the description that was provided.)
T: (Remove the privacy folder to reveal the structure.) Were you correct?
S: Yes! (Allow students a moment to adjust their structures if they were not correct.)
T: Do you like my new composite shape?
S: Yes!
T: Do you think you could make and describe your own interesting composite shapes?
S: Yes!
T: With your partner, you are going to get to play the Build My Composite Shape Game that we just played together.

- Partner A will make a structure behind their hiding folder. Partner B should turn their back so that they cannot peek. Partner A will tell Partner B when to turn around.
- As Partner A describes the structure, Partner B tries to make it with their three-dimensional shapes. When they think they have the right structure, Partner A removes the folder, and they compare structures.
- The partners switch roles. Continue to take turns until time is up.

As students play, circulate and ensure that students are using precise language to describe the position and location of their three-dimensional shapes. When partners are building different structures, ask Partner A to explain the location and position of the shapes again, and support clear communication between students.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.



Name Maria Date

1. Work with your partner and another pair to build a structure with your 3-dimensional shapes. You can use as many of the pieces as you choose.

2. Complete the chart to record the number of each shape you used to make your structure.

Cubes	2
Spheres	0
Rectangular Prisms	1
Triangular Prisms	1
Cylinders	2
Cones	2

3. Which shape did you use on the bottom of your structure? Why?

I used cubes on the bottom because they are flat. I can put things on top and they won't fall.

4. Is there a shape you chose not to use? Why or why not?

I didn't use any spheres because it kept rolling off

Student Debrief (10 minutes)

Lesson Objective: Create a composite shape from three-dimensional shapes and describe the composite shape using shape names and positions.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Which three-dimensional shapes did you choose to use and why? Why did you choose to leave some shapes out?
- Were more spheres or cubes used in the structures? Why might that be?
- Find two three-dimensional structures that used the same pieces to make different larger shapes. Explain the similarities and differences.
- Look at today's Sprint. Explain how the answer to the first number sentence helped you solve the next number sentence.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

1. Work with your partner and another pair to build a structure with your 3-dimensional shapes. You can use as many of the pieces as you choose.

2. Complete the chart to record the number of each shape you used to make your structure.

Cubes	
Spheres	
Rectangular Prisms	
Triangular Prisms	
Cylinders	
Cones	

3. Which shape did you use on the bottom of your structure? Why?

4. Is there a shape you chose not to use? Why or why not?

Name _____ Date _____

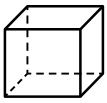
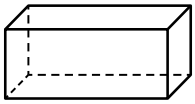
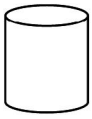
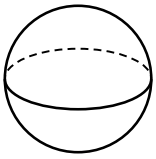
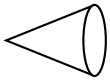
Camilia made a structure using her 3-dimensional shapes. Use your shapes to try to make the same structure as Camilia as your teacher reads the description of Camilia's structure.

Camilia's structure has the following:

- 1 rectangular prism with the shortest face touching the table.
- 1 cube on top and to the right of the rectangular prism.
- 1 cylinder on top of the cube with the circular face touching the cube.

Name _____ Date _____

Use some 3-dimensional shapes to make another structure. The chart below gives you some ideas of objects you could find where you live. You can use objects from the chart or other objects you may have there.

Cube 	Rectangular prism 	Triangular prism 	Cylinder 	Sphere 	Cone 
Block	Food box: Cereal, macaroni and cheese, spaghetti, cake mix, juice box	Candy box	Food can: Soup, vegetables, tuna fish, peanut butter	Balls: Tennis ball, rubber band ball, basketball, soccer ball	Ice cream cone
Dice	Tissue box	Camping tent	Toilet paper or paper towel roll	Fruit: Orange, grapefruit, melon, plum, nectarine	Party hat
	Hardcover book	Rooftop	Glue stick	Marble	Funnel
	Video game box				

Ask someone where you live to take a picture of your structure. If you are unable to take a picture, try to sketch your structure or write the directions on how to build your structure on the back of the paper.

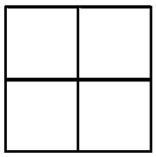
Topic C

Halves and Quarters of Rectangles and Circles

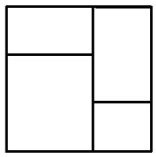
1.6G, 1.6H

Focus Standards:	1.6G	Partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words.
	1.6H	Identify examples and non-examples of halves and fourths.
Instructional Days:	3	
Coherence -Links to:	G2–M8	Time, Shapes, and Fractions as Equal Parts of Shapes

During Topic C, students build on their concrete work with composite shapes and begin naming equal parts of wholes, specifically halves and fourths (or quarters). Students more closely analyze the same composite shapes created in Topic B, recognizing composite shapes made from equal, non-overlapping parts and identifying halves and quarters within rectangular and circular shapes.



Equal Parts



Non-equal Parts

In Lesson 10, students explore composite shapes that have been made throughout the module and sort them into two categories of shapes, those made from equal parts and those made from non-equal parts. Students count the number of equal parts that form one whole.

Lesson 11 introduces the terms *half* and *quarter,* or *fourths,* to name two equal parts of a whole and four equal parts of a whole, respectively. Students learn *half-circle* and *quarter-circle* as the names of shapes and recognize that they are named for their size and shape in relation to a whole circle. Models of rectangular and circular pizzas are used for students to discuss equal parts of the whole.

In Lesson 12, students explore halves and fourths more deeply as they identify these parts within circles and rectangles of varying size and dimension. Students recognize that as they partition, or decompose, the whole into more equal shares, they create smaller units.

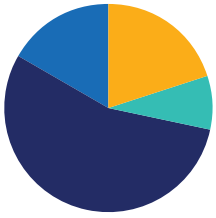
A Teaching Sequence Toward Proficiency with Halves and Quarters of Rectangles and Circles	
Objective 1:	**Name and count shapes as parts of a whole, recognizing relative sizes of the parts. (Lesson 10)**
Objective 2:	**Partition shapes and identify halves and quarters of circles and rectangles. (Lessons 11–12)**

Lesson 10

Objective: Name and count shapes as parts of a whole, recognizing relative sizes of the parts.

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(5 minutes)
Concept Development	(33 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (12 minutes)

- Fluency Differentiated Practice Sets **1.3D** (5 minutes)
- Whisper Count **1.5A** (2 minutes)
- Make Ten Addition with Partners **1.3D** (5 minutes)

Fluency Differentiated Practice Sets (5 minutes)

Materials: (S) Fluency Practice Sets (Lesson 6 Fluency Practice Sets)

Note: Give the appropriate Practice Set to each student. Students who completed all of the questions correctly on their most recent Practice Set should be given the next level of difficulty. All other students should try to improve their scores on their current levels.

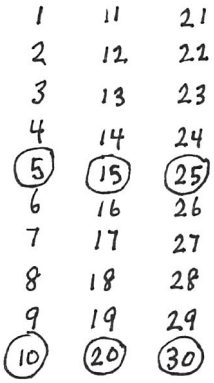
Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for early finishers, or tell them to practice make ten addition or subtraction on the back of their papers. Collect and correct any Practice Sets completed within the allotted time.

Whisper Count (2 minutes)

Materials: (T) Chart of numbers to 30 with multiples of 5 circled

Note: This activity prepares students for Lesson 14, where they add 5 minutes until reaching 30 minutes to connect half past the hour to 30 minutes past the hour. If students are proficient at counting on by fives, consider substituting for the Fluency Practice 5 More (Lesson 11).

Whisper count to 30 with students, saying multiples of 5 out loud.



T: Whisper count with me. Say the circled numbers out loud.

T/S: (Whisper.) 1, 2, 3, 4.

T/S: (Say.) 5.

Continue counting to 30.

Make Ten Addition with Partners (5 minutes)

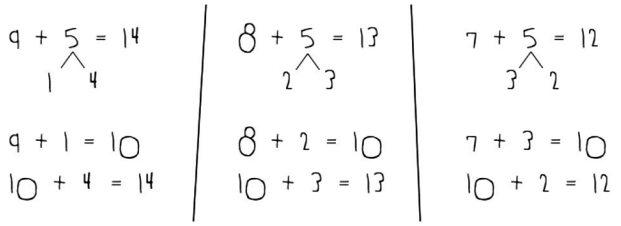
Materials: (S) Personal white board

Note: This fluency activity reviews how to use the strategy of making ten to add two single-digit numbers.

- Assign partners of equal ability.
- Partners choose an addend for each other from 1 to 10.
- On their personal white boards, students add their number to 9, 8, and 7. Remind students to write the two addition sentences they learned in Module 2, as seen in the examples below.
- Partners then exchange personal white boards and check each other's work.

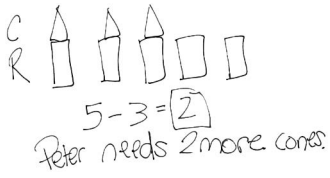
NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Some students may find this fluency activity challenging or need more time to finish the problems. Scaffold tasks by carefully selecting the number of problems to be completed for certain partners.



Application Problem (5 minutes)

Peter set up 5 rectangular prisms to make 5 towers. He put a cone on top of 3 of the towers. How many more cones does Peter need to have a cone on every tower?

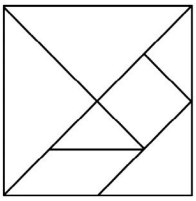


Note: This Application Problem presents a *compare with difference unknown* problem type using simple numbers. Before moving to Concept Development, link the Application Problem question with the more challenging comparison question of *How many fewer cones does Peter have than rectangular prisms?* In the student sample selected, notice that the student does not yet independently use double-strip diagrams. After the student explains how she solved this problem using her drawing, one rectangle can be drawn around the cones, and one rectangle can be drawn around the prisms, turning the drawing into a double-strip diagram. If there are students in the class who are already effectively using the double-strip diagram, the two models can be compared.

Concept Development (33 minutes)

Materials: (T) Tangram pieces (Lesson 8 Template), document camera, pattern blocks, chart paper, yellow marker (S) Tangram pieces (Lesson 8 Template), pattern blocks in individual plastic bags (set of 1–2 hexagons, 6 squares, 6–10 triangles, 2–4 red shapes, 2–4 blue rhombuses, 2–4 tan rhombuses)

Seat students at their desks or tables with the tangram pieces ready to use and pattern blocks in individual plastic bags ready for later in the lesson.



T: Two lessons ago, we made many different shapes using two or more of these tangram pieces. Can you think of any shapes we made?

S: We made a big square. → We made a smaller square. → We made a rectangle. → We made parallelograms.

T: Great! Use two or more of your pieces to make a shape you can name.

S: (Spend one minute creating shapes.)

T: (Circulate and ask questions such as the following: What is the name of your overall shape? Can you add another piece to your shape to make another larger shape that you can name?)

T: Let's look at some of the shapes you created and see what parts, or shapes, they are made of. (Choose a student who created a square using two smaller triangles. Invite the student to place his shape under the document camera.)

T: What is the shape that he created?

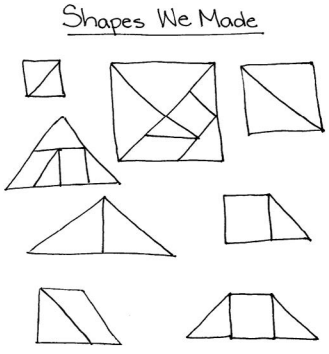
S: A square!

T: What are the parts that he used to make this square, and how many parts are there?

S: He used two triangles to make the square.

T: Great! Let's record this. (Draw the shape on chart paper, partitioned to show the pieces used.) Student A used two triangles to make a square.

T: I saw someone make a square in a different way. (Under the document camera, position all tangram pieces to make the large square.) What are the parts that are used to make this square, and how many parts are there?



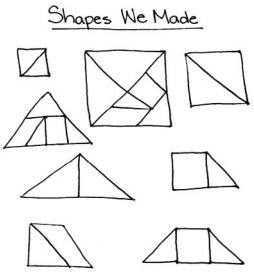
S: There are seven parts. → There are two large triangles, one medium triangle, two small triangles, one parallelogram, and one square. (Add the shapes to the chart as shown.)

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Asking questions for comprehension during this lesson is important for guiding students toward evaluating their thinking. This provides students with an opportunity to evaluate their process and analyze errors.

Repeat this process with any other composite shapes that students created. Some additional examples are shown in the chart.

T: Some of the shapes on our chart are made with equal parts, where two same-size parts were used to make the larger shape. Can you find them on the chart?



S: The first square is made of equal parts!

T: (Color both equal parts with a yellow marker so that the equal parts stand out.) Can you find any more shapes made with equal parts?

S: The triangle made with two smaller triangles has equal parts! (Continue as appropriate.)

T: What about the large square that we made using all of the pieces? Is this made of seven equal parts?

S: No. The parts are different sizes. There are big triangles and little triangles.

T: You are correct! Let's check the rest of our shapes on the chart to make sure we found all the shapes with equal parts. (Repeat the process by having students explain why the rest of the shapes do not have equal parts.)

T: Let's look at some of the hexagon shapes we made a few days ago. (Place one yellow hexagon pattern block under the document camera.) How can we make a hexagon using smaller pattern block pieces?

S: Use six triangles! (Place six green triangles on top of the yellow hexagon, under the document camera.)

T: Is the hexagon made of equal parts?

S: Yes!

T: How many equal parts?

S: Six!

T: What's another way to make a hexagon?

S: Two red shapes! (Place two red shapes on top of the yellow hexagon, under the document camera.)

T: Is the hexagon made of equal parts?

S: Yes!

T: How many equal parts?

S: Two!

T: Can we use red shapes and triangles to make a hexagon?

S: Use one red shape and three triangles. (Place the pieces on top of the yellow hexagon, under the document camera.)

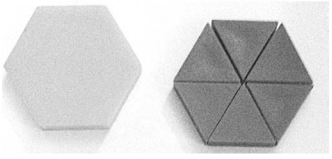
T: How many parts are used for this hexagon?

S: Four parts!

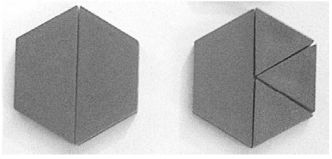
T: Are they four equal parts?

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Students, including some emergent bilingual students, may benefit from referring to the anchor chart from Lesson 8. Use gestures to clarify language and give some emergent bilingual students a little more time to respond.



equal parts



equal parts **not** equal parts

S: No. The red shape is much bigger than the triangles.

T: With a partner, make one hexagon that is created with equal parts and another hexagon that is made with parts that are not equal.

Give students one minute to create composite shapes. Then, have students share their composite hexagon with the class, noting how many parts are used to make the shape and if the shape is made of equal parts. Record these shapes on the chart, coloring the composite shapes made with equal parts in yellow and labeling *2 equal parts* or *3 equal parts* as appropriate.

Extension: If time allows, invite students to use their pattern blocks to create other shapes with equal parts. The composite shapes created do not need to be shape names that students know. If including this portion, during the Student Debrief, ask students what shapes they made with their blocks and what they noticed when they used equal parts for the entire shape.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

While teaching, be sure to provide connections for students. Visit the school or local library to check out books on shapes or equal parts to supplement learning during Topic C.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)

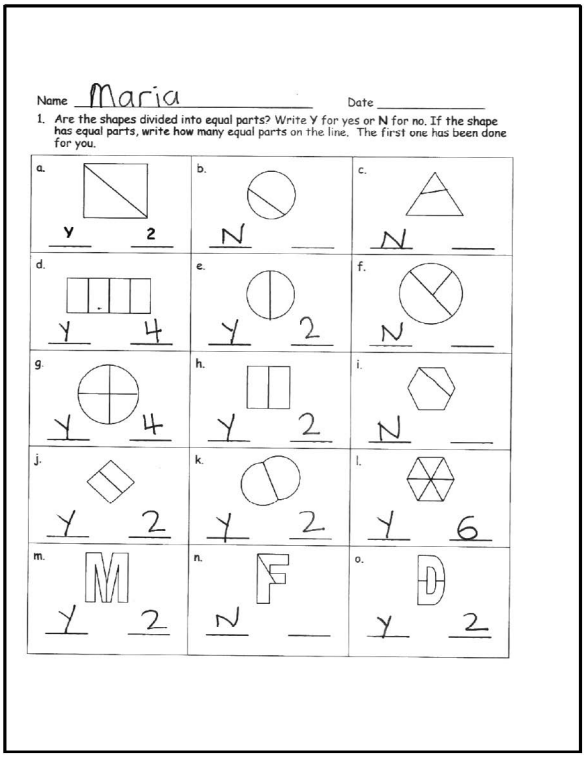
Lesson Objective: Name and count shapes as parts of a whole, recognizing relative sizes of the parts.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problem 1. Find an example of a shape that is not divided into equal parts. How did you decide that the parts were not equal?
- Look at Problem 4. What are the shapes of your equal parts? Compare with your partner. Did everyone make the same shape?


Name Maria Date

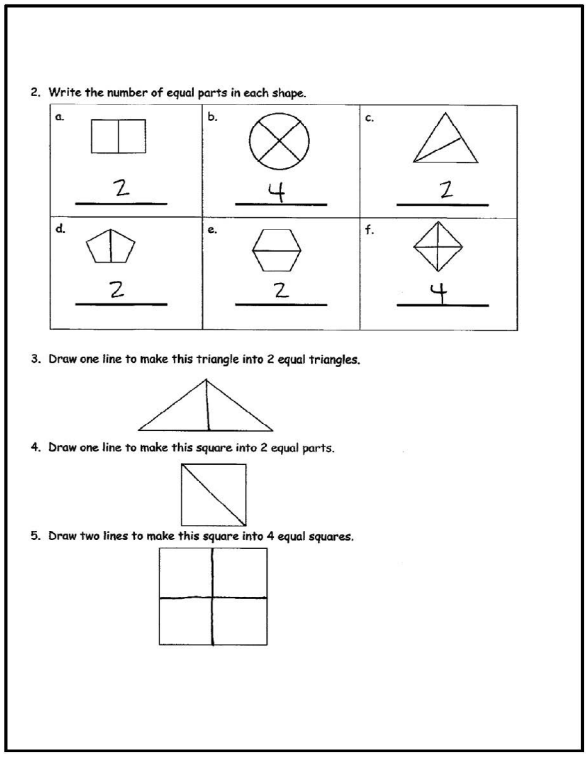
1. Are the shapes divided into equal parts? Write Y for yes or N for no. If the shape has equal parts, write how many equal parts on the line. The first one has been done for you.

a. Y 2 b. N c. N
d. Y 4 e. Y 2 f. N
g. Y 4 h. Y 2 i. N
j. Y 2 k. Y 2 l. Y 6
m. M Y 2 n. F N o. D Y 2

- What does it mean when we say a shape has equal parts? How is this *the same as* or *different from* the ways we have used the word *equal* in the past? Give examples of ways we use the word *equal* in math class.
- Think about your Fluency Practice today. Which addition or subtraction facts are becoming simpler for you to remember?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.


2. Write the number of equal parts in each shape.

a. 2 b. 4 c. 2

d. 2 e. 2 f. 4

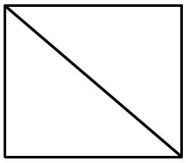
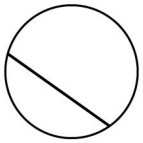
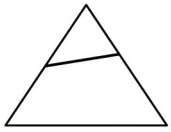
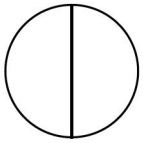
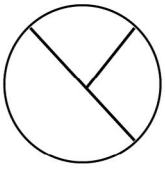
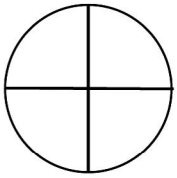
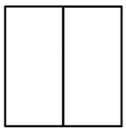
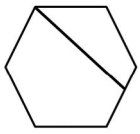
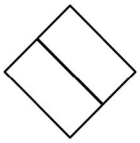
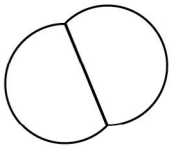
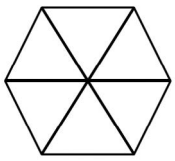
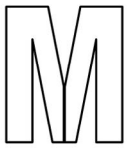
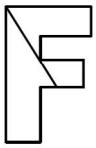
3. Draw one line to make this triangle into 2 equal triangles.

4. Draw one line to make this square into 2 equal parts.

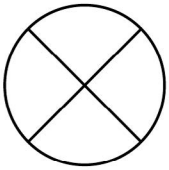
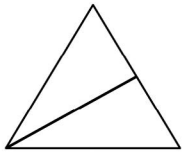
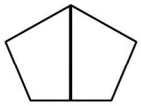
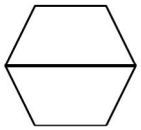
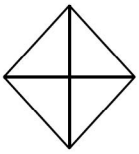
5. Draw two lines to make this square into 4 equal squares.

Name _____ Date _____

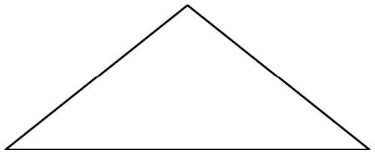
1. Are the shapes divided into equal parts? Write **Y** for yes or **N** for no. If the shape has equal parts, write how many equal parts on the line. The first one has been done for you.

a.  Y 2	b. 	c. 
d. 	e. 	f. 
g. 	h. 	i. 
j. 	k. 	l. 
m. 	n. 	o. 

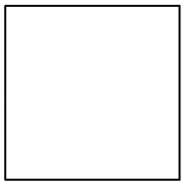
2. Write the number of equal parts in each shape.

a.  _____	b.  _____	c.  _____
d.  _____	e.  _____	f.  _____

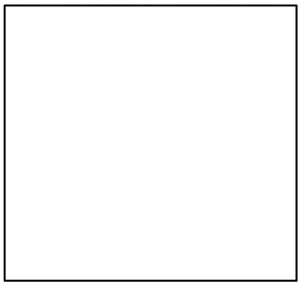
3. Draw one line to make this triangle into 2 equal triangles.



4. Draw one line to make this square into 2 equal parts.

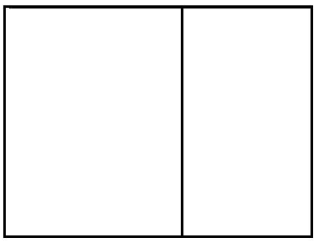


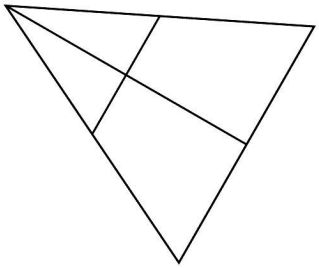
5. Draw two lines to make this square into 4 equal squares.

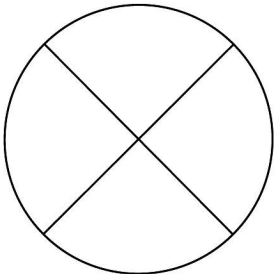


Name _____ Date _____

Circle the shape that has equal parts.



