Full STEAM Ahead!
TEACHER'S GUIDE

Full STEAM Ahead! is a set of guided, non-fiction books that helps early readers build vocabulary, fluency, and comprehension skills, and provides them with an engaging introduction to STEAM subjects. Expertly leveled text, bold images and diagrams, and relatable examples all combine to help children become enthusiastic and skilled readers. Inquiry-based activities and educator support features, such as vocabulary lists and question prompts, will help readers build skills and make STEAM connections.

The *Full STEAM Ahead! Teacher's Guide* is a balanced literacy guide that supports literacy across four strands: reading, writing, speaking and listening, and language. A lesson specially tailored to each title in the series helps build one or more reading skills, from distinguishing between information provided in words and pictures, to identifying reasons given to support points in the text. Accommodations, extensions, and English language learner support are included in each lesson. By using this *Teacher's Guide*, you will help students build vocabulary, develop close-reading strategies, and learn to become accomplished readers.

The lesson plans are tailored for grade 1 and include connections to subjects in science, technology, arts, engineering, and math. Each lesson is accompanied by one or more reproducible worksheets. The titles in *Full STEAM Ahead!* are:

Science Starters

- Day and Night
- The Four Seasons
- From Seed to Pumpkin
- The Life Cycle of a Rabbit
- The Right Material for the Job
- What Makes It Move?

Engineering Everywhere

- Engineering in My Community
- How Engineers Solve Problems
- Mistakes Help Us Learn
- Testing with Models
- What Does an Engineer Do?
- What Is the Best Solution?

Math Matters

- Building Tens with My Friends
- Building with Shapes
- I See 3-D
- Place Value at Playtime
- Skip Counting My Way to School
- Subtraction in Action

Technology Time

- Parts Work Together
- Robots at Work
- Technology and You!
- Technology Then and Now
- Think Like a Computer Scientist
- What Is Technology?

Arts in Action

- Artists Use Tools
- Creating Art Together
- Creating Colors
- The Five Parts of Art
- How Do Artists Tell Stories?
- Making Art from Anything

Ontario
Ontario Media Development Corporation
Made possible with the support of the Ontario Media Development Corporation.

CRABTREE
PUBLISHING COMPANY
WWW.CRABTREEBOOKS.COM

Full STEAM Ahead!
TEACHER'S GUIDE
Science Starters

Full STEAM Ahead! is a set of guided, non-fiction books that helps early readers build vocabulary, fluency, and comprehension skills, and provides them with an engaging introduction to STEAM subjects. Readers will delight in the expertly leveled text, bold images, and relatable examples on their journey to become enthusiastic and skilled readers. *The Full STEAM Ahead! Teacher's Guide* is a balanced literacy guide that supports reading, writing, speaking and listening, and language development. Lessons are specially tailored to each *Full STEAM Ahead!* title, and include accommodations, extensions, and English language learner support.

The *Science Starters* lessons encourage students to notice the information provided by the words and in pictures or illustrations, identify key ideas in a book, and use illustrations and details to describe the key ideas. Students will take part in prediction, close-reading, reflection, and extension activities while building their skills in all areas of literacy.

These lesson plans are tailored for grade 1 and include connections to core science concepts, from understanding cycles to asking and answering questions about natural phenomena. Each lesson is accompanied by one or more reproducible worksheets. The titles in *Full STEAM Ahead!* are:

Science Starters

- Day and Night
- The Four Seasons
- From Seed to Pumpkin
- The Life Cycle of a Rabbit
- The Right Material for the Job
- What Makes It Move?

Engineering Everywhere

- Engineering in My Community
- How Engineers Solve Problems
- Mistakes Help Us Learn
- Testing with Models
- What Does an Engineer Do?
- What Is the Best Solution?

Math Matters

- Building Tens with My Friends
- Building with Shapes
- I See 3-D
- Place Value at Playtime
- Skip Counting My Way to School
- Subtraction in Action

Technology Time

- Parts Work Together
- Robots at Work
- Technology and You!
- Technology Then and Now
- Think Like a Computer Scientist
- What Is Technology?

Arts in Action

- Artists Use Tools
- Creating Art Together
- Creating Colors
- The Five Parts of Art
- How Do Artists Tell Stories?
- Making Art from Anything

Ontario
Ontario Media Development Corporation
Made possible with the support of the Ontario Media Development Corporation.

CRABTREE
PUBLISHING COMPANY
WWW.CRABTREEBOOKS.COM

Day and Night

Book Synopsis

Everyday we experience daytime and nighttime, but do you know what causes this phenomenon? Dive into *Day and Night* and learn about the Sun and Moon and how changing positions in outer space creates the changes we see throughout our day. Learn about why specific things can only been seen in the day or night. Read this informative text to discover what there is to discover in the sky!

Materials

- *Day and Night* book
- *Day and Night Venn Diagram*
- Student notebook
- *Reporting Log*
- *Day and Night Worksheet*
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Facilitate class discussion by showing students the cover of *Day and Night* and asking the following questions:

- What causes day and night?
- Why is the sky dark at night?
- When we experience daylight, is everyone around the world also experiencing daylight? Explain.
- How do we know the day is beginning and ending? What are the terms associated with these occurrences?

Provide students with *Day and Night Venn Diagram*. Students will write down the objects they see or are able to observe in the sky in each section (i.e. stars at night, Sun in the day, and the Moon during both periods). Draw the Venn Diagram on the white board and have students voluntarily share their responses and record them.

In a designated notebook, have students write down one question about the day and/or night that they hope to have answered by the text.

Target Skills

CCSS – Reading: Informational Text

- Distinguish between information provided by pictures or other illustrations and information provided by the words in a text (RI.1.6)
- Use the illustrations and details in a text to describe the key ideas (RI.1.7)

It is important for readers to look at all the features of a book in order to fully understand the text. Explain to students that they must look at how the pictures, diagrams, illustrations and words work together to provide the reader with as much information as possible. Visuals may provide readers with insight into a subject that is not written in the text or they can work with the words to describe key ideas.

Facilitate class discussion by asking the following question: Does anyone know what type of scientist or field of science studies the planets, moons, and planetary systems?

- Hint: The answer is in its name!
  - Answer: Planetary science or planetology. (Note: if students are more familiar with the term "astronomer", teacher can use this term.)

Tell students: Today we are going to be planetologists from another planet! We have come to the planet Earth because we heard that they experience something called "day" and "night." Some nice people have given us a book called *Day and Night* to help us understand. As we read the book, look for key details in the illustrations and the words in the text. We must bring back as much information about day and night on Earth as possible!

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Find instances within *Day and Night* where the information being provided by illustrations and/or pictures is distinguishable from the information being provided by the words in the text. Be sure to prompt students to figure out what source is providing what information. Circle back after focusing on the first skill to provide prompts about what the illustrations in the text tell us about the key ideas.

Provide students with the *Reporting Log*. Students will make jot notes of the information they learn during their close readings of the text.

Prompt 1: Teacher Modeling

Turn to page 5. Read the text. Write the words "day" and "night" on the white board. Pose the question:

- What is the text telling readers about day and night?'

Write the word "cycle" on the white board. Explain that the words inform the readers that the change between day and night repeats again and again.

Direct students' attention to the diagram on page 5. Ask what additional information readers get from the illustration provided. Explain to students that there are four illustrations in the cycle depicted on the page, compared to the two the words in the text describe. Ask students how the illustrations in the cycle add to their understanding about how the cycle of day and night occurs. Pose the following questions;

- How does the day begin and end?
- How does the sun appear in three of the images?
- What conclusion can we draw about the various stages of the day? How do we know they are stages of the day and not the night?

Allow students time to write down information in their *Reporting Log*.

Prompts for Independent Close Reading

- Turn to page 6. Read the text and then look at the illustrations/ diagrams. Prompt students by asking whether the text or the pictures/illustrations inform readers about the following: one day-night cycle is a 24-hour period; Earth spins in a clockwise direction."
- On page 16, we learn that without the light from the Sun's rays, the sky becomes dark. This is what we consider night. Ask students what they see in the picture. Discuss different theories as to why the moon and stars can be seen in the dark. Ask why the stars cannot be seen in the daytime.
- Allow students time to write in their *Reporting Logs.*

Prompt 2: Teacher Modeling

Let's return to the cycle illustrated on page 6 of the book. Discuss with students the event that is occurring in each picture (i.e. A child is sleeping, a student has a back pack and is ready to go to school, a family is eating dinner). Pose the question:

- How do the events that are occurring in each picture help us to understand what happens during the day and night?

Write "Key Idea" on the white board. Discuss with students how the details in these pictures help readers understand key ideas of the book. Write down answers on the white board.

- Possible answers may include, but are not limited to: These pictures help us understand that a 24 hour period can be divided into four core components (morning, afternoon, evening, and night). They help us understand what students usually are doing during these times; They help is understand the order that is repeated again and again.

Prompts for Independent Close Reading

- Turn to page 20. Ask students what they are able to see in each of the two pictures. How do the pictures help us understand day and night? What can we see in the day and not at night? What can we see at night that we can't see in the day?
- Turn to page 14. What does the Sun look like in this picture? How do you know? What time of day is being shown here?

Students will complete their *Reporting Log*.

After Reading

Hand students the *Day and Night Worksheet*. Students will draw a picture of the day and night. Students will then caption their drawing by writing a statement about what they have learned while reading the book. Students should include details in their drawings that show their understanding of the two stages.

Students will complete and hand in the *Venn Diagram*, their *Reporting Logs*, and the *Day and Night Worksheets*. Teachers should review the worksheets for comprehension and their understanding of the targeted skills.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to draw pictures of what you think about when you read these words.
- Students will track the differences between day and night over the period of a week. Encourage students to use their five senses described and explained on page 8 of the text to record the features associated with both of these periods (i.e. what did you hear during the day? What did you hear during the night?) In small groups, students will discuss their observations.
- Students will write a short sentence explaining whether they prefer day or night and one reason as to why this is (i.e. I like the night because I see stars).

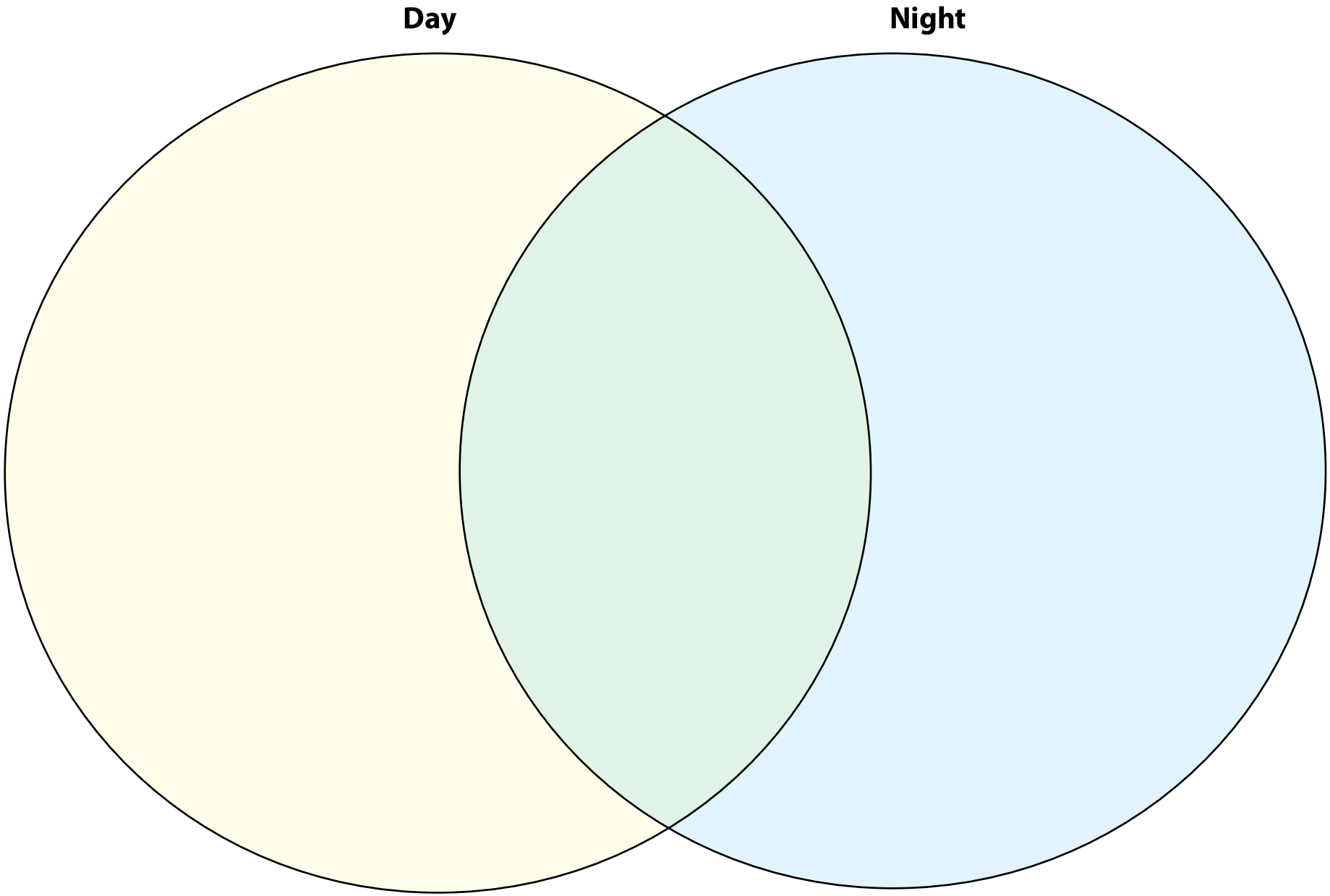
ELL Support

- When discussing features of day and night and how they repeat in a cycle, support English language learners by incorporating a model into the lessons. Students should be able to interact with the model, allowing them to understand the systems that contribute to our knowledge of day and night.

Name: _____ **Date:** _____

Day and Night Venn Diagram

Write the things you can see in the sky during the day on the right side. Write the things you can see in the sky during the night on the right side. Write the things that you can see during both day and night in the middle. Compare your answers with a peer beside you.



Name: _____ **Date:** _____

Reporting Log

Imagine you are from a planet far, far away... You have just traveled to the planet Earth!
You find this planet strange because humans have "day" and "night." Read the book *Day and Night,* and make notes about important facts that you can report back to your home planet. Good luck!

I need to report _____

_____

I need to report _____

_____

I need to report _____

_____

I need to report _____

_____

I need to report _____

_____

I need to report _____

_____

I need to report _____

_____

I need to report _____

_____

I need to report _____

_____

I need to report _____

_____

Name: _____ **Date:** _____

Day and Night

Draw a picture and write a statement about the picture you drew in the space provided.
Make sure you add specific details in your drawing about what you see during these times.

Draw a picture of the daytime sky here

Describe your picture

_____

_____

Draw a picture of the nighttime sky here

Describe your picture

_____

_____

The Four Seasons

Book Synopsis

Most places in the world have different seasons. The position of Earth in relation to the Sun causes four seasons in some places. Read *The Four Seasons* to learn about all of the changes that happen with each season. Read about the changes in weather, how plants and animals change, and how humans behave differently, depending on the season.

Materials

- *The Four Seasons* book
- Sticky Notes
- *The Four Seasons Worksheet*
- White board or chalkboard and markers or chalk

Before Reading

Begin the lesson with a discussion centering on the current day, month, and weather outside. Ask questions such as:

- What is today's date?
- What is the weather outside?
- Is this weather normal for this time of year?
- Would this weather be common four months from now?
- What would you expect to be different about the weather four months from now?

Show students the cover of *The Four Seasons* and ask them to look at the image. Ask students to identify the season in each picture, and what evidence leads students to believe this. Have students turn to their partner and discuss.

