OER K–5 Math

EDITION 1

ENGLISH

Grade 1
Module 3

SUCCEED

ORDERING AND COMPARING LENGTH MEASUREMENTS AS NUMBERS

STUDENT EDITION

Succeed

K–5 Math Grade 1 Module 3

ORDERING AND COMPARING LENGTH MEASUREMENTS AS NUMBERS

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

These learning resources have been built for Texas students, aligned to the Texas Essential Knowledge and Skills, and are made available pursuant to Chapter 31, Subchapter B-1 of the Texas Education Code.

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Read–Draw–Write (RDW) Process

The K–5 Math materials support students as they problem solve by using a simple, repeatable process introduced by the teacher. The Read–Draw–Write (RDW) process calls for students to

1. Read the problem.
2. Draw and label.
3. Write a number sentence (equation).
4. Write a word sentence (statement).

Families may support the process by encouraging their student to ask themselves questions such as

- What do I see?
- Can I draw something?
- What conclusions can I make from my drawing?

The more students participate in reasoning through problems with this systematic approach, the more they internalize these practices and thought processes.

Contents

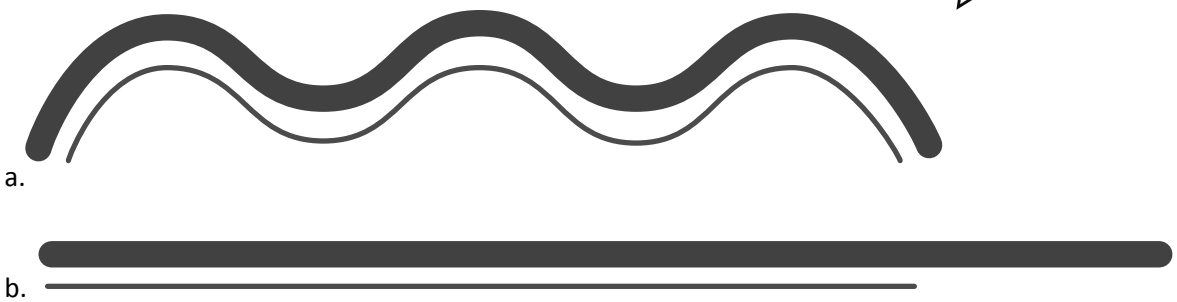
Module 3: Ordering and Comparing Length Measurements as Numbers

Use your piece of yarn to measure path a.

Compare the length of path a to path b.

1.

I can measure path a by laying my yarn on the path. I start at one endpoint and keep going to the other endpoint.

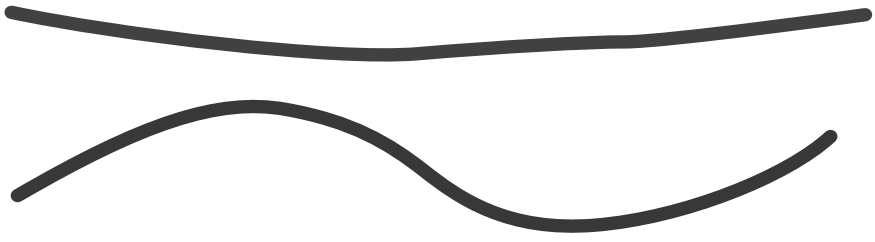


Which path is longer? (a) b

Which path is shorter? a (b)

I lay the yarn from path a onto path b. When I compare the length of yarn that I used to measure path a, I see that the yarn is longer than path b. It sticks out past the endpoint. So, path a is longer than path b.

2. Jen measures the length of the path with yarn. Did Jen measure correctly? Tell how you know.



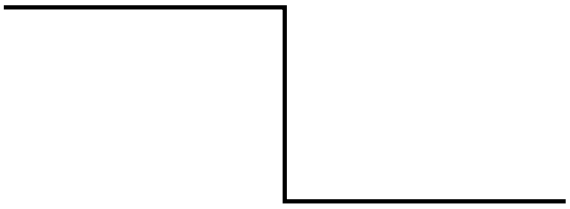
Jen did not measure correctly. The yarn should start at one endpoint, keep going on the path with the yarn, and stop at the other endpoint.

Name _____ Date _____

Use your piece of yarn to measure path a.
Compare the length of path a to the length of path b.

1.

a.

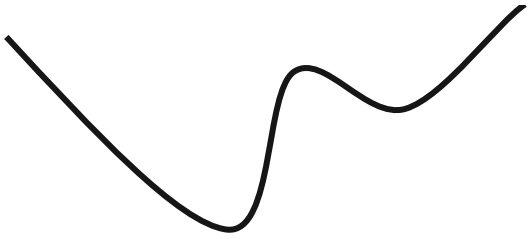


b. _____

Which path is longer? a b Which path is shorter? a b

2.

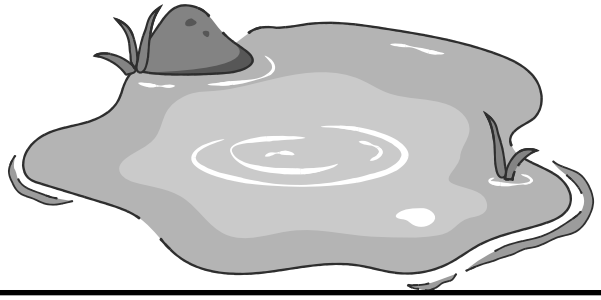
a.



b. _____

Which path is longer? a b Which path is shorter? a b

3. a. The path around the pond:

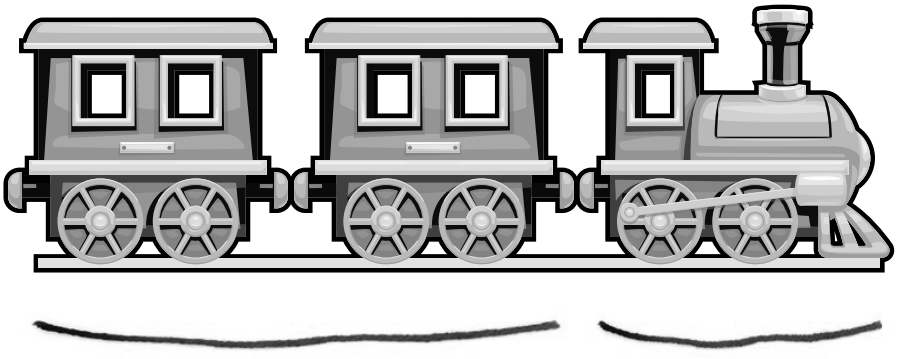


b.

Which path is longer? a b Which path is shorter? a b

4. Chris measures the length of a train with yarn.

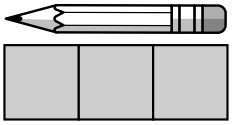
Did Chris measure correctly? Tell how you know.



Measure the length of the picture with your cubes. Complete the statement below.

1. The pencil is __3__ centimeter cubes long.

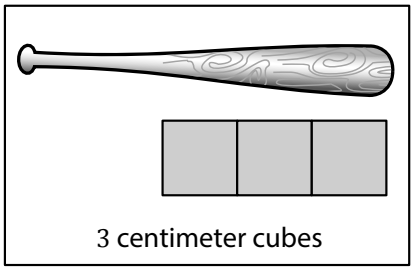
I can measure the pencil with my centimeter cubes. I have to line up the end points and make sure there is no space between each cube.



I start at the tip of the pencil and use enough cubes to go all the way to the eraser.

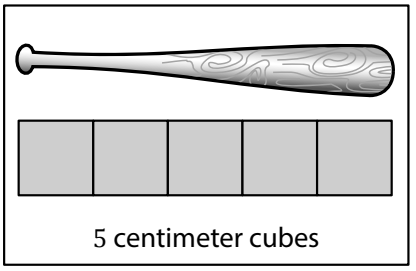
2. Circle the picture that shows the correct measurement of the bat.

A



This isn't right! There are no cubes near the handle of the bat!

B



This looks much better. The cubes start at the endpoint and go all the way across with no spaces in between.

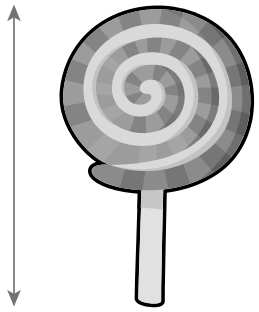
3. Explain what is wrong with the measurements for the picture you did NOT circle.

The picture that shows a measurement of 3 cubes is wrong because the cubes don't go all the way across the bat. The cubes don't start at the endpoint or end at the endpoint. There are not enough cubes!

Name _____ Date _____

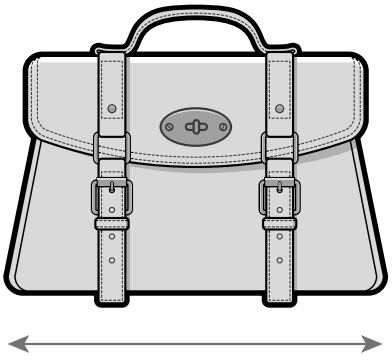
Measure the length of each picture with your cubes. Complete the statements below.

