042924 G4 U2 EOU

Grade	4
Unit/Domain	Eureka! Student Inventor
Copyright (Original or Public Domain)	Original
Source(s)	https://lemelson.mit.edu/resources/philo-farnsworth https://www.smithsonianmag.com/smart-news/farmboy-who-invented-television-while-plowing-180964607/ https://www.in.gov/history/4230.htm
Lexile/Average Grade Level	Unavailable at this time.
Flesch Kincaid	6.5
Word Count	722
Title	A Young Inventor
Author	Lindsey Biggam

A Young Inventor

(1) Inventors are people who are curious about the world around them and enjoy trying fresh ideas to solve problems. In fact, a young man named Philo Farnsworth made one of the most important inventions of our time by taking time to observe the world around him and ponder different ways to improve on ideas. Philo was only 14 years old when he invented a new kind of television. Even though the concept of the television had been around for a while, Philo created an innovative idea to make it even better.

The Kid

(2) Philo was born in 1906 in Utah. By age 6, he knew that he wanted to be an inventor. He was fascinated with mechanical things like trains, motors, and other machines. Philo's family decided to move to Idaho. As they traveled to their new home, Philo saw power lines in the sky for the first time. Unlike the log cabin in Utah, this new home was completely wired for electricity. This was exciting because at this time very few homes in the United States had electric lighting. When not helping on the family farm, he loved reading science magazines and learning about electricity and radios. He also spent his spare time fixing broken motors, creating mechanical inventions, and thinking of ways to improve things. At age 12, he built his family's first electric washing machine by attaching a motor to the hand-cranked washer. At age 13, Philo entered one of his inventions into a contest. It was a lock that could be used for cars. He won the contest and continued to think about the television.

The Idea

(3) Philo was aware of mechanical televisions. He knew these televisions were slow. They sent and received signals with a radio receiver. They turned the signals into images. How could televisions work faster? Philo thought electricity could speed them up. At age 14, he was riding home from school when an idea came to him. He saw rows of potato crops in the field and the furrows between them. The crop field and its identical rows gave him an idea. The field was like a complete picture split up into smaller parts. Philo realized that he could use electrical tubes to carry pieces of moving images. Those pieces would come together to form a complete picture on a television screen. Philo knew what he wanted to invent.

The Work

(4) At age 16, while still in high school, Philo went to college to study science. When his father died, Philo had to leave school to help his family by taking on extra work repairing radios. While still in his teens, he continued to work on his ideas and worked out his basic designs for an electronic television. After using money from two friends and many failed attempts, Philo made his first successful electronic television. In 1927, a 21-year-old Philo was ready to show the world an invention that was unimaginable to most people at the time.

https://pixabay.com/illustrations/tv-70s-60s-1960s-1970s-vintage-2213140/

The Patents

(5) In 1930, Philo was granted a patent, which is a right of ownership. When a person invents something, a patent prevents others from making, using, or selling an invention without the inventor's permission. Because Philo Farnsworth applied for the patent, it was established that Philo Farnsworth was the first person to invent an electronic television, so others could not claim and use the idea as their own. A large electronic company, RCA, challenged Philo's patent. RCA claimed that its electronic television was the first. Eventually, they came to an agreement and RCA paid Philo $1 million to use his ideas in their televisions. RCA went on to become a major television company, and Philo continued to invent. In his lifetime, he had nearly 300 patents including ones that contributed to radar and even infra-red night vision technologies!

(6) Over the past 100 years, televisions have changed from being large, bulky boxes with only black and white colors, very few shows, and unclear images to thin screens showing lots of programs with full-color, clear, crisp, high-definition resolution and images. We see these images everywhere, on televisions, phones, tablets, and computers! Looking back, who knew that a 14-year-old kid looking at a field of potatoes would change the way we look at the world?

https://commons.wikimedia.org/wiki/File:Philo_T_Farnsworth.jpg
Caption: Philo Farnsworth, 1939

Item #	1
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.6.F Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to: (F) make inferences and use evidence to support understanding.
Objective	Students will answer literal and inferential questions about an inventor biography.
DOK Level	1
Question Type	Multiple Select