Hand each student a sticky note and have them write down which season is their favorite. Students will write adjectives that describe the season (i.e. sunny, rainy, cloudy, etc.) and make note of activities they do during that season (i.e. swimming, jumping in puddles, making snow-people, etc.).

Assign each season to a corner of the classroom. Students will gather at their favorite season and discuss with peers an answer to the following scenario:

- I am moving to a new planet! My choices are Winter Planet, Spring Planet, Summer Planet, and Fall Planet. Why is the planet with your favorite season the best planet for me to move to?

Students will use their sticky notes to assist them in formulating their responses. One representative from each group will share their reasoning.

Target Skills

CCSS – Reading: Informational Text

- Use the illustrations and details in a text to describe its key ideas (RI.1.7)

Show students images of frequently placed road signs (i.e. school crossing, deer crossing, construction, etc.). Ask students to explain the key message of each sign. Provide confirmation and explanations as needed.

Tell students:

By analyzing the details and images on several road signs, we were able to identify the main message of each. We can apply the same skills when we read informational books!

We are going to begin by taking a picture walk of the book *The Four Seasons*. Be on the look out for captions that may help us with our understanding. Discuss with a partner certain details you notice. Our goal while we read this book will be to notice details and use the illustrations to help us understand the text's key ideas.

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Find important details within the text and use illustrations to support students' understanding. Explain how this information describes the key ideas of the text.

Prompt 1: Teacher Modeling

Turn to page 4. Write the words "winter", "spring", "summer" and "fall" on the white board. Ask students what the key idea on the page is. Ask them what the key idea of the four words on the board is.

Lead students to identify the following key idea: There are four seasons. Ask students:

- How do the images help our understanding of what occurs during each season?
- What information does the picture tell us that we do not receive from the words?
- Does the order in which the seasons are displayed hold any significance?
- What might these details tell us about a key idea of the book?

Prompts for Independent Close Reading

- Turn to pages 6 and 7. What are some important details we see in these two pages? How do you know this? How do the illustrations support these details and help our understanding of the text? Do the images help your understanding of why seasons change the way they do? What do these details (words and images) tell us about the key ideas of the book?
- Turn to page 10. Look at the images. How do we know which seasons are depicted in each picture? What key ideas are these images alluding to? Look at the colors used to represent summer and winter. How do they contribute to the main ideas on the page?

After Reading

Hand students *The Four Seasons Worksheet*. Students will create a cover page for *The Four Seasons* that illustrates key idea(s) of the text. Students will be encouraged to include as much detail in their drawings as possible. Teacher will assess drawings for the representation of key ideas found within the book.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create a song about the different seasons. Students may voluntarily share their songs with the class.
- Students will create a road sign that depicts a key idea from the book. Have students display their signs and other students will try and identify what the sign represents.
- Working in pairs, students will describe an illustration in the book with enough detail that their partner is able to identify the image.
- Provide students with an image of four bare trees and have them draw how each tree appears during each season

ELL Support

- Support English language learners by having students assist in putting together a small puzzle. Explain to students that once pieced together, a puzzle tells a particular message. We can use a puzzle to help us understand the key ideas of images.

  Provide students with a 5-piece puzzle graphic organizer (four corners and a middle). Then choose one image from *The Four Seasons* to use as an example. In each of the four corners, have students write a detail about the image. Then, in the middle, have students put the details together and identify the main idea (the idea that connects all of the four details). Students can also do this activity verbally, in small groups.

Name: _____ **Date:** _____

The Four Seasons

The author of *The Four Seasons* needs your help. They need a new cover image for the book! They need you to draw a picture that represents the key idea of the book. A person looking at the cover should be able to tell what the book is about.

In the space provided for you below, draw a new cover image for *The Four Seasons*.

The Life Cycle of a Rabbit

Book Synopsis

In *The Life Cycle of a Rabbit*, readers will learn about the changes in a rabbit as it grows from a newborn to a full-grown adult. Discover how rabbits survive in nature by learning about where they live, what they eat, and the behaviors that help them stay safe.

Materials

- *The Life Cycle of a Rabbit* book
- Anchor chart paper
- *KWL Chart*
- *Author and Illustrator Worksheet*
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Show students the cover of the book *The Life Cycle of a Rabbit*. Pose the following questions and discuss as a class:

- What is a life cycle
- Why is it important that we learn about life cycles?
- Which animal's life cycle do you think we are going to be reading and learning about today?
- Does anyone have a rabbit as a pet? Tell us about your rabbit.

As a class, define "life cycle" and write the definition on an anchor chart paper.
An example definition could be:

- A life cycle is the physical changes an organism experiences throughout their life.

Hand students *KWL Chart* and have them fill out the "K" column. Prompt them with the question:

- What do you already know about the life cycle of a rabbit?

Target Skills

CCSS – Reading: Informational Text

- Distinguish between information provided by pictures or other illustrations and information provided by words in a text (RI.1.6)
- Use the illustrations and details in a text to describe its key ideas (RI.1.7)

Explain to students that words and illustrations work together to give readers information. It is important as good readers that we look at both to get all the information we can. By the end of this lesson, you will be able to identify the information from words in a text and information from a picture to describe the book's key ideas.

Tell students:

Jimmy found a rabbit's nest in his backyard. He doesn't know how old the rabbits are, or for how long they will live in his backyard. He hopes that they will be there for a while! Jimmy wants to learn all about the rabbits so he can help them. He visited the library and found a great book called *The Life Cycle of a Rabbit*. Help Jimmy by reading the book to make sure he has all the information he needs.

Students will complete the "W" column of their KWL charts. Prompt them with the question:

- What do you want to know about the life cycle of a rabbit?

During Reading

Prompts can be provided by teacher during class or small-group read-aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Explain to students that we already know that authors write the words in a book and an illustrator draws the illustrations. People also research photos to include in books. Support students by drawing comparisons between pictures and words in the text to better understand the author's message. Use the details in the illustrations to describe its key details.

Prompt 1: Teacher Modeling

Turn to page 10 and look at the illustration. Ask students to discuss the following with a partner:

- What clues does the picture give you about the life of a rabbit?

Ask students to share some of their interpretations. Tell students that you see a lot of small rabbits huddled closely together in a small nest of straw and fur. You notice that these rabbits do not have a lot of fur ,and all of them appear to be dark in color.

Ask students:

- What words correspond to the picture?
- What information is in the words that is not in the picture?
- What information is in the picture that was not written in the words?

Explain to students that by looking at the picture, we can figure out that when baby rabbits are newborn, they remain grouped together. They might do this to keep warm and safe. Their coloring probably shows that they will all have the same color fur. Wow, look at how much more we learned from looking at the pictures!

Prompts for Independent Close Reading

- Turn to page 14. Look at the picture prior to reading the text. What do you see? What do you notice about the rabbits' environment? What age do you think the rabbits are? What would indicate this? Read the text and compare the information in both. Did the words confirm any of the predictions we made about the picture? What information is in the picture that is not in the text?
- Look at the life cycle represented on pages 20 and 21. How do these pictures help readers understand the life cycle of a rabbit? What are some clues that you used to answer the question?

Prompt 2: Teacher Modeling

Tell students that they will be going on a picture walk of the book. Have students look at the pictures of the book and discuss with a partner some of the things they noticed.

- On an anchor chart piece of paper, the teacher will create a T-Chart and write "Details" on the left heading and "Key Idea" on the right.
- Turn to page 21 and think aloud, "In the picture on the left, I see three little bunnies together in a nest underground. In the last picture, the bunny is alone on the hunt for food".
  On the left side of the chart, document these details.
  Explain to students that a key idea shown in the details we noticed is that rabbits remain in their litters up until a certain age. Then, in adulthood, rabbits live on their own. Write this key detail in the right side of the T-Chart.

Prompts for Independent Close Reading

- Students will create their own T-Charts in a notebook or on a separate piece of paper.
- Turn to page 8. Look at the picture. What do you notice about what the rabbit is doing? Does the rabbit appear to be relaxed, or is it alert? On the left side of the chart, document the details that you see. On the right side, identify the key idea that you think the details describe.
- What key ideas are described on page 10 of the text? How do we know this? What details in the picture lead you to this conclusion?

After Reading

Students will fill out the "L" column of their *KWL Chart.* Prompt them with the question:

- What did you learn about the life cycle of a rabbit?

Have students hand the chart in upon completion.

Students will complete the *Author and Illustrator Worksheet*. Students will choose which statement they believe best represents the illustration provided. They will also draw an illustration based on a single statement given to them.

Students will hand in the worksheet upon completion and the teacher will assess their understanding.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create a fill in the blank.
- Invite students to research the life cycle of another living thing discussed in class. Students will use the information to illustrate the different life stages of the organism in question and provide brief descriptions of the main events occurring within each stage. They should look at the cycle on pages 20 and 21 as an example.
- Working in pairs, students will examine one page of the book. One student will write down all the details they see in the images on the page. The other student will write down all the details they see in the words on the page. Students will then compare their answers in order to identify what information was being provided by each source. They can use a Venn Diagram or another graphic organizer to compare the similarities and differences.

ELL Support

- Provide students with single descriptive words that may be used to describe a particular image or illustration. Students will be able to choose which descriptor words they feel best represent the picture in question and explain their reasoning.

Name: _____ **Date:** _____

KWL Chart – *Life Cycle of a Rabbit*

K	
W	
L	

Name: _____ **Date:** _____

Author and Illustrator

1. Choose which statement you think best describes what is happening in the picture.
2. Read the statement and draw a picture that shows all of the information in the words.

1. **Which statement describes the picture? Circle your choice.**

- Burrows are rabbit homes. They are holes in the ground.
- The white and brown rabbit is going into its burrow.
- Mother rabbits dig burrows for their babies.

2. **Draw a picture that shows this statement.**

- When they are a few weeks old, kits search for food. They nibble on flowers, grass, fruits, and vegetables.

From Seed to Pumpkin

Book Synopsis

Discover how a tiny seed grows to become a pumpkin with the help of water, sunlight, air, and soil. In *From Seed to Pumpkin*, readers will learn that there are many parallels between the development of pumpkins and the life of many other living things!

Materials

- *From Seed to Pumpkin* book
- Pumpkin seed
- *Making Predictions Worksheet*
- *Making a Scene Worksheet*
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Begin lesson by showing students a pumpkin seed, but without identifying it to students. Students will turn to their partner and discuss what they believe the object is, and what clues lead them to believe this. Teachers may ask students to share their responses.

Explain that the object is a pumpkin seed. Show students a picture of a pumpkin and discuss what it is, what students know about them, and what uses people have for them.

Show students the cover of *From Seed to Pumpkin*. On a piece of paper, students will draw a picture of the process they believe occurs for a pumpkin seed to grow into a pumpkin.

Use the following prompting questions as a means of encouraging students when they are drawing the stages:

- What do you think a pumpkin seed needs to grow?
- How does a pumpkin first look when it is growing? What color is it?
- Do pumpkins grow from the ground like a watermelon, or do they hang like apples from a tree?

Students will compare their drawing to that of a partner's.

Target Skills

CCSS – Reading: Informational Text

- Distinguish between information provided by pictures or other illustrations and information provided by words in a text (RI.1.6)

Have students participate in a picture walk through the book. Hand students *Making Predictions Worksheet*. Have students make predictions about what the images and/or pictures are showing the reader. Students will complete the "before reading" portion of the worksheet. The "goal" of this activity is for students to gather as much information as possible from just looking at the illustrations.

Tell students:

Good readers use images, pictures, and details to describe the key ideas of a text. Key ideas are not just written in words! As we read, we are going to look at the pictures and see what information we can learn from them. We will compare the information we learned to the information we predicted!

During Reading

Prompts can be provided by teacher during class or small-group read-aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Find instances within *From Seed to Pumpkin* where the information found within an image is distinct from that within the words of the text. Teachers should focus students' attention on information they cannot know from reading the words, but can learn from the images.

Students will complete their *Making Predictions Worksheet* during the reading process.

Prompt 1: Teacher Modeling

Turn to page 7. On the white board write, "Before Reading". Explain to students that based on the image, you believe that the page is informing the reader of the following (write these points on the white board):

- Pumpkins grow in large fields.
- Many pumpkins grow at a time.
- Pumpkins are fully grown in the fall because the image shows that the trees are beginning to change color

Read the text as a class. Ask students if the information we learned from the image is different from the information we learned from the words. On the white board write "after reading". Write the following points:

- Pumpkins begin growing in May and June and finish in September and October.
- People pick pumpkins when they are fully grown.

Discuss whether our predictions based on the image were correct.

Prompts for Independent Close Reading

- Turn to page 8. Look at the image. What are some predictions you have about what this page is telling the reader, based on just the image alone? What do you notice about the placement of the seeds? Do you think its important that the seeds are being planted evenly apart? What information does the reader learn after reading the words?
- Turn to page 21. What do the images indicate about the life of a pumpkin? What information is in the words that is not in the illustrations? Is the information in the words different from the image or does it "add" more to what you already believed?
- Prompt students to complete their *Making Predictions Worksheet*. They should identify if their predictions were correct and give reasons for their answers.

After Reading

Hand students the *Making a Scene Worksheet*. Students will pretend they are a photographer or illustrator and draw an image they feel would help readers of *From Seed to Pumpkin*. Their image should show readers the key idea of the book. They also need to add a caption.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to write their own story about pumpkins.
- Students will be provided with representations of the life cycle of a pumpkin (i.e. pictures of each step of the process). Students will place the images in the order that reflects the cycle of the growth of a pumpkin and write a brief description below each step.
- Have students work in pairs and trade illustrations for the *Making A Scene Worksheet*. Each student will look at their partner's drawing and write their own caption explaining what is happening in the image. Students will discuss the their image and their partner's caption, and compare and contrast their interpretations.

ELL Support

- Split students into groups of 6. Each students will receive an illustration depicting a step in the cycle of a pumpkin. Students will have to stand in the order that reflects the cycle that a pumpkin goes through from beginning to end. Students will explain to their group what is happening during their role in the cycle.
- Work together with English language learners to have them verbally communicate predictions, and then write the students' predictions on an anchor chart to be analyzed together after reading.

Name: _____ **Date:** _____

Making Predictions

Take a picture walk through *From Seed to Pumpkin*. Make three predictions about what you will learn in the book, based on the images you saw. Make sure you write down the page number of the images you mention.

Prediction # 1: _____

_____

_____

Prediction #2: _____

_____

_____

Prediction #3: _____

_____

_____

Now read the words in *From Seed to Pumpkin*. Were your predictions correct? Why or why not?

Prediction # 1: _____

_____

_____

Prediction #2: _____

_____

_____

Prediction #3: _____

_____

_____

Name: _____ **Date:** _____

Making a Scene

Congratulations!

You have just won an illustration contest. Your work will be showcased in *From Seed to Pumpkin*. Read through the book and draw a picture of a photo that you think will help people better understand the key idea. Add a caption so readers are able to identify important details.

Caption: _____

_____

This photo will add to our understanding of the key idea in the book because:_____

_____

_____

_____

The Right Material for the Job

Book Synopsis

Have you ever thought about what would happen if you wore a shirt that was made out of glass? Or shoes that were made out of cotton? It is important that the objects we use are made up of materials that help them work as they should. Read *The Right Material for the Job* and discover why certain properties of material make them more suited for certain functions than others.

Materials

- *The Right Material for the Job* book
- White board or chalkboard and markers or chalk
- *I am a Pencil Worksheet*
- *Doctors and Nurses Worksheet*

Before Reading

Activate Prior Knowledge

Facilitate class discussion by asking students what **materials** are. Create a definition as a class and write the definition on the whiteboard. For example: materials are what objects are made up of. Brainstorm a list of as many materials as possible as a class (i.e. rubber, jean, cotton, wood, plastic, etc.).