1. The lollipop is _____ centimeter cubes long.

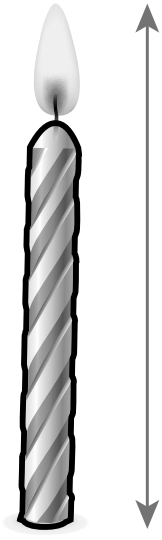


2. The stamp is _____ centimeter cubes long.

3. The purse is _____ centimeter cubes long.

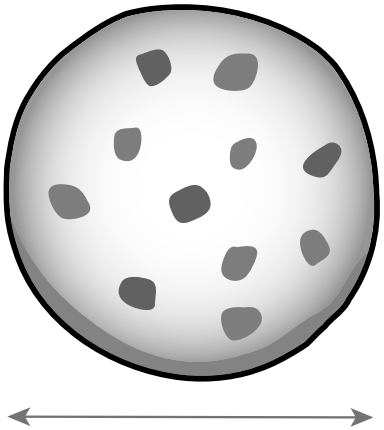


4. The candle is _____ centimeter cubes long.

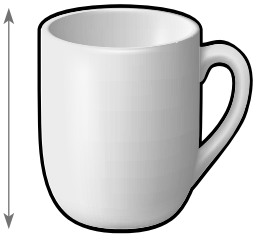


5. The bow is _____ centimeter cubes long.

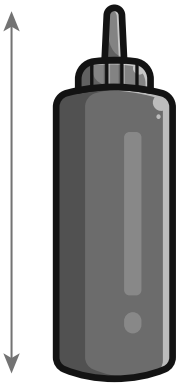
6. The cookie is _____ centimeter cubes long.



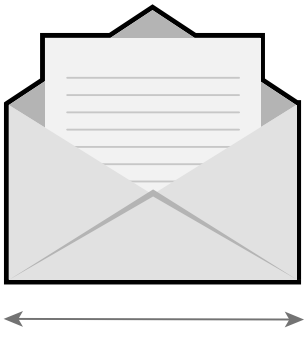
7. The mug is about _____ centimeter cubes long.



8. The ketchup is about _____ centimeter cubes long.

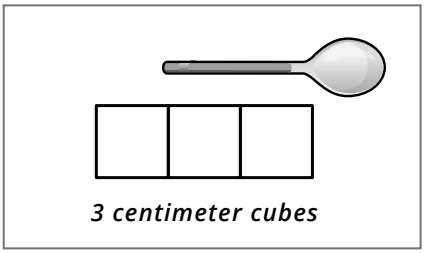


9. The envelope is about _____ centimeter cubes long.

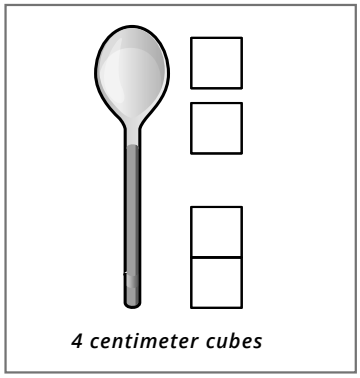


10. Circle the picture that shows the correct way to measure.

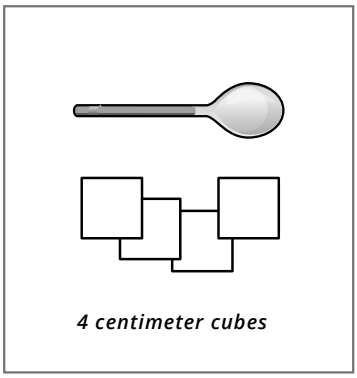
A



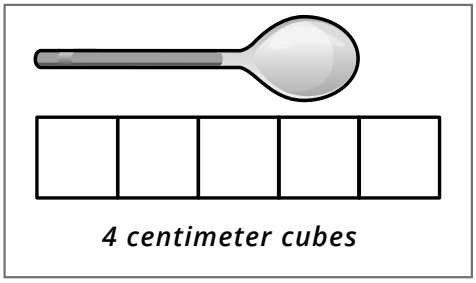
B



C

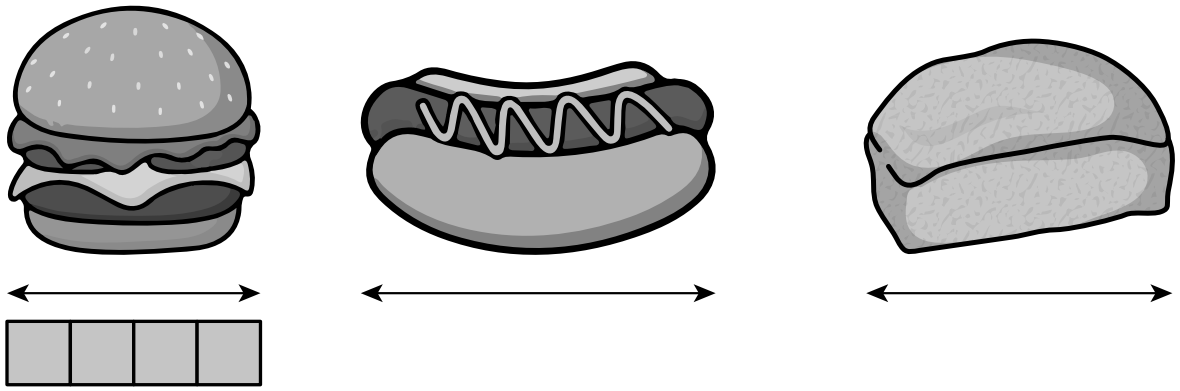


D



11. Explain what is wrong with the measurements for the pictures you did NOT circle.

1. Use centimeter cubes to measure the pictures below. Complete the sentences.



I can measure these pictures accurately as long as I line up the endpoints and don't leave any gaps or overlaps with my centimeter cubes.

Each of my cubes is one centimeter long.

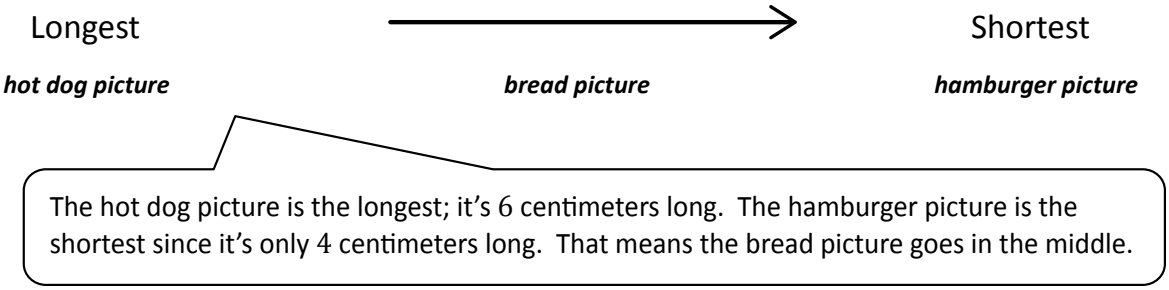
a. The hamburger picture is __4__ centimeters long.

b. The hot dog picture is __6__ centimeters long.

c. The bread picture is __5__ centimeters long.

The bread picture measured 5 centimeter cubes long. That makes it 5 centimeters long.

2. Use the picture measurements to order the hamburger picture, hot dog picture, and bread picture from longest to shortest. You can use drawings or names to order the pictures.



3. Fill in the blanks to make the statements true. (There may be more than one correct answer.)

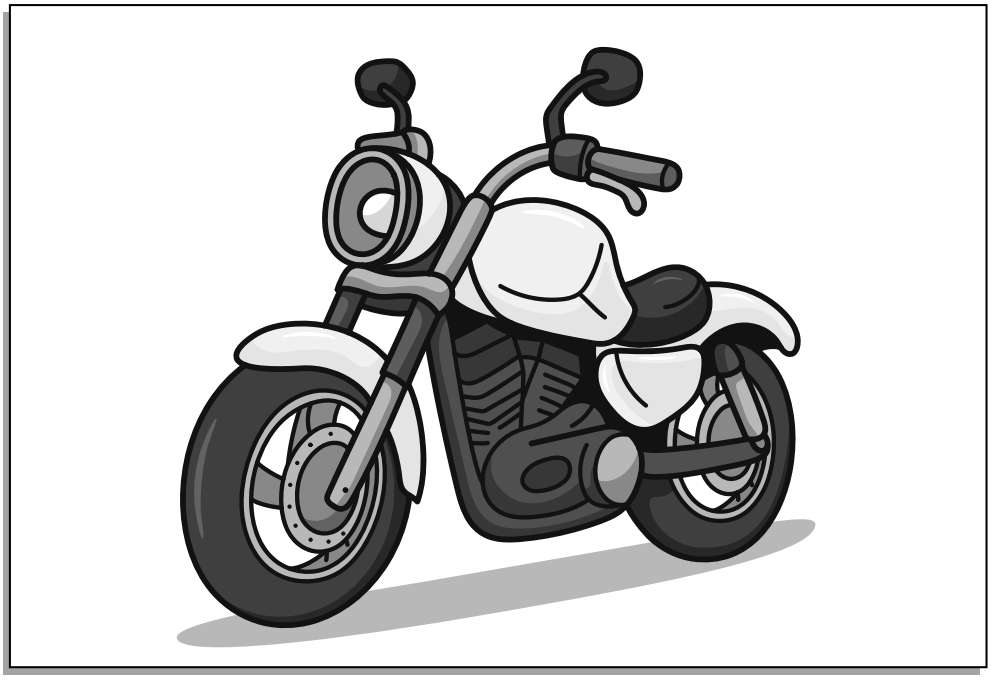
   a. The hot dog picture is longer than the ***bread*** picture.

   b. The bread picture is longer than the ***hamburger*** picture and shorter than the ***hot dog*** picture.