PASSAGE

Element	**Value**
passage_link	
passage_title	A Young Inventor

QUESTION

Element	**Value**
stimulus	Refer to the passage, “A Young Inventor.”
question_stem	In paragraph 3, what are the most likely reasons the author shares the story about the potato field?
prompt	*Select **TWO** correct answers.*
randomize_answer_choices	yes
answer_a	The author wants to explain how Philo got to and from school.
answer_b	The author wants to provide an example of Philo’s creativity.
answer_c	The author wants to describe the farm where Philo grew up.
answer_d	The author wants to tell how televisions worked.
answer_e	The author wants to emphasize that ideas can come from everyday events.
correct_answer_1	b
correct_answer_1_rationale	The author says Philo thought the field looked like a complete picture split up into smaller parts. His ability to visualize farm rows as parts of a television screen is creative.
correct_answer_2	e
correct_answer_2_rationale	Philo lived on a farm and looked at fields regularly going to and from school. When he looked at the field in a new way, the idea was sparked.
incorrect_answer_1	a

incorrect_answer_1_rationale	The idea that came from seeing the potato field occurred when he was riding home from school and no explanation for how Philo got to and from school is evident in the passage.
incorrect_answer_2	c
incorrect_answer_2_rationale	The description of the potato field in the text is to show how Philo got his idea and not to describe the farm where he grew up.
incorrect_answer_3	d
incorrect_answer_3_rationale	The information about the potato field explains what prompted Philo to think about how to use electrical tubes to carry images, not to describe how the television worked.
scoring	Partial match; 1 point (.5 each)

Item #	2
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.6.G Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to: (G) evaluate details read to determine key ideas.
Objective	Students will evaluate details read to determine key ideas about an inventor biography.
DOK Level	3
Question Type	Multiple Select

PASSAGE

Element	**Value**
passage_link	
passage_title	A Young Inventor

QUESTION

Element	**Value**
stimulus	Refer to the passage, “A Young Inventor.”
question_stem	Which details from “A Young Inventor” support the idea that Philo Farnsworth had a big imagination?
prompt	*Select TWO correct answers.*
randomize_answer_choices	yes
answer_a	Inventors are people who are curious about the world around them and enjoy trying fresh ideas to solve problems. (paragraph 1)
answer_b	Growing up, Philo read science magazines and learned about other inventors. (paragraph 2)
answer_c	At age 12, he built his family’s first electric washing machine by attaching a motor to the hand-cranked washer. (paragraph 2)
answer_d	Philo knew about televisions that used mechanics, or moving parts, to show images. (paragraph 3)
answer_e	Philo realized that he could use electrical tubes to carry pieces of moving images. (paragraph 3)
answer_f	At age 16, while still in high school, Philo went to college to study science. (paragraph 4)
correct_answer_1	c
correct_answer_1_rationale	By describing how Philo figured out how to create an electric

	washing machine on his own, this detail supports the idea that Philo had a big imagination.
correct_answer_2	e
correct_answer_2_rationale	By describing how Philo discovered he could transmit images over the air, this detail supports the idea that Philo had a big imagination.
incorrect_answer_1	a
incorrect_answer_1_rationale	The question is about Philo having a big imagination, so the detail about other inventors being curious about the world around them does not support the idea of Philo himself having a big imagination.
incorrect_answer_2	b
incorrect_answer_2_rationale	While reading science magazines fostered his interest in science, this detail does not show an example of his imagination.
incorrect_answer_3	d
incorrect_answer_3_rationale	Philo having knowledge about mechanical things is an important detail about his skill but does not support the idea that he had a big imagination.
incorrect_answer_4	f
incorrect_answer_4_rationale	Philo going to college at an early age shows that he is smart but does not show that he has a big imagination.
scoring	Partial match; 1 point (.5 each)

Item #	3
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.6.G Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to: (G) evaluate details read to determine key ideas.
Objective	Students will identify a key idea of a paragraph.
DOK Level	2
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	A Young Inventor

QUESTION

Element	**Value**
stimulus	Refer to the passage, “A Young Inventor.”
question_stem	The details in paragraph 4 support the key idea that -
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	Philo is a hard worker
answer_b	Philo is creative
answer_c	Philo’s idea was put on hold when his father died
answer_d	Philo preferred school to farm work
correct_answer	a
correct_answer_rationale	The details in the paragraph tell about Philo studying at school and working at the family’s farm.
incorrect_answer_1	b
incorrect_answer_1_rationale	While there is a sentence that states he worked on his ideas, there are no other references to creativity. Most of the details center around him taking on extra work and persevering after failed attempts.
incorrect_answer_2	c
incorrect_answer_2_rationale	The paragraph clearly states that Philo continued to work on his ideas and worked out his basic designs for an electronic television after his father died, showing he did not put his idea

	on hold.
incorrect_answer_3	d
incorrect_answer_3_rationale	Working on the family farm is referenced in paragraph 2 not paragraph 4 and even in that paragraph there is no evidence to support that he preferred farm work over other activities.
scoring	Exact match; 1 point