Hand students *I am a Pencil Worksheet*. Students will label the materials that are used to make a pencil (to the best of their knowledge) as well as indicate where they think the materials came from.

Show students the title page of *The Right Material for the Job* and brainstorm different ideas as to what they will learn about. Pose the following questions:

- What do you notice about the picture?
- Do you notice the different materials of the children's clothing? Direct your attention to the boy wearing the jeans, leather boots, and wool sweater. What type of weather do you think he would be wearing these types of materials in? How about the little girl in the dress? Why is it important for people to plan the type of material they wear according to the weather? Do you think it would be a good idea to wear a large woolly sweater in the middle of the summer?"

Target Skills

CCSS – Reading: Informational Text

- Describe the connection between two individuals, events, ideas, or pieces of information in a text (RI.1.3)
- Identify the reasons an author gives to support points in a text (RI.1.8)

Tell students:

Did you know that there is a field of science dedicated to studying materials? Today, we are going to pretend we are materials scientists! As we read *The Right Materials for the Job*, think about the importance of using specific materials for certain jobs and how those jobs might not get done properly if the right materials aren't being used.

As materials scientists, it is important that we make connections. Making connections between ideas or information helps us understand how materials should be used. Readers make connections too. It helps them understand the books they read. As we read the text today, we will describe connections between information and identify the reasons the author gives to support the points in the text.

During Reading

Prompts can be provided by teacher during class or small-group read-aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Find instances within the text where connections between information and ideas exist. Consider guiding students in their understanding by creating cause and effect sentences. Support students by looking at pictures and creating "what if" statements.

During Reading

Prompt 1: Teacher Modeling

Explain to students that *connections* are how things are related. Connections can exist between people, events, ideas, or pieces of information. We can identify connections by describing and providing detail as to how two or more items are similar or how they are different.

Turn to page 7 of the text. Read the text and look at the illustration. Ask the following questions to assist students in their understanding:

- What is similar about both of the images below? Do they have the same function? What is their purpose?
- What is different about the items? What materials are each of the illustrations made of?
- When might someone choose to use a paper plate rather than a glass plate?

On the white board, make a chart and list the similarities between the two illustrations and the differences. Brainstorm reasons as to why one material might be chosen over the other. Ask students what other materials plates might be made out of (i.e. plastic). Make a separate column and compare materials to those previously discussed.

Prompts for Independent Close Reading

- Read about the different types of fabrics on pages 14 to 16. What do you notice about the clothes that are used in the summer compared to those used in the wintertime? The text states that summer clothes are made up of thin fabric to allow air to flow through it. Why wouldn't this be a practical material for winter wear? Can you think of any similarities between the fabrics used in summer and winter? How about differences?
- Turn to page 13. Why is it important that a life jacket is made out of materials that float? What connection can be made between the water and the type of materials described in the image?

Prompt 2: Teacher Modeling

Explain to students that an **author's point** is what the author is trying to prove in the text. Informational texts such as *The Right Material for the Job*, inform their readers about a topic. These books have main ideas. Authors also include reasons that support their main point. For example, if I claim that rain is good for the environment, I might support that claim by using the reason that rain helps trees and plants to grow.

Read *The Right Material for the Job* and determine what the author's point is as a class. Write the author's point on the whiteboard (i.e. *It is important that the right materials are used for the job that they are intended for*). Support student understanding of learning goals by finding reasons the author uses to support this claim.

Turn to page 9. Look at the illustration of the child jumping in the puddle. Why does the author say that using rubber as a material is important? What does rubber do? How does the author's example of making boots out of rubber support their claim that it is important that we use the right materials for the job we want them to perform?

Prompts for Independent Close Reading

- Turn to page 13. What is the purpose of the life jacket? Why is it important that a life jacket performs its job well? What materials are a life jacket made of that help it to perform its job?
- Turn to page 17. Look at the illustration and read the caption below. What functions does the author claim a backpack needs to do? Why is it important to use materials that will perform these functions? What would happen if the material was really delicate? Think about the way you use your own backpack.

After Reading

Students will complete *Doctors and Nurses Worksheet*. Students will read a passage that supports the learning objectives explored within this lesson. Students will compare two pieces of information and describe their similarities and/or differences. Additionally, students will determine what the point is the author is making and support their understanding by providing two reasons that the author uses to support these points. After students have completed their worksheet, they will submit them.

Students will submit *I am a Pencil Worksheet* completed in the beginning of the lesson.

Accommodations and Extensions

Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to play a game of "Word Checkers". Using a blank piece of paper, student pairs will create their own checkerboard. Students will write the high frequency vocabulary words on the squares of their checkerboard. As students play the game, they will need to provide the correct definition of the word when they land on its square. If they are successful, they get to claim the corresponding square.

- Students may demonstrate their understanding of the learning objectives by drawing images rather than writing sentences.
- Invite students to explain how the reasons support the point the author is making by writing a paragraph of each reason to support their understanding.

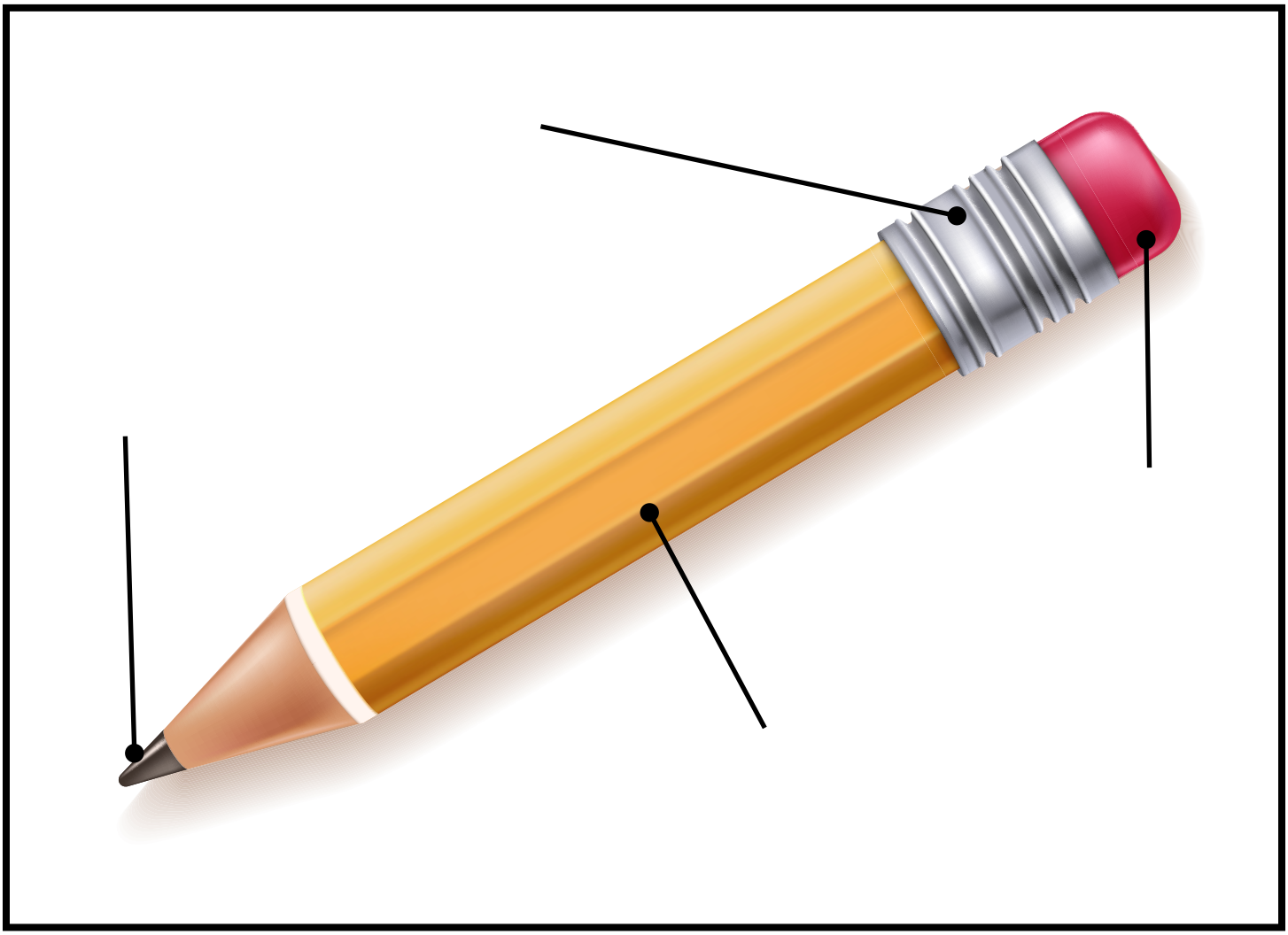
ELL Support

- Support English Language Learners by making "what if" or "cause and effect" sentences relating to the material in the text. In pairs, students will create scenarios of what would happen if the incorrect materials were used for a specified job. For example, if my rainboots were made out of _____, then _____ would happen.
- Provide students with a list of descriptive words that might be used to connect information within the text. Students will choose two items that could be paired with a given descriptive word and write a brief sentence explaining their thinking.

Name: _____ Date: _____

I am a Pencil

Label the different materials that are used to make a pencil. In the space below, write where you think each of the materials come from. Hint: Part of this pencil is made out of a tree!



_____

_____

_____

_____

_____

_____

Name: _____ **Date:** _____

Doctors and Nurses

Have you ever been to a hospital? You might notice that there are tons of people. Sometimes, hospitals can be a little scary. But some of the most important people you will meet are nurses and doctors! Nurses and doctors save people's lives every single day. You might be surprised to learn that these two heroes are similar! Both doctors and nurses go to school for many years. Doctors usually go to school for longer and choose a special area to become an expert in. Special nurses, called nurse practitioners (NPs) can treat you when you are sick, just like doctors can. Both nurses and doctors make sure you are as healthy as you can be!

1. What is the author's point? _____

_____

2. What is one reason the author gives to support this point? _____

_____

_____

_____

_____

3. What is another reason the author gives to support this point? _____

_____

_____

_____

_____

Name: _____ **Date:** _____

Doctors and Nurses

Instructions: Fill out the chart below.

FACT 1	
FACT 2	
How are the pieces of information connected?	

What Makes It Move?

Book Synopsis

Have you ever thought about the effort needed to brush your teeth? The force that we exert as we push, and pull is a type of motion. We use forces every day to put various types of objects into motion. In this *What Makes it Move?,* students will learn how movement is created and discover the different factors that influence motion in nature and in our everyday lives.

Materials

- *What Makes It Move?* book
- Student journals
- White board or chalkboard and markers or chalk
- Chart paper
- *The More You See the More You Know! Worksheet*

Before Reading

Activate Prior Knowledge

Facilitate class discussion by posing the questions:

- What does motion mean to you?
- What are some words that come to mind when you think of the word motion?

Explain to students that motion also means *movement*.

Using their student journals, students will write or draw the different ways they can think of moving. Encourage students by asking one or two students to share an example with the class.

While students are writing, use prompting statements such as:

- Think of the different types of movements you do at home and at school.
- Imagine how other poeple, animals, or objects move in different ways. Try comparing the movements! (i.e. how is the way a cat moves different from a fish?

Students will submit journals upon completion of the activity.

Show students the title page of *What Makes it Move* and brainstorm some ideas as to what the book will be about. Pose the following questions:

- What is moving in the picture?
- What is the little boy doing to the luggage bag?
- Is the boy being moved by the luggage or is the luggage being moved by the boy? How do we know this?

Target Skills

CCSS – Reading: Informational Text

- Distinguish between information provided by pictures or other illustrations and information provided by words in a text (RI.1.6)

Explain to students that both the words and illustrations in a text provide us with information. Good readers are not only able to distinguish what source information is coming from, but also, analyze both sources to obtain all the information possible. Illustrations are chosen for a reason!

During Reading

Close Reading Prompts

Prompts can be provided by teacher during class or small-group read-aloud. They can also be provided prior to students' independent reading.

Prompt 1: Teacher Modeling

Label one piece of chart paper *Things I noticed in the picture* and another *Facts I learned from the text*.

Explain to students that page four of the text informed us that there are many ways an object can move. These various movements are known as types of motion.

Turn to page 5 of the text and look at the illustration. Students will turn to their elbow partner and describe what they see. Use the following prompting questions to encourage critical thinking:

- What are the children doing on the playground?
- Think about what we learned about movement and motion from the previous page. How does the image presented here reflect the concept of motion and/or movement?

Ask students to share some of the things they notice about the picture and write it on the corresponding anchor chart paper. Ensure that the following things are identified: climbing, up and down movement created by the teeter-totter, sliding, and walking.

Read the text and write any additional information on the corresponding anchor chart paper. Explain to students that the picture provides the reader with more context than just the definition of motion itself.

Prompts for Independent Close Reading

- Turn to page 17 and examine the illustration. Turn to your partner and describe what it is you see. How does the image of a child skipping rope relate to movement? Describe the different types of movements shown in the image. What components are being pushed and which are being pulled? Read the text. What additional information did we get from the text? What information is in the picture only?
- Look at the two images depicted on page 19. How do these images help readers understand the concept of "push and pull"? Why does the little boy appear as though he is having a more difficult time pulling the wagon than the little girl? What do you think will happen as the girl starts to climb the hill? What factors will be pushing against her? How so?

After Reading

Provide students with informational texts such as those found at **http://tiny.cc/y6zmdz**, or provide students with another text from the Full Steam Ahead series.

Students will complete *The More You See the More You Know! Worksheet.* As students read the informational text, they will identify information provided by an image of their choosing as well as the facts indicated within the accompanying text.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create a fill in the blank.
- Invite students to research an informative topic of their choosing. Students will write important facts about the topic that they intend to represent in a drawing in point form. Students will draw a scene that illustrates the information.
- Provide students with an image. Using full sentence, students will describe what they see in the image.

