

Celebrating STEM: Black and Brown S.T.E.M Pioneers

The overall goal for this weeklong unit is to promote and celebrate Black and Brown S.T.E.M pioneers.

DAY: 1

Minnesota Standards:

- SL.2.8.1.1: Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- RL.2.1.7.7: Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot
- RL.2.1.5.5 Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.

Objectives: Students will be able to:

- Recall prior knowledge using a K.W.L chart
- Use the strategy of retelling to understand the text
- Sequence events in the text
- Identify short a words using the informational text from the [African American Registry](#)

Materials: Celebrating STEM power point, KWL chart, Short a worksheet, Retelling worksheet

Opening Activity/Launch: Write the word scientist on the board and read the word aloud. Ask the students what they know about science. Who becomes a scientist? What do scientists do? Have students share what they know and record their answers on a classroom KWL chart. Students can add to their own chart using the student KWL chart attached to this lesson.

Focus Skill: Retell

- Explain that stories are generally told in order from beginning to end and that knowing the order of a story is important because it helps the reader understand what happens.
- Model how to retell the main events using the story, *The Three Little Pigs*. As you describe the main events to your students, write key words from each event on the board.
 - Think-aloud: *In the story, the first main event is the first little pig builds his house out of straw. Next, the second little pig builds*

Celebrating STEM: Black and Brown S.T.E.M Pioneers

a house out of sticks. Then the last little pig builds their house out of bricks. A wolf comes and blows down the first and second little pig's homes. Finally, when the wolf tries to blow down the house made of bricks, he can't!

- Explain that after reading the story today, students will practice retelling the story in pairs.

Read Aloud: Introduce the story. Guide students to the front and back covers and read the title. Have students discuss what they see on the cover. Encourage them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about.

Show the students the title page. Discuss the information on the page (title of book, author's name, illustrator's name).

Read or use the link to listen to the story [Mae among the Stars](#), by Roda Ahmed. Then have a short discussion.

Recommendations for discussion:

- What did Mae want to be when she grew up? How did her classmates react to her dream?
- During the story, who believes in Mae and encourages her to reach her dreams?
- Do you have someone who believes in you? How do they make you feel?

Retell: Model retelling the story and then ask for a student to re-tell in a different way. Use the retelling worksheet to record what happens first, next and last. Have students share their work as they go.

Phonics Activity: Say the words: cat, hat, rag, cap. All these words have the short a vowel sound. Use [this text](#) about Mae Jemison from the African American Registry to find short a words as a class. Read the text and pause each time you reach a short a word. Have students record the short a words using the attached worksheet.

Closing: Tell the students that at the end of each lesson they will listen to advice from a scientist. Today's scientist is Saeed Elfadil!
<https://aaregistry.org/video/science-career-advice-saeed-elfadil-saeed/>

Celebrating STEM: Black and Brown S.T.E.M Pioneers

DAY: 2

Minnesota Standards:

- SL.2.8.1.1: Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- RL.2.1.9.9: Compare and contrast two or more versions of the same story.
- RF.2.3.0.3: Know and apply grade-level phonics and word analysis skills in decoding words.

Objectives: Students will be able to:

- Recall prior knowledge using a K.W.L chart
- Identify details to compare and contrast information using two texts
- Identify short e words using the informational text from the [African American Registry](#)

Materials: Celebrating STEM power point, Compare and Contrast Worksheet, Short e worksheet.

Opening Activity/Launch: Re-visit the K.W.L chart from the previous lesson. Have the students add any new questions they have. Students can add to their own chart using the student KWL chart attached to this lesson.

Focus Skill: Compare and Contrast

- Explain that one way to organize information in a book is to explain how topics are alike and how they are different. Write the words: Sports Equipment on the board and show students a soccer ball and basketball. Invite them to explain how the two objects are alike and different (alike: round, used for a game, balls; different: colors, size, sport they are used for).
- As the students how identifying ways that a soccer ball and basketball are alike and different helped them understand more about the topic *Sports Equipment*.
 - Think-aloud: *To understand and remember new information about our scientists, I can think about how they are alike and different. I know that is a strategy that good readers use, so I'm going to compare and contrast Mae Jemison and Katherine Johnson after I have read our story for today.*

Read Aloud: Introduce the story. Guide students to the front and back covers and read the title. Have students discuss what they see on the

Celebrating STEM: Black and Brown S.T.E.M Pioneers

cover. Encourage them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about.

Show the students the title page. Discuss the information on the page (title of book, author's name, illustrator's name).

Read or use the link to listen to the story [Counting on Katherine](#), by Helaine Becker. Then have a short discussion.

Recommendations for discussion:

- Why wasn't Katherine able to go to her town's high school? How did this make her feel?
- Have you ever been excluded or left out? What did you do about it?
- What words would you use to describe Katherine Johnson?

Compare and Contrast: Explain to the students that Katherine Johnson and Mae Jemison are alike and different. Invite the students to share ways that Katherine and Mae are alike and different. Students will use the compare and contrast Venn diagram to record their thinking.

Phonics Activity: Say the words: let, hen, bed, leg. All these words have the short e vowel sound. Use [this text](#) about Katherine Johnson from the African American Registry to find short e words as a class. Read the text and pause each time you reach a short e word. Have students record the short e words using the attached worksheet.

Closing: Tell the students that at the end of each lesson they will listen to advice from a scientist. Today's scientist is Collie Graddick!

<https://aaregistry.org/video/encouraging-youth-in-an-agri-science-career-collie-graddick/>

Extension: Katherine Johnson faced discrimination and racism. People around our country have protested racism in the past and present. Ask the students if they have ever been to a protest. Explain that oftentimes people bring signs to protests? Tell the students that today they will be designing their own protest sign. Use the protest sign worksheet as a template or have students create their own.