Item #	4
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.6.G Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to: (G) evaluate details read to determine key ideas.
Objective	Students will explain events, ideas, or procedures described in a text.
DOK Level	1
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	A Young Inventor

QUESTION

Element	**Value**
stimulus	Refer to the passage, “A Young Inventor.”
question_stem	What idea did Philo Farnsworth think of after seeing rows of potato crops?
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	He could use tubes of electricity to carry pictures.
answer_b	He could use electrical lines to power farm equipment.
answer_c	He could make televisions thinner, lighter, and clearer.
answer_d	He could send electrical signals through the air to antennas.
correct_answer	a
correct_answer_rationale	The lines of the potato crops reminded him of tubes of electricity.
incorrect_answer_1	b
incorrect_answer_1_rationale	The passage states that Philo saw power lines and that he used electricity to power a washing machine before he got the idea from the potato field.
incorrect_answer_2	c
incorrect_answer_2_rationale	The reference to televisions being thinner, lighter, and clearer

	is an improvement on Philo's initial idea about using tubes of electricity to carry pictures, which is what came to him after seeing the potato field.
incorrect_answer_3	d
incorrect_answer_3_rationale	Sending electrical signals through the air to antennas is not a detail from the passage.
scoring	Exact match; 1 point

Item #	5
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.7.D Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:(D) retell, paraphrase, or summarize texts in ways that maintain meaning and logical order.
Objective	Students will organize information and use information that requires two or more steps in a text.
DOK Level	2
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	A Young Inventor

QUESTION

Element	**Value**
stimulus	Refer to the passage, “A Young Inventor.”
question_stem	Which of the following events occurred <u>third</u> in Philo’s order of accomplishments?
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	Philo went to college to study science.
answer_b	Philo read science magazines.
answer_c	Philo built an electric washing machine for his family.
answer_d	Philo received a patent for the electronic television.
answer_e	Philo designed and built the first electronic television.
correct_answer	a
correct_answer_rationale	First, Philo read science magazines. Second, Philo built an electric washing machine for his family. Third, Philo went to college to study science. Fourth, Philo designed and built the first electronic television. Fifth, Philo received a patent for the electronic television.
incorrect_answer_all	b, c, d, e
incorrect_answer_rationale_	First, Philo read science magazines. Second, Philo built an

all	electric washing machine for his family. Third, Philo went to college to study science. Fourth, Philo designed and built the first electronic television. Fifth, Philo received a patent for the electronic television.
scoring	Exact match; 1 point

Item #	6
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.6.G Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to: (G) evaluate details read to determine key ideas.
Objective	Students will describe the development and/or impact of major inventions.
DOK Level	2
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	A Young Inventor

QUESTION

Element	**Value**
stimulus	Refer to the passage, “A Young Inventor.”
question_stem	Read this sentence from paragraph 1. Even though the concept of the television had been around for a while, Philo created an innovative idea to make it even better. What was Philo’s innovative idea?
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	He made better, faster moving parts.
answer_b	He made televisions more affordable for people.
answer_c	He used electricity to transmit, or carry, images.
answer_d	He laid wire underground to carry television signals.
correct_answer	c
correct_answer_rationale	This idea helped change television for everyone.
incorrect_answer_1	a
incorrect_answer_1_rationale	The reference to Philo knowing about moving parts is referenced in paragraph 3, but there is no evidence in the

	passage that his innovative idea was to make faster moving parts.
incorrect_answer_2	b
incorrect_answer_2_rationale	The affordability of televisions is not mentioned in the passage.
incorrect_answer_3	d
incorrect_answer_3_rationale	The signals referenced in paragraph 3 pertain to televisions sending and receiving signals and turning the signals into images. No reference to underground wire is made.
scoring	Exact match; 1 point

Item #	7
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.9.D.iii Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to: (D) recognize characteristics and structures of informational text, including: (iii) organizational patterns such as compare and contrast.
Objective	Students will recognize the overall structure of a text, including chronology, cause and effect, problem/solution, and/or comparison.
DOK Level	2
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	A Young Inventor