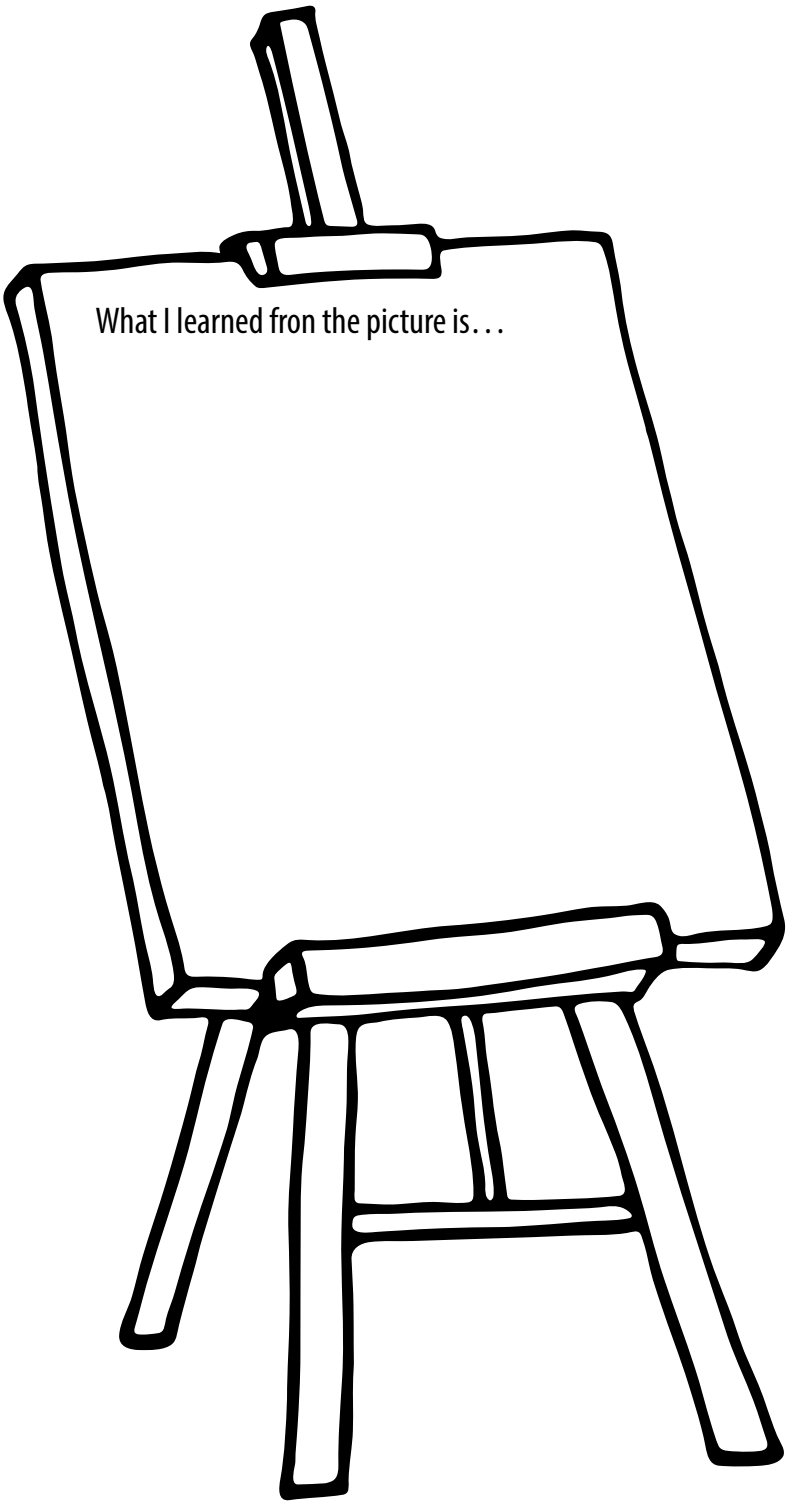
ELL Support

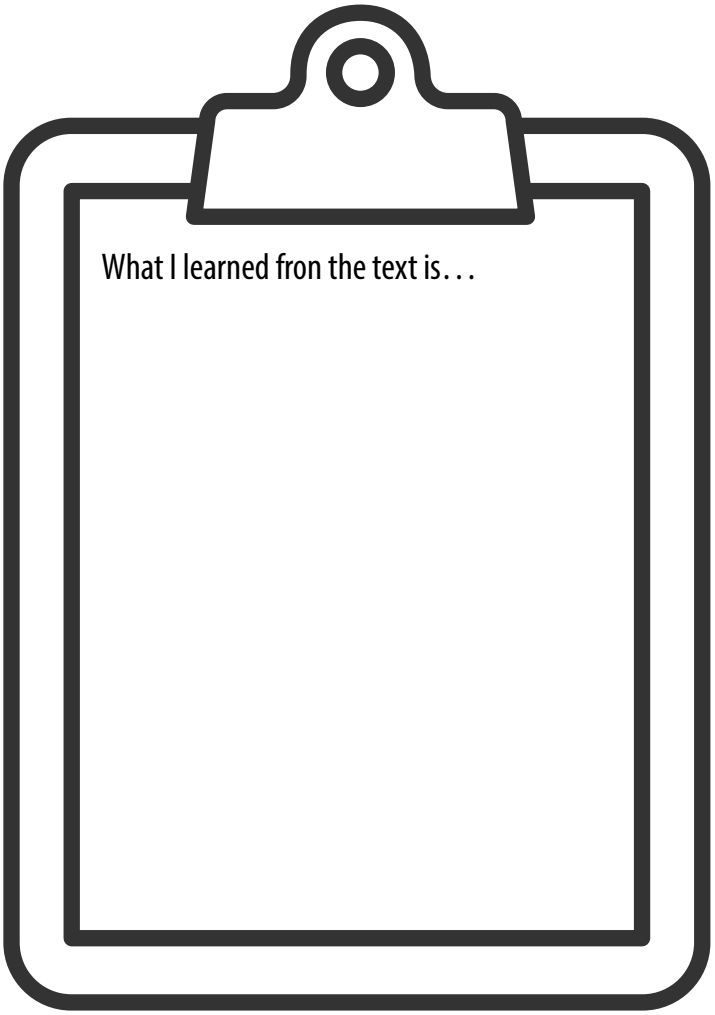
- Support English Language Learners by playing a movement game; students will be able to engage with the concepts of motion and movement. Students will form a large circle. Two students will stand in the middle of the circle and be shown a card with a movement descriptor (i.e. drop). Students will demonstrate the movement while the class guesses the type of motion being represented.
- Provide students two colored signal cards (one color representing "words" and the other "picture"). As a class, read a small informational passage and look at the provided image. The teacher will read a statement and students will identify which source the information came from by holding up the corresponding signal card.

Name: _____ **Date:** _____

The More you See the More you Know!

Create a list of facts you learned from a picture and the words in a text!





Full STEAM Ahead!
TEACHER'S GUIDE
Technology Time

Full STEAM Ahead! is a set of guided, non-fiction books that helps early readers build vocabulary, fluency, and comprehension skills, and provides them with an engaging introduction to STEAM subjects. Readers will delight in the expertly leveled text, bold images, and relatable examples on their journey to become enthusiastic and skilled readers. The *Full STEAM Ahead! Teacher's Guide* is a balanced literacy guide that supports reading, writing, speaking and listening, and language development. Lessons are specially tailored to each *Full STEAM Ahead!* title, and include accommodations, extensions, and English language learner support.

The *Technology Time* lessons encourage students to retell the main ideas and key details of a book, describe the reasons an author uses to support their points, make connections between pieces of information, and ask and answer questions about details. Students will take part in prediction, close-reading, reflection, and extension activities while building their skills in all areas of literacy.

These lesson plans are tailored for grade 1 and include connections to core technology concepts, such as the type of work that technology does, and how technology makes life easier, safer, and more fun. Each lesson is accompanied by one or more reproducible worksheets. The titles in *Full STEAM Ahead!* are:

Science Starters

- Day and Night
- The Four Seasons
- From Seed to Pumpkin
- The Life Cycle of a Rabbit
- The Right Material for the Job
- What Makes It Move?

Engineering Everywhere

- Engineering in My Community
- How Engineers Solve Problems
- Mistakes Help Us Learn
- Testing with Models
- What Does an Engineer Do?
- What Is the Best Solution?

Math Matters

- Building Tens with My Friends
- Building with Shapes
- I See 3-D
- Place Value at Playtime
- Skip Counting My Way to School
- Subtraction in Action

Technology Time

- Parts Work Together
- Robots at Work
- Technology and You!
- Technology Then and Now
- Think Like a Computer Scientist
- What Is Technology?

Arts in Action

- Artists Use Tools
- Creating Art Together
- Creating Colors
- The Five Parts of Art
- How Do Artists Tell Stories?
- Making Art from Anything

Ontario
Ontario Media Development Corporation
Made possible with the support of the Ontario Media Development Corporation.

CRABTREE
PUBLISHING COMPANY
WWW.CRABTREEBOOKS.COM

Parts Work Together

Book Synopsis

Many technologies are made up of different parts that work together as a system and perform a task. *Parts Work Together* is a basic introduction to systems. Readers will learn how the parts of a technology depend on each other. Readers will also learn what happens when one part is missing or does not work as it should.

Materials

- *Parts Work Together* book
- Pen or mechanical pencil that can be taken apart
- *What Can I Tell You? Worksheet*
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Show students the cover of *Parts Work Together* and discuss what students believe they will be learning about based on the title and cover of the text.

Complete the following demonstration in front of the class:

1. Take apart a pen or mechanical pencil
2. Lay each of the parts of the pen or mechanical pencil on a table. Allow students to see the parts in small groups.
3. Put the pen or mechanical pencil back together but this time, leave out an important part.
4. Demonstrate the functionality of the pen or mechanical pencil by attempting to write on a piece of paper

As a class, discuss why the pen or mechanical pencil did not work without the missing part. Encourage students to think about the importance of each part, and how the parts work together to allow us to write.

Students will participate in a think, pair, share activity. With a partner, students will brainstorm different technologies that need all of its parts to work together so that it can make life easier, safer, and more fun (i.e. cars, trains, computers, etc.).

Each pair will share one idea with the class. Teacher will write each of the responses on the white board.

Target Skills

CCSS – Reading: Informational Text

- Identify the main topic and retell key details of the text (RI.1.2)

Explain to students that it is important for readers to know the main idea of a book so that they understand the main message. Key details support the main idea and help the audience with this overall understanding. We can identify the main idea of a book by reading the text, listening for clues in the title, watching for repeated words, and by thinking about what the book was about.

Main ideas should be described in only a couple words (i.e. Penguins live in Antarctica). If we know our main topic, then the details in the text will support it! Key details are sentences/ideas that tell us about the main topic of our book (i.e. Penguins have flippers to help them swim in the water around Antarctica).

Tell students:

While we read *Parts Work Together*, be on the look out for words and ideas that point us to the main topic and details that support it!

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Find instances within the text that help students identify the main topic as well as key details that help support it. At the end of the lesson, students should be able to identify the main idea of the book and retell key details that support the main idea.

Prompt 1: Teacher Modeling

Turn to page 8. Read the text. Then ask students:

- What do we learn on this page of the text?
- What are some indicators that provide clues to what the main topic of the book is about?
- What is in the page heading?
- Look at the image of the bicycle. Why are there arrows naming different areas?

Students will mostly likely respond that they are learning about a bicycle. Encourage students to look at the larger idea. Ask students what the book is telling us about the bicycle.

Explain that the page indicates that the bicycle is a technology that is made up of many parts. When the parts are all put together, they make the bicycle work! Therefore, the main idea is that the parts of a technology work together.

Prompts for Independent Reading

- Turn to page 18. Why was it important to read about the parts that make up a bicycle? What would happen if something on the bike was broken or missing? How does one part of the bicycle affect the whole bicycle?
- Turn to page 21. What is an important detail about the scissors? Would we be able to cut paper if the scissors had only one blade? Why are scissors a type of technology? Look at the image of the laptop. How does the caption support the main topic of the book?

After Reading

Hand students *What Can I Tell You? Worksheet*. Students will apply their knowledge of the learning objectives in this lesson by identifying the main topic of a short passage and retelling key details.

Upon completion, students will submit the worksheet. Check to ensure that students correctly identified the main topic of the passage and were able to write three supporting details. Review learning objectives with students where required.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Teacher's will use the words to create printables for students to work on writing and tracing sight words.
- Students will draw a form of technology and label the different parts that can be found on or within it. Students will write a short story explaining what happened when one of those parts was missing and/or broken.
- When identifying the main topic and details, students should be provided with multiple choice answers.

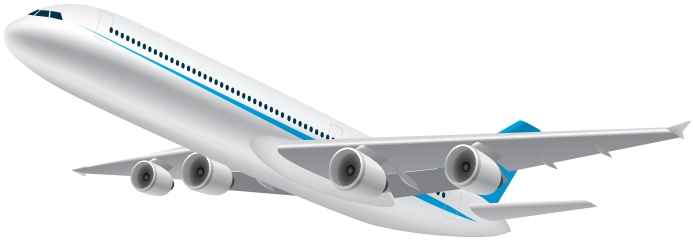
ELL Support

- Students will choose an item, take it apart, and put it back together without an important component (this should be fairly simple, such as taking staples out of a stapler). Students will verbally explain why the part they left out impacts the ability of that technology to function.

Name: _____ **Date:** _____

What Can I Tell You?

Airplanes



Airplanes are a type of technology. They make it easier and more fun to travel from one place to another. They have many parts. The parts help the plane work as it should. They have wings and big engines that help them fly. They have seats for people riding on the plane, and windows for them to look out. Pilots fly airplanes. They sit in the front of the plane, in an area called the cockpit. They use computers, press buttons, and turn switches. Have you ever flown on a plane?

Main Topic: _____

_____

Detail #1	Detail #2	Detail #3
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

BONUS

Which statement is the main idea of the paragraph about airplanes?

A. Airplanes have wings and big engines to help them fly in the air.

B. Airplanes make it easier and more fun to travel from place to place.

C. Airplanes are an important technology that are made of many parts.

D. Airplanes are flown by pilots. They sit in cockpits.

Technology and You

Book Synopsis

We may not realize it, but technology surrounds us! Technology comes in many different forms and makes life easier, safer, and more fun. We depend on technology many times throughout our day! Read about all the different kinds of technology in *Technology and You*. Think about the kinds of technology you use, and how they help make your life easier, safer, and more fun.

Materials

- *Technology and You* book
- Photograph of a stick and rock
- *What Does the Author Have to Say? Worksheet*
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Write the word "technology" on the white board. Ask students what they think about when they see the word technology. Brainstorm examples as a class and write them on the white board. Most answers will probably center on modern technology, especially computer technology. Pose the question:

- Does technology have to be computer-related? Why or why not?

Explain to students that technology includes any tools, machines, materials, or inventions that work to make people's lives easier, safer, and more fun.

Show students a picture of a rock and a stick. Ask them what a rock and stick may have been used for in the past, and how they might have helped people (i.e. items may have been used to make fire, weapons, play games, etc.). Explain that believe it or not, people in the past used rocks and sticks as technologies!

Show students the cover of *Technology and You*. Encourage students to think about how technology impacts their life.

Have students write a brief explanation of a technology that is important to them. Students will use the following format:

- A technology that is important to me is _____ because _____.

Teachers may choose to allow some students to share their answers (time-dependent).

Target Skills

CCSS – Reading: Informational Text

- Identify the reasons an author gives to support points in a text (RI.1.8)

Explain to students that authors support the statements they write by giving reasons. Reasons can be facts or examples that help prove that something is true. They help the audience understand the material and make the content more credible.

Being able to identify the author's point(s) and the reasons that support them is an important reading skill. As a class, define the words "points", "reasons", and "support".

Tell students:

We are going to read a book about many different technologies and why they are important! We need to be able to explain why each technology is important in everyday life. How does it make life easier, safer, and more fun? As you read the text, be on the look out for reasons why technologies make life easier, safer, and more fun. Which technologies do you think are the most important, based on the reasons given?

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Write "author's point" on the white board. Tell students that they are going to be identifying reasons in the book that support the point that "Technology makes life easier, safer, and more fun."

Write the preceding statement on the white board beside "author's point". Write "reason 1/reason 2/reason 3" on the white board and leave space beside each.

Prompt 1: Teacher Modeling

Turn to page 6. Read the text as a class. Move to examine the photograph. Ask students which object the author is referring to.

- Why does a refrigerator support the author's point?
- What reasons does the author provide?
- By show of hands, how many of us use a refrigerator to store food and keep it safe and healthy to eat?
- How does this make our lives easier?

Write "Refrigerators keep food healthy and safe to eat" beside "Reason 1" on the white board. Continue to find two more reasons and write them on the white board beside reason 2 and 3.

Prompts for Independent Close Reading

- Have students find their own reasons to support the main ideas of the text. For example, turn to page 8. Read the text and look at the illustrations. Ask students why shoes and boots are technologies. How do shoes and boots make life easier? How do they protect us? How do they allow us to have more fun? Ask students to share their understanding and write this down as a supporting "reason."
- On page 21, we see street lights and the headlights of a car in the night. Pose the questions, "what is the purpose of street lights and headlights, according to the author? How does the light they provide people make life easier? How many of you need light to see in the dark? What other technologies do you use to see in the dark?"

After Reading

Read an inspiring short story in which the author makes a point (i.e. "Be Kind" by Pat Zietlow Miller). Students should listen for reasons that the author provides to support their point.