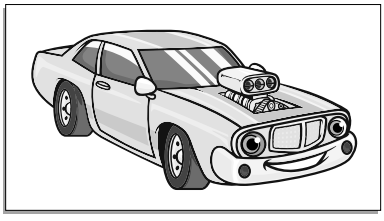
   c. If a banana picture is added that is longer than the bread picture, it will also be longer than which of the other pictures? ***hamburger***

Name _____ Date _____

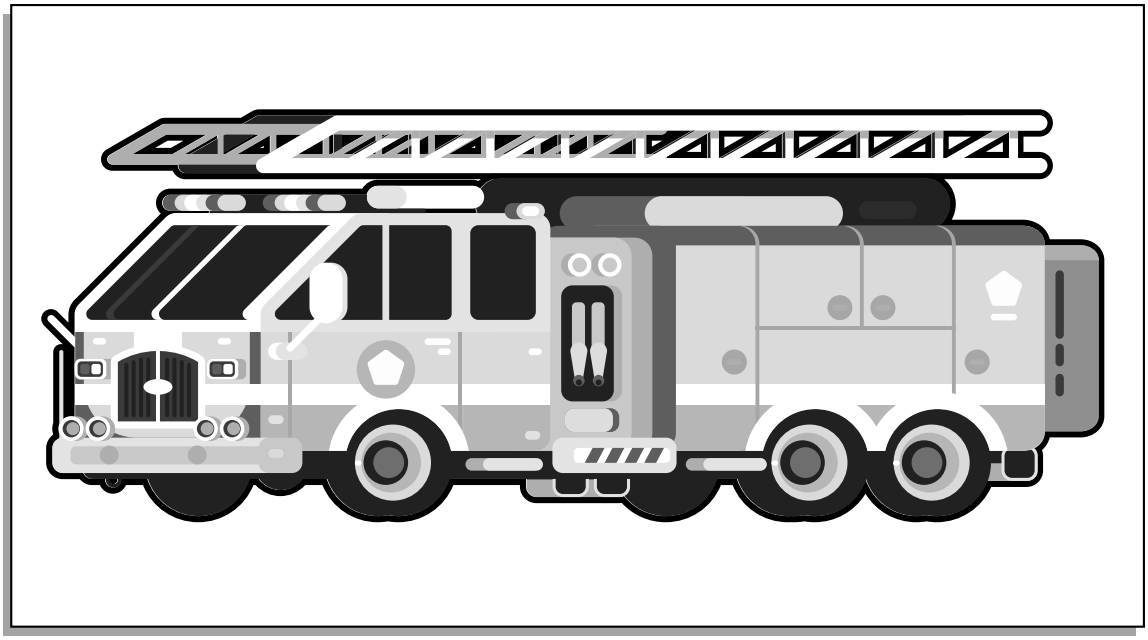
1. Justin collects stickers. Use centimeter cubes to measure Justin's stickers. Complete the sentences about Justin's stickers.



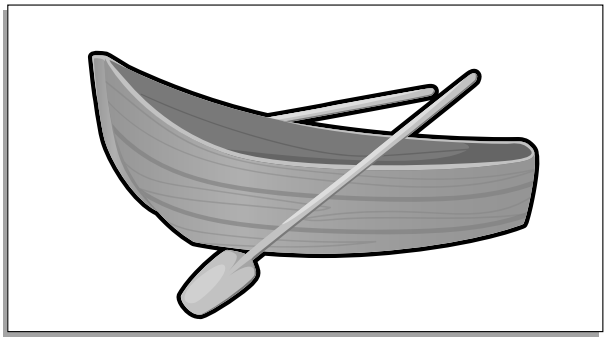
a. The motorcycle sticker is _____ centimeters long.



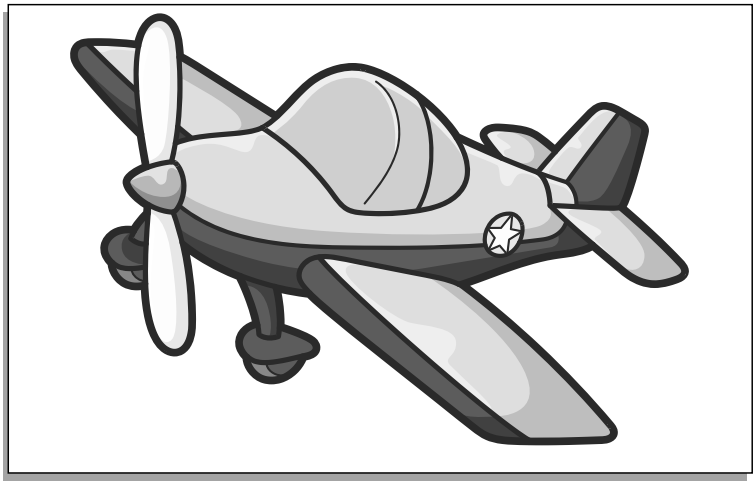
b. The car sticker is _____ centimeters long.



c. The fire truck sticker is _____ centimeters long.



d. The rowboat sticker is _____ centimeters long.



e. The airplane sticker is _____ centimeters long.

2. Use the stickers' measurements to order the stickers of the **fire truck**, the **rowboat**, and the **airplane** from longest to shortest. You can use drawings or names to order the stickers.

Longest ⟶ Shortest

3. Fill in the blanks to make the statements true. (There may be more than one correct answer.)

a. The airplane sticker is longer than the _____ sticker.

b. The rowboat sticker is longer than the _____ sticker and shorter than the _____ sticker.

c. The motorcycle sticker is shorter than the _____ sticker and longer than the _____ sticker.

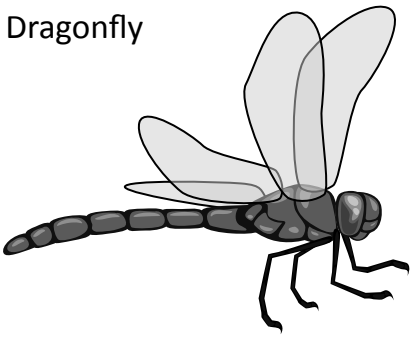
d. If Justin gets a new sticker that is longer than the rowboat, it will also be longer than which of his other stickers? _____

1. Order the bugs from longest to shortest by writing the bug names on the lines. Use centimeter cubes to check your answer. Write the length of each bug in the space to the right of the pictures.

   The bugs from longest to shortest are

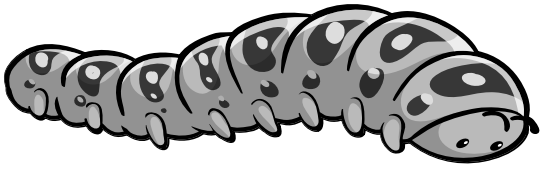
   Caterpillar ***Dragonfly*** ***Bee***

Dragonfly



5 centimeters

Caterpillar



The caterpillar is the longest bug. The caterpillar is 7 centimeters long!

7 centimeters

Bee

The bee is the shortest bug. The bee is only 4 centimeters long!

4 centimeters

2. Use all of the bug measurements to complete the sentences.

   a. The fly is longer than the ***bee*** and shorter than the ***caterpillar***.

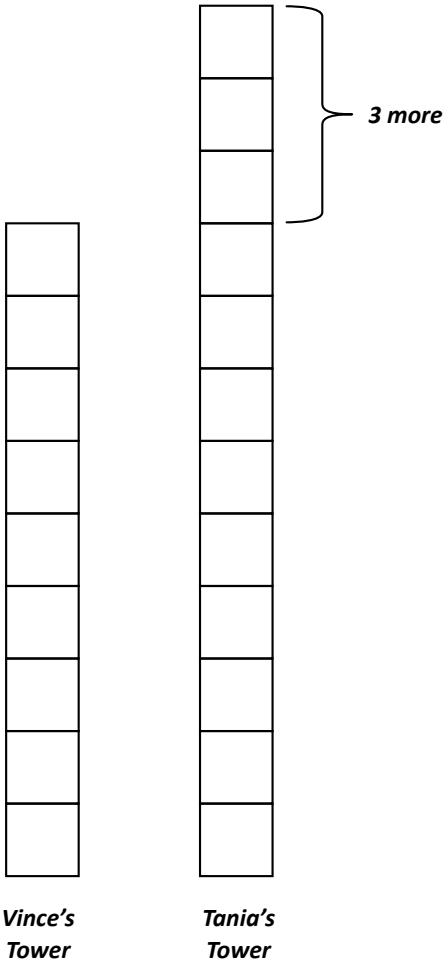
   b. The ***bee*** is the shortest bug.

   c. If another bug is added that is shorter than the bee, list the bugs that the new bug is also shorter than.

   The new bug will be shorter than the fly and the caterpillar.

   The bee is the shortest bug, so if a bug is shorter than the bee, it is also shorter than all the other bugs.

3. Tania makes a cube tower that is 3 centimeters taller than Vince's tower. If Vince's tower is 9 centimeters tall, how tall is Tania's tower?



To solve, I can use Read, Draw, Write! Now that I have read the problem, what can I draw? I think I can draw the towers! I can start with Vince's tower since I know his is 9 cubes tall.

I can write a number sentence to solve. 9 cubes + 3 cubes equals 12 cubes.

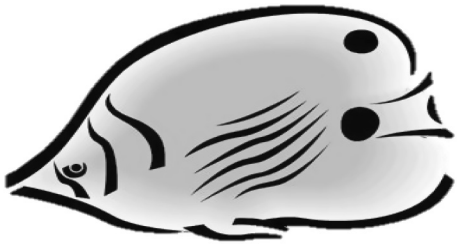
$$9 + 3 = 12$$

Tania's tower is 12 cubes tall.