QUESTION

Element	**Value**
stimulus	Refer to the passage, “A Young Inventor.”
question_stem	Which organizational structure does the author use in the passage?
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	The author uses a compare and contrast structure to compare Philo’s invention with another well-known invention.
answer_b	The author uses a chronological structure to detail the events in the order they occurred.
answer_c	The author uses a cause-and-effect structure to connect the results with why they happened.
answer_d	The author uses a descriptive text structure to paint a picture of Philo’s invention.
correct_answer	b
correct_answer_rationale	The passage begins with Philo’s birth and ends with the impact

	of Philo’s invention.
incorrect_answer_1	a
incorrect_answer_1_rationale	The passage focuses on one invention, the television. No comparison is made with another well-known invention.
incorrect_answer_2	c
incorrect_answer_2_rationale	While there is an example of a cause and effect (Philo’s father passed away, so he had to come home and help the family) this is not the overall organizational structure of the entire text.
incorrect_answer_3	d
incorrect_answer_3_rationale	The passage explains how Philo came up with his idea and the use of electrical tubes to carry the moving images, the entire text does not describe the invention in detail in order to paint a picture for the reader.
scoring	Exact match; 1 point

Item #	8
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.3.B Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking --vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to: (B) use context within and beyond a sentence to determine the relevant meaning of unfamiliar words or multiple-meaning words.
Objective	Students will demonstrate understanding of domain-specific vocabulary associated with major inventions.
DOK Level	2
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	A Young Inventor

QUESTION

Element	**Value**
stimulus	Refer to the passage, “A Young Inventor.”
question_stem	Read this sentence from paragraph 3. Philo was <u>aware</u> of mechanical televisions. What does it mean to be <u>aware</u> of something?
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	to be very interested in something
answer_b	to worry about something
answer_c	to make something better
answer_d	to know about something
correct_answer	d
correct_answer_rationale	Philo was aware of mechanical televisions, meaning that he knew about that type of television.
incorrect_answer_1	a
incorrect_answer_1_rationale	Being interested in something is showing curiosity; showing curiosity about something is different than being knowledgeable about – or aware of – it.

incorrect_answer_2	b
incorrect_answer_2_rationale	Worry means to have uneasiness. Philo was not uneasy about the invention of the television; he had knowledge that it existed.
incorrect_answer_3	c
incorrect_answer_3_rationale	Making something better means improving it, which is what Philo did AFTER he had knowledge of it.
scoring	Exact match; 1 point

Item #	9
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.3.B Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking --vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to:(B) use context within and beyond a sentence to determine the relevant meaning of unfamiliar words or multiple-meaning words.
Objective	Students will demonstrate understanding of domain-specific vocabulary associated with major inventions.
DOK Level	2
Question Type	Table Match

PASSAGE

Element	**Value**
passage_link	
passage_title	A Young Inventor

QUESTION

Element	**Value**
stimulus	Refer to the passage, “A Young Inventor.”
question_stem	Find each word in the passage and read it in context. What is the correct definition for each word?
prompt	*Match each definition with the correct word.*
randomize_answer_choices	yes
column1_object1	invention (paragraph 1)
column1_object2	patent (paragraph 5)
column2_object1	a document protecting one’s original ideas
column2_object2	a newly made device or way of doing things
correct_answer	column1_object1: column2_object2 column1_object2: column2_object1
correct_answer_rationale	An *invention* is a newly made device or way of doing things. A *patent* is a document protecting one’s original ideas.
incorrect__answer_rationale	A patent is not a newly made device, but a document that protects the idea of the newly made device. A newly made device is not the document protecting the idea, but the invention that is being protected.
scoring	Partial match per response; 1 point (.5 each)

Grade	4
Unit/Domain	Eureka: Art of Invention
Copyright	Original
Source(s)	http://www.women-inventors.com/Rachel-Zimmerman.asp https://www.cbc.ca/2017/this-canadian-girl-s-school-project-gave-non-verbal-kids-a-new-voice-1.4036004 https://www.britannica.com/topic/Iris-Greek-mythology
Lexile/Average Grade Level	Unavailable at this time.
Flesch Kincaid	7.2
Word Count	391
Title	Making Connections
Author	Christina Dendy

Making Connections

https://www.shutterstock.com/image-photo/signal-lamp-designed-provide-morse-code-2084603932

(1) Communication is an important part of daily life. We communicate with one another using different methods for different purposes. Over the years, there have been many inventions that have improved the ways information is exchanged to make communicating easier for everyone.

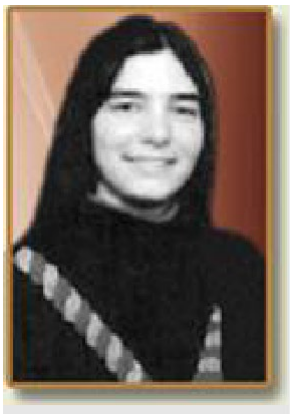
(2) Throughout history, people have invented their own amazing ways to communicate. Having a face-to-face conversation, writing a letter, or using a telephone or computer to send messages, people continue to find innovative ways to connect with one another. But what if communicating using speaking and writing is not easy to do?

