



EXPEDITIONARY
LEARNING

Grade 5: Module 2B: Unit 1: Lesson 8

Using Quotes and Opinion Writing: Ingenious Inventions by Women



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can quote accurately from a text when explaining what the text says explicitly. (RI.5.1)

I can determine the meaning of general academic and domain-specific words and phrases. (RI.5.4)

I can write opinion pieces supporting a point of view with reasons and information. (W.5.1)

- a. I can introduce a topic clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support my purpose.
- b. I can provide logically ordered reasons that are supported by facts and details.

Supporting Learning Targets

- I can explain how the windshield wiper and paper bag machine met societal needs using quotes from the text.
- I can determine the meaning of unfamiliar words and phrases from context.
- With peers, I can write an opinion paragraph about which invention meets a greater societal need.

Ongoing Assessment

- Graphic Novel Template A, B, or C (from homework)
- Gist statement (in journal)
- Compare and Contrast note-catcher
- Vocabulary (in journal)
- Group opinion paragraph (on chart paper)
- Independent Reading Choice Board response



Agenda	Teaching Notes
<ol style="list-style-type: none"> 1. Opening <ol style="list-style-type: none"> A. Reviewing Homework and Engaging the Reader (5 minutes) 2. Work Time <ol style="list-style-type: none"> A. Determining the Gist: “Ingenious Inventions by Women: The Windshield Wiper and Paper Bag Machine” (10 minutes) B. Second Read: Using Quotes and Key Vocabulary to Explain How the Windshield Wiper and Paper Bag Machine were Developed to Meet Societal Needs (20 minutes) C. Opinion Writing: Which Invention Meets a Greater Societal Need? (20 minutes) 3. Closing and Assessment <ol style="list-style-type: none"> A. Gallery Walk and Reviewing Learning Targets (5 minutes) 4. Homework <ol style="list-style-type: none"> A. Reread the article “Ingenious Inventions by Women: The Windshield Wiper and Paper Bag Machine” and write response on index card B. Finish Classwork C. Independent Reading 	<ul style="list-style-type: none"> • This lesson follows a similar pattern to Lesson 7. Students work with a new informational text, “Ingenious Inventions by Women: The Windshield Wiper and Paper Bag Machine” to continue building their understanding of how informational texts are structured and how technologies are developed to meet societal needs. The structure focus in this lesson is compare and contrast. Because the text is above grade-level, reading the text aloud first allows all students, particularly struggling readers, to develop an initial understanding of the ideas presented, building background knowledge that will scaffold later independent reading. The read-aloud also models the fluent reading skills students are working on (appropriate rate, accuracy, and expression). • Work Time C familiarizes students with how to introduce a topic, form an opinion based on information gathered through research, and support an opinion with reasons and evidence directly from the text. Students work with group members to form an opinion about which invention meets a greater societal need, the windshield wiper or the paper bag machine. Students support their opinion with a reason and evidence from the article in the form of quotes. It is important to note that this is a cursory introduction to opinion writing. This activity serves as a scaffold toward the longer opinion pieces students are expected to write in Modules 3 and 4. • In advance: <ul style="list-style-type: none"> – Post all Close Readers Do These Things, Group Norms, and Vocabulary Strategies anchor charts. – Review Milling to Music and Glass, Bugs, Mud in Checking for Understanding Techniques (see Appendix). – Create a new Opinion Paragraph anchor chart (see supporting materials).



Lesson Vocabulary	Materials
explain, societal needs, quotes, compare, contrast, determine, context, opinion, reasons, evidence, credible, rely, struggled, realized, set (out to), transport, led, value	<ul style="list-style-type: none">• Journals (students' own, begun in Lesson 1)• “Ingenious Inventions by Women: The Windshield Wiper and Paper Bag Machine” (one per student)• Document camera• Close Readers Do These Things anchor chart (from Lesson 2)• Text Structure resource page (from Lesson 7; one to display)• Compare and Contrast note-catcher: “Ingenious Inventions by Women” (one per student)• Compare and Contrast note-catcher: “Ingenious Inventions by Women” (answers, for teacher reference)• Vocabulary Strategies anchor chart (from Lesson 2)• Tape, glue, or staples (for each student)• Opinion Paragraph anchor chart (new; teacher created)• Chart paper (one sheet per group)• Markers (one per group)• Index cards (one per student)