Name _____ Date _____

1. Natasha's teacher wants her to put the fish in order from longest to shortest. Measure each fish with the centimeter cubes that your teacher gave you.

A



_____ centimeters

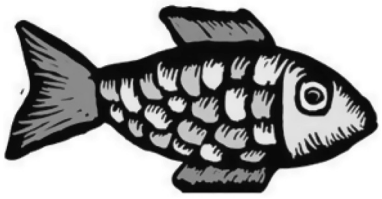
B

_____ centimeters

C

_____ centimeters

D



_____ centimeters

E

_____ centimeters

2. Order fish A, B, and C from longest to shortest.

   _____ _____ _____

3. Use all of the fish measurements to complete the sentences.

   a. Fish A is longer than Fish _____ and shorter than Fish _____.

   b. Fish C is shorter than Fish _____ and longer than Fish _____.

   c. Fish _____ is the shortest fish.

   d. If Natasha gets a new fish that is shorter than Fish A, list the fish that the new fish is also shorter than.

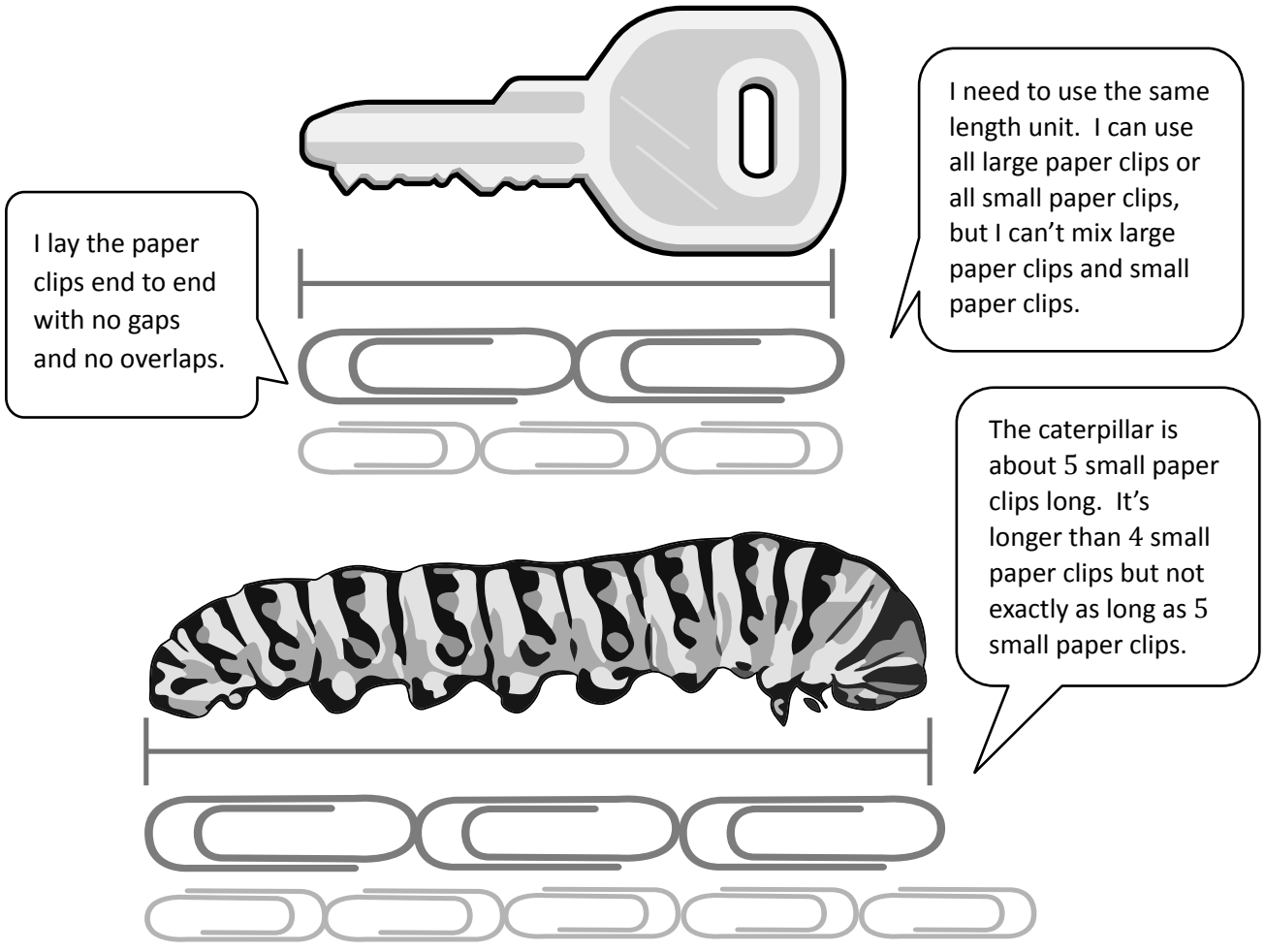
Use your centimeter cubes to model each length, and answer the question.

4. Henry gets a new pencil that is 19 centimeters long. He sharpens the pencil several times. If the pencil is now 9 centimeters long, how much shorter is the pencil now than when it was new?

5. Malik and Jared each found a stick at the park. Malik found a stick that was 11 centimeters long. Jared found a stick that was 17 centimeters long. How much longer was Jared's stick?

Measure the objects with the large paper clip strip (included with homework paper) and then again with the small paper clip strip (included with homework).

Fill in the chart on the back of the page with your measurements.

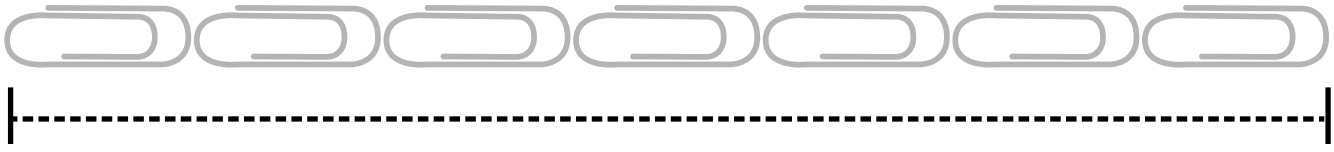


Name of Object	Length in Large Paper Clips	Length in Small Paper Clips
a. key	2	3
b. caterpillar	3	5

I knew that the length in small paper clips would be a bigger number. The smaller the length unit, the larger the measurement!

Large paper clip strip

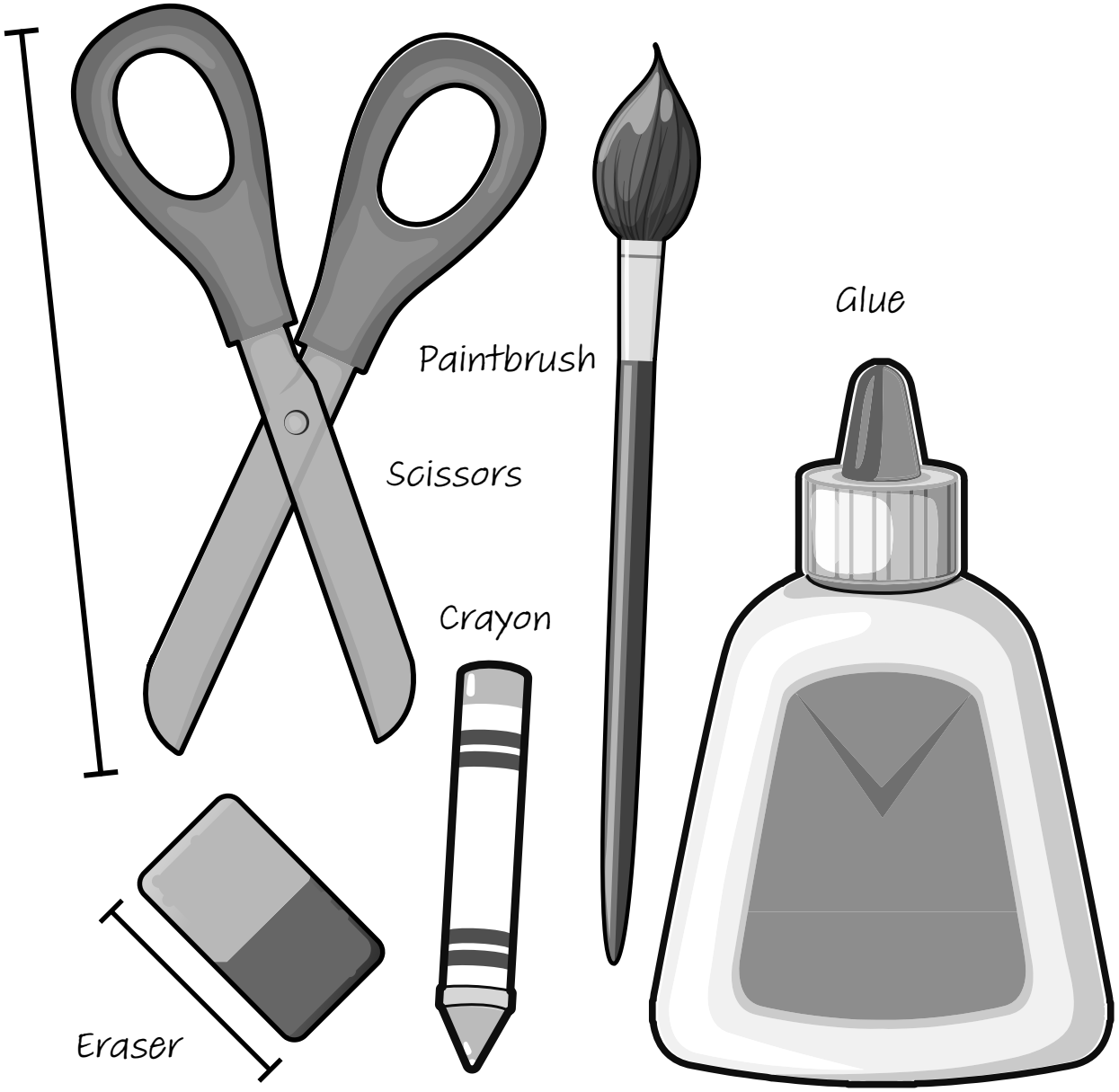
Small paper clip strip



Name _____ Date _____

Cut the strip of paper clips. Measure the length of each object with the **large** paper clips to the right. Then, measure the length with the **small** paper clips on the back.