Hand students *What Does the Author Have to Say? Worksheet*. Put students in groups of four or five. Then, read the story again. This time, students will write down the author's point, and thee reasons that support it.

After students have completed their worksheets, have them hand it in. Students should be assessed on the examples they have provided and whether they support the standards set out in this lesson.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create a word sorting activity.
- Students may draw illustrations on their worksheets that demonstrate their understanding of the examples used to support the author's point.
- As students provide examples of reasons on their worksheets, invite students to defend how each reason supports the point. This activity will help to prepare students for grade 2 CCSS.

ELL Support

- Props and/or teacher led demonstrations of examples will provide English language learners with hands-on learning and a deeper understanding as to how reasons provided support the author's point (i.e. turn off all the lights in the class and ask students how their vision is impaired without light—then demonstrate a technology that lets them see more easily).

Name: _____ **Date:** _____

What Does the Author Have to Say?

What is the author's point in the story? _____

_____

_____

Reason #1:

_____

_____

_____

_____

Reason #2:

_____

_____

_____

_____

Reason #3:

_____

_____

_____

_____

Technology Then and Now

Book Synopsis

People have always relied on different technologies to make life easier, safer, and more fun. Technologies today may not look the same as they did in the past, but the inventions created in early years were life-changing! In *Technology Then and Now*, read about the invention of technologies from airplanes and cars to sports equipment and instruments. Learn about how technology has improved over time to make life even easier, safer, and more fun.

Materials

- *Technology Then and Now* book
- Yarn
- *Times Have Changed Worksheet*
- Computer (Research)
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Show students the cover of *Technology Then and Now* and facilitate a discussion on what they believe they will be learning about. Ask the following prompting questions:

- Look at the illustrations on the cover of the text. What are these two devices used for? How are they different? What changes were made from past to present? Has technology improved from the latest example shown?
- What do you think the illustrations demonstrate about the speed of technology?
- What do you think the title is referring to when it uses the words then and now?

Ask students to provide examples of some technology that has changed over the past several years (i.e. cars, computers, amusement rides, shoes, etc.). Write examples on the white board.

Target Skills

CCSS – Reading: Informational Text

- Describe the connection between two individuals, events, ideas, or pieces of information in a text (RI.1.3)

Encourage students to think of some examples of technology that have meaning to them, and how these technologies may or may not have changed over their lifetime (i.e. has a favorite toy they had become more technically advanced?). Have students voluntarily share these connections with the class.

Bring a ball of yarn. Have a student hold the end of the yarn. Then, throw the ball to another student and explain how they are connected. Have the student holding the ball hold the yarn where it connects to the ball, creating a straight line between them and the first student. Then throw the ball to a new student. Continue the activity until the entire class is holding the yarn. Pose the question:

- How are we all connected by the yarn?
- What was it important to understand and explain how we are connected by the yarn?

Explain the importance of making connections in a text: we can better understand the main ideas in a text by making connections between key details.

Tell students:

Today we are going to be historians who are learning all about technology of the past! We need to find a piece of technology that has changed to make the biggest impact on the present. Look for words that show connections between two objects, such as "then, in the past, and now". Also check for pictures that show changes and help you compare two objects!

Your task is to identify the type of technology you think has made the largest impact over time. Which technology has made life the most safe, easy, or more fun? You will be using this example in our after reading activity.

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Find instances within the text where connections between information and ideas exist. You might consider guiding students to make these connections by making sequencing sentences. Support students in their understanding by looking at pictures and reading the text/captions. Students should be able to explain the connection between past and present technologies.

Prompt 1: Teacher Modeling

Turn to page 8 and 9. Read the text and look at the pictures. Ask the following questions to assist students in their understanding of the learning objectives:

- What is the technology that is being referred to?
- How can we tell which technology is of the past and which one is of the present (now)?
- Technology makes our lives easier, safer, and more fun. How do cars do this now? How has this changed from the past?

As a class, describe a connection by writing a sentence that shows a sequence. Write the following on the white board: wheels, roof, doors.

Discuss what type of sentence could be written based on those three descriptors. The sentence needs to describe the connection between cars then and now. An example could be:

- Cars used to have three wheels and did not have doors or roofs. Cars today have doors, a roof, and four wheels.

Discuss why the above has improved cars over time. Using arrows or other connection indicators, write the following sentences stemmed from the first ones:

- Four wheels help the car move faster. The doors and roof make it safer to ride in.

Prompts for Independent Close Reading

- Turn to pages 10 and 11. There are many changes described on these pages about the way we learn at school. What are some of these changes? Look at the text and the pictures to find some examples. How are they connected? How does the technology now affect people differently than it used to?
- On page 16 and 17 we are introduced to the changes instruments have gone through over the years. Which instrument is specifically discussed in the book? How many different changes does the book illustrate? What is a sequencing sentence we can create about the way drums have changed?

After Reading

Hand students the *Times Have Changed Worksheet*. Students will choose one of the technologies described in *Technology Then and Now* that they believe has made the biggest impact in one of the tree categories: easier, safer, and more fun.

Students will research how this technology has changed and draw pictures of the various advancements the technology has gone through. Students will write a brief explanation of how their chosen technology has had the largest impact on our lives.

After students have completed the worksheet, have them hand it in. Review the worksheets for comprehension.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create and then play a word search with peers.
- Students will pair up with a partner who chose a different technology during the after reading activity. Students will participate in a small debate in which they argue two reasons as to why the advancement in their technology has made life easier, safer, or more fun than the other.
- As a means of better understanding connections between information and ideas, students will participate in an sequencing activity at the following website. They will read a passage, and number the events as they occur (**http://www.beaconlearningcenter.com/weblessons/SequenceOfEvents/default.htm#paget**)

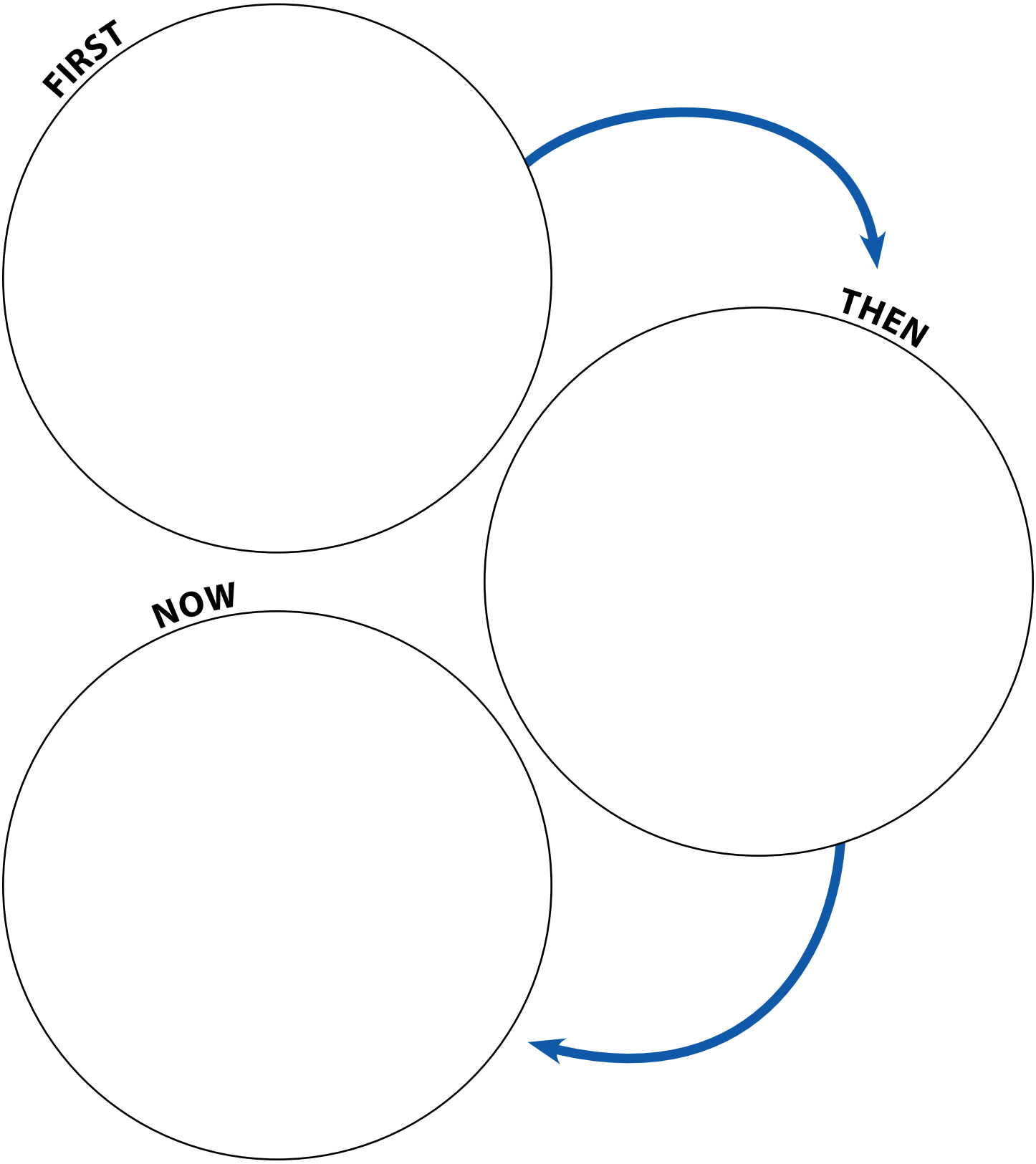
ELL Support

- In order to support English language learners, provide students with two pictures and various descriptor words, with one of them being a connecting phrase. Students will have to determine which word is the correct option for describing the connection between the two images.
- Support students by providing two words and having them create their own sentence that connects the ideas (i.e. brush teeth/dinner: We should brush our teeth *after* we eat dinner).

Name: _____ **Date:** _____

Times Have Changed

Technology makes our lives easier, safer, and more fun! Read *Technology Then and Now* and choose one of the examples that you believe has made the largest improvement over the years and the greatest impact on our lives. Research how this item first looked when it was created and draw three pictures that show how it has changed.



Why do you think this technology has made life a lot easier, safer, or more fun?

How do you use this technology in your everyday life?

What is Technology?

Book Synopsis

Technology is the name we give to the tools that help make life easier, safer, and more fun. In *What is Technology?*, learn about the basics of technology and how it improves our lives. Enjoy reading examples that show many kinds of technology and how people use and benefit from them.

Materials

- *What is Technology?* book
- Flash cards
- *Who, What, Why Charts*
- White board or chalkboard and markers or chalk
- Anchor chart paper

Before Reading

Activate Prior Knowledge

Show students the cover of *What is Technology?* and brainstorm different ideas as to what they will learn about. Have students look at the picture and ask students if a playground or play-center is a type of technology. Have students explain their reasoning.

Show students pictures of various types of technologies (i.e. hockey stick, ladder, paint, helmet, etc.). Flash cards would be the most beneficial for this activity. After each picture, ask students to consider whether the object can be considered a technology.

Explain to students that "technology" can be defined as any tool(s) that help make life easier, safer, and more fun. Write a definition for technology on an anchor chart piece of paper. Ask students to think of one type of technology that makes their life easier, safer, or more fun. Students will share their responses and the teacher will write examples under the definition on the anchor chart paper.

Target Skills

CCSS – Reading: Informational Text

- Ask and answer questions about key details in a text (RI.1.1)
- Identify the main topic and retell key details of the text (RI.1.2)

Tell students:

Today we are going to ask and answer questions about our book. Asking questions about information is something good readers do in order to understand the information better. A list of words we should use when beginning a question is: who, what, when, where, why, or how. Good questions make readers go back to look at the illustrations and text in order to answer them. Write down a question you have about technology. While we read the book, see if your question is answered along the way.

Identifying the main topic of a text is also important as good readers. It helps us remember important information. We can identify the main topic of a book by: listening for clues in the title, listening for repeated words, and reading the text to determine what it is mostly about. It helps to ask ourselves, is the main topic about a person, place, or thing? Main topics can be summed up in a few words (i.e. School buses take children safely to school). The key details in a text tells readers important information about the main topic (i.e. School buses are yellow because it is an easy color to see on the road).

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

As a class, read *What is Technology?*

Encourage students to listen for repeated words and listen to clues within the title and the text in order to determine the main topic. Identify the main topic and write the answer on the white board (i.e. Technologies are tools that make life easier, safer, and more fun). Through prompting, assist students in retelling key details of the text and asking and answering questions to extend their understanding of the material.

During Reading

Prompt 1: Teacher Modeling

Write the following statement on the white board:

- One detail that tells us about _____ is _____.

Explain to students that because the main topic of this book is technology, the statement will write,

- One detail that tells us about **technology** is _____.

Hand out *Who, What, Why Charts.* Turn to page 12. Re-read the text. Explain to students that we can retell key ideas of the text by separating information into *Who, What, Why Charts*. Draw the chart on the board and fill out the spaces using the information obtained from page 12.

Who	What	Why
People	Makes life safer	Protects us from getting hurt and warns us about danger.

Explain to students that our sentence now becomes,

- One detail that tells us about **technology** is **it makes life safer by protecting us from getting hurt and warning us about danger.**

Prompts for Independent Close Reading

- Turn to page 18. Students will use their *Who, What, Why Charts* to help them retell a key detail about technology. Ask students who the page is talking about. What is technology doing? How is it helping? Why is it helping us? What is the example the text uses to help readers understand?
- On page 21 we see two friends playing a game and a group of friends playing on equipment. What do the illustrations and text tell us about technology? What details are important to readers? Use your chart to come up with your statement.

Prompt 2: Teacher Modeling

Teachers should reiterate the importance of asking questions that encourage readers to review the information in the text. Beginning with who, what, when, where, why and how, helps us ask open-ended questions that encourage text review.

Turn to page 4. Re-read the text. On this page, we are told that technology helps make life easier, safer, and more fun. Tell students that a question you might ask is:

- How does technology make people's lives safer?

Write question on the white board. Ask students how they would answer this question using the text. Have students read the text until they reach an example of how technology makes lives safer (i.e. railings). Discuss as a class why this question helped us to better understand the ideas in the book. How did they know this response answered the question?

Prompts for Independent Close Reading

- On page 6 ,we learn that technology at school can make learning easier. Look at the examples of technology on the page. What are some open-ended questions that will help you understand technology's role in schools? What are some other forms of technology, besides those described in the book, you can ask questions about?
- In what ways does technology make our lives easier? Use examples directly in the text to answer the question. Think of the **big** ideas and the **main topic** to help you with your response.

After Reading

Using their *Who, What, Why Charts*, students will read the book individually and create their own statement about technology.

In small groups of 3-4, students will share their statements and discuss common themes between them. Groups will choose one of the statements and create a small skit.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create a collection of questions readers may refer to while reading the text.
- Encourage students to add a How column to their *Who, What, Why Charts*. Students will provide examples of how a technology makes life easier, safer, or more fun (i.e. an alarm wakes us up at the right time).
- Have students think of a technology for each of the following categories: makes life easier, keeps people safe, and makes life more fun. Students will draw a picture of a technology that best represents each descriptor.
- Students will write a paragraph explaining what they learned during the lesson. Encourage them to think about the learning objectives discussed during the beginning of the lesson.

ELL Support

- Support ELL students by showing them an example of a technology that keeps us safe (i.e. sunglasses) and ask them to explain in their own words how the technology keeps us safe.
  - An example of a response could be that sunglasses protect our eyes from the Sun.
- Students may be divided into smaller groups or remain as one large group. Play charades, using technology as the topic of the game.