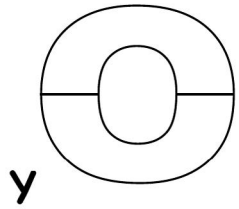
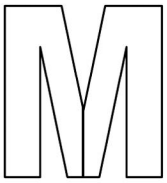
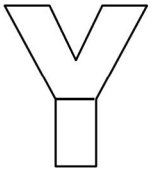
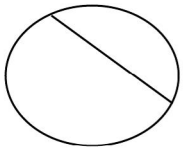
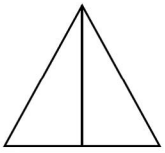
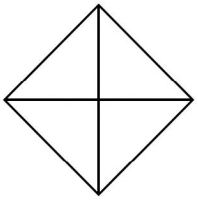
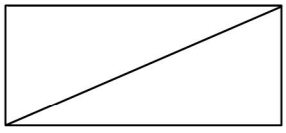
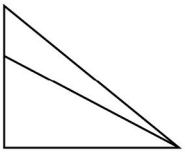
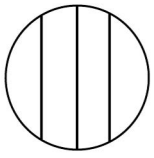
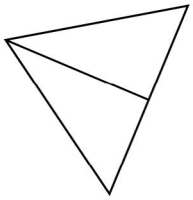
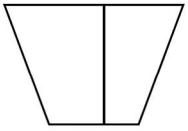
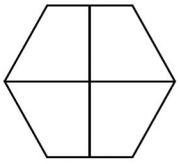
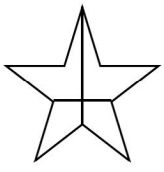




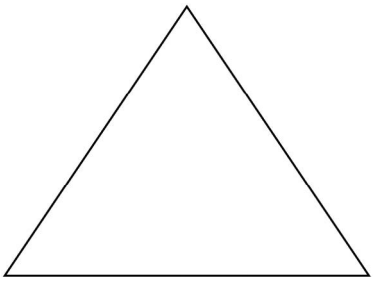
How many equal parts does the shape have? _____

Name _____ Date _____

1. Are the shapes divided into equal parts? Write **Y** for yes or **N** for no. If the shape has equal parts, write how many equal parts there are on the line. The first one has been done for you.

a. 	b. 	c. 
d. 	e. 	f. 
g. 	h. 	i. 
j. 	k. 	l. 
m. 	n. 	o. 

2. Draw 1 line to make 2 equal parts. What smaller shapes did you make?

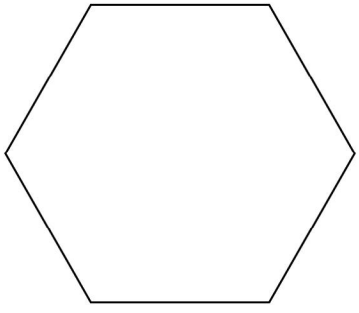


I made 2 _____.

3. Draw 2 lines to make 4 equal parts. What smaller shapes did you make?

I made 4 _____.

4. Draw lines to make 6 equal parts. What smaller shapes did you make?



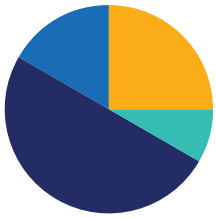
I made 6 _____.

Lesson 11

Objective: Partition shapes and identify halves and quarters of circles and rectangles.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (15 minutes)

- Fluency Differentiated Practice Sets **1.3D** (5 minutes)
- 5 More **1.5B** (5 minutes)
- Make Ten Addition with Partners **1.3D** (5 minutes)

Fluency Differentiated Practice Sets (5 minutes)

Materials: (S) Fluency Practice Sets (Lesson 6 Fluency Practice Sets)

Note: Give the appropriate Practice Set to each student. Help students become aware of their improvement. After students complete today's Practice Sets, ask them to raise their hands if they tried a new level today or improved their scores from the previous day.

Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for early finishers, or tell them to practice make ten addition or subtraction on the back of their papers. Collect and correct any Practice Sets completed within the allotted time.

5 More (5 minutes)

Note: This activity prepares students for Lesson 14, where they add 5 minutes until they reach 30 minutes to connect half past the hour to 30 minutes past the hour. The suggested sequence of this activity enables students to use their experience with analogous addition to add 5. Be sure to provide enough think time for students to mentally add or count on, as needed. If students require more support, consider replacing this activity with Whisper Count from Lesson 10.

T: On my signal, say the number that is 5 more. 0. (Pause. Snap.)

S: 5.

T: 10. (Pause. Snap.)

S: 15.

Continue with the following suggested sequence: 20, 30, 5, 15, 25.

Make Ten Addition with Partners (5 minutes)

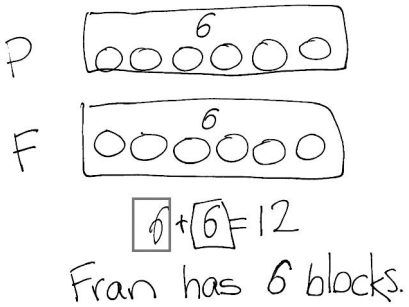
Materials: (S) Personal white board

Note: This fluency activity reviews how to use the strategy of making ten to add two single-digit numbers.

Repeat the activity from Lesson 10.

Application Problem (5 minutes)

Peter and Fran each have an equal number of pattern blocks. There are 12 pattern blocks altogether. How many pattern blocks does Fran have?



Note: In today's Application Problem, students explore their understanding of the word *equal.* Note the various methods students have for solving the problem. Some of these methods may be useful in supporting students' understanding of equal parts, as applied in today's Concept Development.

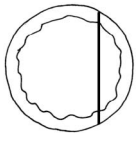
Concept Development (30 minutes)

Materials: (T) Example images (Template 1), circles and rectangles (Template 2), projector (S) Circles and rectangles (Template 2), personal white board

Note: The circles and rectangles template should be cut in half. Distribute the top half—images of pizza—to students at the start of the lesson.

Gather students in the meeting area with the circles and rectangles template inserted into their personal white boards.

T: Last night, my brother and I bought a small pizza to share. We agreed we would each eat **half** of the pizza, or one out of two equal parts. My brother cut the pizza for us to share, and it looked like this. (Show Image 1.)



Small pizza

T: Why do you think I was mad? What's wrong with my brother's version of *fair shares?*

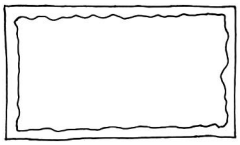
S: One piece is much bigger than the other piece. → They are not cut into equal parts.

T: If my brother and I are going to share this pizza fairly, we need to each have an equal part. To have one **half** of the pizza, the two parts need to be the same size. On your personal white boards, draw a line to show how the pizza should have been cut.

S: (Partition the circle into approximately two equal parts.)

T: (Use a student example to share with the class.) Yes! Now, I can get one half of the pizza because each of the two parts is the same size.

T: Sometimes we buy Sicilian pizza, which is shaped like a rectangle. (Project Image 2.) How can we cut this to be in two equal parts, or two **halves of** the pizza? Draw a line on your personal white boards to show how you would cut the rectangular pizza. (Wait as students draw.)



Sicilian pizza

T: I see more than one idea. Who would like to share how he cut the pizza to be two equal parts, two halves of the pizza?

S: I cut the pizza across (horizontally.) → I cut the pizza up and down (vertically.) → I cut the pizza across from one corner to the other (diagonally.)

T: Will my brother and I get the exact same amount to eat?

S: Yes!

T: Wow, we found three different ways to cut the pizza into halves! Good job!

T: I need your help, though, because sometimes our mom and dad eat with us. How can we share that rectangular pizza equally among all four of us?

S: You need to cut it into four pieces. → The pieces need to be the same size. → You can just cut it again the other way. That's what my mom does with my sandwiches!

T: Draw lines to show how you would cut the rectangular pizza so we would have four equal parts.

S: (Students draw lines on their personal white boards over the rectangular pizza.)

T: How did you cut one pizza into four equal parts, or **fourths**?

S: I drew one line up and down (vertically) and the other line across (horizontally). → I drew all my lines in the same way. Everyone would get a strip of pizza that is the same size.

T: Great job! These are all **fourths of**, or **quarters of**, the pizza. It is cut into four pieces that are the same size.

S: I drew two lines diagonally through the middle from each corner. That makes four triangles, but they are not all the same shape, so I wonder if the four pieces are equal shares even though they are not the same shape.

T: Interesting observation. I wonder, too! (While the diagonal cuts *would* create equal shares, the shapes created are not exactly the same. These are the most challenging types of equal parts. Consider exploring cutting shapes diagonally as an extension to the lesson.)

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Highlight critical vocabulary throughout the lesson for students who would benefit from it, including some emergent bilingual students, by showing object(s) as a visual or gesturing while saying the words. In this lesson, vocabulary to highlight is *half, fourths, quarters, quarter-circle,* and *half-circle.*

T: Let's try to make fourths, or quarters, from the circle-shaped pizza. (Observe as students draw lines on their personal white boards. Support students in visually checking that they have four equal parts to their circle.)

T: How did you cut the pizza so that it was cut into four equal parts, which we call fourths, or quarters?

S: I cut across (horizontally) and up and down (vertically). → I tried to cut it in straight lines, like I did with the rectangle, but the end pieces were too small. I had to cut it through the middle to keep the parts the same size.

T: Good observations. Sometimes it's simpler to make equal parts by cutting them in particular ways. Can the circle AND the rectangle both be cut into fourths?

S: Yes!

T: So, if there are four people sharing a pizza, whichever shape we're using, we need the whole pizza to be cut into...?

S: Fourths! (Or quarters.)

T: If there are two people sharing, we need the whole pizza to be cut into...?

S: Halves!

T: Look at this shape. (Project Image 3, a quarter-circle.) This shape is called a **quarter-circle**. How do you think it got its name?

S: It comes from a whole circle that got cut into fourths, or quarters. → It comes from a circle cut into four equal parts. → If you put it together with 3 other pieces that are the same size, you would get a whole circle. Four quarters make one whole.

T: If this shape (point to Image 3, the quarter-circle) is called a quarter-circle, what do you think this shape is called? (Project Image 4, the half-circle.)

S: A **half-circle**!

T: How did you know?

S: It comes from a whole circle that got cut in half. → It comes from a circle cut into two parts. → If you put it together with another piece that is the same size, you would get a whole circle. Two halves make one whole.

Quarter circle

Half circle

Have students insert the bottom half of the circles and rectangles template into their personal white boards. Invite students to partition the shapes in halves. Discuss the various positions of their lines and the importance of having equal parts no matter which way the shape is partitioned. Repeat this process having students partition the shapes into fourths, or quarters.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Some students, including some emergent bilingual students, may benefit from various aids when modeling halves and fourths. Providing rulers may help students draw straight lines. Other students may need to cut out or fold paper to accurately convey equal partitions.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first. Some problems do not specify a method for solving.

Student Debrief (10 minutes)

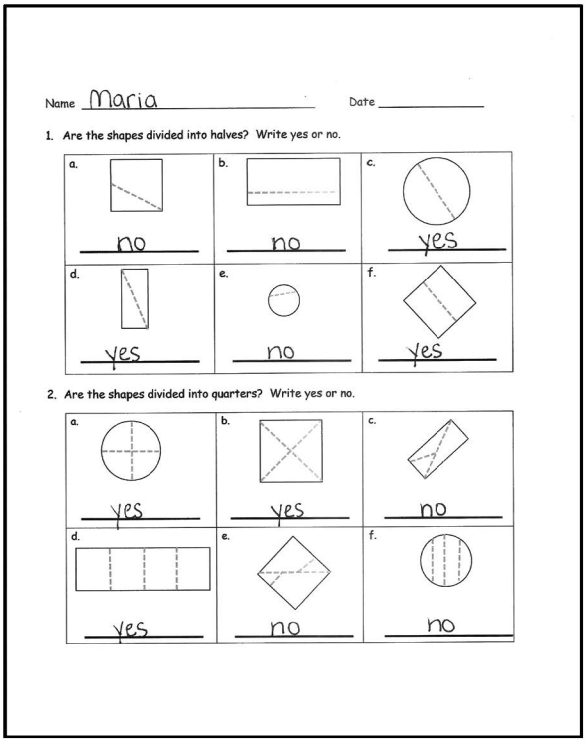
Lesson Objective: Partition shapes and identify halves and quarters of circles and rectangles.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What word did we learn today to help us name the pieces of a shape cut into two equal parts? (**Half** or **halves**.) (Hold up the rectangular pizza image with a line to divide it in half.) How much of the pizza is one part? (**Half of** the pizza.)
- What two different ways can we name the parts of a shape that is cut into four equal parts? (**Fourths** or **quarters**.) (Hold up the rectangular pizza image, divided into quarters.) How much of the pizza is one part? (A **quarter of** the pizza, or a **fourth of** the pizza.) Look at Problem 1. Find an example of a shape that is not divided into halves. How did you decide that the parts were not equal?
- Look at Problem 2. Find an example of a shape that is not divided into quarters. How did you decide it did not have four equal parts?
- (Display the chart created during Lesson 10.) Let's look at the shapes we made with our tangram pieces during our last lesson. Can we name the size of the equal pieces in each of our shapes?
- Someone told me that when you cut rectangles into quarters, you always get smaller rectangles. Is that true? Look over your Problem Set to support your thinking with examples.

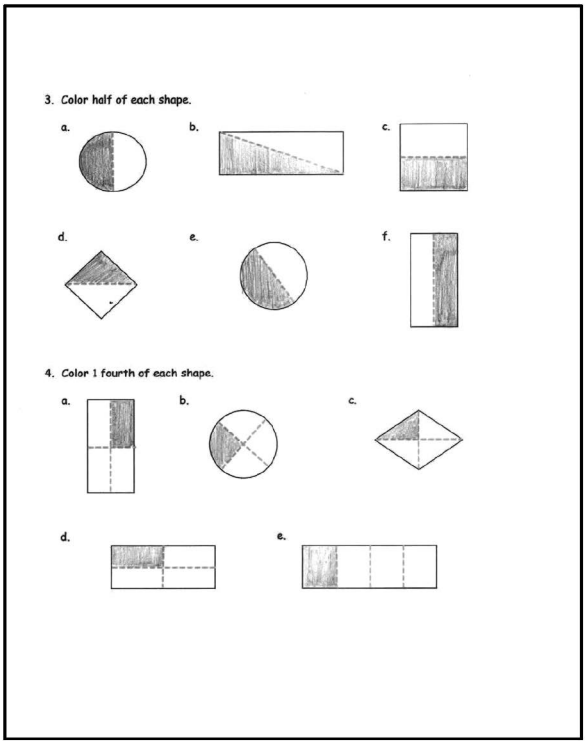

Name Maria Date

1. Are the shapes divided into halves? Write yes or no.

a. no b. no c. yes
d. yes e. no f. yes

2. Are the shapes divided into quarters? Write yes or no.

a. yes b. yes c. no
d. yes e. no f. no


3. Color half of each shape.

a. b. c.
d. e. f.

4. Color 1 fourth of each shape.

a. b. c.
d. e.

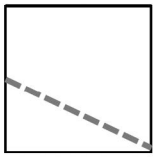
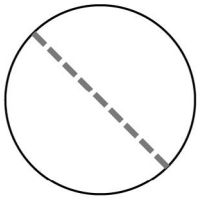
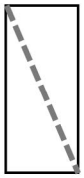
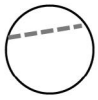
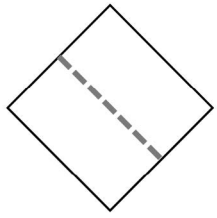
- What is the shape of a **half-circle**? How does it compare to a **quarter-circle**?
- How many quarter-circles would you need to make a whole circle? How many quarter-circles would you need to make a half-circle? Explain your thinking.
- Think about today's fluency activities. Choose one of the activities we completed, and tell your partner how it can help you practice your number work.

Exit Ticket (3 minutes)

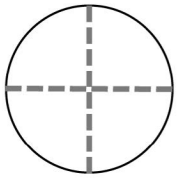
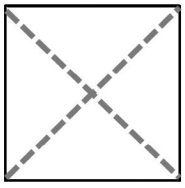
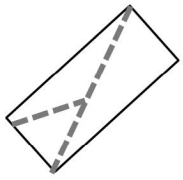
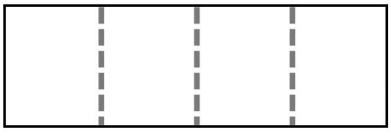
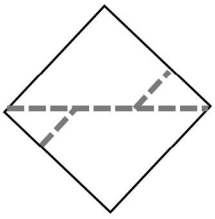
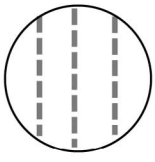
After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

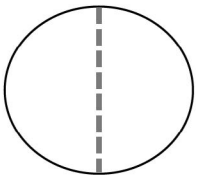
1. Are the shapes divided into halves? Write yes or no.

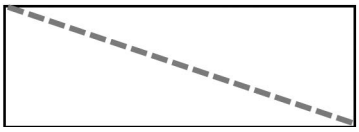
a.  _____	b.  _____	c.  _____
d.  _____	e.  _____	f.  _____

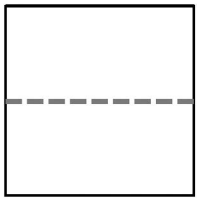
2. Are the shapes divided into quarters? Write yes or no.

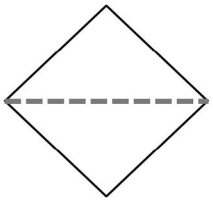
a.  _____	b.  _____	c.  _____
d.  _____	e.  _____	f.  _____

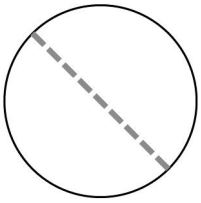
3. Color half of each shape.

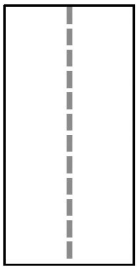
a. 

b. 

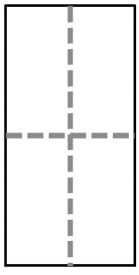
c. 

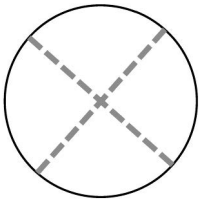
d. 

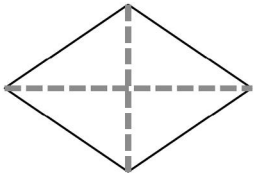
e. 

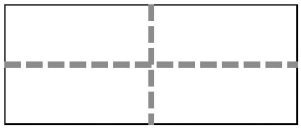
f. 

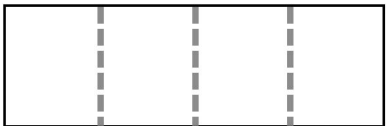
4. Color 1 fourth of each shape.

a. 

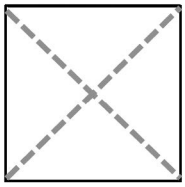
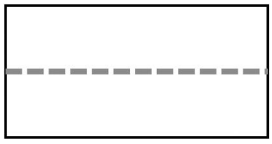
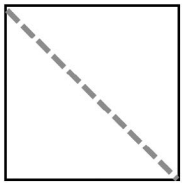
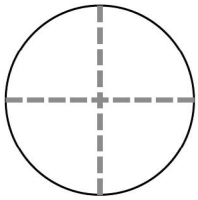
b. 

c. 

d. 

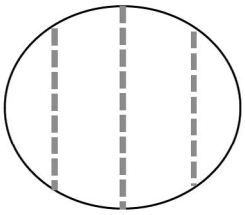
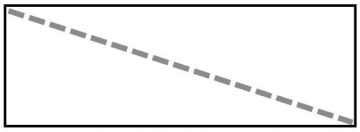
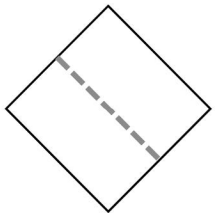
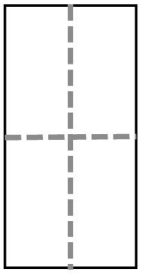
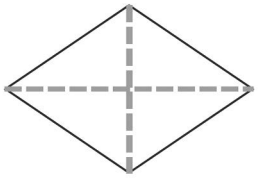
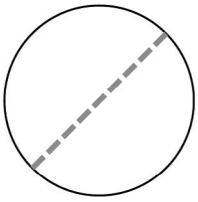
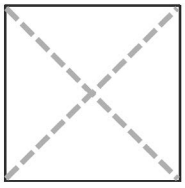
e. 

Name _____ Date _____

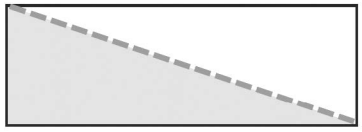
Color 1 fourth of this square. 	Color half of this rectangle. 
Color half of this square. 	Color a quarter of this circle. 

Name _____ Date _____

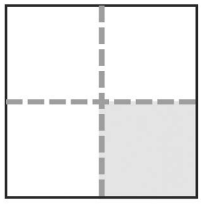
1. Circle the correct word(s) to tell how each shape is divided.

a.  equal parts unequal parts	b.  equal parts unequal parts
c.  halves fourths	d.  halves quarters
e.  halves quarters	f.  fourths halves
g.  quarters halves	h.  halves fourths

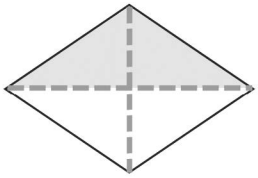
2. What part of the shape is shaded? Circle the correct answer.

a. 

1 half 1 quarter

b. 

1 half 1 quarter

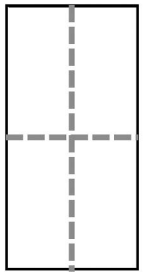
c. 

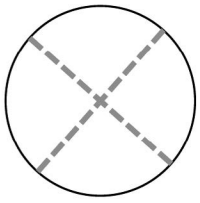
1 half 1 quarter

d. 