Opening	Meeting Students' Needs
<p>A. Reviewing Homework and Engaging the Reader (5 minutes)</p> <ul style="list-style-type: none">• Ask students to take out the Graphic Novel Template they completed for homework.• Review the Milling to Music technique and provide clarification as needed.• Give students 3 minutes to do the following:<ol style="list-style-type: none">1. Briefly mill to locate a partner who is not a part of your regular small group.2. Share the Graphic Novel Template you completed for homework and quickly explain why you chose to add specific details from the text to the template.• After 3 minutes, refocus whole group. Invite a few students to share interesting ideas they heard from their partner (answers will vary, but listen for students to share specific details from the text and explain why they felt certain details were important to add to the template).• Say something like: "Today, we are continuing to build knowledge around our guiding questions, 'How do new or improved technologies meet societal needs?' and 'How do authors structure text to support our understanding of complex ideas?' In this lesson, we are expanding our knowledge about new developments that meet people's needs as we read about how two women who were considered neither scientists nor engineers created solutions to make our lives both safer and simpler."	<ul style="list-style-type: none">• Provide sentence starters to support student discussions: "The visual elements I used are _____," or "These visual elements communicate the ideas on my template because _____."



Work Time	Meeting Students' Needs
<p>A. Determining the Gist: “Ingenious Inventions by Women: The Windshield Wiper and Paper Bag machine” (10 minutes)</p> <ul style="list-style-type: none">• Ask students to take out their journals and join their regular small groups.• Distribute the article “Ingenious Inventions by Women: The Windshield Wiper and Paper Bag Machine.” Then explain to students that the first read will be aloud.• Refer to the Close Readers Do These Things anchor chart posted on the document camera and cold call a few students to share out what they typically do when they encounter an unfamiliar text. Listen for: “Read for the gist to get the flow of the article,” “determine what the article is about,” or similar responses.• Tell students to follow along silently to determine the gist as you read the text aloud.• After the article has been read aloud, ask:<ul style="list-style-type: none">* “What is the gist of this informational article?”• Give students 1 or 2 minutes to discuss their thinking in groups. Then cold call members of each group to share out with the class. Listen for suggestions like: “The gist of this article is that Mary Anderson and Margaret E. Knight invented things that made people’s lives safer and easier,” “this article is about women inventors,” or similar ideas.• Direct students to record a gist statement on the same page in their journal where they recorded the gist of “The Electric Motor” article during the previous lesson.	<ul style="list-style-type: none">• For students who struggle to determine the gist of longer passages, encourage them to find the gist of facing pages to keep track as they go to make it more manageable to determine the gist of the entire section.• Allow struggling writers to dictate their gist statement to a peer or aide acting as a scribe.