Name: _____ **Date:** _____

Who, What, Why

WHO	WHAT	WHY

Statement: _____

_____

_____

_____

WHO	WHAT	WHY

Statement: _____

_____

_____

_____

WHO	WHAT	WHY

Statement: _____

_____

_____

_____

WHO	WHAT	WHY

Statement: _____

_____

_____

_____

Robots at Work

Book Synopsis

We may not realize it, but robots are all around us! Robots are machines that can do work on their own. Robots can take on many different shapes and appearances; the way a robot is built depends on the task that it is designed to complete. In this exciting and explorative text, students will read about the various jobs robots are designed to do, and how a robot can make the lives of people easier and safer.

Materials

- *Robots at Work* book
- Student notebooks
- *I can be an Author Worksheet*
- White board or chalkboard and Markers or Chalk

Before Reading

Activate Prior Knowledge

Facilitate class discussion by asking the questions:

- When you think of the term *robot*, what are some thoughts that come to mind?
- Are there any movies, stories, or images that encompass your beliefs about what a robot is or does?

Students will draw an image of a robot in their notebook. Encourage students to think about what it is that their robot is capable of performing. Note that drawings may be based on robots they have seen in the media or their own representations. Ask volunteers to share their images and explain what a robot means to them.

Show students images of Wall-E and The Transformers and explain that most robots do not look or act like those we imagine. In fact, many objects that we see and use on a regular day-to-day basis are considered robotic and we do not even notice them!

Show students the cover of *Robots at Work* and pose the question:

- What do you think we will be reading about today?

With an elbow partner, students will brainstorm some of the reasons robots are designed and why robots are used to perform work.

Target Skills

CCSS – Reading: Informational Text

- Identify the reasons an author gives to support points in a text (RI.1.8)

Explain to students that informational texts, such as *Robots at Work*, are written by authors because they want us to learn something. Authors make a claim or statement and then support that point by using examples and reasons. Write *author's point* on the whiteboard and beside it write *breakfast is the best meal of the day*. Ask students to provide reasons to support why it is the best meal of the day. Discuss why adding these reasons to our statement makes our point more substantial.

Ask students:

- What are some ideas as to what the author's point may be about based on the title of the story?

Write examples on the whiteboard. Tell students that while they read the text, they should listen and look for the reasons an author gives to support their point. Encourage students to ask themselves, "*does this sentence explain the point the author is arguing*?"

During Reading

Close Reading Prompts

Prompts can be provided by teacher during class or small-group read-aloud. They can also be provided prior to students' independent reading.

Read the text as a class and determine what the point is the author is supporting. Read the text through a second time to find the reasons the author gives to support this point.

- Point: Robots are machines that can do work on their own. Robots make life easier, safer, and more fun.

Prompt 1: Teacher Modeling

Turn to pages 10 and 11. Read the text as a class. Move to examine the images and accompanying captions. Pose the following questions:

- What is the author's main point? Make sure that students identify the main point as being that a robot can do the same job repetitively and not get tired—something humans cannot do.
- Are humans able to do the same job again and again without becoming tired?
- Is the robot working alone?
- How difficult do you believe it would be for a person to fill a water bottle with the same amount of water every time?
- How does the information found on these two pages support the point the author is making?

Prompts for Independent Close Reading

- Turn to page 18. Read the text and the caption below the image. How does this type of robot help us? Why would firefighters want to know exactly where a fire is located? How would the information that the robot provides help make their job safer?
- Turn to page 7. When you think of a robot, are these images something that would come to mind? How do these images support the point the author is making? Do these robots make life easier, safer, or more fun? How so?

After Reading

Students will compose a short text that includes a clear point (often in the title or first sentence), and then proceed to include several supporting statements. Students will read the example provided on the *I Can be an Author Worksheet* as a reference tool and for support where required. Note that computer time may be given to assist students with their topic of choice.

After students have completed their short text, have them hand it in. Students should be assessed on whether they have included a main argument and for the validity of their supporting statements.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the text. Use the words to create and then play a word search with peers.
- As students discuss the reasons the author gives to support the main points in *Robots at Work*, invite students to defend their answers by describing how these reasons support the point.
- Invite students to add statements to their story that are relevant to the subject, but do not directly support the point.
- Provide students with leveled passages that support their reading level. Students will highlight the main point of the text and circle the supporting statements.

ELL Support

- Support English language learners by having students peer edit each other's short text prior to submitting it in for assessment. Encourage peers to examine each other's work and identify the main components taught within the lesson. Students will work to support one another.
- Support students by conducting teacher led demonstrations of the examples discussed within the text (i.e. show a video of a robot filling the water bottles compared with you filling up a water bottle.) Facilitate discussions about the jobs that the robots do.

Name: _____ **Date:** _____

I Can be an Author

Choose a subject to give information about. As you write, include a clear point and at least three (3) ideas that support your point. Use the sample below as a guide.

Brushing your Teeth

Brushing your teeth is important! Your mouth is full of germs, especially after you eat. If you do not take care of your teeth, the dentist will not be happy! Not brushing your teeth can cause bad breath and your teeth to look yellow. By brushing your teeth at least twice a day, you can stop the spread of harmful germs and keep your breath minty fresh.

Title: _____

Author: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Think Like a Computer Scientist

Book Synopsis

Did you know that you often think the same way a computer scientist does? Computer scientists use technology to solve problems. Read *Think Like a Computer Scientist* and discover how we often think like computer scientists to make jobs safer and easier and to make life more fun!

Materials

- *Think Like a Computer Scientist* book
- *Marching Orders Activity* (found at link provided)
- *Computers Worksheet*
- Green and red signal cards
- Chart paper
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Facilitate class discussion by posing the question: What is a computer scientist?

Explain to students that computer scientists are people who design computers and the software that runs them. They write and program software, create applications for mobile devices, and develop websites. Some computer scientists animate movies and design video games!

Tell students that computers are programmed using language, which is instructions that can be obeyed. Computers will always obey the instructions you give them, even if it is something crazy. Ask:

- Do you think it would be good if people followed instructions exactly as they were given?
- What would happen if you told someone to put their shoes on, but their shoes were tied? Unless you first gave instructions to untie those shoes and then put them on, that individual could not do as they were asked.

Computers follow lists of instructions given to them by computer scientists, and do exactly what those instructions tell them, even if they don't make sense. Computer scientists have to use problem solving skills to make technology work better!

Students will participate in *Marching Orders*. Example and activity instructions may be found at **http://tiny.cc/ar13cz**

Target Skills

CCSS – Reading: Informational Text

- Ask and answer questions about key details in a text (RI.1.1)
- Identify the main topic and retell key details of a text (R1.1.2)

Encourage students to think of some examples of activities they do every day that requires them to solve problems. Ask the following questions:

- Can you think of a time where you had to follow a set of instructions in order to solve the problem?
- Have there been instances where you were required to provide a step-by-step plan of how you were going to accomplish something?
- How do we follow instructions in class?

Have students voluntarily share these experiences with the class.

Tell students:

Today, we are going to think like computer scientists! As we read, think about *how* computer scientists solve problems. Consider how you too often use the same set of skills to approach problems in your own life. While we read, we will identify the main topic and ask and answer questions in order to understand key details of the text.

During Reading

Close Reading Prompts

Prompts can be provided by the teacher during class or small-group read aloud. They can also be provided prior to students' independent reading.

Prompt 1: Teacher Modeling

Facilitate class discussion by posing the following question:

- What are some of the different ways we can identify the main topic of an informational text?

Record student responses on the whiteboard. Review the definitions of "main topic" and "key details" with students and record definitions on chart paper for reference.

Explain to students that there are different strategies we can use to identify the main topic of a book. They include the following:

1. Listen for words that tend to be repeated often in the text
2. Look for clues in the title; the topic is almost always similar to the title of the text
3. Ask the question, "what is this text mostly about?"
4. Identify the word that represents what the text is predominantly about (i.e. is the text about a person, place, or thing?)

Read the text as a class and determine the main topic using the strategies listed above. Write the answer on the white board (i.e. *computer scientists*).

Turn to page 6. Tell students: Now that we know the main topic of the text is computer scientists, what are some ideas or sentences that support this? Turn to your elbow partner and retell them one detail about computer scientists you learned from this page in the text.

Prompts for Independent Close Reading

- Turn to page 8. What do we learn about computer scientists? What does the text tell us about the way computer scientists solve problems? Why does this help us understand the main topic?
- Turn to page 10. Why do computer scientists look for patterns? Why is this an important detail that helps us understand computer scientists?

Prompt 2: Teacher Modeling

Write "ask," "question," and "key details" on the white board. Define the terms as a class and write the definitions on chart paper.

Turn to page 7. Provide students with a green and red signal card each. Read the page together. Teacher will model a question referring to key details in the text (i.e. *how does writing a list of tasks we have to do help us solve problems and finish jobs? How does this help our understanding of how computer scientists solve problems?*).

Ask a student volunteer to provide a response to the question. Students will raise their green card if they agree with the response or the red card if they disagree. Facilitate a discussion about the correct response, ensuring that students understand why it is the correct response.

Prompts for Independent Close Reading

- Turn to page 12. What question could you ask that would help you understand the thinking process of a computer scientist? What are some important details about how a computer scientist solves problems that are detailed on this page of the text?
- Turn to page 14. Prompt students to think of a response to the following questions: Why are instructions important to follow? How do step-by-step instructions help us to complete a task?

After Reading

Provide students with *Computers Worksheet.* Students will read a short, non-fiction passage and record the main topic and key details. Students will demonstrate their understanding of asking and answering questions by filling out the indicated section of the worksheet.

After completing the worksheet, students will submit them. Review the worksheets for comprehension and understanding.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the text. Use the words to play a game of memory match. In pairs, students will decide on two categories they would like to sort the words into. Students will write words on individual cards and place them all face down on the table. Have one player choose two. If the two words belong to the same category, it is a match and the player gets to keep them. Otherwise, the student must place the cards back in the pile.
- Provide students with leveled passages in accordance with their reading level. Invite students to draw images that represent the key details and main topic of the provided reading passage.
- Challenge students by inviting them to create a question for each of the question words (who, what, when, where, why, and how).
- Students will identify the **main idea** of *Think Like a Computer Scientist*. Allow students time to research on the difference between a "main topic" and "main idea" of a text to further understanding.

ELL Support

- Provide students with question cubes with the words *who, what, when, where, why,* and *how* written on each side. In small groups, students will roll the cube and ask a peer a question with the question word they land on. The student peer that is chosen will provide a response.
- Provide students with two sets of sentence strips. One set will contain questions about key details of the text while the other will contain the correlating answers. Students will match up the question strip with the answer strip.

Name: _____ **Date:** _____

Computers

The first computer in the world was invented in 1936. These computers were around the size of a large room! Can you imagine sitting in front of a computer that size? Computers are machines that provide information. To prevent computers from becoming too hot, fans help keep them cool. There are five main parts of a computer. Did you know that you usually blink 20 times a minute, but when you use a computer you only blink 7 times? Hmmmm, I wonder why that is! Computers come in many different forms and can do many different things.

Main Topic	

Detail 1	Detail 2	Detail 3

A question I have about computers is _____

_____

Why do you think that people blink less when they are in front of a computer?

_____

_____

_____

Full STEAM Ahead!
TEACHER'S GUIDE
Engineering Everywhere

Full STEAM Ahead! is a set of guided, non-fiction books that helps early readers build vocabulary, fluency, and comprehension skills, and provides them with an engaging introduction to STEAM subjects. Readers will delight in the expertly leveled text, bold images, and relatable examples on their journey to become enthusiastic and skilled readers. The *Full STEAM Ahead! Teacher's Guide* is a balanced literacy guide that supports reading, writing, speaking and listening, and language development. Lessons are specially tailored to each *Full STEAM Ahead!* title, and include accommodations, extensions, and English language learner support.

The *Engineering Everywhere* lessons encourage students to identify how an author supports their points with reasons, retell the main ideas in a book, ask and answer questions to decode unfamiliar vocabulary and understand key details, and notice information shown in pictures or illustrations. Students will take part in prediction, close-reading, reflection, and extension activities while building their skills in all areas of literacy.

These lesson plans are tailored for grade 1 and include connections to core engineering concepts, from understanding how engineers solve problems to learning how engineers improve solutions. Each lesson is accompanied by one or more reproducible worksheets. The titles in *Full STEAM Ahead!* are:

Science Starters

- Day and Night
- The Four Seasons
- From Seed to Pumpkin
- The Life Cycle of a Rabbit
- The Right Material for the Job
- What Makes It Move?

Engineering Everywhere

- Engineering in My Community
- How Engineers Solve Problems
- Mistakes Help Us Learn
- Testing with Models
- What Does an Engineer Do?
- What Is the Best Solution?

Math Matters

- Building Tens with My Friends
- Building with Shapes
- I See 3-D
- Place Value at Playtime
- Skip Counting My Way to School
- Subtraction in Action

Technology Time

- Parts Work Together
- Robots at Work
- Technology and You!
- Technology Then and Now
- Think Like a Computer Scientist
- What Is Technology?

Arts in Action

- Artists Use Tools
- Creating Art Together
- Creating Colors
- The Five Parts of Art
- How Do Artists Tell Stories?
- Making Art from Anything

Ontario
Ontario Media Development Corporation
Made possible with the support of the Ontario Media Development Corporation.

CRABTREE
PUBLISHING COMPANY
WWW.CRABTREEBOOKS.COM

Mistakes Help Us Learn

Book Synopsis

Engineers don't give up when they fail to solve a problem. In *Mistakes Help Us Learn*, mistakes helps guide engineers to find the best solutions. They learn from each mistake and improve the solution. Readers also learn why it is important to keep pushing through adversity.

Materials

- *Mistakes Help Us Learn* book
- Anchor chart paper
- Projector/computer
- *Author's Point Worksheet*
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Facilitate class discussion about making mistakes. Pose the following questions:

- How do you feel when you make a mistake?
- What lessons can we learn from making mistakes?
- Can anyone share a time when they made a mistake? What did you learn from your experience?

Using an anchor chart piece of paper, draw a picture of yourself and write about the various times you have made a mistake as a teacher (i.e. you forgot to bring their assignments home to grade, you forgot to take the attendance, you forgot about the staff potluck, you made a mistake when you were doing a math equation, you called a student by their wrong name!)

Show students the short film *Soar* (**http://www.teachingideas.co.uk/video/soar**). Discuss the film together. Ask students:

- What did you learn from this short film?
- What did the little girl in the video do when she was faced with the difficult task of trying to fix the boy's plane?

Show students the cover of the book *Mistakes Help Us Learn*. Explain to students that they are going to learn how engineers learn from mistakes to find the best solutions.

Target Skills

CCSS – Reading: Informational Text

- Identify the reasons an author gives to support points in a text (RI.1.8)

Explain to students that when authors give reasons to support statements in a text, it helps to make what they are saying factual or true. When authors want us to learn something, they will make a statement and then add reasons to describe or prove their statement. Sometimes, reasons are examples.

In *Mistakes Help Us Learn*, the author is writing about engineers and makes the point that making mistakes helps engineers find better solutions.

Write the following statement on anchor chart paper:

- Mistakes help engineers design the best solutions.

Tell students that we need to find proof that the above statement is true. As we read, we are going to be on the look out for the reasons the author gives, which explain and support that statement.

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Find instances within the text that support the point that making mistakes helps to make better solutions and is a chance to learn.

Prompt 1: Teacher Modeling

Turn to page 11. Read the text as a class. Then reread the page sentence by sentence. After each sentence, ask students:

- Does this sentence explain why making mistakes led to a better solution?

If students agree that the sentence is a supporting reason for the statement, write it on the anchor chart, surrounding the statement. If it is not a supporting reason, explain why.

- For example, "This girl has an artificial hand" is an interesting fact, but it does not explain why making mistakes led to a better solution.

Review the sentences that were written on the anchor chart. Discuss how they prove that the statement is true.