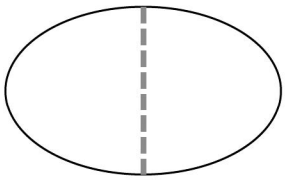
1 half 1 quarter

3. Color 1 quarter of each shape.





4. Color 1 half of each shape.



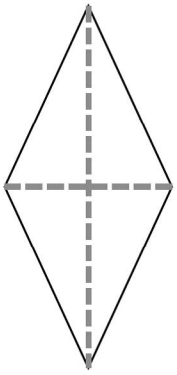


Image 1

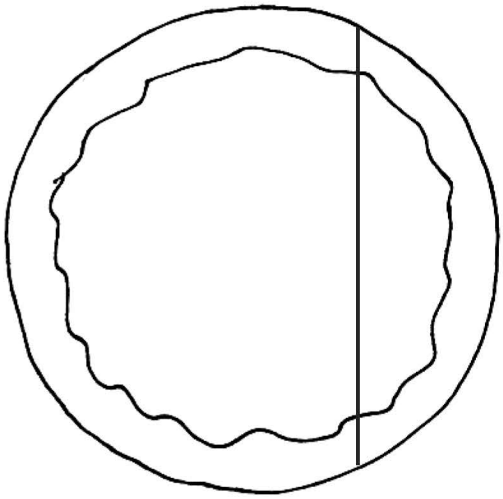


Image 2

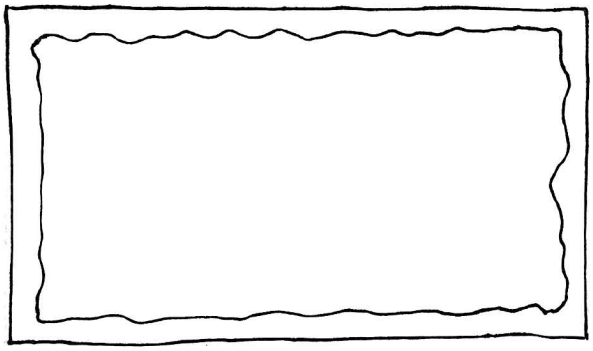
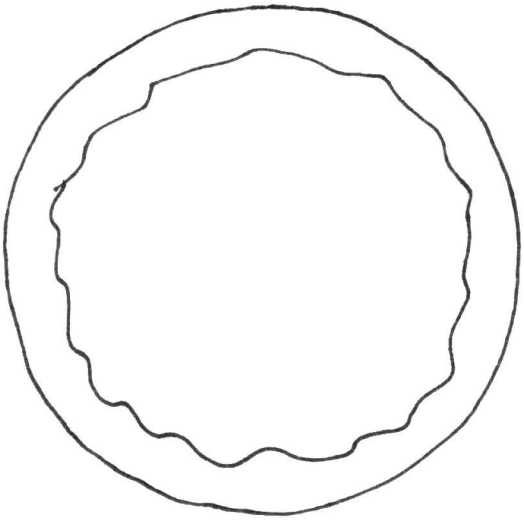
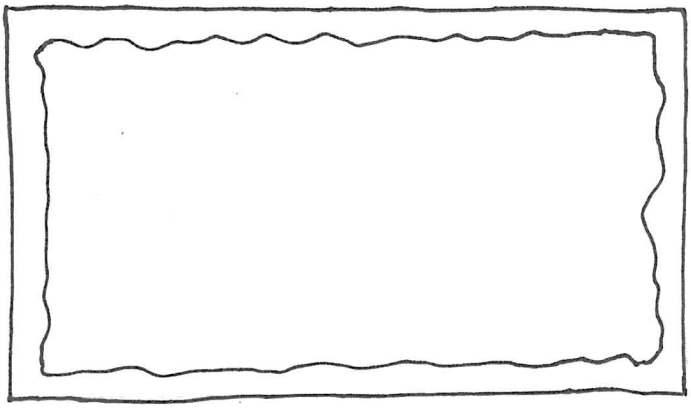


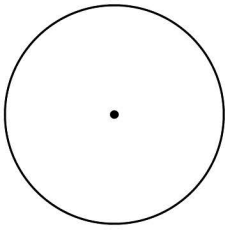
Image 3

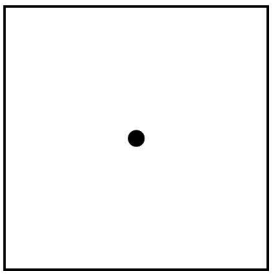
Image 4

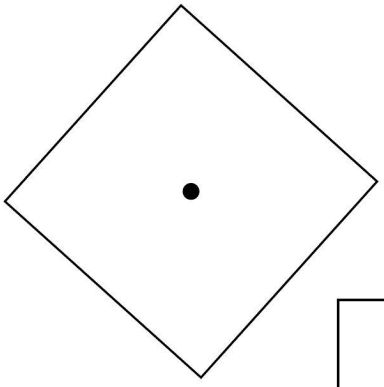
example images

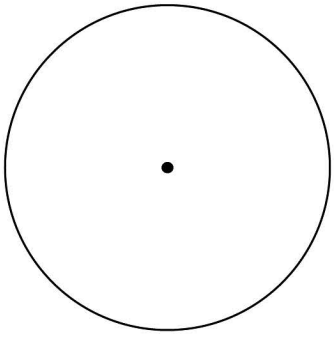


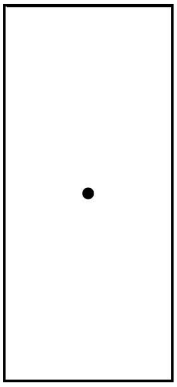


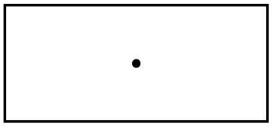


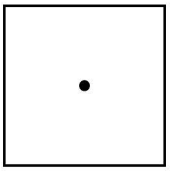


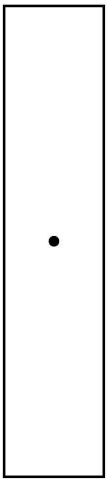












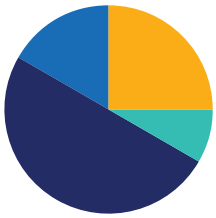
circles and rectangles

Lesson 12

Objective: Partition shapes and identify halves and quarters of circles and rectangles.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (15 minutes)

- Grade 1 Fluency Sprint **1.3D** (10 minutes)
- Make It Equal: Addition Expressions **1.5E** (5 minutes)

Grade 1 Fluency Sprint (10 minutes)

Materials: (S) Fluency Sprint (Lesson 1 Fluency Sprint)

Choose an appropriate Sprint based on the needs of the class. If the majority of students completed the first three quadrants on the previous Sprint, move to the next Sprint listed in the sequence provided below (Fluency Sprint List). If many students are not making it to the third quadrant, consider repeating the same Sprint. As students work, pay attention to their strategies and the number of problems they answer to consider for future Sprint administration.

Fluency Sprint List:

- Addition Sprint 1 (Targets addition and missing addends.)
- Addition Sprint 2 (Targets the most challenging addition within 10.)
- Subtraction Sprint (Targets subtraction.)
- Fluency Sprint: Totals of 5, 6, and 7 (Develops understanding of the relationship between addition and subtraction.)
- Fluency Sprint: Totals of 8, 9, and 10 (Develops understanding of the relationship between addition and subtraction.)

Make It Equal: Addition Expressions (5 minutes)

Materials: (S) Numeral cards (Lesson 1 Fluency Template), one "=" card, two "+" cards

Note: This activity builds fluency with Grade 1's addition facts and promotes an understanding of equality. The suggested sets move from simple to complex, so students can progress through them at their own rate.

Assign students partners of equal ability. Students arrange numeral cards from 0 to 10, including the extra 5. Place the "=" card between partners. Write or project the suggested sets. Partners take the numeral cards that match the numbers written to make two equivalent expressions (e.g., 10 + 0 = 5 + 5).

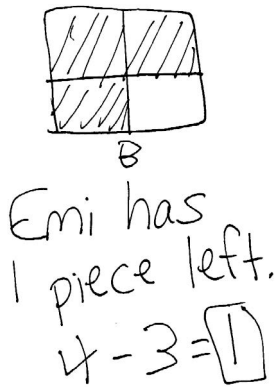
Suggested sets: a) 10, 0, 5, 5 b) 9, 8, 2, 1 c) 3, 6, 4, 7 d) 1, 2, 6, 5
e) 1, 2, 5, 4 f) 3, 5, 4, 2 g) 2, 3, 5, 6 h) 3, 4, 5, 6
i) 4, 5, 9, 10 j) 9, 3, 2, 8 k) 8, 5, 9, 4 l) 5, 6, 8, 7

Application Problem (5 minutes)

Emi cut a square brownie into fourths. Draw a picture of the brownie. Emi gave away 3 parts of the brownie. How many pieces does she have left?

Extension: What part, or fraction, of the whole brownie is left?

Note: Today's Application Problem provides students with the opportunity to apply the terminology of *fourths*. Students solve the relatively familiar *take away with result unknown* problem type using fractions as a type of unit.



Concept Development (30 minutes)

Materials: (T) Chart paper, 2 pieces of blank paper of the same size (preferably different colors), document camera (S) Pairs of shapes (Template), personal white board

Gather students in the meeting area with the pairs of shapes template inserted into their personal white boards.

T: Partner A, draw one line to cut your pizza into halves.
T: Partner B, draw two lines to cut your pizza into quarters.
T: Who has more slices?
S: Partner B has more slices. → Partner B has four slices; Partner A only has two slices.
T: Partner A, color one slice of your pizza. Show me your slice.
T: Partner B, color one slice of your pizza. Show me your slice.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

For kinesthetic learners, it may be beneficial to provide two pieces of blank paper to student partners and have students cut one fourth from one paper and one half from another paper along with the teacher.

T: Partners, put your half and your quarter next to each other.

T: Point to the piece of pizza that is larger. Whose piece is larger?

S: Partner A's.

T: Now, look at your whole pizza. Who has a larger number of slices?

S: Partner B has more slices. → Partner B has four slices of pizza. Partner A only has two slices of pizza.

T: Do you want one half of a yummy pizza or one quarter of a yummy pizza? Discuss this with your partner. Explain your choice. (Listen as students share their thinking, and then repeat the question before having students answer.)

S: I want one half of the pizza because a half is larger than one quarter of the pizza. → To get one quarter of the pizza, you have to cut the two halves of the pizza in half again. That's a lot smaller. I would want one half of the pizza. → You need two quarters of the pizza to have the same amount as one half of the pizza.

Draw two circles of equal size on the board. Invite a student volunteer to draw a line to cut the first circle into two halves. Ask the student to color in one half. Label as one half of the circle. Repeat the process with the other circle, coloring in and labeling one fourth of the circle.

T: Let's try that with the rectangles and see if that's still true. This time, I'll use paper to actually cut and compare. Which will be larger, one half of this piece of paper or one fourth of the paper? Talk with your partner, and explain your thinking. (Listen as students share their thinking.)

T: I'm going to fold the paper first to be sure I'm cutting equal parts. (Fold and cut the paper into halves. Ask a student volunteer to hold one half.)

T: How much of the paper is he holding?

S: One half of the paper!

T: Let's cut this same-size piece of paper into four equal parts now, so we can compare one fourth, or one quarter, of the paper with one half of the paper. This time, I'm going to fold the paper in half and then in half again to make four equal parts. (Fold and cut paper into fourths.)

T: Are all of my parts equal?

S: Yes!

T: How much of the paper is each piece?

S: One fourth of the paper! (Or, one quarter of the paper.)

T: (Ask a student volunteer to hold one fourth next to the student who is holding one half.) Which piece is larger, or greater, one half of the paper or one fourth of the paper?

S: One half of the paper!

T: How many pieces did we make when we cut the paper into halves?

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Some students, including some emergent bilingual students, may benefit from you writing *one fourth of paper* on each of the four equal pieces of paper and *one half of paper* on each of the two equal pieces of paper. These can be posted in the room as a reference, helping students visualize the concept as well as the relationship between concepts.

S: Two pieces.

T: How many pieces did we make when we cut the paper into quarters?

S: Four pieces.

T: So, when we cut the paper into two pieces to make halves, our pieces were this size. (Hold up halves.)

T: What happened to the size of our pieces when we cut the same size paper into four pieces to make quarters?

S: The parts became smaller.

T: Why are the pieces smaller now? Talk to your partner.

S: We cut the paper into more pieces. → We have more parts, but each part is smaller. → The piece of paper is the same size, so if you cut it up into more equal parts, the parts will be smaller.

T: On your personal white boards, you have pairs of the same shape. Draw lines and color in one half of the first shape, and then draw lines and color in one quarter, or one fourth, of the other shape. With your partner, see if one fourth is smaller than one half every time or just sometimes.

When most students have completed the task, have students show their personal white boards under the document camera and explain their findings.

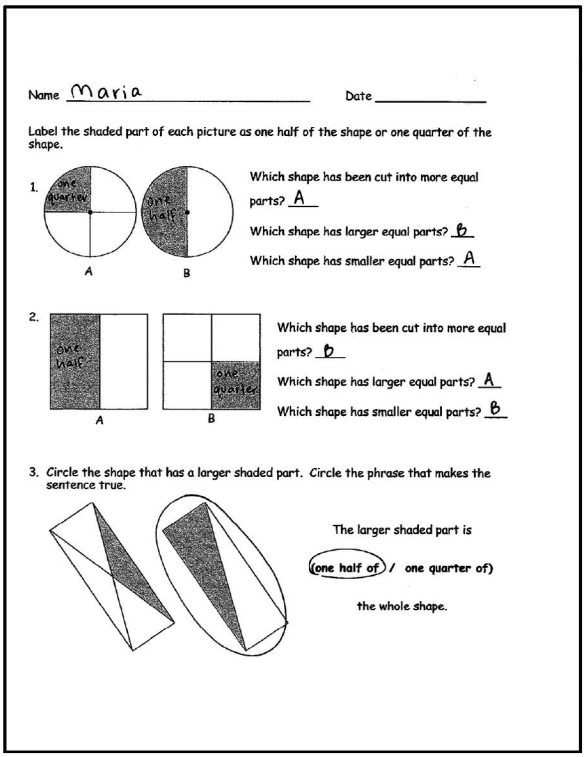
Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)

Lesson Objective: Partition shapes and identify halves and quarters of circles and rectangles.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.



Name Maria Date

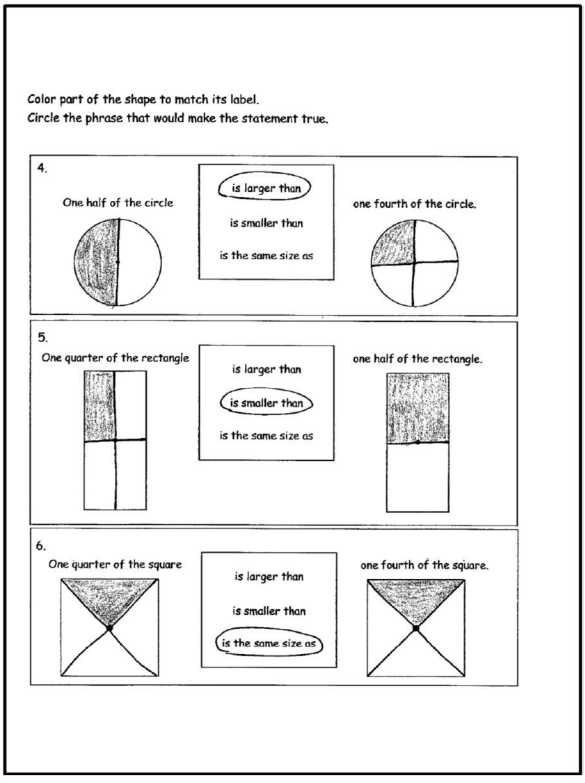
Label the shaded part of each picture as one half of the shape or one quarter of the shape.

1. A: one quarter; B: one half
Which shape has been cut into more equal parts? A
Which shape has larger equal parts? B
Which shape has smaller equal parts? A

2. A: one half; B: one quarter
Which shape has been cut into more equal parts? B
Which shape has larger equal parts? A
Which shape has smaller equal parts? B

3. Circle the shape that has a larger shaded part. Circle the phrase that makes the sentence true.

The larger shaded part is
(one half of) / one quarter of)
the whole shape.



Color part of the shape to match its label.
Circle the phrase that would make the statement true.

4. One half of the circle
(is larger than) / is smaller than / is the same size as
one fourth of the circle.

5. One quarter of the rectangle
is larger than / (is smaller than) / is the same size as
one half of the rectangle.

6. One quarter of the square
is larger than / is smaller than / (is the same size as)
one fourth of the square.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problem 1. Which shaded part is greater, or larger? Is this true for your other problems? Is one half of a shape always larger than one fourth of the same shape?
- If you want *more* pieces, should you cut your shape into halves or quarters? If you want *larger* pieces, should you cut your shape into halves or quarters? Explain your thinking.
- Why does cutting something into fourths make the equal parts smaller than cutting it into halves?
- Let's think about the first question I asked you today. Would you rather have one half of a yummy pizza or one quarter of a yummy pizza? Explain your thinking. (Choose students who may be better able to express accurate reasoning since participating in the lesson.)
- Look at the Application Problem. Share your drawing with your partner. Did you cut your brownie into quarters in the same way or in a different way? How did you make sure you created four equal parts?

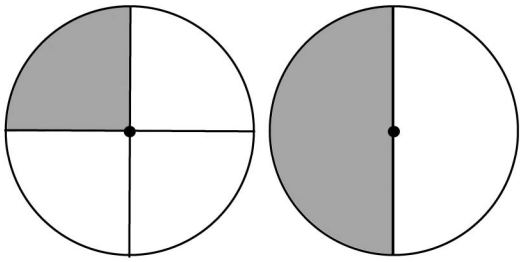
Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

Label the shaded part of each picture as one half of the shape or one quarter of the shape.

1.



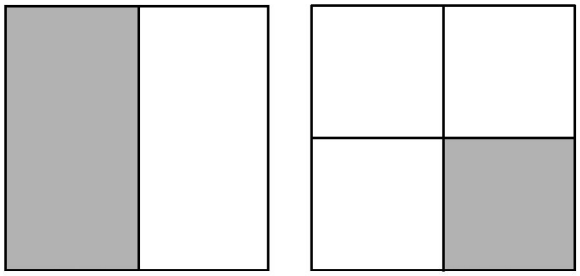
A B

Which shape has been cut into more equal parts? _____

Which shape has larger equal parts? ____

Which shape has smaller equal parts? ____

2.



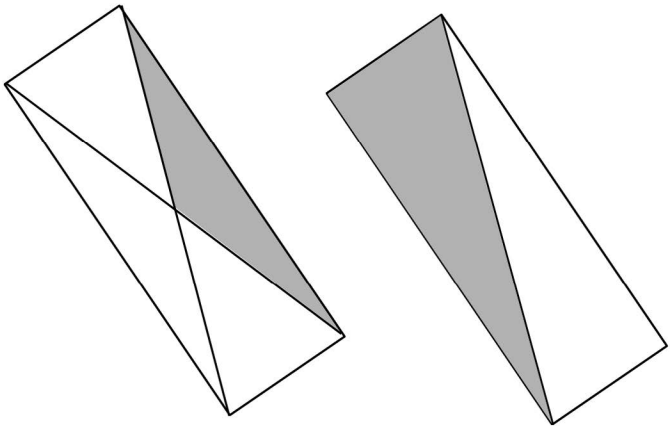
A B

Which shape has been cut into more equal parts? _____

Which shape has larger equal parts? ____

Which shape has smaller equal parts? ____

3. Circle the shape that has a larger shaded part. Circle the phrase that makes the sentence true.



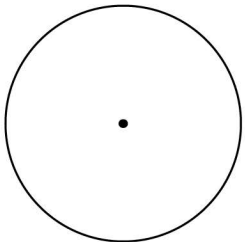
The larger shaded part is **(one half of / one quarter of)** the whole shape.

Color part of the shape to match its label.

Circle the phrase that would make the statement true.

4.

One half of the circle

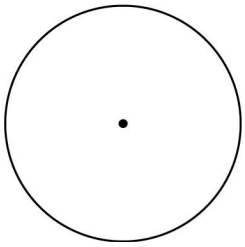


is larger than

is smaller than

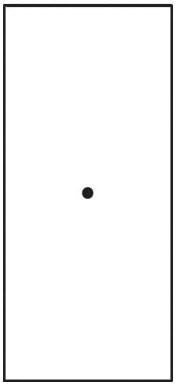
is the same size as

one fourth of the circle.



5.

One quarter of the rectangle

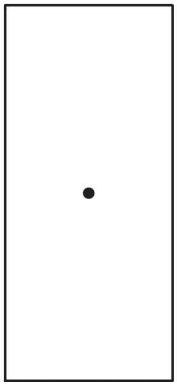


is larger than

is smaller than

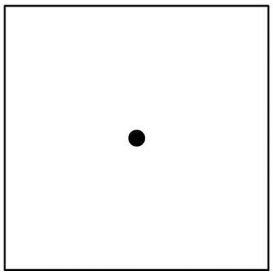
is the same size as

one half of the rectangle.



6.

One quarter of the square

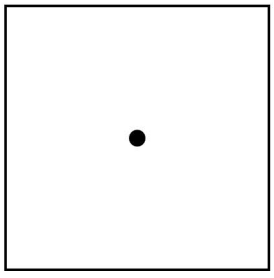


is larger than

is smaller than

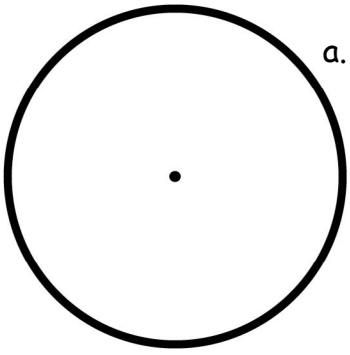
is the same size as

one fourth of the square.



Name _____ Date _____

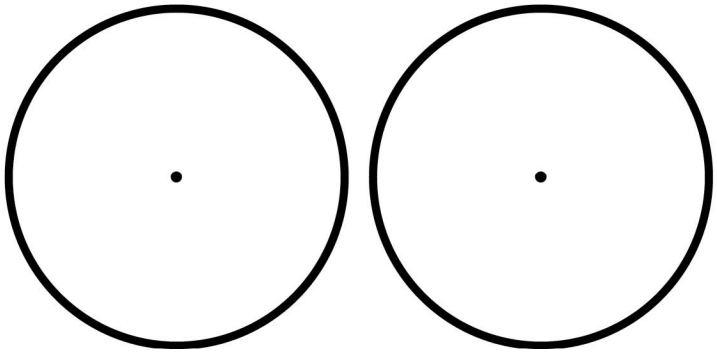
1. Circle **T** for true or **F** for false.



a. One fourth of the circle is larger than one half of the circle. **T F**

b. Cutting the circle into quarters gives you more pieces than cutting the circle into halves. **T F**

2. Explain your answers using the circles below.



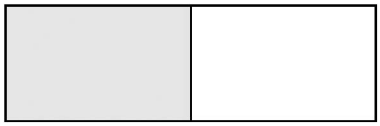
Name _____ Date _____

1. Label the shaded part of each picture as one half of the shape or one quarter of the shape.

A 

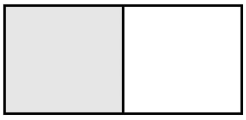
Which picture has been cut into more equal parts? ____

Which picture has larger equal parts? ____

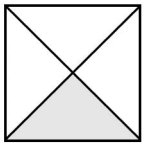
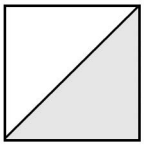
B 

Which picture has smaller equal parts? ____

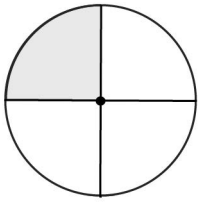
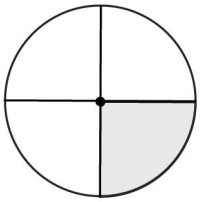
2. Write whether the shaded part of each shape is a half or a quarter.

a.  

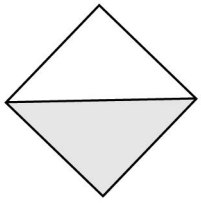
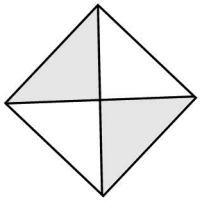
_____ _____

b.  

_____ _____

c.  

_____ _____

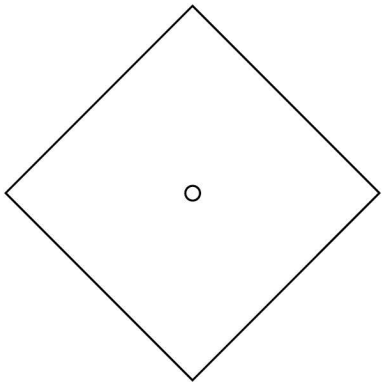
d.  

_____ _____

3. Color part of the shape to match its label. Circle the phrase that would make the statement true.

a.

One quarter of the square

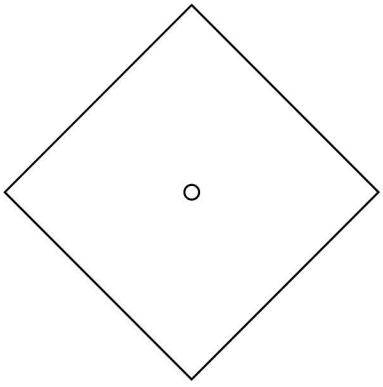


is larger than

is smaller than

is the same size as

one half of the square.



b.