Work Time (continued)	Meeting Students' Needs
<p>B. Second Read: Using Quotes and Key Vocabulary to Explain How the Windshield Wiper and Paper Bag Machine were Developed to Meet Societal Needs (20 minutes)</p> <ul style="list-style-type: none"> • Read the first learning target aloud: <ul style="list-style-type: none"> * “I can explain how the windshield wiper and paper bag machine met societal needs using quotes from the text.” • Point out the key terms in this target that students are familiar with from the previous lesson: <i>explain</i>, <i>societal needs</i>, and <i>quotes</i>. Then ask students to quickly think about and discuss in groups how they could restate the target in their own words. • Cold call a few students to share their thinking whole group. • Display and ask students to turn to the page in their journals where they attached the Text Structure resource page. Focus students' attention on the row titled “Compare/Contrast,” then read the description aloud. Ask students to think about and discuss in groups what the words <i>compare</i> and <i>contrast</i> mean. • After 1 minute, invite a few students to share their definition of these terms. Listen for: <ul style="list-style-type: none"> – “Compare means to identify ways different things are similar, alike, or the same.” – “Contrast means to identify ways things are different,” or similar suggestions. • Distribute the Compare and Contrast note-catcher: “Ingenious Inventions by Women.” Direct students' attention to the top box, “Who or what is being compared and contrasted?” • Tell students to read the first paragraph of the article. Then ask them to take a few minutes to discuss: <ul style="list-style-type: none"> * “Who or what do you believe is being compared and contrasted in this article?” • Cold call members from each group to share out their thinking with the class. Listen for: “The inventors Mary Anderson and Margaret E. Knight.” • Ask students to record this idea in the top box of their note-catchers. 	<ul style="list-style-type: none"> • To support visual learners and ELL students, display a drawing, picture from the internet, or familiar synonym above or below key words in learning target. • For students who struggle with the physical act of writing, allow them to type their responses on a computer or word processor, or dictate their analysis paragraph to an aide or a peer acting as a scribe. • Consider using a think-aloud strategy, either with small groups or individual students, to model using context clues to determine the meaning of the first several terms.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Ask students to complete the following:<ol style="list-style-type: none">1. Reread all but the first paragraph of the article to determine and underline text that explains at least two ways Mary Anderson and Margaret E. Knight are alike and at least two ways they are different.2. Discuss the quotes you underlined with your group members, and explain your thinking.3. After discussing your ideas with group members, record at least two exact quotes from the article into each of the lower boxes on your graphic organizer to explain how Mary Anderson and Margaret E. Knight were alike and different. Make sure to place quotation marks around the text you add to your note-catcher, to indicate the information is exactly what is stated in the article.• Circulate to support.• After 7 or 8 minutes, cold call students from each group to share out quotes they added to their note-catchers that indicate likenesses and differences between the two women. Refer to the Compare and Contrast note-catcher: Ingenuous Inventions by Women (answers, for teacher reference) as needed.• Read the second learning target aloud:<ul style="list-style-type: none">* “I can determine the meaning of unfamiliar words and phrases from context.”• Underline the words <i>determine</i> and <i>context</i>. Ask students to revisit their understandings about each term then quickly think about and discuss with group members how they could restate the target in their own words.• After 1 minute, cold call a few students to share out with the class.• Write the following key terms where all students can see them: <i>rely</i>, <i>struggled</i>, <i>realized</i>, <i>set</i>, <i>transport</i>, <i>led</i>, and <i>value</i>. Then focus students on the posted Vocabulary Strategies anchor chart. Ask students to discuss in groups:<ul style="list-style-type: none">* “How can you use context clues to help you determine the meaning of unfamiliar words or phrases?”• After 1 minute, invite a few students to share out with the class. Listen for:<ul style="list-style-type: none">– “I can use words and phrases I’m already familiar with to give me a clue about unfamiliar terms.”– “I can read sentences before and after the word to help me figure out the meaning,” or similar ideas.• Ask students to locate and circle the word “rely” in the first paragraph of the article, then underline words and phrases around the word that help them determine the meaning. Direct students to briefly discuss their thinking with group members. Invite a few students to share out what they believe the word “rely” means and explain how specific words or phrases from the text support their understanding of the word. Listen for:	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">– “Rely means to depend on, use or need.”– “The phrase “These brilliant women developed devices that we still rely on so much today helped me understand the word rely because it means they invented things that people still use.”– “To make the sentence make sense, I can substitute the words ‘use’ or ‘depend on’ for rely, so rely probably means ‘use’ or ‘depend on.’”– “Because I am familiar with the words ‘developed’ and ‘devices’ from the previous lesson, I know developed means invented or built upon and devices are tools we use,” or similar ideas. <ul style="list-style-type: none">• Next, tell students to:<ol style="list-style-type: none">1. Work with group members to determine the meaning of each of the remaining key terms from context.2. Add each word to the first column of your four-column glossary page.3. Write a synonym for each word in the second column, a definition for each word in the third column, and draw a picture to show the meaning of each word in the fourth column.• Give students 5 or 6 minutes to define. Circulate to support as needed.• Once students have added and defined the words in their glossary, cold call members from each group to share out whole group. Listen for:<ul style="list-style-type: none">– “Struggled means fought, worked hard, tried.”– “Realized means understood, appreciated, recognized.”– “Set in this context means got started on, began.”– “Transport means move, bring, carry.”– “Led means caused, made something possible.”– “Value means the worth of something,” or similar ideas.• Give students a moment to add quotes or revise their note-catchers, based on their new understanding of vocabulary.• Draw students’ attention to the “Enduring Understanding” question and chart at the bottom of their note-catchers. Then invite students to chorally read the question aloud, “How did women develop new or improved technologies to meet people’s needs?” Ask a few students to restate the question in their own words.	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">Ask students to complete the following:<ol style="list-style-type: none">Refer to the article and your notes to locate three quotes from the text that explain how Mary Anderson and Margaret E. Knight developed new or improved technologies to meet people's needsBriefly discuss your thinking with one member of your group.Record three quotes in the chart to explain how women develop new or improved technologies to meet people's needs. Make sure to place quotation marks around the text to indicate exact quotes.Circulate to offer support and guidance as needed.After 3-4 minutes, refocus whole group. Cold call students from each group to share their thinking with the class.After a whole group discussion, ask students to use tape, glue, or staples to add their note-catchers to the next blank page in their journals.	
<p>C. Opinion Writing: Which Invention Meets a Greater Societal Need? (20 minutes)</p> <ul style="list-style-type: none">Read the final learning target aloud:<ul style="list-style-type: none">* "With peers, I can write an opinion paragraph about which invention meets a greater societal need."Underline the word <i>opinion</i> in this target. Then ask students to discuss in groups what they know about forming an opinion. After 1 minute, invite a few students to share out whole group. Listen for:<ul style="list-style-type: none">– "An opinion is what I believe."– "Other people may not agree with my opinion, or may have a different opinion," or similar ideas.Explain that it is important to have reasons and evidence to support an opinion, and it is also important to be able to explain the reasoning behind your opinions to others. Tell students that for the end of unit assessment in Lesson 10, they will need to write a paragraph to share their opinions about which one of the inventions they have learned about met a greater societal need. So during this final part of Work Time, they are going to learn about the parts of a basic opinion paragraph and practice writing one with their group members.Display the Opinion Paragraph anchor chart. Then distribute one piece of chart paper and one marker to each group.	<ul style="list-style-type: none">To support visual learners and ELL students, display a drawing, picture from the internet, or familiar synonym above or below key words in the learning target.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Tell students they will work with their group members to write a complete paragraph to express an opinion about whether the windshield wiper or the paper bag machine met a greater societal need. Explain to students that their opinion paragraphs will have five parts: <ul style="list-style-type: none"> – A sentence that briefly introduces the topic. – An opinion statement that includes key terms from the question. – A reason to support the opinion. – Two pieces of evidence from the text to support the opinion and reason. – A conclusion that restates the opinion. • Remind students that writers form opinions after conducting research on a topic. Tell them that they've collected information about two female inventors and thought about how each woman's invention met a societal need. Now they get to use that information to help form an opinion and write a paragraph to support that view. • Read the focus question from the top of the anchor chart aloud to students, "Did the invention of the windshield wiper or the paper bag machine meet a greater societal need?" • Focus students on the first line of the anchor chart, "brief introduction to the topic." Ask them to discuss in groups: <ul style="list-style-type: none"> * "What kind of sentence could you write to let a reader know what your paragraph will be about?" * "How can you include key terms from the focus question and the text in your introductory sentence?" • After 1 minute, invite a member from each group to share their thinking aloud. Listen for students to share ideas such as: <ul style="list-style-type: none"> – "Mary Anderson and Margaret E. Knight invented devices we still use today." – "Inventions like the windshield wiper and paper bag machine have made our lives simpler and safer." – "Female inventors developed ideas to make our lives better," or similar responses. • Once each group has shared out, ask students to do the following: <ol style="list-style-type: none"> 1. Confer with group members to craft a sentence that briefly introduces the topic of your opinion paragraph. 2. Have one member of your group write the agreed upon introduction sentence at the top of your group's chart paper (remember to indent the first sentence of a paragraph). 	<ul style="list-style-type: none"> • Provide sentence starters or frames to support students during their discussions about a topic sentence, opinion statement, reason, evidence, or conclusion: "A sentence that describes what this paragraph will mostly be about is _____," "In my opinion _____ meets a greater societal need because _____," "The reason I believe _____ meets a greater societal need is because _____," "The reason I believe this is because in the text it says _____," "The article also states _____," "One way I could restate the opinion is by saying _____."