1. Fill in the chart with your measurements.



Name of Object	Length in Large Paper Clips	Length in Small Paper Clips
a. paintbrush		
b. scissors		
c. eraser		
d. crayon		
e. glue		

2. Find objects to measure. Record the objects you find and their measurements on the chart.

Name of Object	Length in Large Paper Clips	Length in Small Paper Clips
a.		
b.		
c.		
d.		
e.		

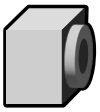
1. Circle the length unit you will use to measure. Use the same length unit for all objects.

Small Paper Clips

Toothpicks

Large Paper Clips

Centimeter Cubes



Measure each object listed on the chart, and record the measurement. Add the names of other objects in the classroom, and record their measurements.

Classroom Object	Measurement
a. glue stick	**8 *centimeter cubes***
b. dry erase marker	**12 *centimeter cubes***
c. unsharpened pencil	**19 *centimeter cubes***
d. new crayon	**9 *centimeter cubes***

2. Did you remember to add the name of the length unit after the number? Yes NO

I have to say centimeter cubes. If not, someone might think I am measuring with some other kind of cube!

3. Pick 3 items from the chart. List your items from longest to shortest:

a. ***unsharpened pencil***

b. ***dry erase marker***

c. ***glue stick***

I started with the longest thing I measured, the unsharpened pencil. Then I wrote the shortest one, the glue stick. Then I put the dry erase marker in the middle because it is shorter than the unsharpened pencil but longer than the glue stick.

Name _____ Date _____

Circle the length unit you will use to measure. Use the same length unit for all objects.

Small Paper Clips

Large Paper Clips

Toothpicks

Centimeter Cubes

1. Measure each object listed on the chart, and record the measurement. Find some other objects to measure. Record the names and the measurements of those objects in the chart.

Object	Measurement
a. fork	
b. picture frame	
c. pan	
d. shoe	

Object	Measurement
e. stuffed animal	
f.	
g.	

Did you remember to add the name of the length unit after the number? Yes No

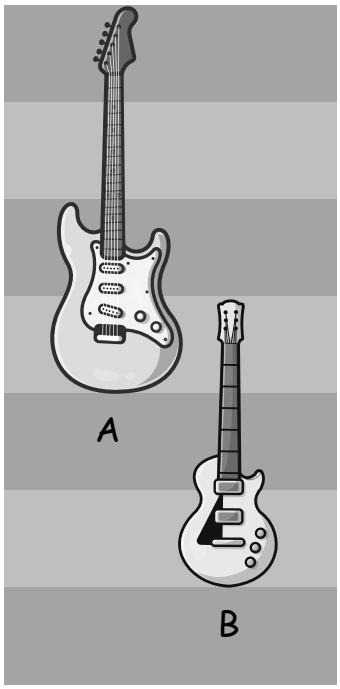
2. Pick 3 items from the chart. List your items from longest to shortest:

a. _____

b. _____

c. _____

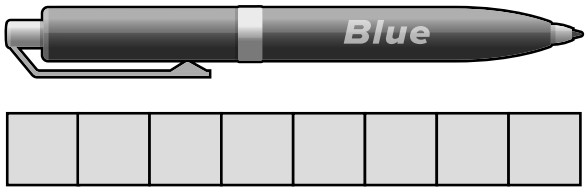
1. Look at the picture below. How much longer is Guitar A than Guitar B?



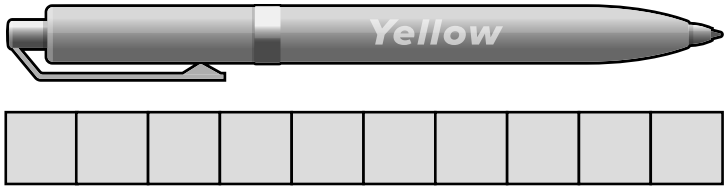
Guitar A is __1__ unit(s) longer than Guitar B.

Guitar A is 4 units long. Guitar B is 3 units long. $4 - 3 = 1$, so Guitar A is 1 unit longer.

2. Measure each object with centimeter cubes.



The blue pen is **8 *centimeter cubes*** .



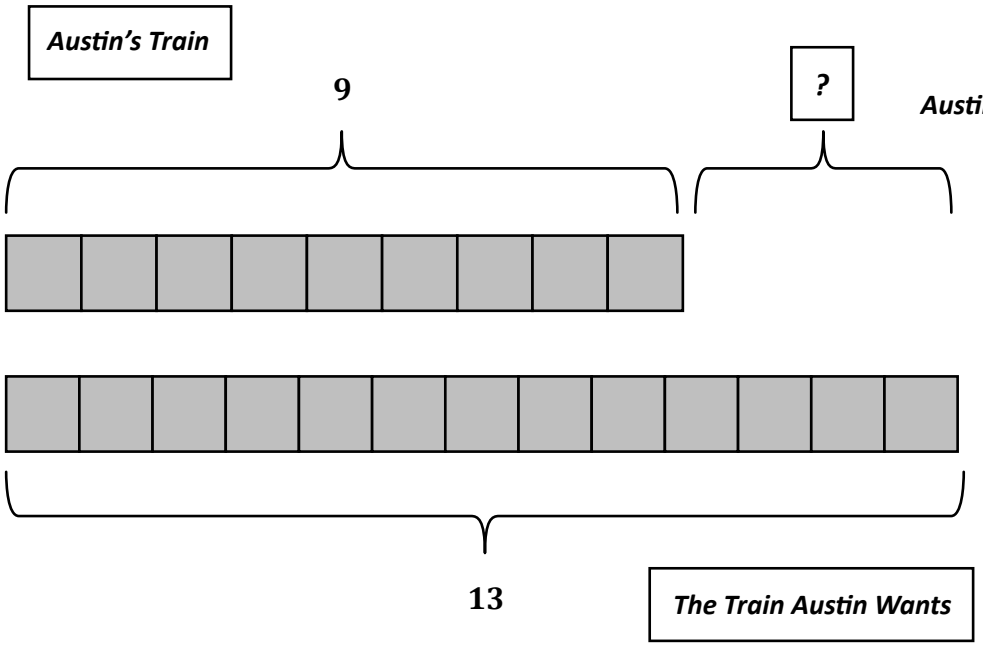
The yellow pen is **10 *centimeter cubes*** .

3. How much **longer** is the yellow pen than the blue pen?

   The yellow pen is **2** centimeters longer than the blue pen.

Use your centimeter cubes to model the problem. Then, solve by drawing a picture of your model and writing a number sentence and a statement.

4. Austin wants to make a train that is 13 centimeter cubes long. If his train is already 9 centimeter cubes long, how many more cubes does he need?



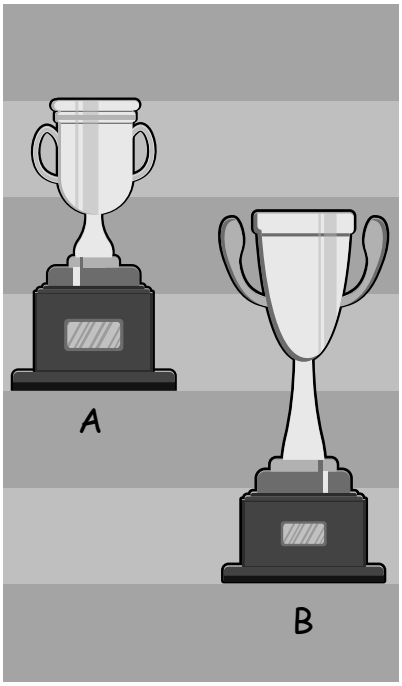
$9 + \boxed{4} = 13$

Austin needs 4 more cubes.

I can use an addition sentence or a subtraction sentence to solve. I can say $13 - 9 = 4$, or I can say $9 + 4 = 13$.

Name _____ Date _____

1. Look at the picture below. How much **shorter** is Trophy A than Trophy B?



Trophy A is _____ units **shorter** than Trophy B.

2. Measure each object with centimeter cubes.

The red shovel is _____ _____.

The green shovel is _____ _____.

3. How much **longer** is the green shovel than the red shovel?
   The green shovel is _____ centimeters **longer** than the red shovel.

Use your centimeter cubes to model each problem. Then, solve by drawing a picture of your model and writing a number sentence and a statement.

4. Susan grew 15 centimeters, and Tyler grew 11 centimeters. How much **more** did Susan grow than Tyler?

5. Bob's straw is 13 centimeters long. If Tom's straw is 6 centimeters long, how much **shorter** is Tom's straw than Bob's straw?

6. A purple card is 8 centimeters long. A red card is 12 centimeters long. How much **longer** is the red card than the purple card?