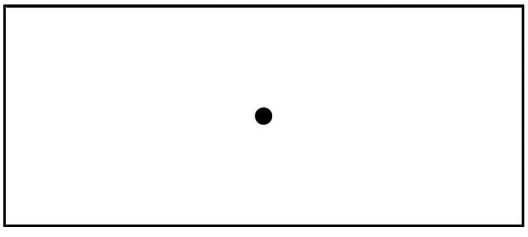
One quarter of the rectangle

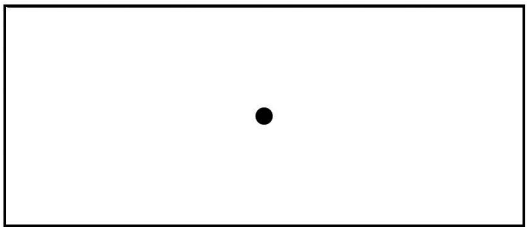
is larger than

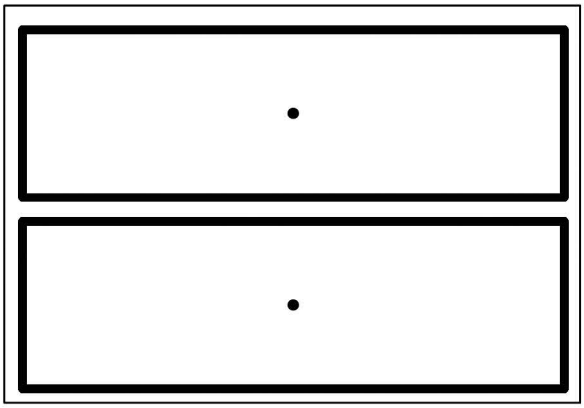
is smaller than

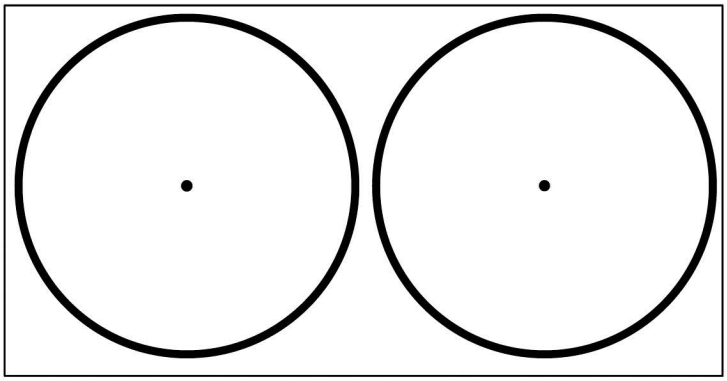
is the same size as

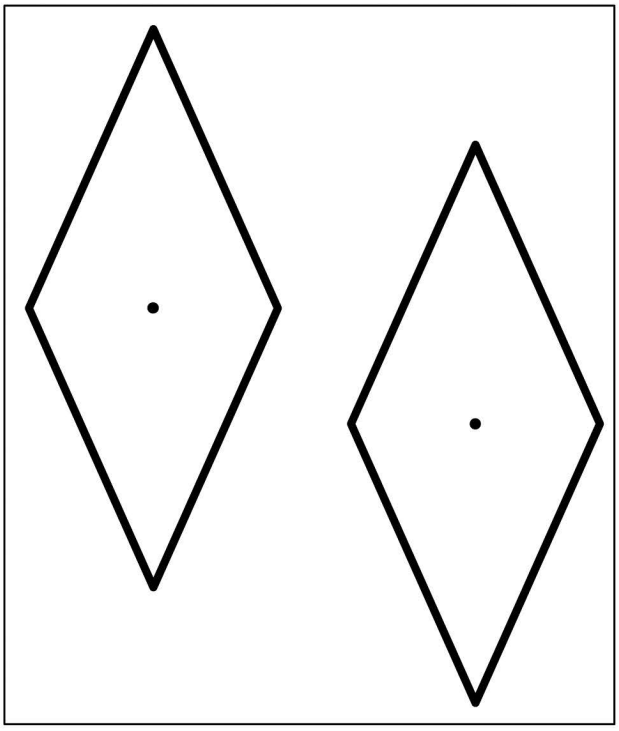
one fourth of the rectangle.

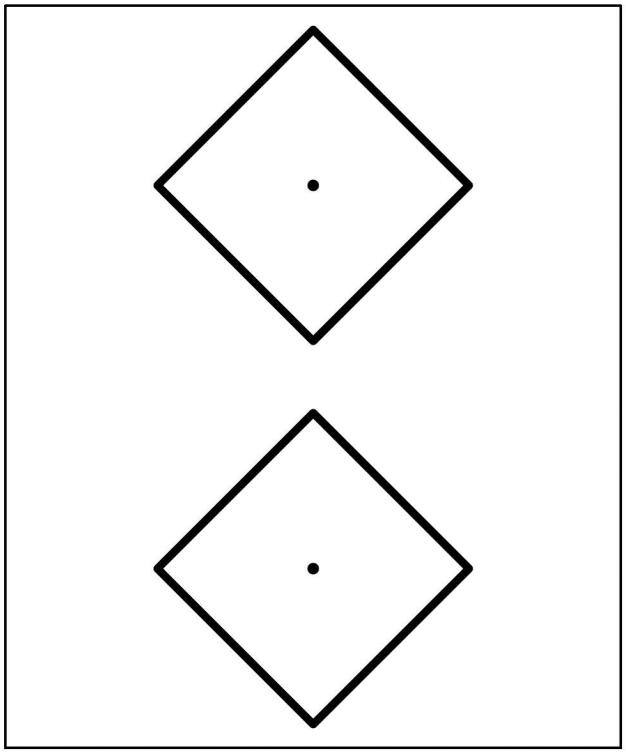












pairs of shapes

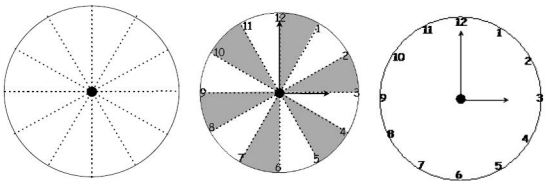
Topic D

Application of Halves to Tell Time

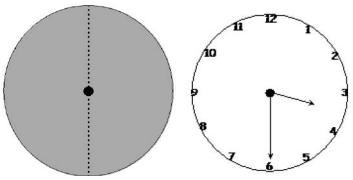
1.6G, 1.6H, 1.7E

Focus Standards:		1.6G	Partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words.
		1.6H	Identify examples and non-examples of halves and fourths.
		1.7E	Tell time to the hour and half hour using analog and digital clocks.
Instructional Days:		4	
Coherence	**-Links from:**	GK–M2	Two-Dimensional and Three-Dimensional Shapes
	-Links to:	G2–M8	Time, Shapes, and Fractions as Equal Parts of Shapes

Topic D builds on students' knowledge of parts of circles to tell time. In Lesson 13, students count and color the parts on a partitioned circle, forming the base of a paper clock. Relating this 12-section circle to the clock, students learn about the hour hand and tell time on both analog and digital clocks.



In Lesson 14, students recognize the two half-circles on the circular clock face and connect this understanding with the half hour. Counting by fives to 30, students see that there are two 30-minute parts that make 1 hour, helping them connect the time displayed on a digital clock with the time displayed on an analog clock. Students notice that the hour hand is halfway through, but still within, the hour section on the partitioned paper clock. They tell time to the half hour on both analog and digital clocks.



Students continue to practice these skills in Lesson 15. In Lesson 16, they extend these new skills to telling time to the hour and half hour using a variety of analog and digital clock faces.

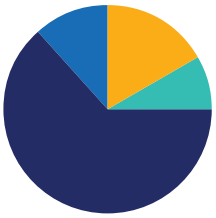
A Teaching Sequence Toward Proficiency in the Application of Halves to Tell Time	
Objective 1:	**Construct a paper clock by partitioning a circle and tell time to the hour. (Lesson 13)**
Objective 2:	**Recognize halves within a circular clock face and tell time to the half hour. (Lessons 14–16)**

Lesson 13

Objective: Construct a paper clock by partitioning a circle and tell time to the hour.

Suggested Lesson Structure

Fluency Practice	(10 minutes)
Application Problem	(5 minutes)
Concept Development	(38 minutes)
Student Debrief	(7 minutes)
Total Time	**(60 minutes)**



Fluency Practice (10 minutes)

- Grade 1 Fluency Sprint **1.3D** (10 minutes)

Grade 1 Fluency Sprint (10 minutes)

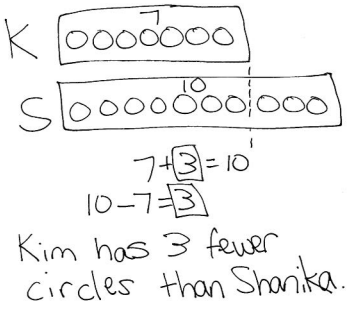
Materials: (S) Fluency Sprint (Lesson 1 Fluency Sprint)

Note: Based on the needs of the class, select a Sprint from Lesson 1. Consider the following options:

1. Re-administer the previous lesson's Sprint.
2. Administer the next Sprint in the sequence.
3. Differentiate. Administer two different Sprints. Simply have one group do a counting activity on the back of the Sprint, while the other group corrects the second Sprint.

Application Problem (5 minutes)

Kim drew 7 circles. Shanika drew 10 circles. How many fewer circles did Kim draw than Shanika?



Note: Students continue to practice the *compare with difference unknown* problem type in today's problem. Students who need more support with this problem type benefit from seeing and hearing their peers' solution strategies. After students describe their solutions, let the class know this is a *compare* problem. Invite students to share why, explaining what is being compared. Module 6 begins with direct instruction on these types of problems. Keep note of which types of problems students need more support with, as well as which problems they solve successfully. This can assist in targeting

instruction at the start of the next module. Circles were chosen as the context for the problem because of their connection to today's Concept Development.

Concept Development (38 minutes)

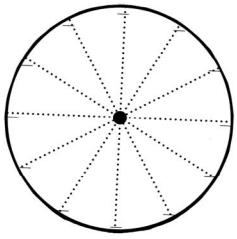
Materials: (T) Partitioned circle (Template 1), digital clock (Template 2) (S) Partitioned circle (Template 1) printed on cardstock, scissors, pencil, yellow crayon, orange crayon, brad fastener, personal white board

Note: Before the lesson, cut off the bottom section of the partitioned circle templates so that clock hands can be distributed later in the lesson. (Precut the teacher's set of clock pieces for ease of use during the lesson.)

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Students who need more practice with fine-motor cutting skills would benefit from using a pre-cut circle. Have some ready for these students to use during the lesson.

Distribute the top section of the partitioned circle template, along with pencils and scissors, to students seated at desks or tables.

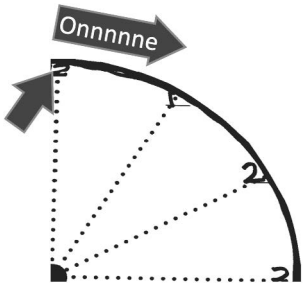


T: What shape is on this paper?

S: A circle!

T: Cut out the circle. Use careful eyes and careful fingers because we will be using this circle for the next three days. Only cut the dark, bold line that forms the circle. (Hold up the circle as a demonstration.)

S: (Cut out the circle.)

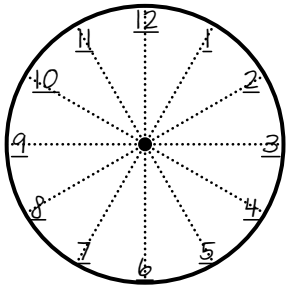


T: What do you notice about the dotted lines on the circle?

S: The lines start in the middle and go out to the edge. → There are 12 of them. → No, there are 6, and they all go through the dot in the middle. → They all look equal. The spaces between the lines are about the same size.

T: (Put the circle under the document camera.) Let's look at the spaces between the lines. Are the parts equal, or are all of the parts different sizes?

S: The parts are all equal.



T: Let's count the parts. Let's use our finger to trace the edge as we count. We'll stretch out the counting numbers as we trace the part. When we get to the next piece, we stop and get ready to say the next number. Let me show you.

T: (Trace the edge of the circle under the document camera as students do the same at their seats, while in unison counting the pieces: Oooooonnnnnne! Twooooooo! Etc.)

S/T: (Repeat together on students' clocks.)

T: How many equal parts do we have?

S: 12 parts!

T: We're going to color in each of the parts, but first, let's use our pencil to trace the edge. We'll trace the edge with brown, and just as we get to the end of the part, or section, we'll put in the number. Watch me. (Start at the edge of the circle, at one dotted line, and trace the edge with the brown colored pencil until reaching the next line. Then, write 1 just before the line, as shown in the image down and to the right. While drawing the line, stretch out saying the word *one,* "Oooooonnnnnne!") Now, you draw a brown line on the edge of your first section, or part, and when you finish saying, "Ooonnne!," write 1 just before the next line. (Point to the sample under the document camera.)

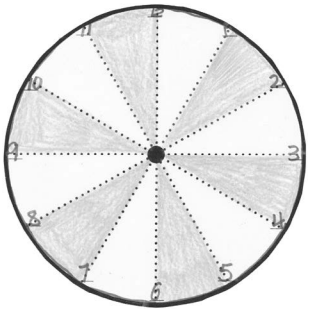
NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Students may have some difficulty writing the numbers correctly on their clocks. For students who are likely to turn the circle as they write, tape the circle to their desks.

S: (Trace the edge, and number each line as shown. Then, touch and count the parts once more after the numbers are labeled.)

T: Does this look like something you have seen before? Perhaps something we have in our classroom?

S: A clock!



T: Yes, we are making a clock!

T: How many equal parts are labeled on a clock?

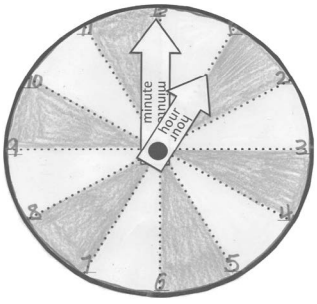
S: 12 parts!

T: Let's color in the 12 parts so we can see them better. Alternate between yellow and orange, so each part stands out. Watch as I start the first one. (Color the section between 12 and 1 in yellow, as represented to the right by the lighter shaded section. Then, color the section between 1 and 2 in orange, as represented by the darker shaded section.)

S: (Color the sections.)

T: Look at the clock in our classroom. What else does it have that we need to add to our clocks?

S: Those black things. → There's a red one, too.



T: Those are called clock hands. The red hand is called a second hand, but we are only going to add the black hands for now. The short one is called the **hour hand**, and the longer hand is called the **minute hand**.

T: (Show the paper hands to the class.) You will cut out your hour hand and minute hand, and push a brad fastener through the dots in each of the three pieces so that the hands are attached to the clock. (Demonstrate and then distribute the paper clock hands.)

S: (Complete the process of making the paper clocks. Position both clock hands pointing toward the 12.)

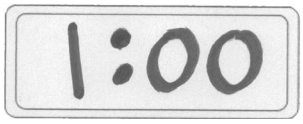
T: (Show the clock.) This is 12 **o'clock**. At midnight, or 12 o'clock, every night, we begin a new day.

T: As each minute goes by, both hands of the clock move. When the minute hand gets back to the top, and the hour hand reaches the next number, it means we just completed a full hour. (Position the clock hands so that they are set at 1:00.) We can look at the hour hand to tell us which hour we have completed in the new day. This clock's hour hand is now at...?

S: 1.

T: When we get through a full hour, but no extra minutes have passed, we say "o'clock" at the end. What time does this clock read?

S: 1 o'clock!



T: (Show *1:00* using the digital clock template under the document camera.) This is how we see 1 o'clock on a **digital clock**, the kind of electronic clock you see on a microwave, an oven, a cell phone, or a computer. We see the hour first (point to the 1). No extra minutes have passed (point to the zeros).

T: (Position the clock hands so that they are set to 3:00.) What time is this?

S: 3 o'clock!

T: (Show 3:00 using the digital clock template under the document camera.) Three (point to the 3 on the digital clock) o'clock (point to the two zeros).

T: Move the hands of your clock so that it says 11 o'clock. (Wait as students adjust clock hands.)

T: Which hand did you move? The hour hand or the minute hand?

S: The hour hand.

T: To what number is the hour hand pointing?

S: 11.

T: To what number is the minute hand still pointing?

S: 12.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Some students, including some emergent bilingual students, may benefit from brainstorming examples of the terms *minutes* and *hours* using familiar activities. For example, tell students walking to the cafeteria and back takes 2 minutes, and math class lasts about 1 hour.

T: Great job! What do you think the digital clock looks like when it reads 11 o'clock?

S: 11, 0, 0.

T: (Show 11:00, using the digital clock template under the document camera.) That's correct!

T: With your partner, choose a time to make on your paper clock by moving just your hour hand. Then, on your personal white board, write the same time the way you would see it on a digital clock.

As students work with a partner, circulate and support student understanding as needed.

Note: The clocks can be collected and redistributed each day during Topic D lessons. Another clock face with numbers already included is provided in Lesson 14 for any students who need a new clock for the upcoming lessons. Alternatively, commercially produced student clocks may be used for Lessons 14–16.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (7 minutes)

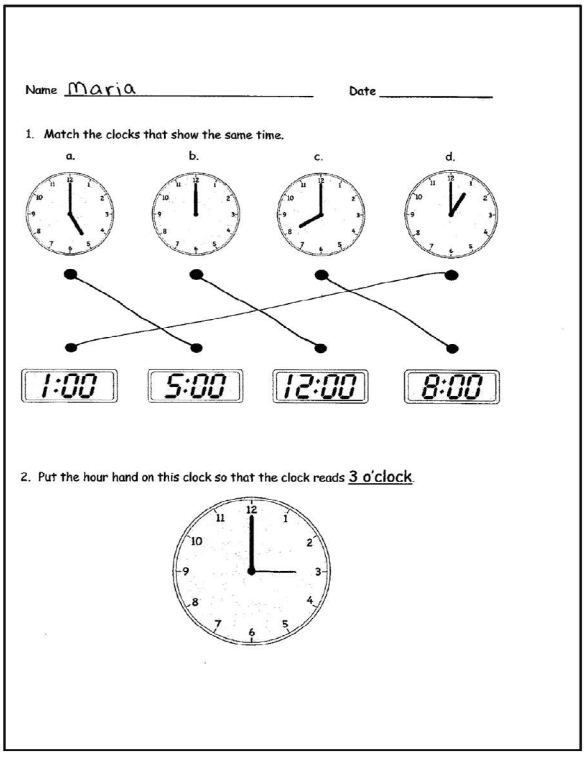
Lesson Objective: Construct a paper clock by partitioning a circle and tell time to the hour.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problem 2. Where did you put the hour hand to show 3 **o'clock**? Is the placement of the hour hand just before, just after, or straight toward the 3? How does your hour hand look different from the minute hand?
- Look at Problem 3. Which times were the simplest for you to read? Why? Which time was the trickiest for you to read? What was tricky about it?
- What is the same about all of the times on your Problem Set? When a new hour has started, and no new minutes have passed since the hour started, which number will the minute hand be pointing toward?
- Besides our classroom, where else have you seen a clock, including a **digital clock**?
- Name the parts of the clock we learned about today. (**Hour hand, minute hand**.)
- What is your favorite fluency activity and why? How does that activity help you?

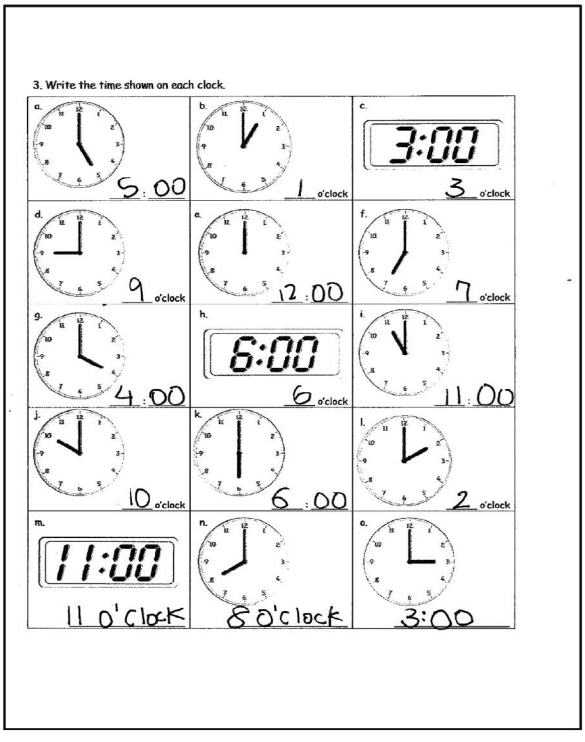

Name Maria Date

1. Match the clocks that show the same time.

a. b. c. d.

1:00 5:00 12:00 8:00

2. Put the hour hand on this clock so that the clock reads 3 o'clock.


3. Write the time shown on each clock.

a. 5:00 b. 1 o'clock c. 3:00 3 o'clock

d. 9 o'clock e. 12:00 f. 7 o'clock

g. 4:00 h. 6:00 6 o'clock i. 11:00

j. 10 o'clock k. 6:00 l. 2 o'clock

m. 11:00 11 o'clock n. 8 o'clock o. 3:00

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

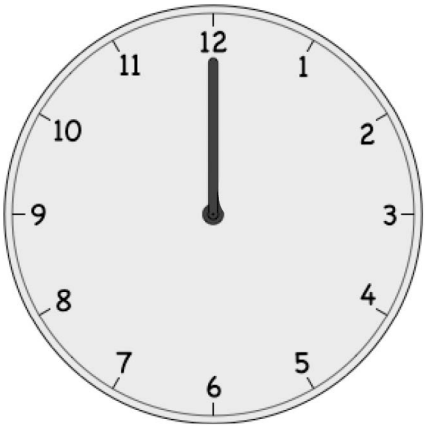
Name _____ Date _____

1. Match the clocks that show the same time.

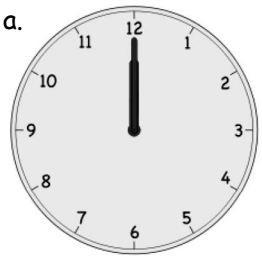
a. b. c. d.



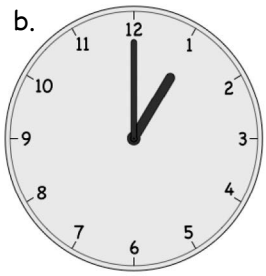

2. Put the hour hand on this clock so that the clock reads 3 o'clock.



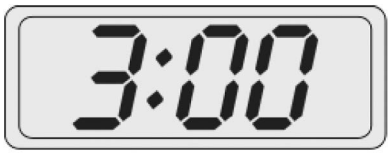
3. Write the time shown on each clock.

a. 

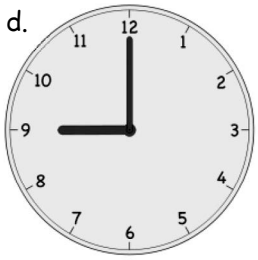
_____ : _____

b. 