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• After 1 or 2 minutes, focus students' attention on the second line of the anchor chart, "opinion statement that includes key terms from the question." Ask students to think about then discuss in groups:<ul style="list-style-type: none">* "What key words or phrases are in the focus question?"• Invite a few students to share out their thinking with the class. Listen for students to share examples like: "invention," "windshield wiper or paper bag machine," "greater," or "societal need."• If students do not mention the above key words and phrases, draw their to and underline each term on the anchor chart.• Give students 2 minutes to discuss with group members and then come to a consensus about which invention met a greater societal need. Encourage them to incorporate key terms from the question in their opinion statement.• After 2 minutes, invite a member from each group to share out the group opinion. Listen for ideas such as:<ul style="list-style-type: none">– "The invention of the windshield wiper met a greater societal need than the paper bag machine."– "The paper bag machine is one of the greatest inventions of all time," or similar ideas. Reinforce students' use of key terms from the focus question and clearly stated opinions.• Allow students 1 to 2 minutes to do the following:<ol style="list-style-type: none">1. With group members, craft an opinion statement that contains key terms from the focus question.2. Have one member of your group write the opinion statement after the introductory sentence on the group's chart paper.• Focus students on the third line of the anchor chart, "reason why you believe the opinion." Ask groups to discuss:<ul style="list-style-type: none">* "What kind of sentence could you write to explain why you believe the opinion?"• After 1 or 2 minutes, invite students to share their ideas with the class. Listen for suggestions such as:<ul style="list-style-type: none">– "Windshield wipers not only made our lives better, they made our lives safer."– "The paper bag machine made it possible for everyone to afford flat-bottomed bags, so transporting groceries from store to home became much easier for people," or similar responses. Draw attention to and reinforce group examples that use examples from the text and clearly support the opinion recorded on the group chart.• Then, give students 2 or 3 minutes to:<ol style="list-style-type: none">1. With group members, discuss and determine a reason that clearly supports the opinion you recorded onto your chart paper.2. Have one member of your group write the reason after the opinion statement on the group's chart paper.	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Focus students on the fourth and fifth lines of the anchor chart, “evidence/quote to support the opinion and reason.” Then explain: “Evidence from research is used to support an opinion. Integrating direct quotes into your evidence sentences is a good way to support your opinion because information from a reliable source, such as the article you read today, lends credibility to your opinion. When something is <i>credible</i> it means that it is trustworthy, reliable, or believable. If you want people to agree with your opinion, it is important to support your opinion with clear reasons and credible evidence.”• Briefly model for students how to include quotes from the text in their evidence sentences. Say something like: “If my opinion is that the windshield wiper met a greater societal need and I support that with a reason such as ‘they made our lives safer.’ I could further support my opinion and reason with an evidence sentence such as, ‘The article states “we can all be grateful to Mary Anderson for this ingenious invention because it helps us see where we’re going, even in the most inclement weather.”’ The quote from the article that I included in my evidence sentence directly connects to both my opinion that the windshield wiper met a greater societal need and my reason that it made our lives safer by allowing us to see where we are going in bad weather.”• Provide additional examples as necessary to support students’ understanding of how to incorporate quotes from the article into their evidence sentences.• Tell students to take 5 to 6 minutes work with group members to:<ol style="list-style-type: none">1. Refer to the article and quotes you recorded on your note-catcher to identify evidence that supports your opinion and connects to your reason.2. Discuss and decide which quotes from the text you will use in your two evidence sentences.3. Record two more sentences after the reason that contain evidence from the text to support your opinion and connect to your reason (make sure to place quotation marks around exact phrases from the text).• Circulate to offer support and provide guidance as needed.• Draw students’ attention to the last line on the anchor chart, “conclusion that restates the opinion.” Then ask students to think about and discuss in groups:<ul style="list-style-type: none">* “What kind of concluding statement could you write to restate the opinion?”	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• After 1 or 2 minutes, invite a few students to share out their thinking with the class. Listen for ideas such as:<ul style="list-style-type: none">– “The paper bag machine is undoubtedly the greater invention.”– “Windshield wipers made people’s lives much better,” or similar suggestions.• Allow students 1 or 2 minutes to:<ol style="list-style-type: none">1. With group members, develop a concluding statement that restates the opinion.2. Have one member of your group write the conclusion after the last evidence sentence, on the group’s chart paper.• Tell students to leave their anchor charts posted for a brief gallery walk during the Closing.	