Prompts for Independent Close Reading

- On page 5, we see two friends building a tower. Read each of the sentences. Which sentence(s) support the point that making mistakes helps us learn? What did the friends do differently to make the tower stand?
- On page 14, we see a picture of an old bridge that fell down. What will an engineer do to make sure the new bridge doesn't fall the same way? How will the engineer learn from past mistakes? What sentences support this idea?

After Reading

Choose a small passage from a text of your choosing. Material may be based on similar subject matter or something different. Hand out the *Author's Point Worksheet*. Students will read the passage, determine the author's main statement, and give examples of the reasons he/she provides to support those ideas.

After students have completed the worksheet, have them submit it. Review the worksheets for comprehension and to ensure that they are able to identify the point(s) and reasons of support an author uses in the given passage.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create and then play a game of word bingo.
- Provide students with leveled passages and/or texts that correlate with their comprehension and reading abilities. As students master the skills associated with this lesson, they may read and complete the higher level texts and new *Author's Point Worksheets*.
- Provide students with an informational text on the subject of your choosing. Students will determine what the main point(s) of the text are and then make a T-chart. On one side, students will write statements that support each main point. On the other side, students will explain why the statement supports the author's point.

ELL Support

- Have students act out a scenario in which they will demonstrate the motions of making a mistake and fixing the problem. As a class, come up with a statement that describes the scenario. Then, discuss which actions were performed that support that the statement is true.
- Place text on a smart board or projector. Use one color to highlight statements, and another to highlight sentences that support the statements. Review multiple examples.

Name: _____ **Date:** _____

Author's Point

What is the main statement the author is making?

_____

_____

_____

_____

_____

What is ONE reason that supports this statement?

_____

_____

_____

_____

_____

What is a SECOND reason that supports this statement?

_____

_____

_____

_____

_____

What Does an Engineer Do?

Book Synopsis

An engineer is a person who uses math, science, and creative thinking to solve problems. Engineers are important because they help with small problems, such as creating a door handle to help us open doors, to large ones, such as designing large aircrafts that fly us to different parts of the world! *What Does an Engineer Do?* helps readers learn about the kinds of jobs that people do as engineers and how they use their skills to solve problems and make life easier, safer, and more fun.

Materials

- *What Does an Engineer Do?* book
- *What is this Story About? Organizer*
- Small toy car
- White board or chalkboard and markers or chalk
- Anchor chart paper

Before Reading

Activate Prior Knowledge

Facilitate class discussion by posing the following questions:

- What do engineers do?
- Did you know there are many types of engineers? Can you think of and name any types of engineers? (Examples such as space engineer or an engineer that designs cars will be sufficient here). Write answers on the white board.
- Why are engineers important?

Ask students if they know what a process engineer does. Explain that a process engineer is someone who makes sure the equipment that makes things works properly. For example, process engineers design machines that make toys! They make sure the machine makes as many toys as possible, as quick as possible, and as safely as possible with the least amount of mistakes.

Play the game, How is it Made? This game is a simple activity, but it helps students understand the process used by process engineers when they want to mass produce a product. Directions are as follows:

1. Show the students a toy, such as a small toy car
2. Ask students to think of the steps it takes to make the car (students may write or draw the steps).
3. Have students think about what type of machine makes each part. Is it a big machine or a small machine? How are the pieces put together? Are there many steps to put the car together, or does it happen at once?

Target Skills

CCSS – Reading: Informational Text

- Ask and answer questions about key details in the text (RI.1.1)
- Identify the main topic and retell key details of the text (RI.1.2)

Tell students: Today, we are going to pretend that we are all engineers! We need to know how to explain our job to other people, and how we do it. We will do this by reading, *What Does an Engineer Do?*

It is important while we read that we can identify the main ideas of the book, as well as ask and answer questions about key details in the text. This will help us become better readers and more informed engineers. As we read, I would also like you to think about the type of engineer that you would like to be!

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Read *What Does an Engineer Do?* Explain that the main "topic" or main "idea" is what the text is mostly about. It is the point that the author is trying to make.

- Write definition of "main idea" on an anchor chart piece of paper

Explain that "key details" are the important parts that help support the main idea.

- Write definition of "key details" on anchor chart piece of paper

Hand out *What is this Story About? Organizer*. Teacher will scaffold student understanding of learning objective by using the following prompts:

Prompt 1: Teacher Modeling

Ask students:

- What is the main idea/topic of *What Does an Engineer Do?*

Write down possibilities on the white board. Once there are a couple of variations, narrow options down to one answer and have students write statement on the corresponding space of the organizer (i.e. Engineers design and create things to solve problems).

Turn to page 10 and 11. Have students reread the text and look at the illustrations. Pose the question:

- What key details support our main topic?

Explain that the students in the photographs need assistance moving from place to place. To help solve this, engineers designed technologies such as crutches and wheelchairs. What other technologies help people move around?

- Students will complete **Key Detail #1** section in their organizer

Prompts for Independent Close Reading

- Turn to page 12. What is the problem that engineers are trying to help solve? What are some of the solutions engineers have designed according to the text? Can you think of any other examples? How does this detail support the main topic of the book?
    - Students will complete **Key Detail #2** section in their organizer
- On page 16 and 17 we see a picture of a helmet and life jackets. Think about the purpose of these two items. How do they help us? What is their main purpose? Why did engineers design these devices?
    - Students will complete **Key Detail #3** section in their organizer

Tell students: I think we are almost mini-engineers! Something tells me we need to ask and answer a couple more questions about what engineers to before we can be sure.

Prompt 2: Teacher Modeling

Explain to students that by asking and answering questions, we can become more knowledgeable about a subject. When creating our questions, we should focus on the 5 Ws and 1 H: **Who, What, When, Where, Why,** and **How**.

Tell the students that one question you have is: "How do engineers find solutions to problems?"

- Write down question on the white board

Turn to page 6. Read the text. Write the words "design," "plan," "math," "science," and "creative thinking" on the white board, surrounding the question.

Ask students how the words you wrote down support and answer the question you asked. Discuss why this is an important question to be able to answer if the students are to consider themselves engineers for the day.

Prompts for Independent Close Reading

- Using the 5 Ws, a question that becomes important to our understanding is: "Why engineers solve problems?" Ask students to consider which pages in the text offer answers to the question. How do they know?
  How does this question support our main point? Why is it important to know the answer to this question?
- Prompt students to think of and ask a question of their choosing. Remind them to use the 5 W's and 1 H to guide them. Where is the text is this question answered? Does this question support our understanding of the main topic?

After Reading

Students will complete a writing activity. They will write a paragraph that answers the question/challenge that was posed in the "Before Reading" section: What is your job as an engineer, and how do you do your job?

A secondary section should ask readers to explain how the book helped them answer the question and "become" engineers for the day!

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to play What If? Students will create a scenario and plan out the steps they would do to solve the problem (i.e. What if Robots tried to take over the world?)
- In order to accommodate students, teachers should provide questions and a corresponding list of possible answers. Students will read the text and circle the response that best answers the given question.
- As a class, brainstorm questions that will help support their understanding of what engineers do. Students will choose one of the questions and use both the text and additional research to provide a detailed explanation.

ELL Support

- When creating and answering questions, students should be supported by discussing the topic with a partner. Encourage students to discuss what they know about the topic and have them ask each other questions that they can then use to support their understanding. Review the questions as a class and write down the possibilities.

Name: _____ **Date:** _____

What is this Story About?

Book Title: _____

Main Idea of the Book _____

_____

_____

_____

Key Detail#1

_____

_____

_____

_____

_____

Key Detail#2

_____

_____

_____

_____

_____

Key Detail#3

_____

_____

_____

_____

_____

Engineering in My Community

Book Synopsis

Think of all the people that work to make your community what it is. Engineers play a very important role, as they design almost everything we use and see each day! From buildings to clean drinking water to traffic lights, engineers design solutions that solve problems within communities. They make life easier, safer, and more fun. Read *Engineering in My Community* and learn about the impact engineers have on how we live, work, and play.

Materials

- *Engineering in My Community* book
- Computer or projector (small video)
- *What is Happening in My Community? Bookmarks*
- Anchor chart paper
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Begin lesson by facilitating discussion on what a community is. Encourage students to think of what the word "community" means to them and to think about what kind of communities they belong to.

As a class, create a definition for **community** on an anchor chart piece of paper. An example definition could look like:

- A community is a group of people who live, work, or play together.

Students will share some examples of some of the communities they belong to (i.e. school, sporting teams, church, etc.). Write examples on the white board.

Explain to students that an important part of a community is that they help each other solve problems and make life easier. A school is a community! Students will participate in a walk around the school where they will make note of three objects that helps make their life easier (i.e. water fountain, pencil sharpener, etc.). Ask students:

- Who do you think designed all the objects you found on your walk?

Explain that engineers design solutions to solve problems in our communities, including those found inside the school and classrooms. Engineers designed all of their examples!

Students will watch video titled "Engineers are Cool" (**https://youtu.be/DGmIkYw19gg**)

Target Skills

CCSS – Reading: Informational Text

- Ask and answer questions to help determine or clarify the meaning of words and phrases in a text (RI.1.4)

Explain to students that by asking and answering questions to help clarify the meaning of words and phrases in a text, they will build their vocabulary and become better readers. A healthy vocabulary deepens our understanding of unfamiliar topics and assists us in reading informational texts.

Tell students:

Let's read E*ngineering in My Community* to discover more about how engineers contribute to our own community and to deepen our understanding of what an engineer is.

While we read the text, I want you to be on the look out for words that are unfamiliar to you. Consider how these words relate to the title of the book. By looking at the context on the page, we can start to decipher the meaning behind these words.

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Encourage students to challenge their understanding of words and phrases in the text by asking and answering questions. Scaffold their understanding by modeling strategies first. Use prompts to help students find the meaning of key words.

Prompt 1: Teacher Modeling

Turn to page 4. Explain to students that one way authors of informational text teach us about their topic is by including special vocabulary words that we may have not seen before. These words are often highlighted, boldfaced, and include pictures next to them.

Write the word "design" on the white board. Break up the word into its syllables: "de-sign". Lead students to pronounce the word correctly.

Provide sentence frames to support students in asking and answering questions about the word meaning. Sentence frames could look like:

- I am wondering what the word _____ means. I think it means _____ because _____.

How would we determine what the word "design" means? What clues on the page provide us with a deeper understanding? What is being designed? What are the sentences with the word design saying?

Write the following on the white board:

- I am wondering what the word design means. I think it means creating or making because the book says that fire extinguishers are designed to help us stop fires.

Prompts for Independent Close Reading

- Turn to page 20. Do you know the word "recycle"? Is there a way to break up the word into smaller words to help you read it on your own? What clues on the page tell us what the word "recycle" means? What question could we ask about the word "recycle" that would help us figure out the meaning?
- Turn to page 14. How would we figure out what the word "travel" means? What are some examples that describe the word? What is happening in the image that is used to describe the word?

After Reading

Hand students *What is Happening in My Community? Bookmarks*. This activity reinforces students' understanding and ability to create meaning out of unfamiliar words by asking and answering questions.

Students will cut out a bookmark and place it on a page that contains an unfamiliar word to them. Students will use clues and strategies learned in the lesson to help them identify the meaning of each word.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create and then sing a song about how engineers help us in our community.
- Students will draw a map of their community. Students will label objects of importance to them within their community. Students will choose three of the objects they labeled and write a sentence explaining why they think an engineer would have designed it.
- Provide students with a mix-and-match worksheet that provides students with images of several objects. Students will have to match the object to the correct label.

ELL Support

- To familiarize students with vocabulary and help them gather meaning from the words, play a modified version of the game charades. This game may be played as a class or students may be divided into smaller groups. The teacher will think of an object in the classroom that helps make life easier, safer , or more fun. Students will ask questions about the object until they guess the correct answer (i.e. Does the object make life safer? Does a person need to hold the object to operate it? Does the object make a noise?)

Name: _____

My New Word Bookmark

New Word:

_____

_____

What I think it means:

_____

_____

_____

_____

_____

How I know: _____

_____

_____

_____

_____

Name: _____

My New Word Bookmark

New Word:

_____

_____

What I think it means:

_____

_____

_____

_____

_____

How I know: _____

_____

_____

_____

_____

Name: _____

My New Word Bookmark

New Word:

_____

_____

What I think it means:

_____

_____

_____

_____

_____

How I know: _____

_____

_____

_____

_____

Name: _____

My New Word Bookmark

New Word:

_____

_____

What I think it means:

_____

_____

_____

_____

_____

How I know: _____

_____

_____

_____

_____

How Engineers Solve Problems

Book Synopsis

Different problems need different solutions, but engineers follow the same steps to solve them. In *How Engineers Solve Problems*, discover the path engineers take to find new solutions. Learn about how they repeat steps until they find the best solution.

Materials

- *How Engineers Solve Problems* book
- *Picture or Words? Worksheet*
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Begin the lesson by brainstorming with students different methods that they use when they have to solve a problem (i.e. ask questions, write possible solutions, process of elimination, etc.). Write down the possibilities on the white board.

Provide students with the steps to making a peanut butter and jam sandwich:

1. Gather ingredients
2. Lay out two slices of bread
3. Spread peanut butter on one slice of bread
4. Spread jam on the other slice of bread
5. Put the slices of bread together, peanut butter and jelly sides in
6. Cut sandwich in half.

Write the steps without numbers on separate pieces of paper. Then give students the slips and have them place the steps in the correct order. This activity may be done in pairs. Discuss the order as a class. Pose the questions:

- What would happen if we placed the step of spreading peanut butter at the very end? Would this make a proper peanut butter and jam sandwich?
- Why are following steps important to the end goal?

Show students the cover of the book *How Engineers Solve Problems*. Ask students how they think engineers solve problems.

Target Skills

CCSS – Reading: Informational Text

- Distinguish between information provided by pictures or other illustrations and information provided by the words in a text (RI.1.6).

Explain to students that photos or illustrations and words in a text can provide the reader with information about a particular topic. It is important as readers that we are able to tell where our information is coming from, as well as what different information we can get from visuals and words.

Ask students:

- Are we able to read photos or illustrations? Why or why not?
- Can photos or illustrations give us more information about a topic than just the words? How?

Tell students: While we read *How Engineers Solve Problems*, I want you to look at the illustrations and compare the information they provide to the information provided by the words in the text.

*Teacher's Note: Pre-teach terms "compare" and "contrast" and reiterate meaning where required.

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Find instances within the text where an idea is supported by both words and pictures or illustrations. Prompt students to discover what information is coming from pictures or illustrations, and what information is coming from words.

Prompt 1: Teacher Modeling

Turn to page 5. Read the text as a class. Ask the class what the caption is telling the reader about the use of an umbrella. Write down information on the white board. Ask students why they believe this picture is being included in a text about engineers. Pose the question:

- What is this photograph telling us about engineers?

Guide students in their understanding and knowledge of engineers as inventors.

Write down information that was learned about the photograph below what was learned about the text on the white board. Explain to students that we were able to gather more information about engineers by using the photograph than what was just written in the text.

Prompts for Independent Close Reading

- Turn to page 16. What kind of technology is represented in the photo? How many of you knew that engineers were involved in the creation of electronic devices? If we weren't provided with this photograph, would we have the same knowledge of this as we do now?
- Turn to page 8. What examples are used to illustrate the steps engineers use to solve problems? How do icons help readers understand the steps in the design process?

After Reading

Students will be provided with the *Picture or Words? Worksheet*. This worksheet builds on students' abilities to recognize information that is provided by text and that is provided by illustrations or photos.

The worksheet contains information about wheelchairs and wheelchair basketball in both written and illustrative form. Students will determine whether the information being provided to them is derived from the text or the illustration.