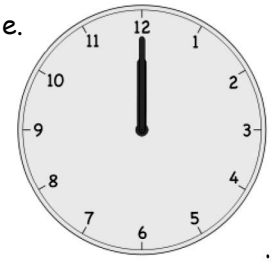
_____ o'clock

c. 

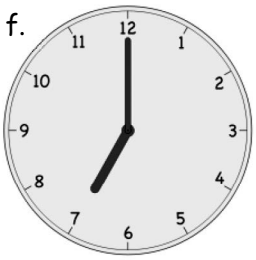
_____ o'clock

d. 

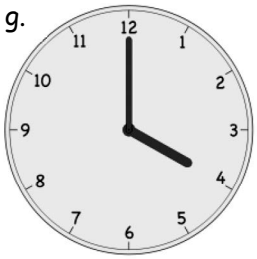
_____ o'clock

e. 

_____ : _____

f. 

_____ o'clock

g. 

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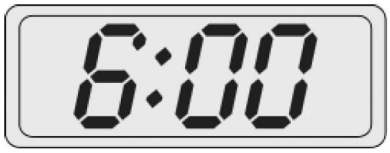
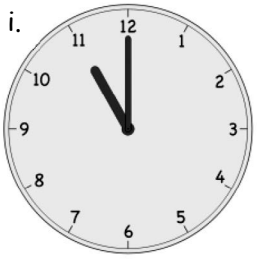
h. 

_____ o'clock

i. 

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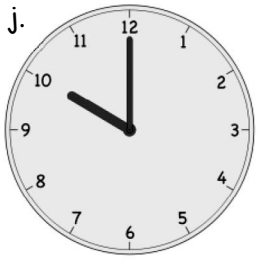
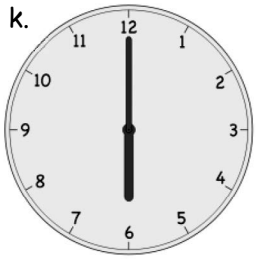
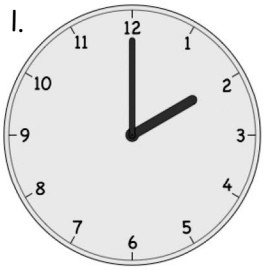
j. 

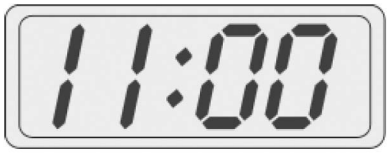
_____ o'clock

k. 

_____ : _____

l. 

_____ o'clock

m. 

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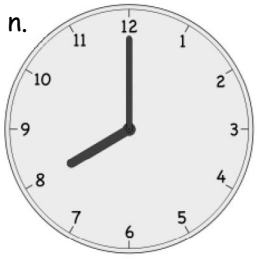
n. 

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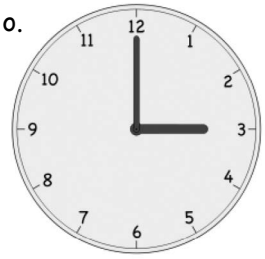
o. 

_____

Name _____ Date _____

Write the time shown on each clock.

1.

_____

2.

_____

3.

_____

4.

_____

Name _____ Date _____

1. Match each clock to the time it shows.

a. 

4 o'clock

b. 

7 o'clock

c. 

11 o'clock

d. 

10 o'clock

e. 

3 o'clock

f. 

2 o'clock

2. Put the hour hand on the clock so that the clock matches the time. Then, write the time on the line.

a. 

6 o'clock

6:00

b. 

9 o'clock

_____

c. 

12 o'clock

_____

d. 

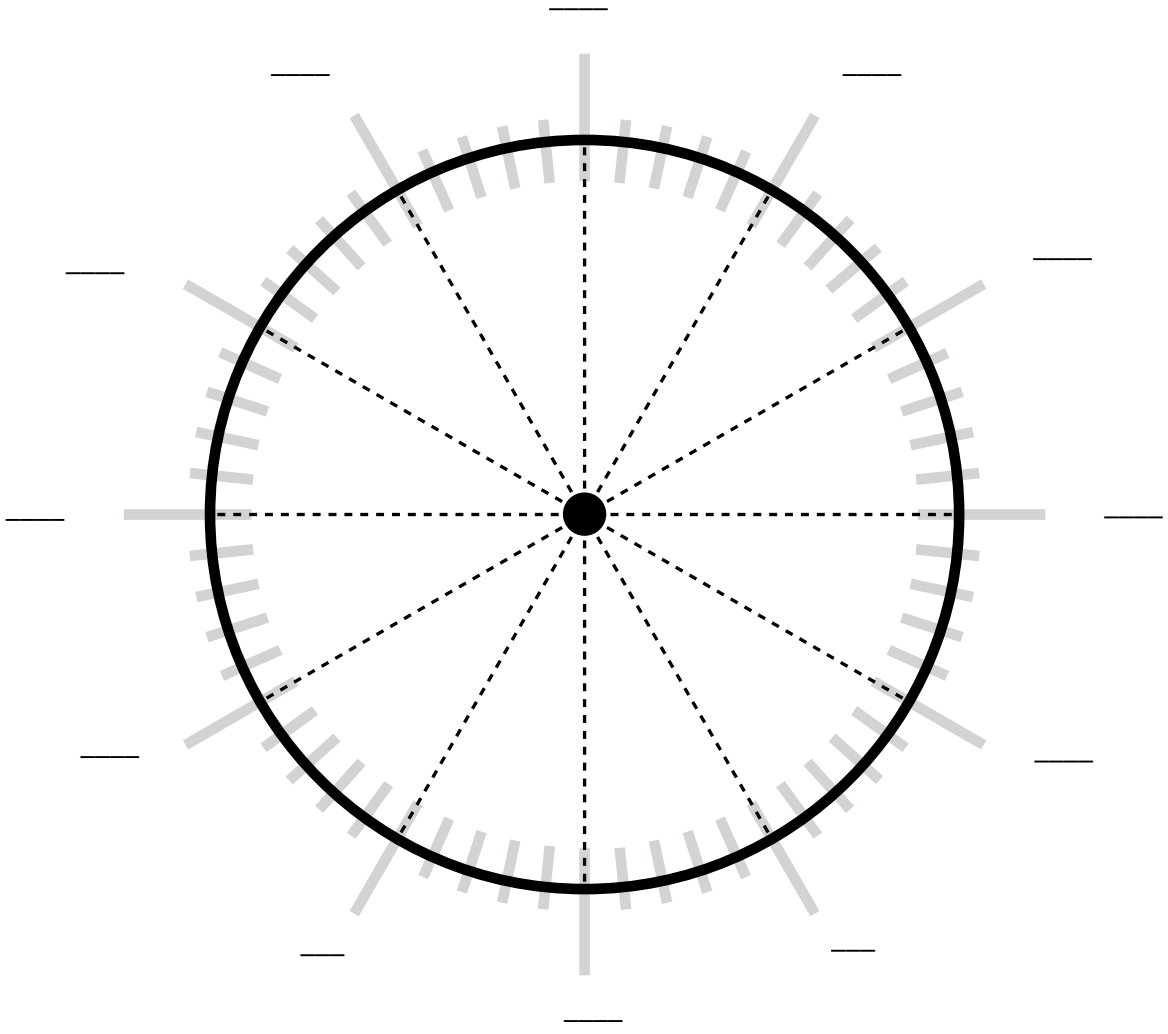
7 o'clock

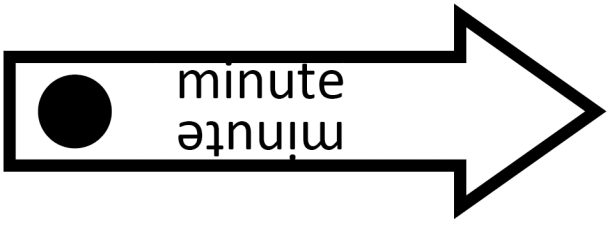
_____

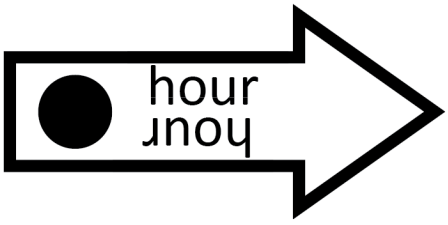
e. 

1 o'clock

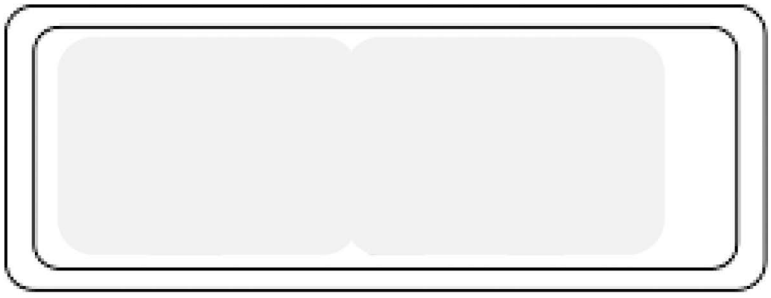
_____

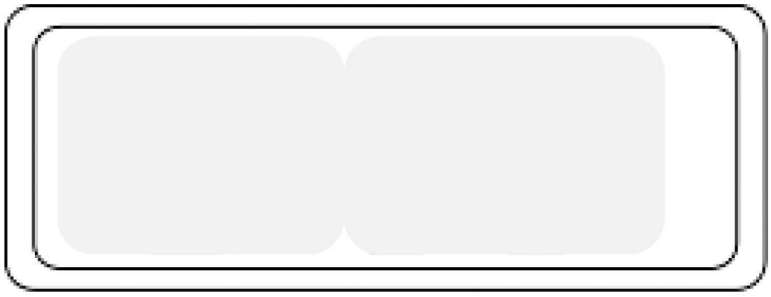


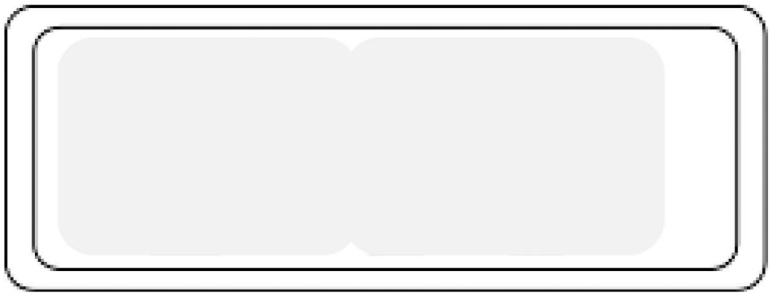




partitioned circle







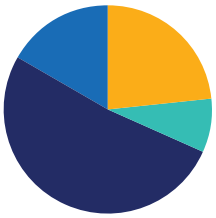
digital clock

Lesson 14

Objective: Recognize halves within a circular clock face and tell time to the half hour.

Suggested Lesson Structure

Fluency Practice	(14 minutes)
Application Problem	(5 minutes)
Concept Development	(31 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (14 minutes)

- Fluency Differentiated Practice Sets **1.3D** (5 minutes)
- Happy Counting **1.5A, 1.5B** (2 minutes)
- Think Count **1.5A, 1.5B** (2 minutes)
- Take from Ten Subtraction with Partners **1.3D** (5 minutes)

Fluency Differentiated Practice Sets (5 minutes)

Materials: (S) Fluency Practice Sets (Lesson 6 Fluency Practice Sets)

Note: Give the appropriate Practice Set to each student. Students who completed all of the questions correctly on their most recent Practice Set should be given the next level of difficulty. All other students should try to improve their scores on their current levels.

Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for early finishers, or tell them to practice make ten addition or subtraction on the back of their papers. Collect and correct any Practice Set completed within the allotted time.

Happy Counting (2 minutes)

Note: In the next module, students learn addition and subtraction within 100 and extend their counting and number writing skills to 120. Give students practice counting by ones and tens within 100 to prepare them for Module 6. When Happy Counting by ones, spend more time changing directions where changes in tens occur, which is typically more challenging. Happy Count by ones the regular way and the Say Ten way between 40 and 100. Then, Happy Count by tens.

T: 

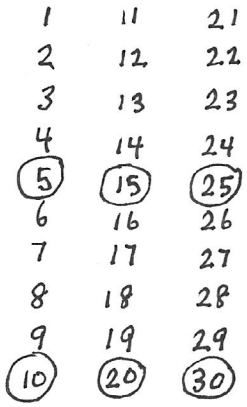
T/S: 88 89 90 (pause) 89 90 91 90 89 (etc.)

Think Count (2 minutes)

Materials: (T) Chart of numbers to 30 with multiples of 5 circled

Note: This activity prepares students for today's lesson, when they will be adding 5 minutes until they reach 30 minutes to connect half past the hour to 30 minutes past the hour.

Display the chart. Students think-count to 20, saying multiples of 5 aloud. Hide the chart, and let students try to remember the sequence, counting slowly by fives to 20. Repeat think-counting and slowly skip-counting first to 25 and then to 30.

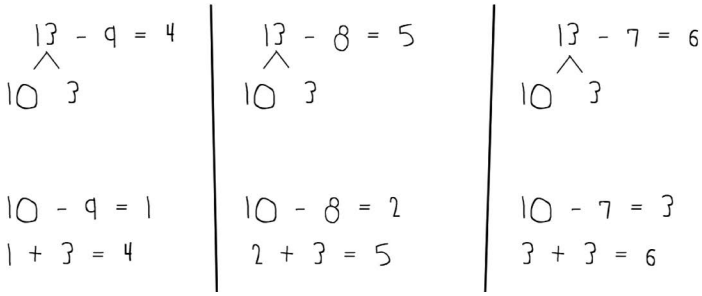


Take from Ten Subtraction with Partners (5 minutes)

Materials: (S) Personal white board

Note: This fluency activity reviews how to use the strategy of taking from ten when subtracting from teen numbers.

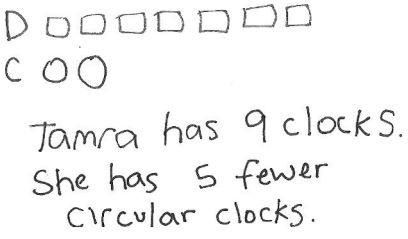
- Assign partners of equal ability.
- Partners choose a minuend for each other between 10 and 20.
- On their personal white boards, students subtract 9, 8, and 7 from their number. Remind students to write the two number sentences (e.g., to solve 13 – 8, they write 10 – 8 = 2, 2 + 3 = 5).
- Partners then exchange personal white boards and check each other's work.



Application Problem (5 minutes)

Tamra has 7 digital clocks and only 2 circular or analog clocks. How many fewer circular clocks does Tamra have than digital clocks? How many clocks does Tamra have altogether?

Note: Today's problem presents both a *join with result unknown* problem type and a *compare with difference unknown* problem type. Presenting both problems within the same context can support recognizing the differences between the two problem types.



Concept Development (31 minutes)

Materials: (T) Paper clock created during Lesson 13, document camera, personal white board, dry erase marker, large instructional clock with gears (if available)
(S) Paper clock created in Lesson 13 or commercial student clocks, personal white board

Note: For students who need a new paper clock, an additional paper clock is provided at the end of this lesson (Template). Students can be instructed to write the numbers on the clock face before the lesson begins.

Distribute materials to students seated at their tables or desks.

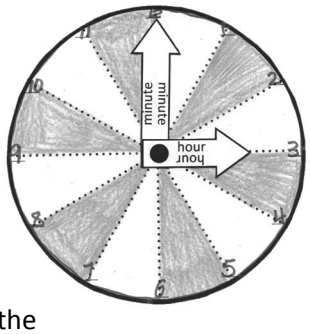
T: In the previous lesson, we read the time when we had whole hours with no extra minutes past the hour. Let's start at 12 o'clock. Where is the minute hand?

S: At the 12.

T: Where is the hour hand?

S: At the 12.

T: (Position the minute hand on the paper clock accordingly.) When the minute hand moves all the way around the clock, it has been 60 **minutes**, or 1 **hour**. When 1 hour passes, we will be at...?



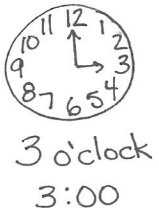
S: 1 o'clock!

T: Which clock hand do we move to show 1 o'clock?

S: The hour hand. It's the short one.

T: (Have students count chorally with the teacher, who moves from 1 o'clock, to 2 o'clock, and then 3 o'clock. Move the minute hand all the way around the clock for each hour to show that by moving the minute hand, the hour hand moves to the next hour when the minute hand makes it around the clock once.)

T: (Draw 3 o'clock, as shown to the right.) How would this look on a digital clock? (Have a student volunteer add the digital time, 3:00, as shown.)

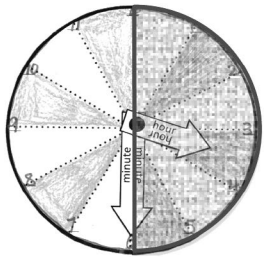


T: If we were halfway through the next hour, the hour hand would need to be halfway between 3 and...?

S: 4.

T: (Position the hour hand halfway between 3 and 4.)

T: Now, let's think about the minute hand. It would go halfway around the circle. Think about our half circles. Where would we need to stop the minute hand so that it would have traveled across the shape of a half of the circle? Talk with a partner. (Provide students time to discuss.)



T: (Insert the clock into the personal white board. Starting at the 12, begin to color over each partition of the clock.) Tell me when I have colored half of the clock. Think about the shape of a half circle.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

The choral counting activity combines the visual aspect of the moving clock hands with the verbal description of time. This multi-modal approach supports all students, including some emergent bilingual students. Consider students' visual needs when determining the appropriate clock for each student. Some students may benefit from large numbers. Other students may find large numbers challenging for identifying the space halfway between the numbers when positioning hands to show the half hour.

S: (When the 6 is reached...) STOP!

T: Which number is halfway around the clock?

S: The 6.

T: (Move the minute hand so that it points to the 6.) Yes, if the minute hand were halfway between one hour and another hour, it would be pointing to the 6. We call this time **half past** 3 because it is **half an hour** past 3 o'clock.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

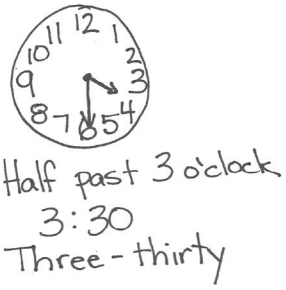
If most of the class is finding it challenging to count by fives, choose to use the hash marks on a commercial teacher clock or student clock, and count by ones to 30.

T: Let's see how many minutes are in this half of the hour. We can count each minute, using the little marks on the side of the clock, but it'll be faster to count by groups of 5 minutes, like we do when we whisper count. There are 5 minutes from one number to the next number. (Point to the number 12 on the clock, and then sweep a finger to the number 1 on the clock.)

T: Think about the whisper counting we practiced during Fluency Practice. Count with me, and use your pencil to write the number of minutes next to each dot as we go. (Move a finger along the edge of the clock while counting.) 5…10…15…20…25…30. When the minute hand gets to halfway around and lands on the 6, it has been…?

S: 30 minutes!

T: Another way to say half past 3 is 3:30 because it's 3 hours and 30 minutes since 12 o'clock, when we either started a new day or when we started the afternoon. On a digital clock, half past 3 would look like this. (Write 3:30 on paper. Write *half past 3* next to it.)



T: What time is this? (Point to 3:30.)

S: 3:30.

T: What's another way we can say that it's 3:30?

S: Half past 3.

T: Look at our two clocks. One clock shows 3 o'clock. The other clock shows half past 3, or 3:30. Compare them. What do you notice?

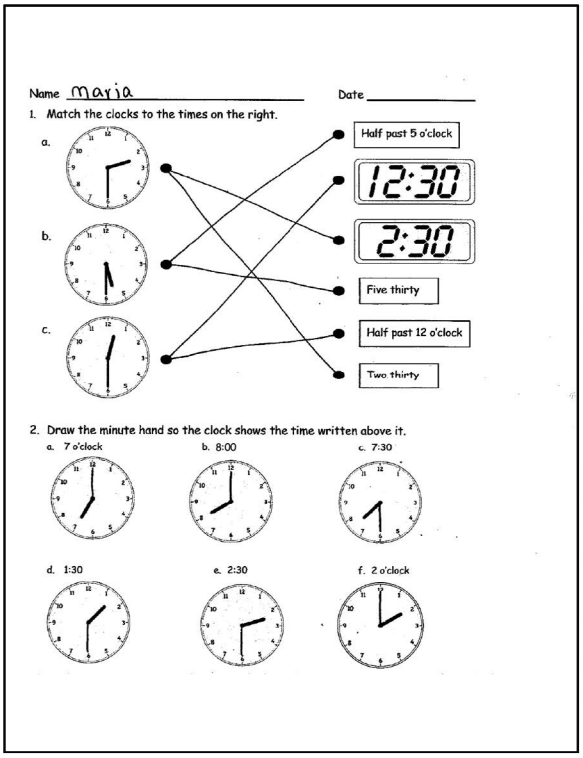
S: The clock on 3 o'clock has its minute hand on 12, and the clock at 3:30 has its minute hand at 6. → The hour hand is pointing directly to 3 on the clock that shows 3 o'clock. The hour hand is pointing between 3 and 4 on the clock that shows 3:30.

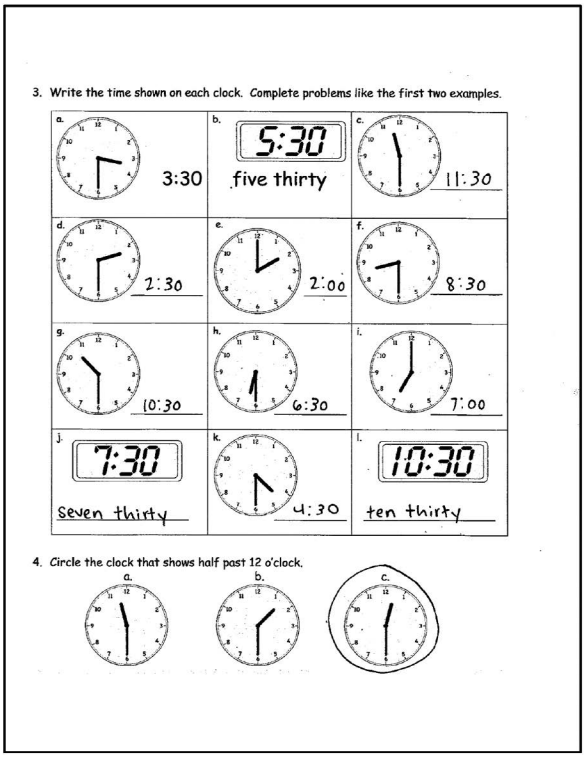
Repeat the process of naming a time and having students create the time on their student clocks and then writing the digital time on their personal white boards. Use the following suggested sequence:

- Half past 4
- 10:30
- Half past 11
- Half past 12
- 6:30

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.


Name Maria Date
1. Match the clocks to the times on the right.
a.
b.
c.
Half past 5 o'clock
12:30
2:30
Five thirty
Half past 12 o'clock
Two thirty
2. Draw the minute hand so the clock shows the time written above it.
a. 7 o'clock
b. 8:00
c. 7:30
d. 1:30
e. 2:30
f. 2 o'clock


3. Write the time shown on each clock. Complete problems like the first two examples.
a. 3:30
b. 5:30 five thirty
c. 11:30
d. 1:30
e. 2:00
f. 8:30
g. 10:30
h. 6:30
i. 7:00
j. 7:30 seven thirty
k. 4:30
l. 10:30 ten thirty
4. Circle the clock that shows half past 12 o'clock.
a.
b.
c.