Closing and Assessment	Meeting Students' Needs
<p>A. Gallery Walk and Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">Ask students to do the following:<ol style="list-style-type: none">With your group members, quickly move to another group's Opinion Paragraph chart.Read the paragraph and discuss one "star" (a specific and positive comment) about the paragraph, related to the introduction, opinion, reason, or evidence.Be prepared to share your thinking whole class.After 2 to 3 minutes, invite groups to share out the comments they have about their peers' opinion paragraphs. Encourage students to be specific with their praise.Quickly read through each learning target and ask students to use Glass, Bugs, Mud Checking for Understanding technique to indicate their mastery. Note students who show bugs or mud as they may need more support.Distribute one index card to each student, for homework. Ask students to write the following question on their index card:<ul style="list-style-type: none">* "How did the compare and contrast structure of the article help you form an opinion about which invention met a greater societal need?"	<ul style="list-style-type: none">Provide a sentence frame to support students during group discussions about opinion paragraphs: "One piece of this opinion paragraph that is really clear/strong is _____ because _____."Consider writing the question on index cards in advance to support struggling writers.
Homework	Meeting Students' Needs
<ul style="list-style-type: none">Reread the article "Ingenious Inventions by Women: The Windshield Wiper and Paper Bag Machine" to someone at home or aloud to yourself.Think about and then write a statement on your index card to explain, "How did the compare and contrast structure of the article help you form an opinion about which invention met a greater societal need?" Bring your index card to class as an entry task for the next lesson.If you did not finish in class, complete your four-column chart for each of the key vocabulary words.Read your independent reading book for at least 20–30 minutes and write a response to another one of the questions on your Independent Reading Choice Board.	<ul style="list-style-type: none">Some students will benefit from using a "Phonics Phone" while reading aloud to more easily hear the inflection (or lack of) in their voice. Encourage students to practicing reading aloud until fluent enough to engage an audience.Allow struggling writers to dictate their responses to someone at home.Consider providing a recording of the text for struggling readers.