7. Carl's bean plant grew to be 9 centimeters tall. Dan's bean plant grew to be 14 centimeters tall. How much **taller** is Dan's plant than Carl's plant?

Students were asked about their favorite kind of fruit. Use the data below to answer the questions.

Fruit	Tally Marks	Votes
Apple	𝍸	**2**
Strawberry	𝍸	**4**
Banana	𝍸 𝍸	**8**

1. Fill in the blanks in the table by writing the number of students who voted for fruit.

2. How many students chose apple as the fruit they like best?
   2 students

I can solve by adding $2 + 4$ since there are 2 students who like apple and 4 students who like strawberry.

3. What is the total number of students who like apple or strawberry the best?
   6 students

4. Which fruit received the least amount of votes? ***apple***

By looking at the tally marks, it's clear to see that the least number of people voted for apple.

5. What is the total number of students who like banana or apple the best?
   10 students

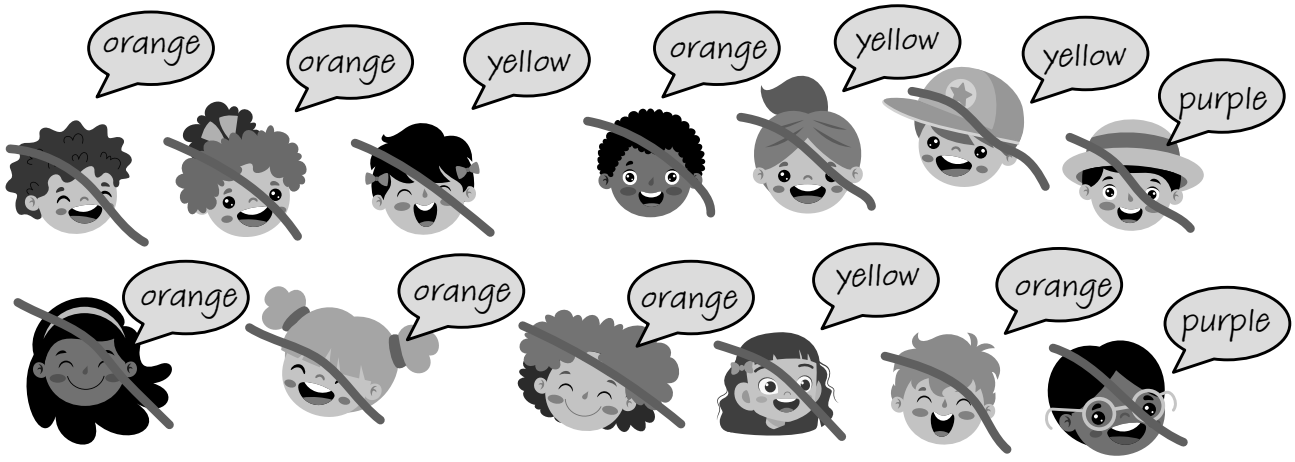
6. Which two flavors are liked by a total of 12 students?

   strawberry and ***banana***

I have to think about which two numbers can make 12. There is a 2, 4, and 8. $4 + 8 = 12$ so that means strawberry and banana were liked by 12 students.

7. Write an addition sentence that shows how many students voted for their favorite fruit.
   $2 + 4 + 8 = 14$

8. A group of people were asked to say their favorite color. Organize the data using tally marks, and answer the questions.



Orange	𝍸 ||
Yellow	𝍸
Purple	||

I can count each vote and make a tally. I can't see which ones I have counted, so I just cross them off as I count.

9. Which color received the least amount of votes? ***purple***

10. How many more people like yellow than purple ?

I can see that yellow has two more tallies than purple.

2 students

11. What is the total number of people who like orange and purple the most?

9 students

12. Which two colors did a total of 11 people vote for?

7 students like orange, and 4 students like yellow. $7 + 4 = 11$.

orange and **yellow**

13. Write an addition sentence that shows how many people voted for their favorite color.

$\mathbf{7 + 4 + 2 = 13}$

Name _____ Date _____

Students were asked about their favorite ice cream flavor. Use the data below to answer the questions.

Ice Cream Flavor	Tally Marks	Votes
Chocolate	𝍸	
Strawberry	𝍷	
Cookie Dough	𝍸 𝍸	

1. Fill in the blanks in the table by writing the number of students who voted for each flavor.

2. How many students chose cookie dough as the flavor they like **best**?

   _____ students

3. What is the total number of students who like chocolate or strawberry the **best**?

   _____ students

4. Which flavor received the **least** amount of votes? _____

5. What is the total number of students who like cookie dough or chocolate the **best**?

   _____ students

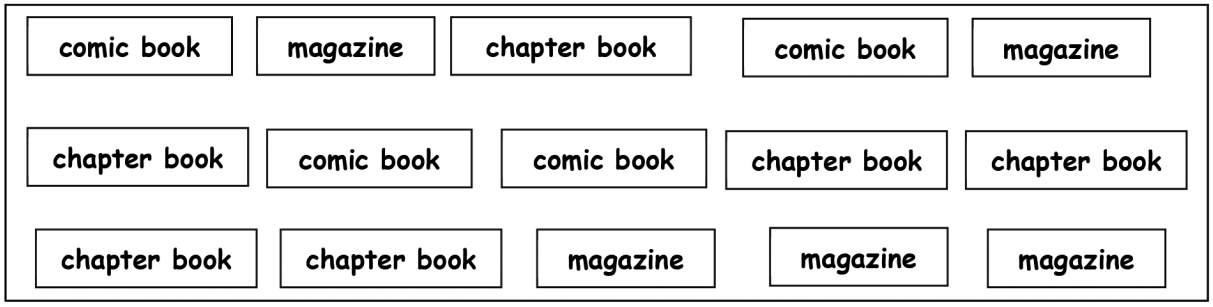
6. Which two flavors were liked by a **total** of 7 students?

   _____ and _____

7. Write an addition sentence that shows how many students voted for their favorite ice cream flavor.

   _____

Students voted on what they like to read the most. Organize the data using tally marks, and then answer the questions.



What Students Like to Read the Most	Number of Students
Comic Book	
Magazine	
Chapter Book	

8. How many students like to read chapter books the most? _____ students

9. Which item received the **least** amount of votes? _____

10. How many more students like to read chapter books than magazines?

    _____ students

11. What is the total number of students who like to read magazines or chapter books?

    _____ students

12. Which two items did a total of 9 students like to read?

    _____ and _____

13. Write an addition sentence that shows how many students voted.

    _____

Collect information about the block you live on. Use tally marks or numbers to organize the data in the chart below.

How many **brick buildings/houses** are on your street?	How many **two story buildings/houses** are on your street?	How many **one story buildings/houses** are on your street?	How many **grassy lawns** are on your street?	How many **buildings/houses with a garage** are on your street?
𝍸	𝍸	𝍸	𝍸 𝍸	𝍸

- Complete the question sentence frames to ask questions about your data.
- Answer your own questions.

I can see that the most houses have grassy lawns because there are so many tallies!

1. How many ***grassy lawns*** are there? (Pick the the category that has the **most.**) **9**

2. How many ***brick buildings*** are there? (Pick the item you have the **least** of.) **2**

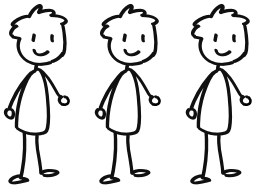
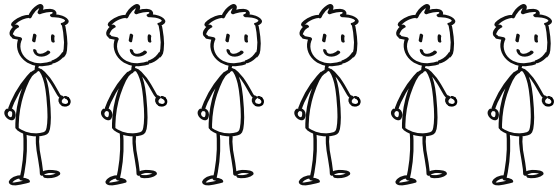
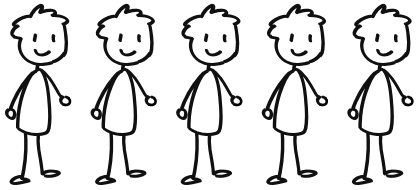
3. **Together**, how many brick houses and houses with garages are there? **8**

4. Write and answer two more questions using the data you collected.

   a. ***Are there more one story or two story houses? There are more one story houses.***

   b. ***Together, how many one story and two story houses are there*** ? **9**

Workers voted on their favorite snack food for the office kitchen. Each worker could only vote once. Answer the questions based on the data in the table.

Crackers	
Popcorn	
Fruit	

3 workers chose crackers, and 5 chose fruit. $3 + 5 = 8$, so 8 workers chose fruit or crackers.

5. How many workers chose popcorn? **6** workers

6. How many workers chose fruit or crackers?
8 workers

7. From this data, can you tell how many workers are in this office? Explain your thinking.

I think there must be* 14 *workers in the office because I counted each person who voted. There could be more though because what if someone was absent that day or just did not vote?

I know that $3 + 6 = 9$, and then there are 5 more. $9 + 1 = 10$, and then I add on 4 more, and I get 14.

Name _____ Date _____

Collect information about things you own. Use tally marks or numbers to organize the data in the chart below.

How many **pets** do you have?	How many **toothbrushes** does your family have?	How many **pillows** does your family have?	How many **jars of tomato sauce** does your family have?	How many **picture frames** does your family have?

- Complete the question sentence frames to ask questions about your data.
- Answer your own questions.