Student Debrief (10 minutes)

Lesson Objective: Recognize halves within a circular clock face and tell time to the half hour.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problem 4. Which clock shows half past 12 o'clock? Explain your thinking. Remember to use *hour hand* and *minute hand* in your explanation.
- How many minutes are in half an hour? When it is **half past** seven, how many minutes have there been since 7 o'clock? (Extension: If there are 30 minutes in half an hour, how many minutes are in a whole hour?)
- (Write 7:30 on the board.) What are the two ways to say this time?
- When we go around a circle in this direction (motion in a clockwise path), we say we are going *clockwise.* How can knowing about how clocks work help us understand the direction of *clockwise?*
- Look at the Application Problem. What kinds of clocks do you have where you live? Compare the clocks where you live with Tamra's clocks. Who has more clocks? How many more clocks does that person have?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

1. Match the clocks to the times on the right.

a. 

b. 

c. 

- Half past 5 o'clock
- 12:30
- 2:30
- Five thirty
- Half past 12 o'clock
- Two thirty

2. Draw the minute hand so the clock shows the time written above it.

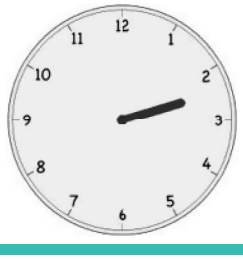
a. 7 o'clock

b. 8:00

c. 7:30

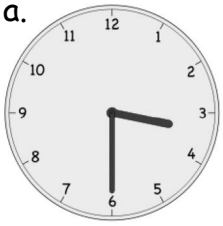
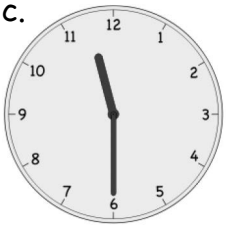
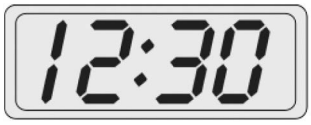
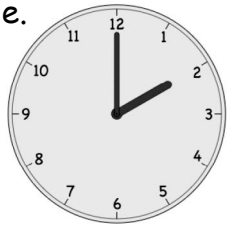
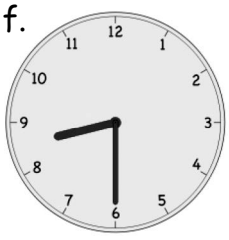
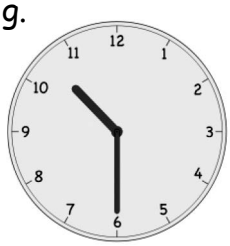
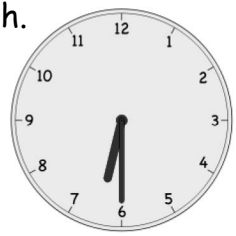
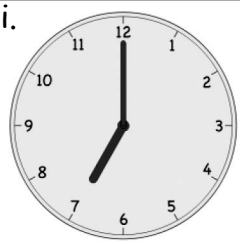
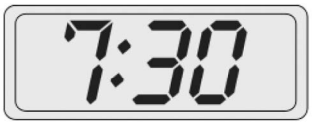
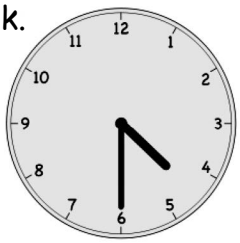
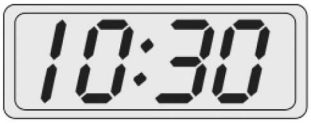
d. 1:30

e. 2:30



f. 2 o'clock

3. Write the time shown on each clock. Complete problems like the first two examples.

a.  3:30	b.  five thirty	c.  _____
d.  _____	e.  _____	f.  _____
g.  _____	h.  _____	i.  _____
j.  _____	k.  _____	l.  _____

4. Circle the clock that shows half past 12 o'clock.

a. 

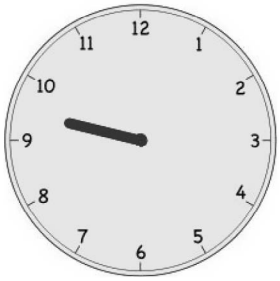
b. 

c. 

Name _____ Date _____

Draw the minute hand so the clock shows the time written above it.

1. 9:30



2. 3:30

3. Write the correct time on the line.

_____

Name _____ Date _____

Circle the correct clock.

1. Half past 2 o'clock

a.

b.

c.

2. Half past 10 o'clock

a.

b.

c.

3. 6 o'clock

a.

b.

c.

4. Half past 8 o'clock

a.

b.

c.

Write the time shown on each clock to tell about Lee's day.

5. 

Lee wakes up at _____.

6. 

He takes the bus to school at _____.

7. 

He has math at _____.

8. 

He eats lunch at _____.

9. 

He has basketball practice at _____.

10. 

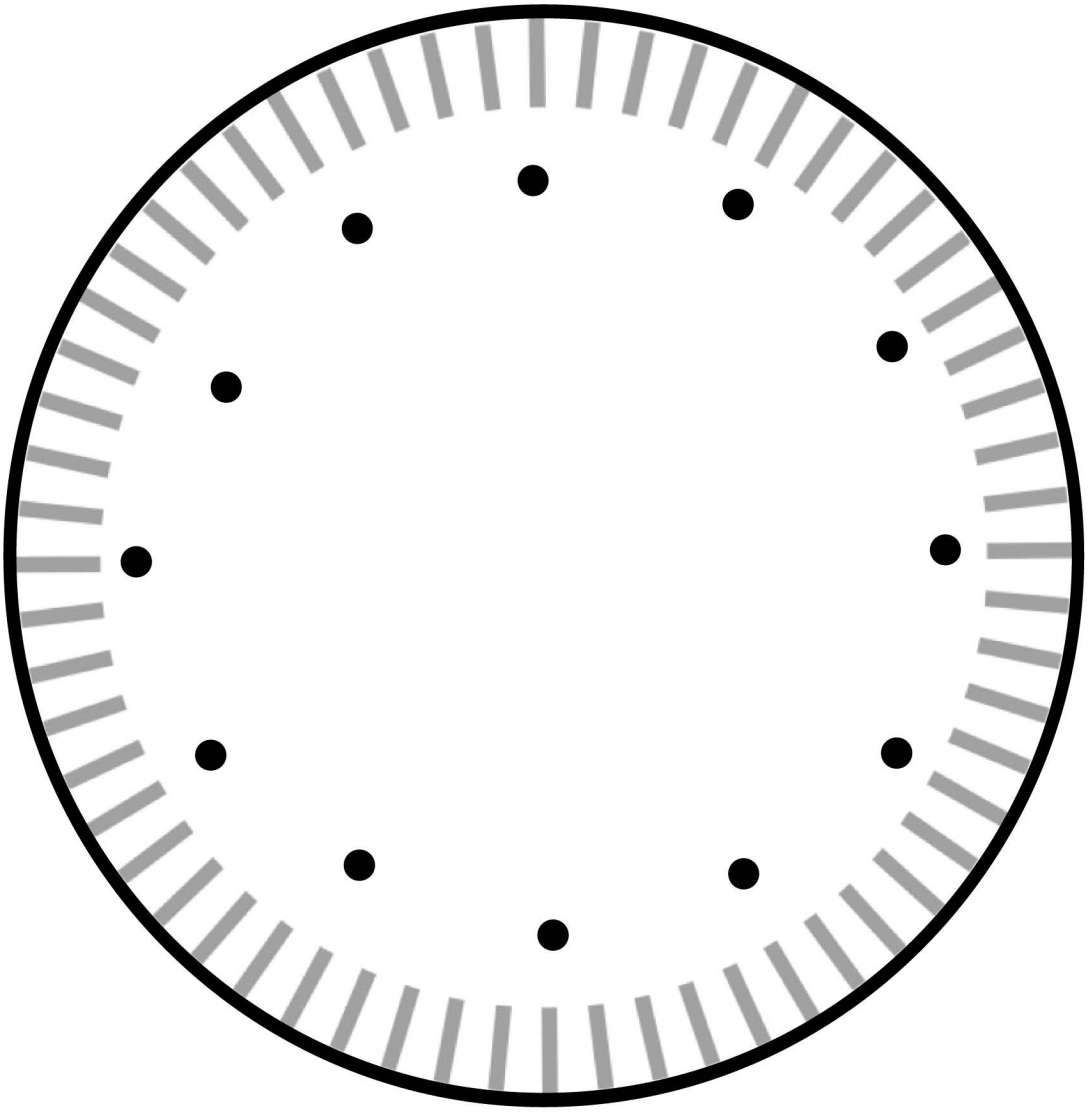
He does his homework at _____.

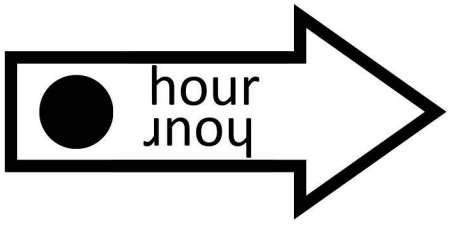
11. 

He eats dinner at _____.

12. 

He goes to bed at _____.





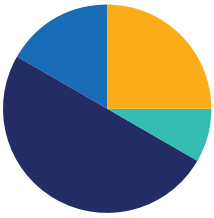
additional paper clock with numbers

Lesson 15

Objective: Recognize halves within a circular clock face and tell time to the half hour.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (15 minutes)

- Fluency Differentiated Practice Sets **1.3D** (5 minutes)
- Happy Counting **1.5A, 1.5B** (2 minutes)
- Analogous Addition and Subtraction **1.5G** (3 minutes)
- Take from Ten Subtraction with Partners **1.3D** (5 minutes)

Fluency Differentiated Practice Sets (5 minutes)

Materials: (S) Fluency Practice Sets (Lesson 6 Fluency Practice Sets)

Note: Give the appropriate Practice Set to each student. Help students become aware of their improvement. After students do today's Practice Sets, ask them to raise their hands if they tried a new level today or improved their score from the previous day.

Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for early finishers, or tell them to practice make ten addition or subtraction on the back of their papers. Collect and correct any Practice Set completed within the allotted time.

Happy Counting (2 minutes)

Note: This activity prepares students for Module 6 by providing practice counting by ones and tens within 100.

Repeat the activity from Lesson 14.

Analogous Addition and Subtraction (3 minutes)

Note: This activity practices Grade 1's fluency and reminds students to use their knowledge of sums and differences within 10 (e.g., 5 + 3 = 8) to solve analogous problems within 40 (e.g., 15 + 3 = 18, 25 + 3 = 28, and 35 + 3 = 38).

T: On my signal, say the equation with the answer. 6 + 2 = ____. (Pause. Snap.)
S: 6 + 2 = 8.
T: 16 + 2 = ____. (Pause. Snap.)
S: 16 + 2 = 18.

Continue with 26 + 2 and 36 + 2. Then repeat, beginning with other addition or subtraction sentences within 10.

Suggested sequence:

- 5 + 3, 15 + 3, 25 + 3, 35 + 3
- 5 + 4, 4 + 5, 14 + 5, 24 + 5
- 7 + 2, 2 + 7, 12 + 7, 32 + 7
- 6 – 3, 16 – 3, 26 – 3, 36 – 3
- 8 – 2, 18 – 2, 28 – 2, 38 – 2
- 9 – 3, 19 – 3, 29 – 3, 39 – 3

Take from Ten Subtraction with Partners (5 minutes)

Materials: (S) Personal white board

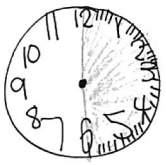
Note: This fluency activity reviews how to use the strategy of taking from ten when subtracting from teen numbers.

Repeat activity from Lesson 14.

Application Problem (5 minutes)

Shade the clock from the start of a new hour through half an hour. Explain why that is the same as 30 minutes.

Note: Before beginning today's Concept Development, students have the opportunity to demonstrate their understanding using words and pictures. Circulate, and notice the areas where students are using clear, precise language, as well as elements of their explanation that can use stronger or clearer language. Throughout today's Concept Development, take care to emphasize or extend the lesson around these areas.



Half an hour is halfway around the clock with the minute hand. There are 30 minutes in that half of the clock.

Concept Development (30 minutes)

Materials: (T) Instructional clock, paper with quarter of the page cut out to cover the minute hand (see Sequence C figure) (S) Student clock

This lesson is designed to support student understanding of telling time to the half hour. Below are four sequences of problems that can be used, from simple to complex:

- Sequence A reinforces time to the hour.
- Sequence B reinforces discriminating between time to the hour and the half hour.
- Sequence C focuses on positioning the hour hand when telling time to the half hour.
- Sequence D challenges students beyond the standard to apply their ability of telling time to the hour and half hour to story problems.

Choose the sequence that is most appropriate for students. If appropriate, only use part of a sequence.

Sequence A

T: Write the time that matches this clock. (Hold up a clock showing the following times.)
- 11:00
- 2:00
- 6:00

T: On your clock, show the following time. Then, write the time the way it would appear on a digital clock. (Say the following times.)
- 7:00
- 8 o'clock
- 12 o'clock
- 5:00

Sequence B

T: Write the time that matches this clock. (Hold up a clock showing the following times.)
- 7:00
- 12:30 (Ask for both ways to say this time.)
- 1:30 (Ask for both ways to say this time.)

T: On your clock, show the following time. Then, write the time the way it would appear on a digital clock. (Say the following times.)
- half past 8
- 9:00
- half past 9

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

While teaching, be sure to provide connections for students. Visit the school or local library to check out books about time to supplement learning during the last two lessons of the module.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

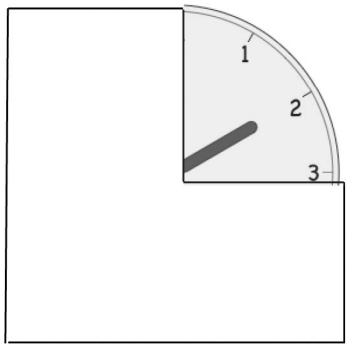
Some students, including some emergent bilingual learners, may benefit from having the following sentence frames about time to the hour and half hour posted in the classroom:

- Half past ____ o'clock
- ____ thirty
- To show ____o'clock, I placed the _____ hand on _____ and the ____ hand on _____.
- To show ____thirty, I placed the _____ hand on _____ and the ____ hand on _____.

- 11:00
- 10:30
- 7 o'clock
- 6:30

Sequence C

T: I'm going to cover the minute hand on this clock. Look closely at the hour hand to decide what time it is. Show the correct time on your clock, and write the time on your personal white board.
(For each time below, cover as much of the clock as possible while showing the hour hand. Place the hour hand directly on the given hour, or halfway between the two numbers, depending on the appropriate position for the given time.)



- 2:00
- 2:30 (Ask for both ways to say this time.)
- 4:00
- 4:30 (Ask for both ways to say this time.)
- 9:30 (Ask for both ways to say this time.)
- 7:30 (Ask for both ways to say this time.)
- 3:00

Sequence D

T: Listen to my story, and see if you can determine the time.

- Kim's dance class starts at 3 o'clock. The class lasts half an hour. What does the clock look like when the class ends? Show the time by using your paper clock and writing on your personal white board.
- When I left to buy groceries, the clock looked like this. (Show clock at 5:00.) It took me 1 hour to buy groceries and return. What time did the clock show when I got back? Use your paper clock and your personal white board to show the time.
- School begins at 8:30. We have lunch after 3 hours. What time do we have lunch? Use your paper clock and your personal white board to show the time.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Remember to provide challenging extensions for students who have demonstrated proficiency. Giving problems such as those in Sequence D allows students to think about elapsed time. After completing this sequence, these students can write their own elapsed time problems to provide another extension to their learning.

For each problem situation, invite students to share how they solved the problem and share the position of the hands on their clock and the time displayed on a digital clock.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)

Lesson Objective: Recognize halves within a circular clock face and tell time to the half hour.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

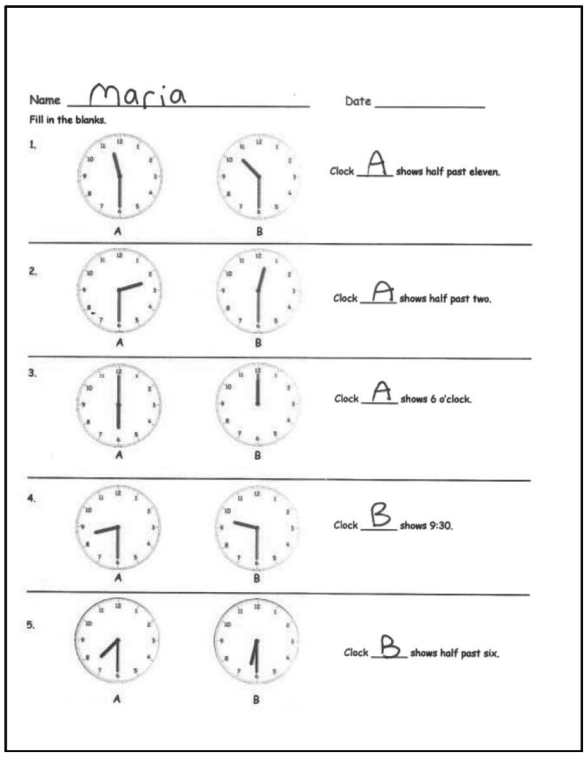
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

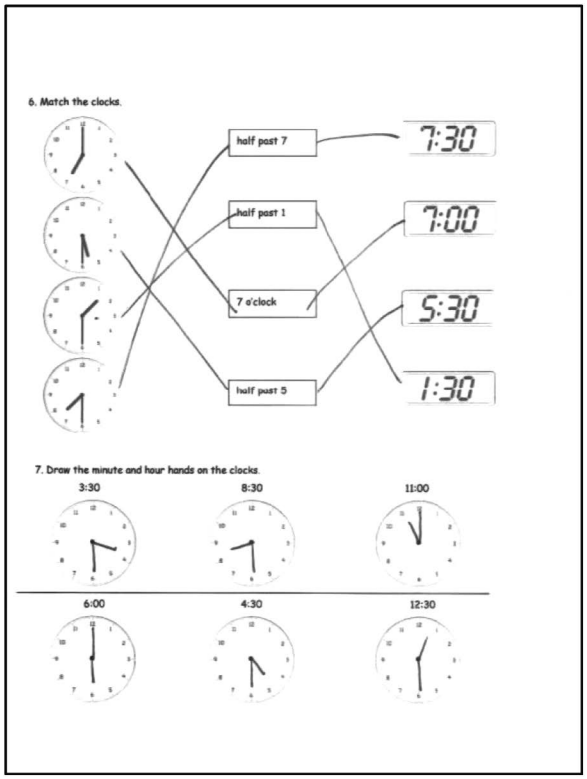
Any combination of the questions below may be used to lead the discussion.

- Look at Problem 1. How did you choose the correct clock? Demonstrate how you know A is the correct answer.
- Look at Problem 4. What is another way to say 9:30? Why is 9:30 also known as *half past 9?*
- Look at Problem 7. How did you draw the clock hands for 12:30? Explain why you placed the minute hand and the hour hand in each location.
- Look at the clock in our room. Is the time closest to a new hour or closest to half past the hour? What time is it right now?
- How could your fluency activities today help you with your subtraction?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

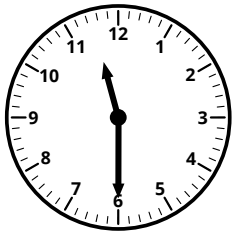

Name Maria Date
Fill in the blanks.
1. A B Clock A shows half past eleven.
2. A B Clock A shows half past two.
3. A B Clock A shows 6 o'clock.
4. A B Clock B shows 9:30.
5. A B Clock B shows half past six.



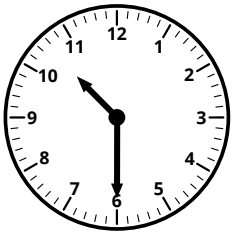
Name _____ Date _____

Fill in the blanks.

1.



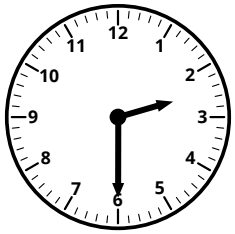
A



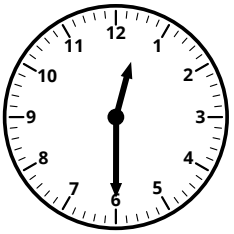
B

Clock _____ shows half past eleven.

2.



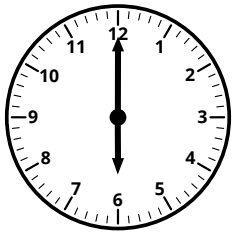
A



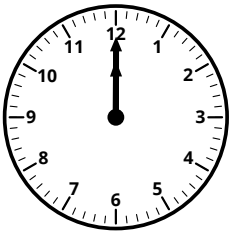
B

Clock _____ shows half past two.

3.



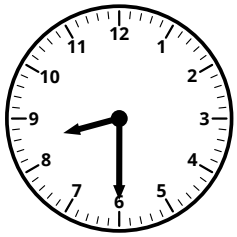
A



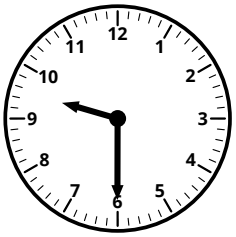
B

Clock _____ shows 6 o'clock.

4.



A

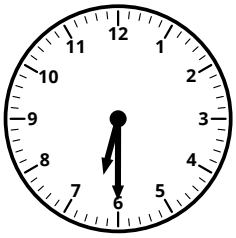


B

Clock _____ shows 9:30.

5.

A



B

Clock _____ shows half past six.

6. Match the clocks.

a. 

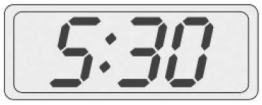
half past 7

b. 

half past 1

c. 

7 o'clock

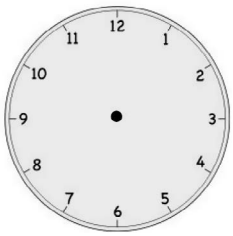


d. 

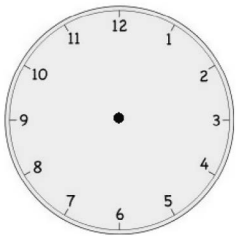
half past 5

7. Draw the minute and hour hands on the clocks.

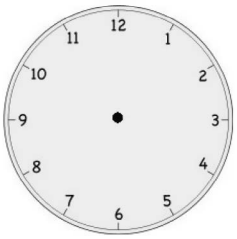
a. 3:30



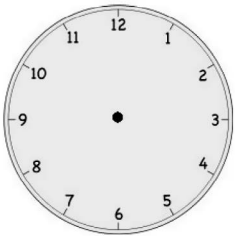
b. 8:30



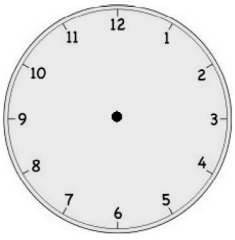
c. 11:00



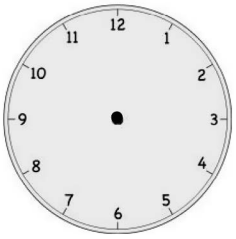
d. 6:00



e. 4:30



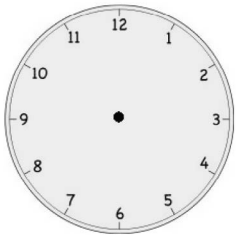
f. 12:30



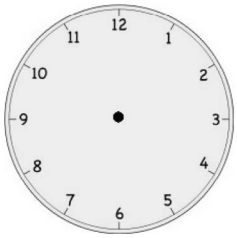
Name _____ Date _____

Draw the minute and hour hands on the clocks.