EXPEDITIONARY
LEARNING

Grade 5: Module 2B: Unit 1: Lesson 8

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



“Ingenious Inventions by Women: The Windshield Wiper and the Paper Bag Machine”

Written by Expeditionary Learning for instructional purposes

Mary Anderson and Margaret E. Knight are two inventors you have probably never heard of. However, their ingenious ideas have made our lives both safer and simpler. Read on to learn more about how and why each of these brilliant women developed devices that we still rely on so much today.

Mary Anderson

Where does the idea for a great invention come from? Well, in the case of Mary Anderson it was developed purely from the desire to make people’s lives safer.

It was the year 1902 when Mary Anderson traveled far from her home in Alabama and boarded a New York City streetcar. The snow and sleet pelted the car mercilessly. The driver struggled to see the road in front of him through the frost-caked glass. It was because Mary felt sorry for the driver and realized the potential danger to her fellow passengers that she was inspired to create a device that would make people’s lives better. That invention was the windshield wiper.

At the time, the best option available was a split windshield. During bad weather, drivers would swing open their front window in the hopes that debris would slide off to clear their view. However, this design did not work very well. So Mary thought, “Why not create a device to remove the snow and ice completely?” Immediately, she began to draw up plans in her notebook.

Mary’s final sketch became what we refer to today as “windshield wipers.” Or, as she described in her patent application, “... an improvement in window-cleaning devices in which a radially-swinging arm is actuated by a handle from inside of a car-vestibule,” which is just another way of saying there would be a lever inside the car that made an arm move across the glass of the windshield.