1. How many _____ do you have? (Pick the item you have the **most** of.)

2. How many _____ do you have? (Pick the it em you have the **least** of.)

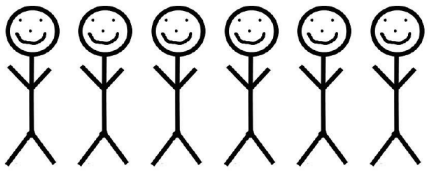
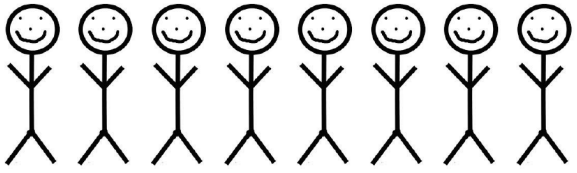
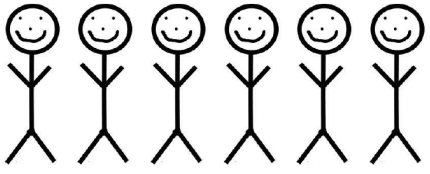
3. **Together**, how many picture frames and pillows do you have?

4. Write and answer two more questions using the data you collected.

   a. _____?

   b. _____?

Students voted on their favorite type of museum to visit. Each student could only vote once. Answer the questions based on the data in the table.

Science Museum	
Art Museum	
History Museum	

5. How many students chose art museums? _____ students

6. How many students chose the art museum or the science museum?
   _____ students

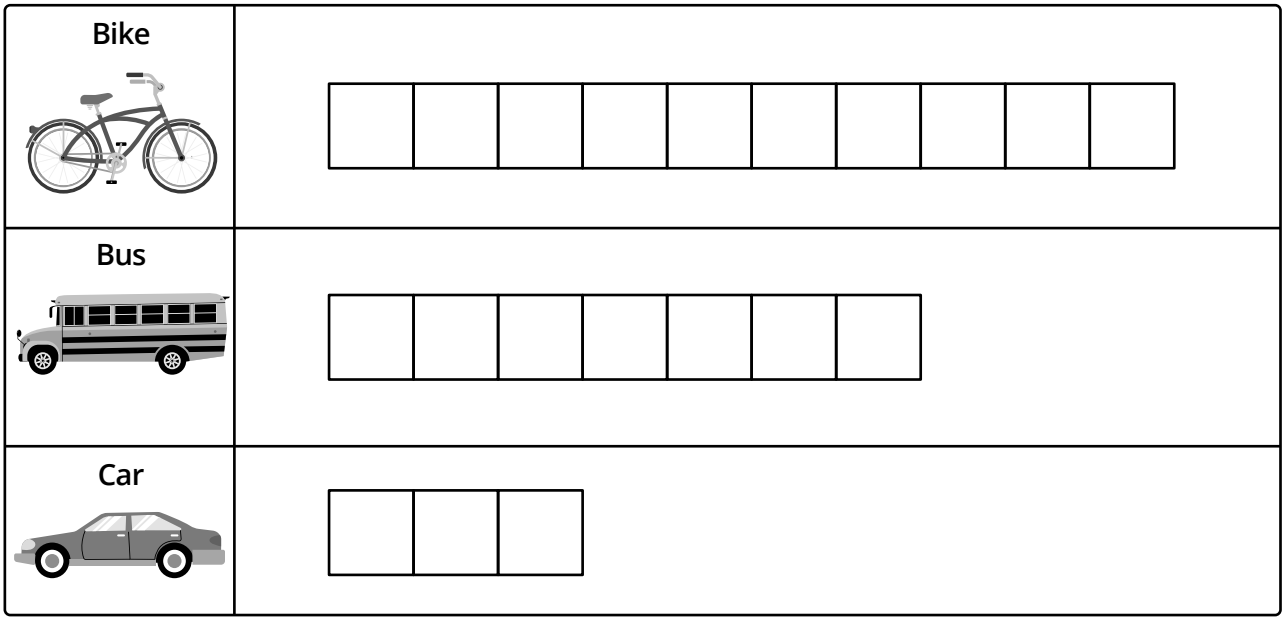
7. From this data, can you tell how many students are in this class? Explain your thinking.

The class has 20 students. 10 students ride their bikes to school, 7 ride the bus, and 3 come in a car. Use squares with no gaps or overlaps to organize the data. Line up your squares carefully.

How Students Came to School

Number of Students

= 1 student



I line my squares up carefully with no gaps in between and no overlaps. I started from the same endpoint.

I can look at the number of students that rode a bike and the number of students that rode the bus. I can count how many more students rode a bike. 1, 2, 3 students!

1. How many more students rode a bike than rode the bus? **3** students

2. How many students were asked how they come to school? Write a number sentence to show your answer.

   $10 + 7 + 3 = 20$

I add the number of bike riders, bus riders, and car riders!

3. How many fewer students rode in a car than the bus? Write a number sentence to show your answer.

   $7 - 3 = 4$

Name _____ Date _____

In class on Friday, 9 students wore sneakers, 3 students wore boots, and 6 students wore sandals. Use the correct number of picture cards to build your graph. Line up the cards carefully, and make sure there are no gaps or overlaps.

1. How many more students wore sneakers than sandals?

   _____ students

2. How many students were asked about their shoes on Friday? Write a number sentence to show your answer.

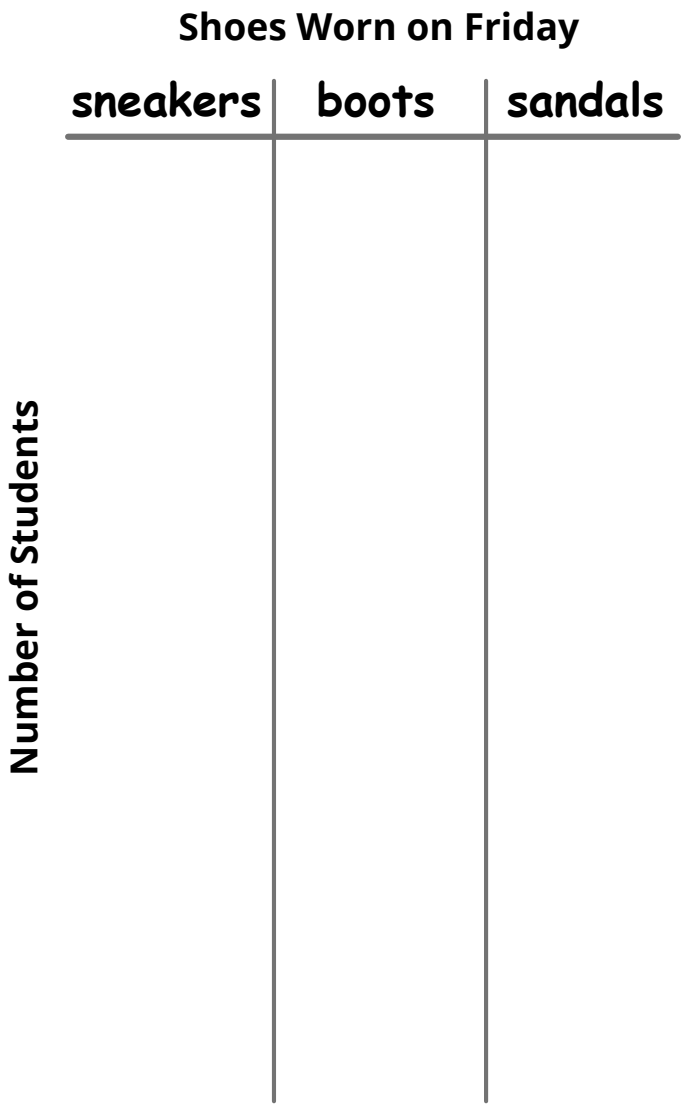
   _____

3. How many fewer students wore boots than sneakers? Write a number sentence to show your answer.

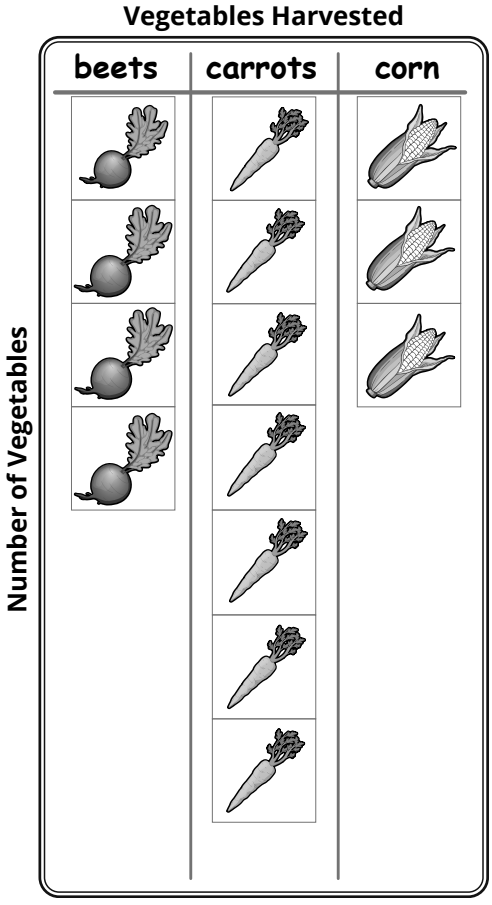
   _____

4. If the teacher asked a question about this picture graph and you correctly answered "3," what question might the teacher have asked?

   _____



Our school garden has been growing for two months. The graph below shows the numbers of each vegetable that have been harvested so far.