(3) Many people have physical conditions that make it hard to speak, write, or even type. In 1983, inspired by a book about communicating without speaking, a young inventor from Canada named Rachel Zimmerman became interested in helping people communicate. She learned that Charles K. Bliss first developed a system of symbols, called Blissymbols. People could point to a symbol to convey a message and then someone could translate the message and write it down. This made the process of communicating very slow. Rachel's invention improved this.

(4) For her sixth-grade science project, Rachel invented the Blissymbol software program, a device that used symbols to represent things and ideas. She wrote software for the computer that could translate the Blissymbols. She then arranged the symbols on an electronic touch pad and connected it to an Atari computer. Individuals with limited speech and movement touched the symbols, and the computer translated them. The next year, in 1984, Rachel took her project a little further. She connected the computer and her software to a printer. Now, the system could translate and print out the user's ideas. Rachel's Blissymbol printer made it easier for people to communicate independently.

(5) Rachel continued to make efforts to make the process of communication using her printer easier. She also continued to make her device with materials that kept the price low, so families and schools could more easily pay for it. Rachel's printer also laid the groundwork for later technologies, making methods like email possible. Today, many people use touch screens, tablets, and other tools like Rachel's to talk and write.

(6) What began as a science fair project became a tool that improved the lives of many people by making it easier to communicate with others. Rachel has been busy ever since. Today, she works as a scientist at NASA, making their innovations easier to use for all people. What connections will she make next?



http://www.women-inventors.com/Rachel-Zimmerman.asp
Caption: Rachel Zimmerman

Item #	10
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.7.C Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:(C) use text evidence to support an appropriate response.
Objective	Students will answer literal and inferential questions about an inventor biography.
DOK Level	1
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	Making Connections

QUESTION

Element	**Value**
stimulus	Refer to the passage, “Making Connections.”
question_stem	Whom did Rachel Zimmerman mainly want to help with her invention?
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	scientists who studied symbols
answer_b	writers who did not want to write their stories by hand
answer_c	people who had difficulty speaking and writing
answer_d	teachers who want students to learn independently
correct_answer	c
correct_answer_rationale	Rachel’s printer was designed to help people with certain physical conditions to communicate.
incorrect_answer_1	a
incorrect_answer_1_rationale	The scientist who studied and invented symbols inspired Zimmerman to help people who had writing and speaking difficulty.
incorrect_answer_2	b
incorrect_answer_2_rationale	The only reference to writers in the passage is about those who translate the messages and write them.
incorrect_answer_3	d

incorrect_answer_3_rationale	Teachers who want students to learn independently are not referenced in the passage.
scoring	Exact match; 1 point

Item #	11
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.7.C Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to: (C) use text evidence to support an appropriate response.
Objective	Students will answer literal and inferential questions about an inventor biography.
DOK Level	1
Question Type	Hot Text

PASSAGE

Element	**Value**
passage_link	
passage_title	Making Connections

QUESTION

Element	**Value**
stimulus	Refer to the passage, “Making Connections.”
question_stem	Which phrase from paragraph 5 explains how Rachel Zimmerman kept her invention affordable? Rachel continued to [make efforts to make the process of communication using her printer easier.] She also continued to [make her device with materials that kept the price low] so families and schools could more easily pay for it. Rachel’s printer [laid the groundwork for later technologies], making methods like email possible. Today, many people [use touch screens, tablets, and other tools like Rachel’s] to talk and write.
prompt	*Select the **best** answer.*
correct_answer	[make her device with materials that kept the price low]
correct_answer_rationale	This phrase explains that Rachel kept her invention affordable by making it with materials that kept the price low.
incorrect_answer_1	make efforts to make the process of communication using her printer easier
incorrect_answer_1_rationale	The detail about her efforts to make the process of communication using her printer easier supports the idea that she wants to help people but does not support the affordability factor.

incorrect_answer_2	laid the groundwork for later technologies
incorrect_answer_2_rationale	The detail about laying the groundwork for later technologies does not explain or connect to the idea that Zimmerman kept her invention affordable.
incorrect_answer_3	use touch screens, tablets, and other tools like Rachel's
incorrect_answer_3_rationale	The detail about using touch screens, tablets, and other tools is about how her invention laid the groundwork for future technologies, not about her invention's affordability.
scoring	Exact match; 1 point

Item #	12
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.7.D Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:(D) retell, paraphrase, or summarize texts in ways that maintain meaning and logical order.
Objective	Students will paraphrase a portion of the text in a way that maintains meaning.
DOK Level	2
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	Making Connections