Celebrating STEM: Black and Brown S.T.E.M Pioneers

DAY: 3

Minnesota Standards:

- SL.2.8.1.1: Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- RL.2.1.1.1: Ask and answer such questions as who, what, where, when why, and how to demonstrate understanding of key details in a text.
- RF.2.3.0.3: Know and apply grade-level phonics and word analysis skills in decoding words.

Objectives: Students will be able to:

- Ask and answer questions using a K.W.L chart
- Identify short i words using the informational text from the [African American Registry](#)

Materials: Celebrating STEM power point, Ask and answer questions worksheet, Short i worksheet

Opening Activity/Launch: Re-visit the K.W.L chart from the previous lesson. Have the students share responses for the last column. Have any of their questions been answered so far? Record their answers on a classroom KWL chart. Students can add to their own chart using the student KWL chart attached to this lesson.

Focus Skill: Ask and Answer Questions

- Explain to students that readers help themselves to understand what they are reading by asking and answering questions before, during and after reading.
- Show students the front and back covers and read the title. Ask them what questions they already have about the story.
 - Think-aloud: *Before I even start reading I have questions about the book. My questions come from looking at the cover, the title and sometimes the information in the table of contents. This title has me very curious. I wonder what the author means by: A Weed is a Flower.*
- Have students turn to a partner and share a question they have about the story. As a group, listen to a few students share their questions with the class.

Celebrating STEM: Black and Brown S.T.E.M Pioneers

Read Aloud: Introduce the story. Guide students to the front and back covers and read the title. Have students discuss what they see on the cover. Encourage them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about.

Show the students the title page. Discuss the information on the page (title of book, author's name, illustrator's name).

Read or use the link to listen to the story [A Weed is a Flower](#), by Aiki. Then have a short discussion.

Recommendations for discussion:

- Why do you think it was so important to George Washington Carver that he go to college?
- Do you think other people would have given up when things were so difficult?
- What were three big events that happened in Carver's life?

Ask and Answer Questions: Tell the students that while you were reading, you thought of many questions. As a class, record the questions using the ask and answer questions worksheet. Have students share with a partner how asking and answering questions helped them to understand and remember what they read.

Phonics Activity: Say the words: mit, wig, fig, fin, I. All these words have the short i vowel sound. Use [this text](#) about George Washington Carver from the African American Registry to find short i words as a class. Read the text and pause each time you reach a short i word. Have students record the short i words using the attached worksheet.

Closing: Tell the students that at the end of each lesson they will listen to advice from a scientist. Today's scientist is Efe Mensah-Brown!

<https://aaregistry.org/video/career-advice-mathi-t-efe-mensah-brown/>

Extension: If you were to design an invention, what would it be? Just like George Washington Carver, today we will be designing our own inventions. If you could invent something, what would you invent? What would your invention be called? Have students use the invention worksheet to plan and design their own invention.

Celebrating STEM: Black and Brown S.T.E.M Pioneers

DAY: 4

Minnesota Standards:

- SL.2.8.1.1: Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- RL.2.1.1.1: Ask and answer such questions as who, what, where, when why, and how to demonstrate understanding of key details in a text.
- RL.2.1.3.3: Describe how characters in a story respond to major events and challenges

Objectives: Students will be able to:

- Ask and answer questions using a K.W.L chart
- Students will identify facts and opinions from the text
- Identify short o words using the informational text from the [African American Registry](#)

Materials: Celebrating STEM power point, Fact and opinion worksheet, Short o worksheet

Opening Activity/Launch: Compete the K.W.L chart as a class. Have students share any additional questions and answers with the class. Record their responses on the classroom KWL chart. Students can add to their own chart using the student KWL chart attached to this lesson.

Focus Skill: Fact and Opinion

- Explain that a fact is something that a person can prove to be true in real life. An opinion is a belief and is based on feelings.
- Talk about different types of foods that one might eat and ask the class to raise their hand if they like the food and keep their hand down if they don't like it. Explain that how we feel about foods is an opinion because it has to do with feelings.
 - Think-aloud: *I love spinach, that's how I feel about it so it is an opinion. Spinach is a vegetable. I can prove this is true so that statement is a fact.*
- Tell the students that they are going to take time to practice. Have students turn to a partner and share their favorite sport. Then have the students share a fact about that sport. Come together as a class and have a few students share with the whole group.

Celebrating STEM: Black and Brown S.T.E.M Pioneers

Read Aloud: Introduce the story. Guide students to the front and back covers and read the title. Have students discuss what they see on the cover. Encourage them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about.

Show the students the title page. Discuss the information on the page (title of book, author's name, illustrator's name).

Read or use the link to listen to the story [The Doctor with an Eye for Eyes](#), by Aliko. Then have a short discussion.

Recommendations for discussion:

- Why do you think there were only boys at medical school?
- Dr. Patricia Bath had a dream to be a doctor, what is your dream?
- What words would you use to describe Dr. Patricia Bath?

Fact or Opinion: Have volunteers provide examples of different facts from the book. Have other volunteers offer examples of their opinions about those facts. Independent practice: Have the students sort facts and opinions about Dr. Patricia Bath using the fact and opinion worksheet.

Phonics Activity: Say the words: lot, rot, mop, top. All these words have the short o vowel sound. Use [this text](#) about Patricia Era Bath from the African American Registry to find short o words as a class. Read the text and pause each time you reach a short o word. Have students record the short o words using the attached worksheet.

Closing: Tell the students that at the end of each lesson they will listen to advice from a scientist. Today's scientist is Dr. Frank Snowden!
<https://aaregistry.org/video/science-career-inspiration-dr-frank-snowden/>