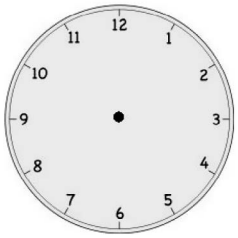
1. 1:30



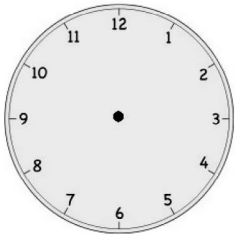
2. 10:00



3. 5:30

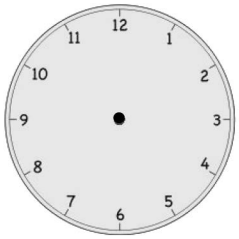
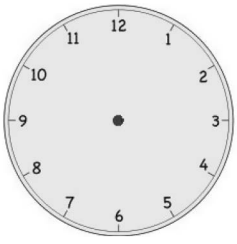
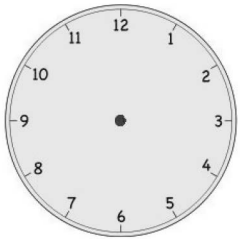
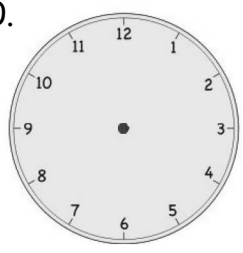


4. 7:30



Name _____ Date _____

Write the time shown on the clock, or draw the missing hand(s) on the clock.

1.  10 o'clock	2.  half past 10 o'clock
3.  8 o'clock	4.  _____
5.  3 o'clock	6.  half past 3 o'clock
7.  _____	8.  half past 6 o'clock
9.  half past 9 o'clock	10.  4 o'clock

11. Match the pictures with the clocks.

a.

Soccer practice

3:30

b.

Brush teeth

7:30

c.

Wash dishes

6:00

d.

Eat dinner

5:30

e.

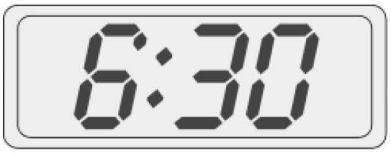
Afterschool bus

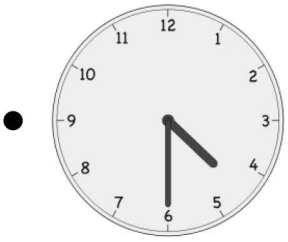
4:30

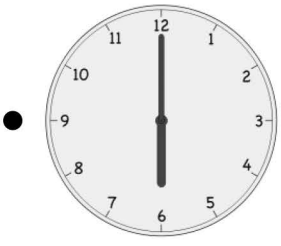
f.

Homework

half past 6 o'clock





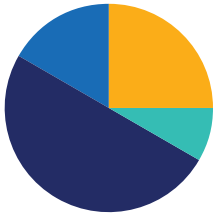


Lesson 16

Objective: Recognize halves within a circular clock face and tell time to the half hour.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (15 minutes)

- Grade 1 Fluency Sprint **1.3D** (10 minutes)
- Happy Counting **1.5A, 1.5B** (2 minutes)
- Analogous Addition and Subtraction **1.5G** (3 minutes)

Grade 1 Fluency Sprint (10 minutes)

Materials: (S) Fluency Sprint (Lesson 1 Fluency Sprint)

Note: Choose an appropriate Sprint, based on the needs of the class. If the majority of students completed the first three quadrants on the previous Sprint, move to the next Sprint listed in the sequence provided below (Fluency Sprint List). If many students are not making it to the third quadrant, consider repeating the same Sprint. As students work, pay attention to their strategies and the number of problems they are answering to consider for future Sprint administration.

Fluency Sprint List:

- Addition Sprint 1 (Targets addition and missing addends.)
- Addition Sprint 2 (Targets the most challenging addition within 10.)
- Subtraction Sprint (Targets subtraction.)
- Fluency Sprint: Totals of 5, 6, and 7 (Develops understanding of the relationship between addition and subtraction.)
- Fluency Sprint: Totals of 8, 9, and 10 (Develops understanding of the relationship between addition and subtraction.)

Happy Counting (2 minutes)

Note: This activity prepares students for Module 6 by providing practice counting by ones and tens within 100.

Repeat the activity from Lesson 14.

Analogous Addition and Subtraction (3 minutes)

Note: This activity practices Grade 1's fluency and reminds students to use their knowledge of sums and differences within 10 (e.g., 5 + 3 = 8) to solve analogous problems within 40 (e.g., 15 + 3 = 18, 25 + 3 = 28, and 35 + 3 = 38).

T: On my signal, say the equation with the answer. 6 + 2 = ____. (Pause. Signal.)

S: 6 + 2 = 8.

T: 16 + 2 = ____. (Pause. Signal.)

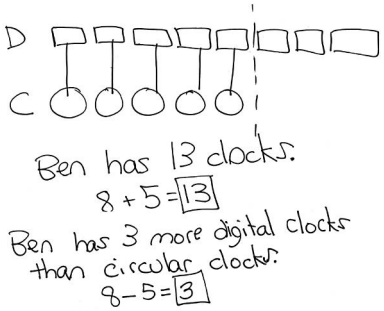
S: 16 + 2 = 18.

Continue with 26 + 2 and 36 + 2. Then repeat, beginning with other addition or subtraction sentences within 10.

Application Problem (5 minutes)

Ben is a clock collector. He has 8 digital clocks and 5 circular clocks. How many clocks does Ben have altogether? How many more digital clocks does Ben have than circular clocks?

Note: Today's Application Problem is very similar to the problem in Lesson 14. Use this opportunity to recognize students who are showing improvement in solving *compare with difference unknown* problem types. Analyze students' work to pinpoint challenges and then adjust or extend Module 6 Lesson 1 to support students' development with these problem types.



Concept Development (30 minutes)

Materials: (T) Clock image 1 (Template 1) (S) Clock images (Template 2), personal white board

Note: Today's objective extends to clocks students may encounter. If the majority of the class requires more exposure to the traditional analog clock used during Lessons 13–15, substitute the variety of clock faces with the paper clock template in Lesson 14, and have students erase and redraw clock hands for each time they are given.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Remember to ask students, "What time is it?" throughout the day to accustom them to looking at a clock and noticing when events happen during their day. Continuing to incorporate clocks into all teaching helps students become proficient with telling time to the hour and half hour.

If using various clock faces, it might be preferable to bring in actual clocks and watches to use during the lesson, or ask families in advance to send in pictures of clocks in their homes.

Have students place the clocks template (Template 2) into their personal white boards and gather in the meeting area.

T: (Project clock image 1, a watch.) Many people use something like this to show them what time it is. Do you know what it is called?

S: A watch!

T: Why do people sometimes wear watches? Talk with your partner about it. (Wait as students share their thoughts.)

S: It tells them the time. → It's like having a clock with you even when you're outside. → People have watches because they can't carry around a big clock.

T: What is the time on this watch?

S: 3:30.

T: This watch looks a lot like the clocks we have been looking at. But sometimes watches and clocks look different from each other. What differences do you notice among the clocks and watches on the clock page in your personal white board (Template 2)?

S: One of them is a square. → Some of them have no numbers. → Some of them have a few of the numbers, but not all of the numbers. → One of them has weird letters where the numbers should be. → Some of them have pointy arrows on the clock hands.

T: Let's use what we know about circles and clocks to help us tell the time, even when the clock face looks different.

T: Let's look at the square clock. What is the time?

S: 9:30 → It's not exactly 9:30 though!

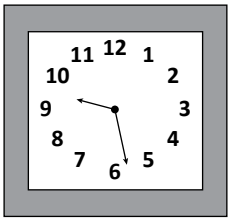
T: That's right. It's *almost* 9:30. The hour hand is between the 9 and 10. The minute hand is really close to the 6. Is it closer to 9:00? (Point to the 12.) Or is it closer to 9:30? (Point to the 6.)

S: 9:30.

T: Yes, we can tell the time to the closest half hour by looking to see if the minute hand is closer to the 6 or to the 12. This clock shows that it's close to 9:30. Write the time to the closest half hour under the clock. (Wait as students write 9:30.)

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Some students, including some emergent bilingual students, may benefit from a kinesthetic experience. Consider creating a life-size clock face on the classroom floor or outside with masking tape or chalk. Invite the class to help you label the numbers on the clock. Ask for volunteers to represent the hour and minute hands. Call out various times and have volunteers move to the location on the clock face where the hour and the minute hands should point.



NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

While teaching, be sure to provide connections for students. Interested students can write a story about their school day and the events that occur at certain times. During other writing activities, encourage students to incorporate time into their stories.

T: Let's look at the next clock. Point to the minute hand. Is it closer to the 6 or the 12?

S: The 12.

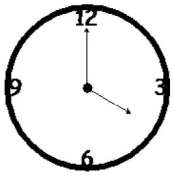
T: Yes, the minute hand is closer to the hour. The hour hand is between the 10 and 11. When the minute hand gets to the hour, the hour hand will move too, and will point to 11. (Point to the 11.) Is the time closer to 10:30? (Point to the 6.) Or is it closer to 11:00? (Point to the 12.)

S: 11:00.

T: Write the time to the closest half hour under the clock. (Wait as students write 11:00.)

T: Let's all look at the next clock. This clock only has four numbers—3, 6, 9, and 12. Where do you think the missing numbers would go? Use your dry erase marker to put them in. (Wait as students place in the missing numbers.)

T: What time does the clock show?



S: 4 o'clock!

T: Write the time on the line under the clock.

Repeat the process for each watch or clock on the page, discussing ways to determine the time based on the position of the hands on the clock face.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)

Lesson Objective: Recognize halves within a circular clock face and tell time to the half hour.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

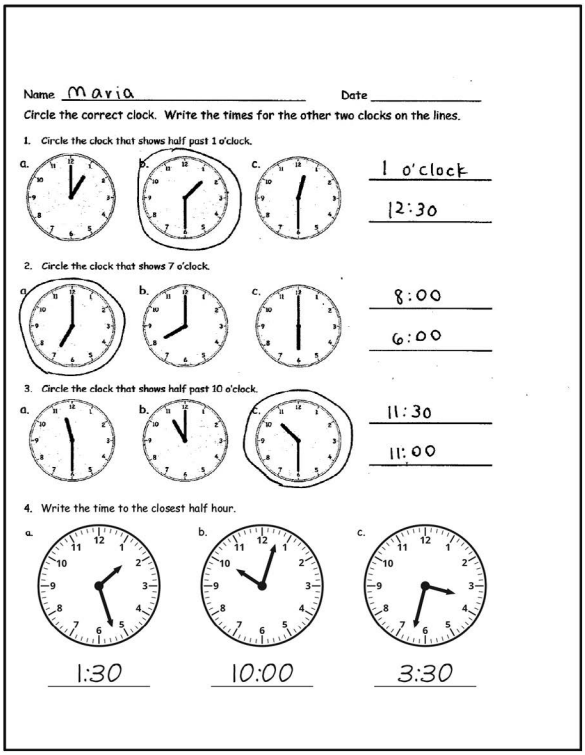
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

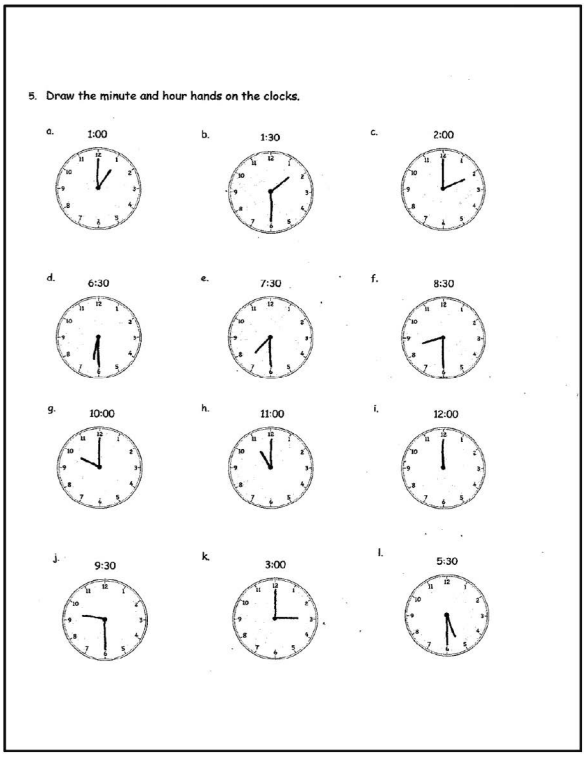
Any combination of the questions below may be used to lead the discussion.

- Look at the clocks on your personal white board. Which clock was the most challenging for you to read and why? Which clock would you like to have where you live and why?
- No matter what a clock looks like, what parts must it include in order for us to tell the time?
- When can it be helpful to know what time it is?
- Look at the Application Problem. Share how you used your drawing to help solve the problem.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

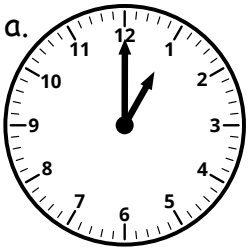

Name Maria Date
Circle the correct clock. Write the times for the other two clocks on the lines.
1. Circle the clock that shows half past 1 o'clock.
a. b. c.
1 o'clock
12:30
2. Circle the clock that shows 7 o'clock.
a. b. c.
8:00
6:00
3. Circle the clock that shows half past 10 o'clock.
a. b. c.
11:30
11:00
4. Write the time to the closest half hour.
a. b. c.
1:30 10:00 3:30

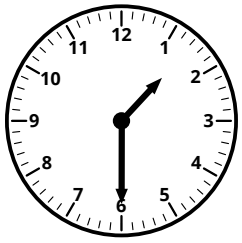

5. Draw the minute and hour hands on the clocks.
a. 1:00 b. 1:30 c. 2:00
d. 6:30 e. 7:30 f. 8:30
g. 10:00 h. 11:00 i. 12:00
j. 9:30 k. 3:00 l. 5:30

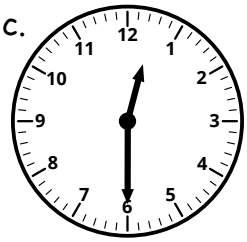
Name _____ Date _____

Circle the correct clock. Write the times for the other two clocks on the lines.

1. Circle the clock that shows half past 1 o'clock.

a. 

b. 

c. 

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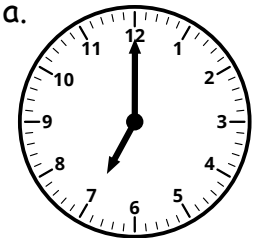
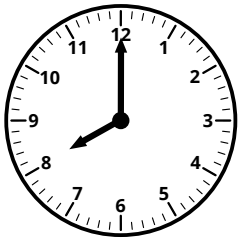
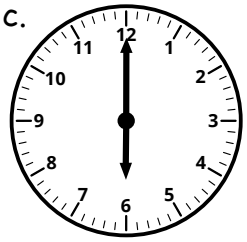
_____

2. Circle the clock that shows 7 o'clock.

a. 

b. 

c. 

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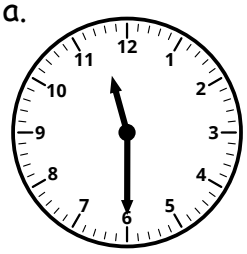
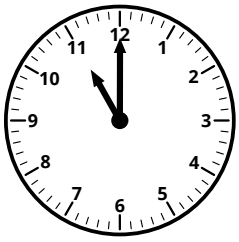
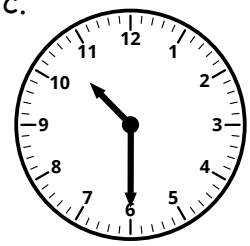
3. Circle the clock that shows half past 10 o'clock.

a. 

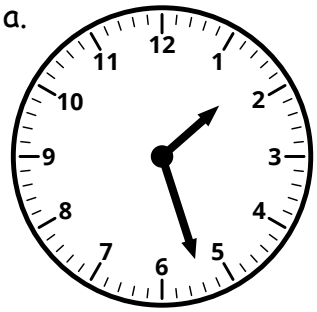
b. 

c. 

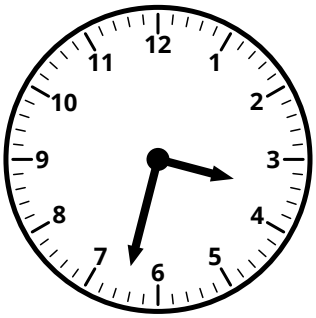
_____

_____

4. Write the time to the closest half hour.

a. 

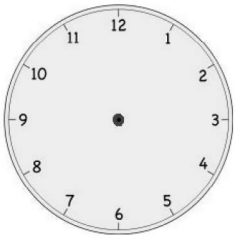
b. 

c. 

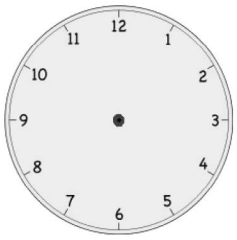
_____ _____ _____

5. Draw the minute and hour hands on the clocks.

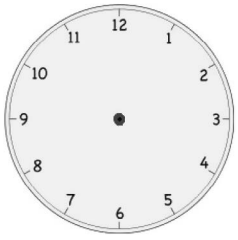
a. 1:00



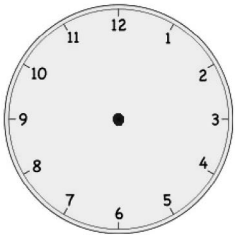
b. 1:30



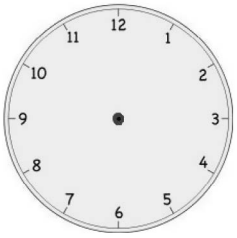
c. 2:00



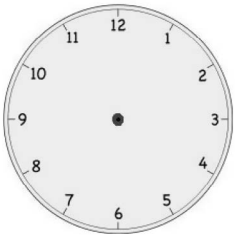
d. 6:30



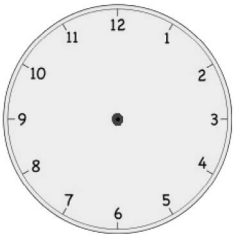
e. 7:30



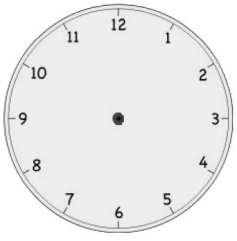
f. 8:30



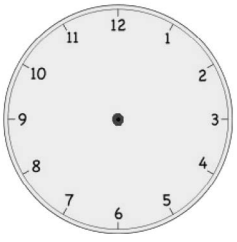
g. 10:00



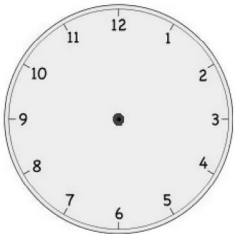
h. 11:00



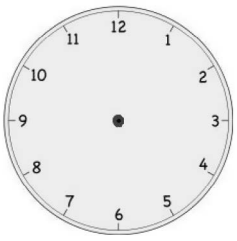
i. 12:00



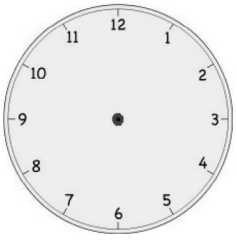
j. 9:30



k. 3:00



l. 5:30



Name _____ Date _____

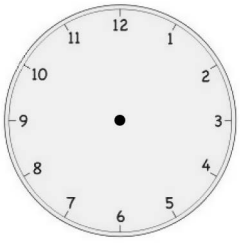
1. Circle the clock(s) that shows half past 3 o'clock.

a. 

b. 

c. 

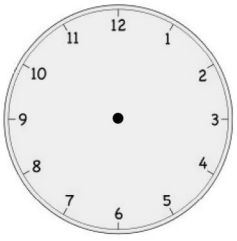
2. Write the time or draw the hands on the clocks.

a. 

4:30

b. 

_____

c. 

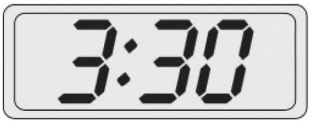
9 o'clock

Name _____ Date _____

Fill in the blanks.

1.

A



B

Clock _____ shows half past three.

2.

A

B

Clock _____ shows half past twelve.

3.

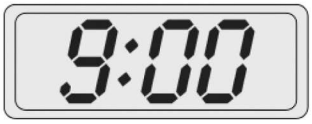
A

B

Clock _____ shows eleven o'clock.

4.

A



B

Clock _____ shows 8:30.

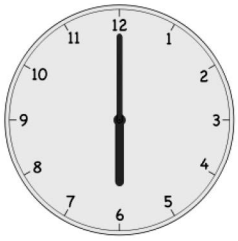
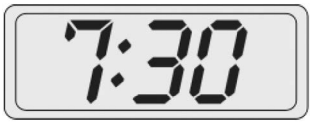
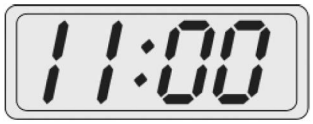
5.

A

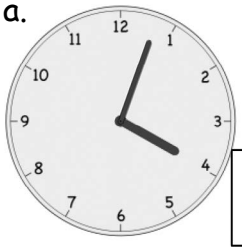
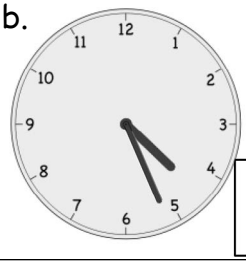
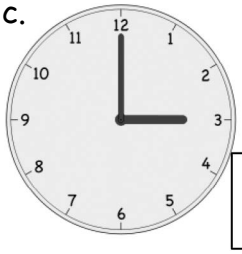
B

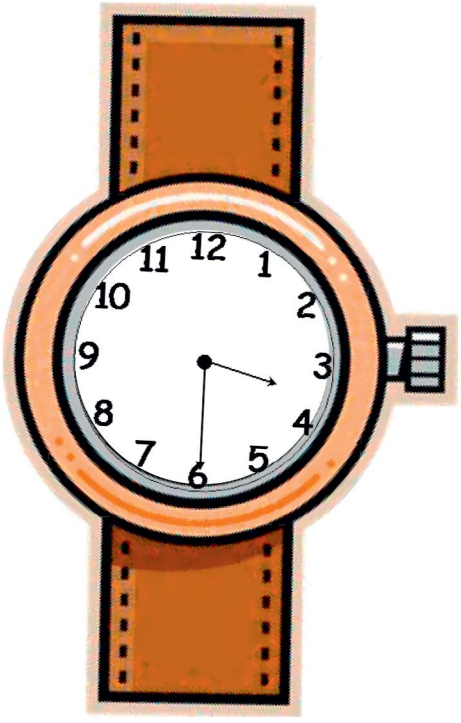
Clock _____ shows 5:00.

6. Write the time on the line under the clock.

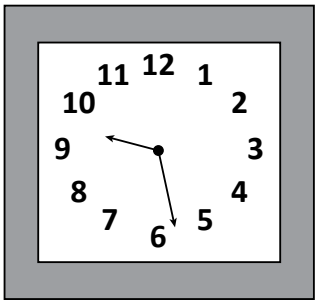
a. 	b. 	c. 
d. 	e. 	f. 
g. 	h. 	i. 