Unfortunately, manufacturers did not see the value of her idea and she allowed the patent to expire. Several years later, someone else saw Mary’s idea. That person patented and sold the invention of windshield wipers to car companies far and wide. Today, we can all be grateful to Mary Anderson for this ingenious invention because it helps us see where we’re going, even in the most inclement weather.



“Ingenious Inventions by Women: The Windshield Wiper and the Paper Bag Machine”

Margaret E. Knight

Whereas Mary Anderson’s goal was to make people’s lives safer, another inventor, Margaret E. Knight, set out to make people’s lives easier. In the mid-1800s, Margaret Knight worked at the Columbia Paper Bag Company. Her job was to tie together stacks of handmade, flat-bottomed bags. Flat-bottomed bags took a long time to make, so they cost more than most people could afford. At the time, most people could only afford large wooden crates or poorly crafted envelope-shaped bags to transport their goods from the grocery store to their homes. So when Margaret had been on the job only a week she wondered, “Why can’t flat-bottomed bags be made with a machine so they would take less time to put together and cost less money? Then everyone could afford them.” Similar to Mary, Margaret’s question led her to create a device that would improve people’s lives.

Margaret was neither a scientist nor an engineer. However, because she had worked with machines most of her life, she understood how they worked and how to build them. She began sketching ideas for a new paper bag machine that would fold square-bottomed bags. Her next step was constructing and testing the various parts of her machine. Within a year, Margaret had built a complete and working model of her invention. Once her wooden model was complete, she hired a machinist to build one out of iron. She submitted an application for a patent along with the newest version of her “Paper Feeding Machine” in 1868.

Unlike Mary’s idea, the value of Margaret’s machine was recognized almost immediately. When a man named Charles Annan saw Mary’s paper bag machine being cast in iron at the machinist’s shop, he tried to steal the idea. Annan copied Margaret’s invention and tried to file a patent. He claimed he invented it first. Margaret fought Charles Annan’s claim. She traveled to Washington, D.C. to fight him in court. After days of presenting evidence, Margaret received credit for being the first person to develop the paper-folding device. She was awarded the patent for her invention in 1870.

Margaret spent her life developing new and useful inventions. Eventually, she held the rights to 27 patents. In fact, reporters referred to her as “Lady Edison” because of her many discoveries. Nevertheless, it was her first invention of the paper-bag machine that continues to make our lives simpler, even in today’s modern world.



Compare and Contrast Note-catcher: “Ingenious Inventions by Women”

***How does the way a text is structured support our understanding of complex ideas?**

Who is being compared and contrasted?	
Alike	Different



Compare and Contrast Note-catcher: “Ingenious Inventions by Women”