QUESTION

Element	**Value**
stimulus	Refer to the passage, “Making Connections.”
question_stem	What is the best paraphrase of paragraph 3.
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	Rachel Zimmerman invented the Blissymbol printer which translates symbols into words and helps people with limiting physical conditions communicate.
answer_b	A young inventor from Canada thought of an answer to a tough communication problem.
answer_c	Rachel Zimmerman worked with Charles Bliss to create a system of symbols that helps people with limiting physical conditions communicate.
answer_d	A young inventor from Canada worked for people with communication problems translating symbols to words.
correct_answer	a
correct_answer_rationale	This paraphrase restates the ideas of the paragraph that maintains the meaning and uses original wording.
incorrect_answer_1	b
incorrect_answer_1_rationale	Zimmerman did not think of the answer to the tough communication problem, she improved upon it.

incorrect_answer_2	c
incorrect_answer_2_rationale	The paragraph states that she was inspired by Bliss, not that she worked with Bliss. He had already created the system of symbols.
incorrect_answer_3	d
incorrect_answer_3_rationale	The paragraph states that someone else could translate the messages. The improvement she made using technology to translate the symbols is referenced in paragraph 4.
scoring	Exact match; 1 point

Item #	13
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.7.D Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:(D) retell, paraphrase, or summarize texts in ways that maintain meaning and logical order.
Objective	Students will explain events of the passage in order.
DOK Level	1
Question Type	Short Constructed Response

PASSAGE

Element	**Value**
passage_link	
passage_title	Making Connections

QUESTION

Element	**Value**	
stimulus	Refer to the passage, “Making Connections.”	
question_stem	Describe what actions Rachel Zimmerman took to develop her invention.	
prompt	*Write your response in the box provided*.	
scoring rubric	**Points**	**Content Development**

	2	• A complete response will include the four actions Rachel Zimmerman took to develop her invention:
		  ○ She connected the touch pad to an Atari computer.
		  ○ She connected the computer to a printer.
		  ○ She wrote a program to translate Blissymbols.
		  ○ She arranged the symbols on an electronic touch pad.
		• Evidence is accurately used to support the response.
		• The response and the evidence to support it are based on the text.

	1	• A partial response may include one of the answers expected in the complete response. However, the evidence does not support the answer stated, or evidence is not provided. • A partial response may cite or paraphrase relevant text evidence, but the student does not include an accurate answer to the prompt.
	0	• The response is incorrect. • The response is not based in the text. • No response is provided.
scoring	See rubric for scoring information	

Item #	14
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.7.C Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to: (C) use text evidence to support an appropriate response.
Objective	Students will describe the development and/or impact of major inventions.
DOK Level	2
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	Making Connections

QUESTION

Element	**Value**
stimulus	Refer to the passage, “Making Connections.”
question_stem	Which sentence from the passage describes a long-term impact of Rachel’s Blissymbol printer?
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	“She learned that Charles K. Bliss first developed a system of symbols, called Blissymbols.” (paragraph 3)
answer_b	“People could point to a symbol to convey a message and then someone could translate the message and write it down.” (paragraph 3)
answer_c	“Rachel’s printer laid the groundwork for later technologies, making methods like email possible.” (paragraph 5)
answer_d	“Today, she works as a scientist at NASA, making their innovations easier to use for all people.” (paragraph 6)
correct_answer	c
correct_answer_rationale	This sentence shows that Rachel’s printer had a long-term impact by influencing later inventions.
incorrect_answer_1	a
incorrect_answer_1_rationale	Learning about the Blissymbols was the initial event and does

	not describe the long-term impact.
incorrect_answer_2	b
incorrect_answer_2_rationale	The fact that people could point to a symbol and convey a message tells the reader about the existing technology of the time but does not offer a description of Rachel's printer making a long-term impact.
incorrect_answer_3	d
incorrect_answer_3_rationale	The detail about Zimmerman working at NASA to improve their innovations for all people is about NASA's inventions, not Zimmerman's or its long-term impact.
scoring	Exact match; 1 point

Item #	15
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.7.C Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to: (C) use text evidence to support an appropriate response.
Objective	Students will describe the development and/or impact of major inventions.
DOK Level	2
Question Type	Multipart