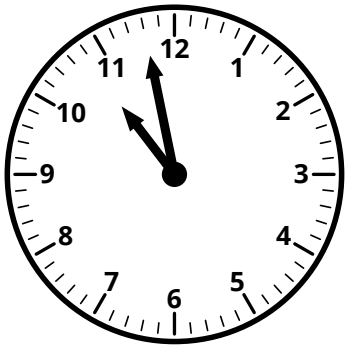
7. Put a check (✓) next to the clock(s) that are close to 4 o'clock.

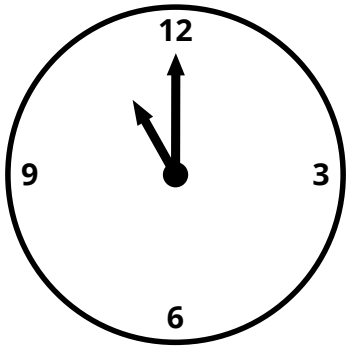
a.  ☐	b.  ☐	c.  ☐	d.  ☐

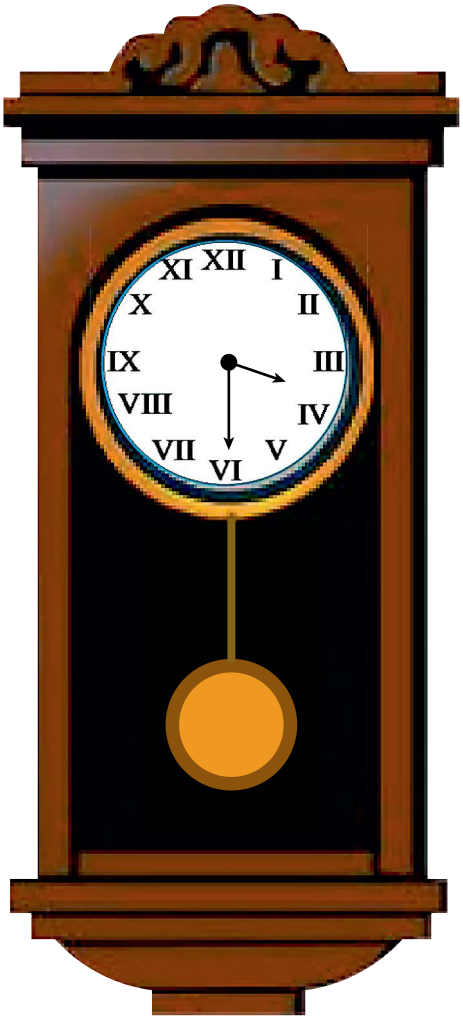


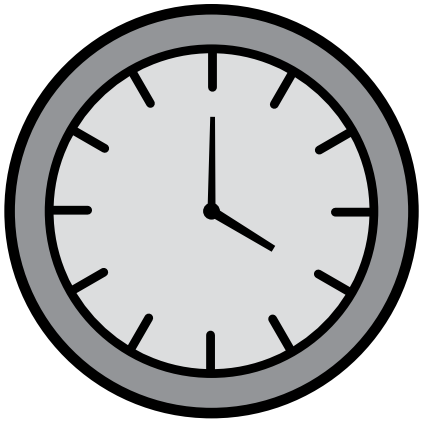
clock image 1











clock images

Answer Key

GRADE 1 • MODULE 5

Identifying, Composing, and Partitioning Shapes

Lesson 1

Addition Sprint 1

Side A

1.	5	11.	5	21.	5
2.	6	12.	9	22.	9
3.	7	13.	10	23.	7
4.	7	14.	3	24.	2
5.	8	15.	3	25.	9
6.	9	16.	7	26.	6
7.	6	17.	3	27.	3
8.	7	18.	3	28.	6
9.	8	19.	9	29.	6
10.	3	20.	4	30.	2

Side B

1.	6	11.	3	21.	3
2.	7	12.	7	22.	9
3.	8	13.	8	23.	5
4.	5	14.	3	24.	4
5.	6	15.	5	25.	8
6.	7	16.	6	26.	3
7.	4	17.	2	27.	7
8.	5	18.	2	28.	2
9.	6	19.	7	29.	2
10.	3	20.	4	30.	3

Addition Sprint 2

Side A

1.	7	11.	7	21.	9
2.	8	12.	7	22.	7
3.	9	13.	8	23.	9
4.	7	14.	8	24.	9
5.	8	15.	7	25.	7
6.	9	16.	9	26.	17
7.	8	17.	9	27.	17
8.	8	18.	9	28.	9
9.	9	19.	9	29.	6
10.	9	20.	8	30.	3

Side B

1.	7	11.	8	21.	8
2.	8	12.	8	22.	7
3.	9	13.	9	23.	9
4.	8	14.	9	24.	9
5.	9	15.	9	25.	9
6.	9	16.	9	26.	19
7.	7	17.	9	27.	19
8.	7	18.	9	28.	9
9.	8	19.	9	29.	5
10.	8	20.	9	30.	4

Subtraction Sprint

Side A

1.	5	11.	5	21.	5
2.	4	12.	7	22.	4
3.	3	13.	6	23.	3
4.	9	14.	5	24.	3
5.	8	15.	4	25.	7
6.	7	16.	6	26.	6
7.	5	17.	2	27.	7
8.	6	18.	4	28.	6
9.	7	19.	3	29.	7
10.	4	20.	4	30.	8

Side B

1.	4	11.	4	21.	6
2.	3	12.	5	22.	3
3.	2	13.	1	23.	2
4.	9	14.	2	24.	4
5.	8	15.	3	25.	5
6.	7	16.	4	26.	4
7.	4	17.	2	27.	5
8.	5	18.	5	28.	7
9.	6	19.	3	29.	9
10.	3	20.	2	30.	7

Fluency Sprint: Totals of 5, 6, and 7

Side A

1.	5	11.	6	21.	5
2.	2	12.	4	22.	2
3.	2	13.	4	23.	2
4.	3	14.	2	24.	7
5.	3	15.	2	25.	3
6.	6	16.	6	26.	3
7.	5	17.	3	27.	4
8.	5	18.	3	28.	4
9.	1	19.	7	29.	6
10.	1	20.	2	30.	6

Side B

1.	5	11.	6	21.	4
2.	1	12.	5	22.	2
3.	1	13.	5	23.	2
4.	4	14.	1	24.	7
5.	4	15.	1	25.	3
6.	7	16.	6	26.	3
7.	2	17.	3	27.	3
8.	5	18.	3	28.	3
9.	2	19.	6	29.	7
10.	5	20.	2	30.	6

Fluency Sprint: Totals of 8, 9, and 10

Side A

1.	10	11.	8	21.	2
2.	5	12.	1	22.	6
3.	5	13.	8	23.	2
4.	10	14.	8	24.	9
5.	9	15.	4	25.	3
6.	9	16.	8	26.	3
7.	1	17.	2	27.	6
8.	1	18.	6	28.	6
9.	9	19.	9	29.	10
10.	1	20.	2	30.	9

Side B

1.	10	11.	10	21.	2
2.	9	12.	8	22.	9
3.	9	13.	8	23.	7
4.	1	14.	2	24.	2
5.	1	15.	2	25.	9
6.	8	16.	8	26.	4
7.	1	17.	3	27.	4
8.	7	18.	5	28.	4
9.	1	19.	8	29.	8
10.	7	20.	2	30.	8

Problem Set

1. 3 four-sided shapes circled
2. 1 circle and 3 ovals circled
3. 1 rectangle and 1 square circled
4. a. Triangle drawn
   b. Different triangle drawn
5. Have 3 straight sides; have 3 corners
6. Triangle circled
7. Two triangles drawn
8. Any shape without 3 sides and 3 corners drawn

Exit Ticket

1. a. 3; 3
   b. 4; 4
   c. 0; 0
2. a. Square crossed off
   b. Parallelogram crossed off

Homework

1. 4 triangles circled
2. 1 circle and 3 ovals circled
3. 1 rectangle and 1 square circled
4. a. Answers will vary.
   b. Answers will vary.
5. Have 4 straight sides; have 4 square corners
6. Rectangle circled
7. Two rectangles drawn
8. Any shape that is not a rectangle drawn

Lesson 2

Problem Set

1. a. 7
   b. 3
   c. 0
   d. 1
   e. 7
2. 3 rectangles circled
3. a. Yes, explanations will vary.
   b. No, explanations will vary.

Exit Ticket

1. 0; 0; circle
2. 3; 3; triangle
3. 6; 6; hexagon
4. 4; 4; rectangle, square, rhombus

Homework

1. 3; 4; 1; 2
2. a. 3; 3
   b. 3
3. a. 6; 6
   b. 1
4. a. 0; 0
   b. 2
5. a. 4; 4
   b. 1
6. a. Fourth shape from left crossed off
   b. Open shape; it only has 3 corners
7. a. Fourth shape from left crossed off
   b. All four sides are not of equal length

Lesson 3

Problem Set

1. (Drawings may vary.)
   These shapes have **4** corners.
   These shapes have 4 **equal** sides.
   These shapes are called **rhombuses**.
2. (Drawings may vary.)
   These shapes have **6** straight sides.
   These shapes have **6** corners.
   These shapes are called **hexagons**.
3. (Drawings may vary.)
   All rectangles have **4** sides and **4** square corners.
   Squares are a special type of rectangle because they have 4 **square** sides.
4. (Drawings may vary.)
   Circles are closed shapes. They are curved with no straight sides.
5. (Drawings may vary.)
   Triangles have 3 corners and 3 straight sides.
6. (Drawings may vary.)
   Squares have 4 square corners and 4 equal sides.

Exit Ticket

1. (Drawings may vary.)
   These shapes have **3** straight sides.
   These shapes have **3** corners.
   These shapes are called **triangles**.
2. (Drawings may vary.)
   These shapes have **4** straight sides.
   These shapes have **4** corners.
   These shapes are called **rectangles**.
3. (Drawings may vary.)
   These shapes have **0** straight sides.
   These shapes are **circles**.

Homework

1. (Drawings may vary.)
   Squares have 4 square corners and 4 equal sides.
2. (Drawings may vary.)
   Hexagons have 6 corners and 6 sides.
3. (Drawings may vary.)
   Triangles have 3 corners and 3 sides.

Lesson 4

Problem Set

1. Shapes with square corners are the right triangle, rectangle, square, and rhombuses. All other shapes have 0 square corners.
2. Answers will vary.
3. Answers will vary but may include “There are many different types of shapes in each group.”
4. Shapes with equal sides are the regular hexagon, square, regular triangle, and rhombuses.
5. some
   all
   none

Exit Ticket

1. Group 1
2. Answers will vary.

Homework

1. Triangles are blue. Rectangles, squares, and rhombuses are red. Circles and hexagons are left white.
2. triangle

Lesson 5

Problem Set

1. Answers will vary.
2. Answers will vary.
3. Answers will vary, but may include *shapes with curves* and *shapes with straight sides*.
4. Answers will vary.
5. Answers will vary, but may include *shapes with 6 sides* (hexagons) and *shapes with 4 sides* (rectangles).
6. Answers will vary.

Exit Ticket

1. Answers will vary.
2. Answers will vary.

Homework

1. *open shapes* and *closed shapes*
2. Answers will vary.
3. *shapes with square corners* and *shapes with no square corners*
4. Answers will vary.

Lesson 6

Fluency Differentiated Practice Set A

1.	6	11.	8	21.	8
2.	6	12.	8	22.	9
3.	6	13.	6	23.	10
4.	6	14.	7	24.	10
5.	7	15.	8	25.	8
6.	7	16.	9	26.	7
7.	8	17.	10	27.	10
8.	7	18.	9	28.	9
9.	7	19.	9	29.	10
10.	6	20.	10	30.	9

Fluency Differentiated Practice Set B

1.	0	11.	3	21.	3
2.	6	12.	4	22.	4
3.	1	13.	5	23.	5
4.	2	14.	4	24.	6
5.	7	15.	2	25.	7
6.	1	16.	3	26.	8
7.	6	17.	4	27.	7
8.	1	18.	2	28.	6
9.	7	19.	3	29.	5
10.	2	20.	4	30.	6

Fluency Differentiated Practice Set C

1.	1	11.	3	21.	4
2.	5	12.	3	22.	4
3.	5	13.	2	23.	3
4.	1	14.	2	24.	3
5.	9	15.	3	25.	4
6.	1	16.	3	26.	4
7.	5	17.	2	27.	3
8.	5	18.	2	28.	3
9.	2	19.	3	29.	3
10.	2	20.	3	30.	3

Fluency Differentiated Practice Set D

1.	6	11.	3	21.	4
2.	5	12.	4	22.	5
3.	6	13.	6	23.	3
4.	7	14.	2	24.	4
5.	4	15.	4	25.	5
6.	5	16.	6	26.	4
7.	7	17.	5	27.	3
8.	0	18.	1	28.	2
9.	1	19.	2	29.	3
10.	3	20.	2	30.	2

Fluency Differentiated Practice Set E

1.	6	11.	4	21.	3
2.	4	12.	4	22.	5
3.	3	13.	2	23.	3
4.	7	14.	2	24.	7
5.	2	15.	2	25.	2
6.	7	16.	3	26.	7
7.	3	17.	4	27.	2
8.	4	18.	2	28.	3
9.	9	19.	6	29.	5
10.	5	20.	2	30.	3

Problem Set

1. a. Cone
   b. Cube
   c. Cylinder
   d. Rectangular prism
   e. Trianular prism
   f. Sphere
2. Cubes: block, dice
   Spheres: globe, tennis ball
   Cones: party hat
   Rectangular Prisms: tissue box
   Triangular Prisms: tent
   Cylinders: can
3. Have no straight sides; are round; can roll circled
4. Have square faces; have 6 faces circled

Exit Ticket

1. True. Answers may vary.
2. False. Answers may vary.

Homework

1. Answers may vary.
2. Answers may vary.

Lesson 7

Problem Set

1. Drawing of large triangle made with 4 small triangles
2. Drawing of large square made with 4 squares
3. Drawing of hexagon made with 6 triangles
4. Drawing of hexagon made with 1 red shape, 1 rhombus, 1 triangle
5. Answers may vary.
6. 50
7. Answers may vary.

Exit Ticket

1. Drawing of hexagon made with 3 rhombuses
2. Drawing of triangle made with 1 hexagon and 3 triangles

Homework

1. Drawing of large triangle made with 2 triangles and a rhombus
2. Drawing of hexagon made with 2 triangles and 2 rhombuses
3. 30

Lesson 8

Problem Set

1. a. 7
   b. triangle, square, parallelogram
2. Square made with 2 triangles drawn
3. Rectangle made with 3 tangram pieces drawn
4. Puzzle completed
5. Answers will vary.

Exit Ticket

Answers will vary.

Homework

1. Answers will vary.
2. Answers will vary.
3. a. Triangle made with 2 small triangles drawn
   b. Rhombus made with 2 triangles drawn
   c. Square made with 2 triangles drawn
4. Answers will vary.

Lesson 9

Problem Set

1. Answers will vary.
2. Answers will vary.
3. Answers will vary.
4. Answers will vary.

Exit Ticket

Structure matching Camilia's structure built

Homework

Answers will vary.

Lesson 10

Problem Set

1. a. Answer provided
   b. N
   c. N
   d. Y, 4
   e. Y, 2
   f. N
   g. Y, 4
   h. Y, 2
   i. N
   j. Y, 2
   k. Y, 2
   l. Y, 6
   m. Y, 2
   n. N
   o. Y, 2
2. a. 2
   b. 4
   c. 2
   d. 2
   e. 2
   f. 4
3. Vertical line drawn from corner to midpoint
4. Answers may vary.
5. Lines drawn accurately

Exit Ticket

Circle; 4

Homework

1. a. Answer provided
   b. Y, 2
   c. N
   d. N
   e. Y, 2
   f. Y, 4
   g. Y, 2
   h. N
   i. N
   j. Y, 2
   k. N
   l. Y, 4
   m. Y, 6
   n. Y, 2
   o. N
2. Line drawn accurately; triangles
3. Line drawn accurately; rectangles
4. Lines drawn accurately; triangles

Lesson 11

Problem Set

1. a. No
   b. No
   c. Yes
   d. Yes
   e. No
   f. Yes
2. a. Yes
   b. Yes
   c. No
   d. Yes
   e. No
   f. No
3. a. Answers may vary.
   b. Answers may vary.
   c. Answers may vary.
   d. Answers may vary.
   e. Answers may vary.
   f. Answers may vary.
4. a. Answers may vary.
   b. Answers may vary.
   c. Answers may vary.
   d. Answers may vary.
   e. Answers may vary.

Exit Ticket

Answers may vary.

Homework

1. a. Unequal parts
   b. Equal parts
   c. Halves
   d. Quarters
   e. Quarters
   f. Halves
   g. Quarters
   h. Fourths
2. a. 1 half
   b. 1 quarter
   c. 1 half
   d. 1 half
3. Answers may vary.
4. Answers may vary.

Lesson 12

Problem Set

1. A; B; A
2. B; A; B
3. Second rectangle circled; one half of circled
4. Is larger than circled
5. Is smaller than circled
6. Is the same size as circled

Exit Ticket

1. a. F
   b. T
2. Answers may vary.

Homework

1. A; B; A
2. a. Half; half
   b. Quarter; half
   c. Quarter; quarter
   d. Half; half
3. a. Is smaller than circled
   b. Is the same size as circled

Lesson 13

Problem Set

1. a. 5:00
   b. 12:00
   c. 8:00
   d. 1:00
2. Hour hand drawn pointing at 3
3. a. 5:00
   b. 1
   c. 3
   d. 9
   e. 12:00
   f. 7
   g. 4:00
   h. 6
   i. 11:00
   j. 10
   k. 6:00
   l. 2
   m. 11 o'clock
   n. 8:00 or 8 o'clock
   o. 3:00 or 3 o'clock

Exit Ticket

1. 6:00 or 6 o'clock
2. 9:00 or 9 o'clock
3. 7:00 or 7 o'clock
4. 12:00 or 12 o'clock

Homework

1. a. 2 o'clock, 2:00
   b. 7 o'clock, 7:00
   c. 11 o'clock, 11:00
   d. 4 o'clock, 4:00
   e. 10 o'clock, 10:00
   f. 3 o'clock, 3:00
2. a. Answer provided
   b. Hand pointing to 9, 9:00
   c. Hand pointing to 12, 12:00
   d. Hand pointing to 7, 7:00
   e. Hand pointing to 1, 1:00

Lesson 14

Problem Set

1. a. 2:30, Two thirty
   b. Half past 5 o'clock, Five thirty
   c. 12:30, half past 12 o'clock
2. a. Minute hand drawn pointing to 12
   b. Minute hand drawn pointing to 12
   c. Minute hand drawn pointing to 6
   d. Minute hand drawn pointing to 6
   e. Minute hand drawn pointing to 6
   f. Minute hand drawn pointing to 12
3. a. Answer provided
   b. Answer provided
   c. 11:30, eleven thirty, or half past 11 o'clock
   d. 2:30, two thirty, or half past 2 o'clock
   e. 2:00 or 2 o'clock
   f. 8:30, eight thirty, or half past 8 o'clock
   g. 10:30, ten thirty, or half past 10 o'clock
   h. 6:30, six thirty, or half past 6 o'clock
   i. 7:00 or 7 o'clock
   j. Seven thirty or half past 7 o'clock
   k. 4:30, four thirty, or half past 4 o'clock
   l. Ten thirty or half past 10 o'clock
4. Clock (c.)

Exit Ticket

1. Minute hand drawn pointing to 6
2. Minute hand drawn pointing to 6
3. 1:30, one thirty, or half past 1 o'clock

Homework

1. Clock (b.)
2. Clock (a.)
3. Clock (a.)
4. Clock (b.)
5. 6:30, six thirty, or half past 6 o'clock
6. 7:30, seven thirty, or half past 7 o'clock
7. 10:30, ten thirty, or half past 10 o'clock
8. 12:30, twelve thirty, or half past 12 o'clock
9. 3:30, three thirty, or half past 3 o'clock
10. 4:30, four thirty, or half past 4 o'clock
11. 5:30, five thirty, or half past 5 o'clock
12. 7:30, seven thirty, or half past 7 o'clock

Lesson 15

Problem Set

1. A
2. A
3. A
4. B
5. B
6. a. 7 o'clock, 7:00
   b. Half past 5, 5:30
   c. Half past 1, 1:30
   d. Half past 7, 7:30
7. a. Hour hand between 3 and 4, minute hand at 6
   b. Hour hand between 8 and 9, minute hand at 6
   c. Hour hand at 11, minute hand at 12
   d. Hour hand at 6, minute hand at 12
   e. Hour hand between 4 and 5, minute hand at 6
   f. Hour hand between 12 and 1, minute hand at 6

Exit Ticket

1. Hour hand between 1 and 2, minute hand at 6
2. Hour hand at 10, minute hand at 12
3. Hour hand between 5 and 6, minute hand at 6
4. Hour hand between 7 and 8, minute hand at 6

Homework

1. Hour hand at 10, minute hand at 12
2. Minute hand at 6
3. Hour hand at 8
4. 6:30 or half past 6 o'clock
5. Hour hand at 3, minute hand at 12
6. Minute hand at 6
7. 2:00 or two o'clock
8. Hour hand between 6 and 7, minute hand at 6
9. Minute hand at 6
10. Hour hand at 4, minute hand at 12
11. a. 3:30—second clock
    b. 7:30—sixth clock
    c. 6:00—fifth clock
    d. 5:30—first clock
    e. 4:30—fourth clock
    f. Half past 6 o'clock—third clock

Lesson 16

Problem Set

1. Clock (b.) circled; 1:00 or 1 o'clock; 12:30, twelve thirty, or half past twelve o'clock
2. Clock (a.) circled; 8:00 or 8 o'clock; 6:00 or six o'clock
3. Clock (c.) circled; 11:30, eleven thirty, or half past 11 o'clock; 11:00 or 11 o'clock
4. a. 1:30
   b. 10:00
   c. 3:30
5. a. Hour hand at 1, minute hand at 12
   b. Hour hand between 1 and 2, minute hand at 6
   c. Hour hand at 2, minute hand at 12
   d. Hour hand between 6 and 7, minute hand at 6
   e. Hour hand between 7 and 8, minute hand at 6
   f. Hour hand between 8 and 9, minute hand at 6
   g. Hour hand at 10, minute hand at 12
   h. Hour hand at 11, minute hand at 12
   i. Hour hand at 12, minute hand at 12
   j. Hour hand between 9 and 10, minute hand at 6
   k. Hour hand at 3, minute hand at 12
   l. Hour hand between 5 and 6, minute hand at 6

Exit Ticket

1. Clock (c.)
2. a. Hour hand between 4 and 5, minute hand at 6
   b. 12:00 or twelve o'clock
   c. Hour hand at 9, minute hand at 12

Homework

1. B
2. B
3. A
4. A
5. B
6. a. 1:00 or one o’clock
   b. 11:30, eleven thirty, or half past 11 o’clock
   c. 6:00 or six o’clock
   d. Seven thirty or half past 7 o’clock
   e. 5:30 or half past 5 o’clock
   f. 2:30, two thirty, or half past 2 o’clock
   g. 7:00 or seven o’clock
   h. Eleven o’clock
   i. 9:30, nine thirty, or half past 9 o’clock
7. Clocks (a.) and (d.)

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