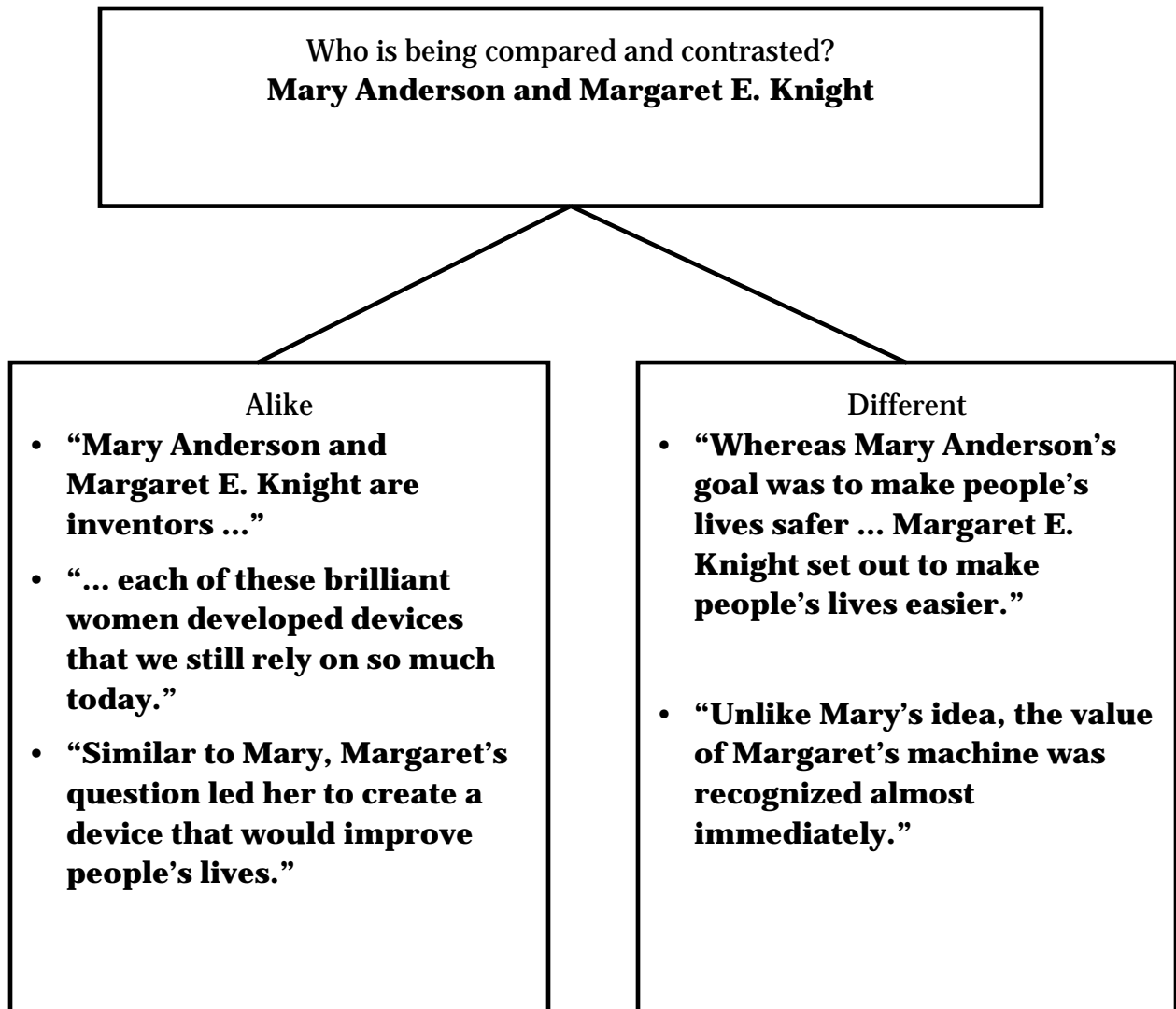
Enduring Understanding: How did female inventors develop new or improved technologies to meet people’s needs?

Fill in the chart using *three* quotes from the text to show how women developed new or improved technologies to meet people’s needs.

Female inventors have developed new or improved technologies to meet people’s needs.	
EVIDENCE (quote from text)	



Compare and Contrast Note-catcher: “Ingenious Inventions by Women”
(Answers, for Teacher reference)





Compare and Contrast Note-catcher: “Ingenious Inventions by Women”

(Answers, for Teacher reference)

Enduring Understanding: How did female inventors develop new or improved technologies to meet people’s needs? (RI.5.1, RI.5.3)

Female inventors have developed new or improved technologies to meet people’s needs.

EVIDENCE (quote from text)

“... because Mary felt sorry for the driver and realized the potential danger to her fellow passengers that she was inspired to create a device that would make people’s lives better. That invention was the windshield wiper.”

“ Today we can all be grateful to Mary Anderson for this ingenious invention because it helps us see where we’re going, even in the most inclement weather.”

“... it was her first invention of the paper-bag machine that continues to make our lives simpler, even in today’s modern world.”



Opinion Paragraph Anchor Chart

Focus question: Did the invention of the windshield wiper or the paper bag machine meet a greater societal need?

<hr/>	(brief <i>introduction</i> to the topic)
<hr/>	(<i>opinion</i> statement that includes <i>key terms</i> from the question)
<hr/>	(<i>reason why</i> you believe the opinion)
<hr/>	(<i>evidence/quote</i> to support the opinion and reason)
<hr/>	(<i>evidence/quote</i> to support the opinion and reason)
<hr/>	(<i>conclusion</i> that restates the opinion)