PASSAGE

Element	**Value**
passage_link	
passage_title	Making Connections

QUESTION

Element	**Value**
stimulus	Refer to the passage, “Making Connections.”
question_stem	This question has two parts. First, answer Part A. Then, answer Part B. Part A Which statement best expresses an idea about Rachel Zimmerman?
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	She has a desire to help others communicate.
answer_b	She helped Charles K. Bliss create symbols.
answer_c	She found speaking and writing difficult.
answer_d	She is not interested in using technology.
correct_answer	a
correct_answer_rationale	The article states that Rachel became interested in helping people communicate and continued to improve her invention to make it easier for people to do so.
incorrect_answer_1	b

incorrect_answer_1_rationale	Charles Bliss had already invented the symbols and that inspired Zimmerman.
incorrect_answer_2	c
incorrect_answer_2_rationale	Zimmerman wanted to help others who had difficulty speaking and writing.
incorrect_answer_3	d
incorrect_answer_3_rationale	She created a software program and figured out a way to connect an electronic touch pad to her computer, and then connected the computer and her software to a printer, which shows she is interested in using technology.
scoring	Exact match; 1 point
question_stem	Part B Which sentence from the article best supports the answer to Part A?
prompt	Part B *Select the **best** answer.*
randomize_answer_choices	yes
answer_a	Over the years, there have been many inventions that have improved the ways information is exchanged to make communicating easier for everyone. (paragraph 1)
answer_b	But what if communicating using speaking and writing is not easy to do? (paragraph 2)
answer_c	For her sixth-grade science project, Rachel invented the Blissymbol software program, a device that used symbols to represent things and ideas. (paragraph 4)
answer_d	What began as a science fair project became a tool that improved the lives of many people by making it easier to communicate with others. (paragraph 6)
correct_answer	d
correct_answer_rationale	The correct answer is “What began as a science fair project became a tool that improved the lives of many people by making it easier to communicate with others." (paragraph 6) Rachel asked how she could help, and that question led to the invention.
incorrect_answer_1	a
incorrect_answer_1_rationale	This text evidence is about other inventions that have improved communication, so does not express an idea about Zimmerman.
incorrect_answer_2	b
incorrect_answer_2_rationale	This text evidence poses a question about having difficulty speaking and writing, which is what Zimmerman addresses later, but it does not clearly express an idea about her.

incorrect_answer_3	c
incorrect_answer_3_rationale	While this evidence details what she did for her project, it does not fully express Zimmerman's overall impact.
scoring	Exact match; 1 point

Item #	16
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.9.D.iii Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to: (D) recognize characteristics and structures of informational text, including: (iii) organizational patterns such as compare and contrast.
Objective	Students will recognize the overall structure of a text, including chronology, cause and effect, problem/solution, and/or comparison.
DOK Level	2
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	Making Connections

QUESTION

Element	**Value**
stimulus	Refer to the passage, “A Young Inventor.”
question_stem	How is the information in the article organized?
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	A compare and contrast pattern is used.
answer_b	A cause and effect pattern is used.
answer_c	A description pattern is used.
answer_d	A problem-solution pattern is used.
correct_answer	d
correct_answer_rationale	The author explains a problem Rachel wants to solve and how she went about solving it.
incorrect_answer_1	a
incorrect_answer_1_rationale	Ideas and concepts are not being compared in this passage. Words that signal a comparison are also not evident (*like, also, similarly, unlike*, etc.)

incorrect_answer_2	b
incorrect_answer_2_rationale	This structure helps to explain the reasons why something has happened or the effects of something. The passage does not explain why people have difficulty speaking or that people having difficulty speaking and writing caused Zimmerman to create her invention. Rather, she was inspired to help.
incorrect_answer_3	c
incorrect_answer_3_rationale	A descriptive structure elaborates more deeply on a topic by providing vivid and specific details, as well as using more sensory language. The details provided about the invention are brief in nature and provide an overview.
scoring	Exact match; 1 point

Item #	17
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.3.B Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking --vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to:(B) use context within and beyond a sentence to determine the relevant meaning of unfamiliar words or multiple-meaning words.
Objective	Students will demonstrate understanding of domain-specific vocabulary associated with major inventions.
DOK Level	2
Question Type	Hot Text

PASSAGE

Element	**Value**
passage_link	
passage_title	Making Connections

QUESTION

Element	**Value**
stimulus	Refer to the passage, “Making Connections.”
question_stem	Read these sentences from the passage. She learned that Charles K. Bliss first [developed] a [system] of symbols, called Blissymbols. People could point to a symbol to convey a message and then someone could [translate] the [message] and write it down. Based on the context, which word in these sentences means “to express in another way or language”?
prompt	*Select the **best** answer.*
correct_answer	translate
correct_answer_rationale	To translate something is to express it in another way or language. Rachel’s invention helped people to express their ideas by sharing the symbols in a new way.
incorrect_answer_1	developed
incorrect_answer_1_rationale	To develop something means to create, change, or advance

	something. In this example, Rachel developed – or created – a new system for communicating.
incorrect_answer_2	system
incorrect_answer_2_rationale	In this example, a system is a series of symbols that work together as a process for communication. Rachel developed this system to help people communicate.
incorrect_answer_3	message
incorrect_answer_3_rationale	A message is communication that you share with someone to express ideas. Rachel developed a new system for communicating messages to others.
scoring	Exact match; 1 point