Each picture = 1 vegetable

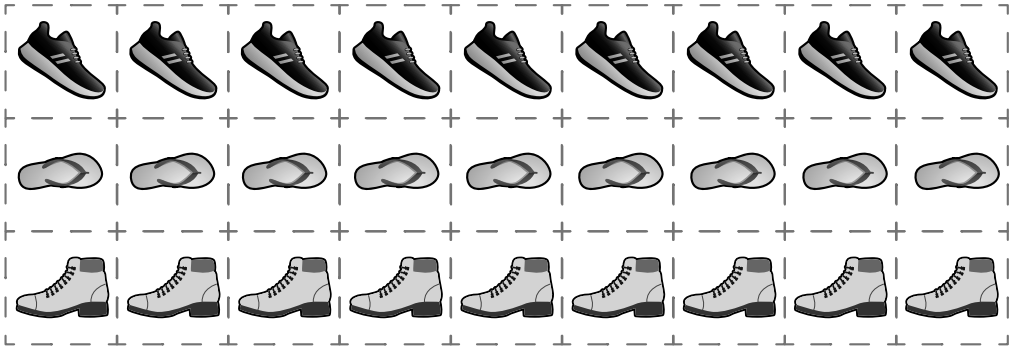
5. How many total vegetables were harvested? _____ vegetables

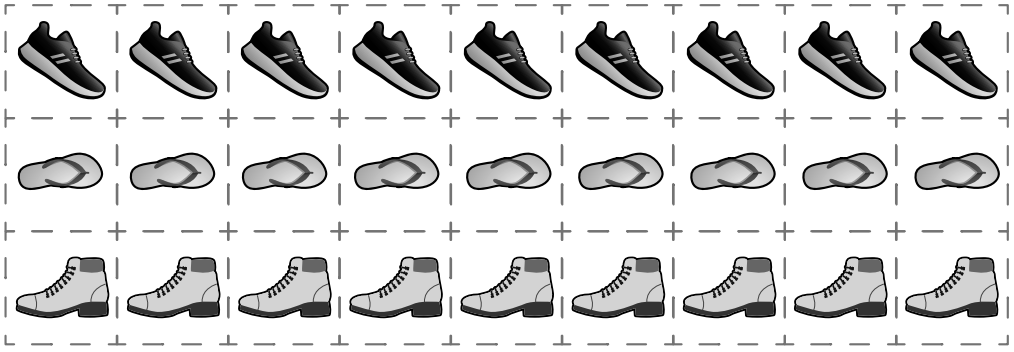
6. Which vegetable has been harvested the most? _____

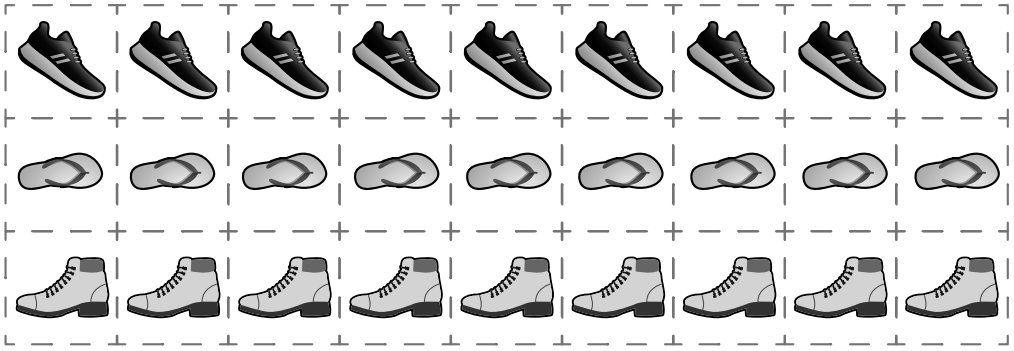
7. How many more beets were harvested than corn? _____ more beets than corn

8. How many more beets would need to be harvested to have the same amount as the number of carrots harvested? _____

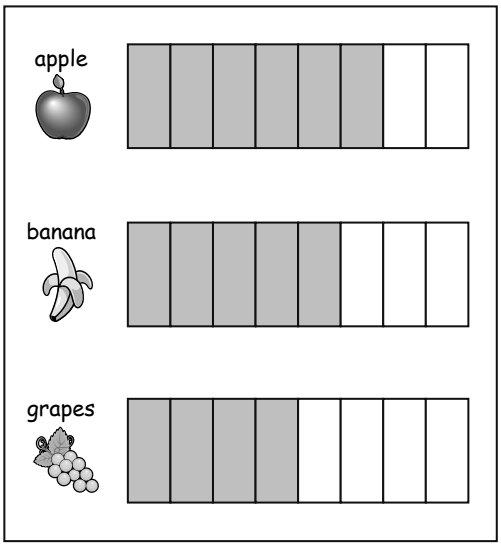
Attach a set of picture cards to each student's homework page.







Use the data from the chart to make a bar graph by shading the boxes. Use the bar graph to answer the questions. For Questions 1-3, fill in the blank and write a number sentence.



Food	Number of Votes
Apple	𝍸 |
Banana	𝍸 |
Grapes	𝍸

I can count the tallies to find how many people voted for each food.

6 people voted for apple. I color 6 boxes in the bar graph next to the apple.

1. How many more people voted for bananas than for grapes?

   There was **1** more vote for bananas. **5 – 4 = 1**

2. How many fewer votes were there for grapes than for apples?

   There were **2** fewer votes for grapes. **6 – 4 = 2**

I can use the bar graph or the tally chart to help me answer the questions.

I see 5 votes for bananas, and 4 votes for grapes. So, there was 1 more vote for bananas. A number sentence that shows this is $5 - 4 = 1$.

3. If 3 more students vote for bananas, how many votes for bananas will there be?

   There will be **8** votes for bananas. **5 + 3 = 8**

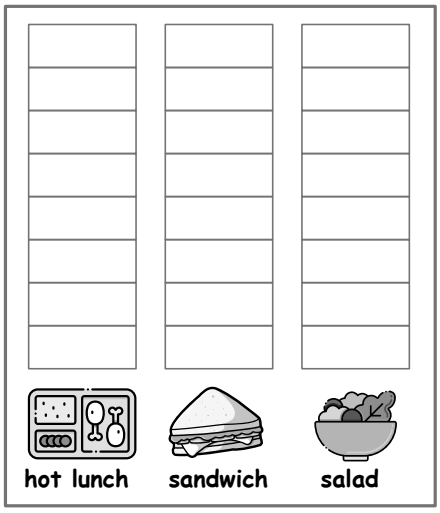
4. What is another question you can ask about this bar graph? Write the question and answer.

   How many people voted in all? 6 + 4 + 5 = 15

Name _____ Date _____

Use the data from the chart to make a bar graph by shading the boxes. Use the bar graph to answer the questions. For Questions 1-3, fill in the blank and write a number sentence.

School Lunch Order



Meal Choices

Meal Choice	Number of Orders
Hot Lunch	5
Sandwich	6
Salad	4

= 1 order

1. How many more hot lunch orders were there than sandwich orders?

   There were _____ more hot lunch orders._____

2. How many fewer salad orders were there than hot lunch orders?

   There were _____ fewer salad orders._____

3. If 5 more students order hot lunch, how many hot lunch orders will there be?

   There will be _____ hot lunch orders._____

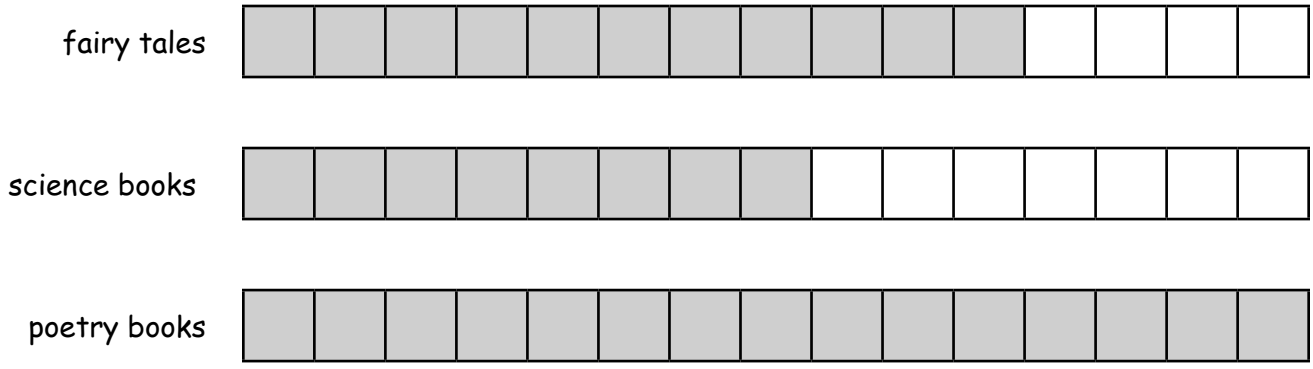
4. What is another question you can ask about this bar graph? Write the question and answer.

_____

_____

Use the bar graph to answer the questions. For Questions 5–7, fill in the blanks, and write a number sentence.

Favorite Type of Book



5. How many more students like fairy tales than science books?
   _____ more students like fairy tales. _____

6. How many fewer students like science books than poetry books?
   _____ fewer students like science books. _____

7. How many students picked fairy tales or science books in all?
   _____ students picked fairy tales or science books.
   _____

8. If 5 more students show up late and all pick fairy tales, will this be the most popular type of book? Use a number sentence to show your answer.
   _____

9. If the teacher asked a question about this bar graph and you correctly answered "8," what question might the teacher have asked?

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OER K–5 Math

EDITION 1

ENGLISH

SUCCEED

ORDERING AND COMPARING LENGTH MEASUREMENTS AS NUMBERS

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