Item #	18
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.3.B Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking --vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to: (B) use context within and beyond a sentence to determine the relevant meaning of unfamiliar words or multiple-meaning words.
Objective	Students will demonstrate understanding of domain-specific vocabulary associated with major inventions.
DOK Level	2
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	Making Connections

QUESTION

Element	**Value**
stimulus	Refer to the passage, “Making Connections.”
question_stem	Read this sentence from paragraph 4. She connected the computer and her <u>software</u> to a printer. Based on the context, what is the meaning of the word *software*?
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	a new invention
answer_b	a computer program
answer_c	a sign language
answer_d	a study of printers
correct_answer	b
correct_answer_rationale	Rachel created a computer program. She connected her computer and the new computer program to a printer.
incorrect_answer_1	a
incorrect_answer_1_rationale	While Zimmerman created software to connect the computer to the printer, this is not the definition of “software.”

incorrect_answer_2	c
incorrect_answer_2_rationale	Sign language is not referenced in the passage and is clearly not related to the concept of “software.”
incorrect_answer_3	d
incorrect_answer_3_rationale	The text explains that Zimmerman connected the computer and her software to the printer, which does not indicate a study of printers.
scoring	Exact match; 1 point

Item #	19
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.6.E Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to: (E) make connections to personal experiences, ideas in other texts, and society.
Objective	Students will integrate information from two texts about the same topic.
DOK Level	3
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	A Young Inventor and Making Connections

QUESTION

Element	**Value**
stimulus	Refer to the passages, “A Young Inventor” and “Making Connections.”
question_stem	What conclusion about inventors is supported by BOTH texts, “A Young Inventor” and “Making Connections”?
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	They were most interested in becoming wealthy.
answer_b	They changed the world with their inventions.
answer_c	They went to college to study science.
answer_d	They were not interested in learning new things.
correct_answer	b
correct_answer_rationale	Both passages describe two young inventors and how their inventions changed the world.
incorrect_answer_1	a
incorrect_answer_1_rationale	Neither passage provides details about the inventors becoming wealthy or desiring to do so.
incorrect_answer_2	c

incorrect_answer_2_rationale	The text, “The Young Inventor” provides a detail that Philo went to college to study science. In the “Making Connections” text, no reference to Zimmerman attending college is made.
incorrect_answer_3	d
incorrect_answer_3_rationale	The inventors in both passages were interested in learning new things and created innovations because of that interest.
scoring	Exact match; 1 point

Item #	20
Discipline	ELA
Grade Level	4
Assessment Type	End of Unit
Unit/Domain Title	Eureka: Art of Invention
TEKS	TEKS 4.6.E Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to: (E) make connections to personal experiences, ideas in other texts, and society.
Objective	Students will integrate information from two texts on the same topic.
DOK Level	3
Question Type	Multiple Choice

PASSAGE

Element	**Value**
passage_link	
passage_title	A Young Inventor and Making Connections

QUESTION

Element	**Value**
stimulus	Refer to the passages, “A Young Inventor” and “Making Connections.”
question_stem	Which central idea do details from both passages support? **Central Idea** **Detail** Philo Farnsworth learned about mechanical televisions and studied electricity. **Detail** Rachel Zimmerman learned about Blissymbols and used an Atari computer.
prompt	*Select the **best** answer.*
randomize_answer_choices	yes
answer_a	Inventors need money to make their inventions.
answer_b	Inventors build on existing technologies and ideas.
answer_c	Inventors must work together to build new things.
answer_d	Inventors spend many years studying and learning.
correct_answer	b
correct _rationale	The details from both passages show that both inventors used existing technologies and ideas to develop their own

	inventions.
incorrect_answer_1	a
incorrect_answer_1_rationale	Farnsworth needed money to make his invention, not Zimmerman.
incorrect_answer_2	c
incorrect_answer_2_rationale	It is not evident in either passage that the inventors had to work together to create their inventions. The details in both articles support the idea that the two inventors worked independently.
incorrect_answer_3	d
incorrect_answer_3_rationale	Both inventors started creating their innovations as young children, so this shows that it is not necessary to spend many years studying and learning to be an inventor.
scoring	Exact match; 1 point

Printed in the USA