After students have completed the worksheet, have them submit them. Review the worksheet to ensure that students are able to differentiate/ distinguish where the information is coming from.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create a photo album. Each vocabulary word will be accompanied by an illustration drawn by the students.
- Provide students with an illustration related to the subject matter at hand. Students will write down as many points as possible about the information being relayed in the photo. Students will compare and contrast their understanding of the photo with a peer.
- Provide students with a "problem". Students will think like an engineer by writing out the steps they would take to solve the problem. Students may use the book as support.

ELL Support

- Support English Language Learners by providing key terms or buzz words that can be associated with each of the photographs used in the during reading prompts.

Name: _____ **Date:** _____

Picture or Words?

Some people cannot walk on their own. Engineers design wheelchairs to help them move from place to place. They even design special wheelchairs to let them play basketball! Wheelchair basketball is a fun sport played around the world.

Read the sentences below. Did the information come from the picture, or the words? Circle one.

1. People around the world play wheelchair basketball. **Picture** **Words**

2. Engineers design wheelchairs. They help people move from place to place. **Picture** **Words**

3. Wheelchair basketball is played on teams. **Picture** **Words**

4. Engineers design special wheelchairs for wheelchair basketball. **Picture** **Words**

5. The wheels on basketball wheelchairs are tilted. This helps athletes make fast turns. **Picture** **Words**

Testing with Models

Book Synopsis

Have you ever heard the terms "model train" or "model car" and wondered why they were called models? A model is a representation of an object, typically on a much smaller scale than the original. Models can come in many different shapes, sizes, and constructs. Many of the toys you play with can be considered models! Read *Testing with Models* and discover how models are used to help us learn and help engineers solve problems.

Materials

- *Testing with Models* book
- White board or chalkboard with markers or chalk
- Glue stick and push pins
- Chart paper
- *Rating My Vocabulary Worksheet*

Before Reading

Activate Prior Knowledge

Begin the lesson by taking a class poll. Ask students whether they believe the Sun orbits around Earth or whether Earth orbits around the Sun. Record results by creating a tally on the white board.

Using the *Space: Model of Earth & Moon's orbit* (**http://tiny.cc/4ed2dz**), students will discover the orbiting patterns of both the Earth and its moon. Pose the following questions:

- How did this activity aid in your understanding of the topic?
- Do you think that your ability to manipulate the Sun, Earth, and moon helped facilitate your understanding?
- Can anyone tell me the name we can use for what we created?"

Explain to students that they created a **model**, which is a physical representation of how something looks like or how it works. Models are much smaller than the objects they represent. Can you think of any other examples of models you might have in your own home or have seen?

Show students the cover page of *Testing with Models*. Ask students the following:

- What do you think it means to "test" a model?
- Why do you think that it might be important to test models?
- Can you think of any people who might depend on models?

Target Skills

CCSS – Reading: Informational Text

- Ask and answer questions to help determine or clarify the meaning of words and phrases in a text (RI.1.4)
- Use the illustrations and details in a text to describe its key ideas (RI.1.7)

Explain to students that by asking and answering questions to help clarify the meaning of words and phrases in a text, they will strengthen their vocabulary, thus becoming better readers. People need to understand the words they read in order to understand what it is they are reading.

Encourage students to recognize when they do not understand a particular word. Using the high frequency or academic vocabulary found on page 2 or the *Words to Know* on page 22, create a *Rating My Vocabulary Worksheet* with some of words you would like to target. Students will listen to each word and rate their understanding. In order for students to give themselves the highest rating, they need to be able to use the word correctly in a sentence.

During Reading

Prompts can be provided by teacher during class or small-group read-aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Explain to students that a strategy we can use to understand vocabulary is to ask and answer questions. Introduce the questions and write them on an anchor chart paper for future reference:

1. Is there a clue in the sentence?
2. Does it sound like another word I know?
3. What would make sense in its place? (Synonym)
4. What would be the opposite of this word? (Antonym)
5. Can I look at an image to help me understand?

Prompt 1: Teacher Modeling

Model how to ask and answer questions using one of the targeted vocabulary terms. For example, turn to page 13 of the text. Direct students' attention to the term **artificial**. Break the word into its syllables: "art-i-fic-ial". Lead students to pronounce the word correctly.

As a large group, ask the questions listed above and provide an answer for each. For example,

- Is there a clue in the sentence? *The engineer is making a leg which implies that it is not authentic or real*.
- Does it sound like another word I know? *The word "art" implies that something is being created or made*
- What would make sense in its place? *Human-made, manufactured, fake*
- What would be the opposite of this word? *Natural, real*
- Can I look at the image to help me understand? T*he engineer is holding a leg that is made up of human-made materials such as steel and plastic*

Decide on a meaning for the word based on the answers to the questions and write the definition on the white board. Students will also write the definition on their *Rating My Vocabulary* worksheet.

Prompts for Independent Close Reading

- Turn to page 4. Break the word into its syllables. Using our ask and answer strategy, how do we know what the word **representation** means? Look to the sentence following the term. How does this sentence aid in our understanding? The child is playing with small toys, are they copies of objects much larger in real life?
- Turn to page 13 and direct your attention to the word **test**. What is the first think that comes to mind when you think of the word test? Most people might think of a pencil and paper activity that shows how much you know on a topic. How can we apply our understanding of this type of "test" to the term found in this text? What questions in our strategy help us to define it?

Prompt 2: Teacher Modeling

Show students an image of a "no swimming" sign. Ask students to identify the message the sign is giving. Explain to students that sometimes, we are able to identify the key idea by looking at the image alone. Repeat this process with additional images of signs if necessary.

Explain to students that illustrations and details are used to create accurate and interesting informational texts. Tell students that our purpose today will be to learn how to find important details in the text, use the illustrations to support our understanding, and to then describe these key details.

Turn to page 8 and 9 in the text. Think out loud and demonstrate to students how to determine important details and use the pictures to support their thinking. Say:

- The text tells us that engineers use models to help them learn. Making models helps them to solve problems by testing their intended use. Look at the image of the bridge. By testing the model of the bridge, this engineer discovered that this design would not be able to withstand certain weight requirements.

Ask students:

- What would have happened had this design been built without testing a model first?
- How does this image and the details describe and support the idea that testing models is important to solving problems?
- What problem does this engineer need to solve moving forwards?"

Prompts for Independent Close Reading

- Turn to page 7 and look at the image. What is the purpose of the globe? How does a globe help us to learn? Do you think it would be possible to go to outer space every time someone wanted to find the location of a country or body of water compared to another? Why is a model a more practical solution? What key idea is being represented in this image?
- Turn to page 11. Look at the drawing. Why can this drawing in particular be considered a model? How is this model different from others we have seen in the text thus far? What key details are being alluded to with this image?

After Reading

Students will complete *Rating My Vocabulary Worksheet* with the rest of the terms identified at the beginning of the lesson. This activity reinforces how to use "ask and answer strategies" to strengthen their vocabulary and in turn, their reading comprehension.

Students will bring in a physical model, an image, or a diagram of their choosing. Students will briefly present their model to the class and explain how their model helps them learn. Students will hand in a drawing of their model, labeling at least three parts of the model that helps our understanding of the topic.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to play a game of "flyswatter." Write each vocabulary word on the white board and divide the class into teams of 2. One student from each team will come to the white board and be provided with a flyswatter. The teacher will read a definition for one of the vocabulary words written on the board. The student who locates the correct word and hits it with the flyswatter scores a point for their team.
- Invite students to write a sentence for each of the vocabulary words.
- Students will draw their own bumper sticker or road sign that details an important message about an issue.

ELL Support

- Support English Language Learners in their understanding of the learning objectives by providing them with a mix and match worksheet. Students will connect the image with the description that best represents the key ideas being described.
- Provide students with a passage. Students will draw an image representing the key details.

Name: _____ **Date:** _____

Rating My Vocabulary

Instructions: Fill in the chart below. Rate your understanding of the word and then ask yourself these questions:

1. Is there a clue in the sentence?
2. Does it sound like another word I know?
3. What would make sense in its place? (Synonym)
4. What would be the opposite of this word? (Antonym)
5. Can I look at an image to help me understand?

Write your own definition now that you have used the "ask and answer" strategy.

New Term	Is My Knowledge of the Word Sunny, Stormy, or Cloudy?	Have I Asked all the Questions?	My Definition for the Word Is ...
1.		1. 2. 3. 4. 5. ○ ○ ○ ○ ○	
2.		1. 2. 3. 4. 5. ○ ○ ○ ○ ○	
3.		1. 2. 3. 4. 5. ○ ○ ○ ○ ○	
4.		1. 2. 3. 4. 5. ○ ○ ○ ○ ○	
5.		1. 2. 3. 4. 5. ○ ○ ○ ○ ○	
6.		1. 2. 3. 4. 5. ○ ○ ○ ○ ○	

What is the Best Solution?

Book Synopsis

Engineers are people who solve problems by creating solutions to make life easier, safer, and more fun. Read *What is the Best Solution?* and discover how engineers use math, science, and creative thinking to model, test, and then apply the best solutions to solve many every day issues.

Materials

- *What is the Best Solution?* book
- White board or chalkboard and markers or chalk
- Chart paper

Before Reading

Activate Prior Knowledge

Begin the lesson by facilitating a class discussion. Pose the following questions:

- Can you think of a time when there was a problem you had to solve? What did you do to solve it?

Invite students to share some examples with the class. Explain to students that in order to solve their problem, they came up with a **solution**, which is an answer to a question or a problem. Say:

- Sometimes, we might come up with a solution that does not work! Then we have to think of another solution and try to solve the issue again. For example, if you are cold you might put on some socks. If you are still cold, you might have to consider putting on a sweater or a scarf to make you warmer.

Show students the cover of *What is the Best Solution?* Ask students:

- What might we do if we wanted to find the best solution to a problem?

Encourage students to think about the processes we take to solve problems. As a class, write down the steps we might consider taking as we try to solve an issue (i.e. do we brainstorm ideas first? Do we try a bunch of different ideas until one works? Do we make a plan?) Write the steps on a piece of chart paper and compare the class steps to the steps described in *What is the Best Solution?*

Target Skills

CCSS – Reading: Informational Text

- Ask and answer questions about key details in the text (RI.1.1)

Tell students:

Asking questions is a great way to learn more about a subject. When we ask questions, we are being critical thinkers. Engineers ask many questions when they want to solve problems! They might ask questions such as:

- What is the problem?
- How is this issue affecting people?
- Why does this problem exist?
- When did this problem start happening?
- Where is this problem happening?

Today, we are going to be engineers! We are going to formulate our own questions about key details in the text and solve those questions by providing valuable answers.

Write **who**, **what**, **when**, **where**, **why**, and **how** on the white board. When we ask questions, we can use these question words to help us formulate our questions. When we want to answer a question, we must use evidence from the text to help us create our response.

During Reading

Close Reading Prompts

Prompts can be provided by the teacher during class or small-group read aloud. They can also be provided prior to students' independent reading.

Prompt 1: Teacher Modeling

Read pages 4 to 7 of the book. Model to the class how to ask a question that pertains to the important themes and details of the text. For example:

- "After reading pages 4-7, I have learned that engineers solve problems by creating solutions. What I would like to know is *how do engineers try to find solutions to problems?*"

Write the question (in italics) on the white board.

Explain to students that in order to find an answer to the question, we must continue reading. Turn to page 10 in the text and read the passage out loud. Ask:

- What is the text telling us about engineers?
- Is the text informing its readers about how engineers go about solving an issue?
- Do you think that this information helps us to understand the steps involved in finding the best solution?"

On the white board, write the following answer:

- E*ngineers find out as much as they can about a problem by looking at the problem up close and finding out how it affects people* .

Prompts for Independent Close Reading

- Turn to page 14. Think of a question that relates to how engineers try to come up with the best solutions to problems. What do we learn about after reading the text and studying the image provided? Write a question statement that focuses on deepening your understanding of how solutions are made better.
- Turn to page 12. What is brainstorming? Formulate a question that relates to this process? What answer could you provide that would support the main details of the text?

After Reading

Students will create a *Retell Wheel*. Provide students with an informational text. Students will divide a paper circle into six parts. Students will formulate a question for each section of their wheel. Questions should be based on important details of the text and provide insight into what the text is about. Students will write one question per question word (i.e. who, what, when, where, why, and how). Students will trade their question wheels with an elbow partner. Using another wheel, students will answer each of the questions using the informational text for support and evidence.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the text. Use the words to participate in a book search. Students will be provided with age-approproate books. Students will look for pictures that relate to each of the vocabulary words. Invite students to share which pictures they found with the class.
- In order to accommodate learners, provide students with question starters while they are doing their independent close reading. For example,
  Why do engineers ... ?
  How does brainstorming/making models help ... ?

ELL Support

- Provide students will a leveled reading passage and a worksheet that gives examples of questions based on the specific passage. Provide students with multiple choice answers that they may choose from to answer the question.
- Engage students in a question and answer game. Students will be provided with either a question or an answer on a sticker. Students will place the sticker on a noticeable place on their clothing and find the student partner that has the corresponding question/answer.

Full STEAM Ahead!
TEACHER'S GUIDE
Arts in Action

Full STEAM Ahead! is a set of guided, non-fiction books that helps early readers build vocabulary, fluency, and comprehension skills, and provides them with an engaging introduction to STEAM subjects. Readers will delight in the expertly leveled text, bold images, and relatable examples on their journey to become enthusiastic and skilled readers. *The Full STEAM Ahead! Teacher's Guide* is a balanced literacy guide that supports reading, writing, speaking and listening, and language development. Lessons are specially tailored to each *Full STEAM Ahead!* title, and include accommodations, extensions, and English language learner support.

The *Arts in Action* lessons encourage students to ask and answer questions to decode unfamiliar vocabulary, describe connections between pieces of information, identify reasons given to support points, and notice information provided by pictures or illustrations. Students will take part in prediction, close-reading, reflection, and extension activities while building their skills in all areas of literacy.

These lesson plans are tailored for grade 1 and include connections to core art concepts, from sending messages in art to exploring different mediums and tools used by artists. Each lesson is accompanied by one or more reproducible worksheets. The titles in *Full STEAM Ahead!* are:

Science Starters

- Day and Night
- The Four Seasons
- From Seed to Pumpkin
- The Life Cycle of a Rabbit
- The Right Material for the Job
- What Makes It Move?

Engineering Everywhere

- Engineering in My Community
- How Engineers Solve Problems
- Mistakes Help Us Learn
- Testing with Models
- What Does an Engineer Do?
- What Is the Best Solution?

Math Matters

- Building Tens with My Friends
- Building with Shapes
- I See 3-D
- Place Value at Playtime
- Skip Counting My Way to School
- Subtraction in Action

Technology Time

- Parts Work Together
- Robots at Work
- Technology and You!
- Technology Then and Now
- Think Like a Computer Scientist
- What Is Technology?

Arts in Action

- Artists Use Tools
- Creating Art Together
- Creating Colors
- The Five Parts of Art
- How Do Artists Tell Stories?
- Making Art from Anything

Ontario
Ontario Media Development Corporation
Made possible with the support of the Ontario Media Development Corporation.

CRABTREE
PUBLISHING COMPANY
WWW.CRABTREEBOOKS.COM

Creating Colors

Book Synopsis

Color is everywhere! Colors are multi-dimensional and are used for a multitude of purposes. In *Creating Colors*, readers will learn how artists use color; how primary colors are mixed to create secondary colors; how colors can make an audience feel a certain way; and how color can be categorized.

Materials

- *Creating Colors* book
- *Making Color Predictions Worksheet*
- *I See Colors Worksheet*
- White board or chalkboard with markers or chalk

Before Reading

Activate Prior Knowledge

Begin the lesson by posing the question:

- Why is color important to you?
- Can you name or give some examples of how you use color on a daily basis?

Show students the cover of *Creating Colors*. Ask them:

- What do you think you are going to learn about based on the cover of the text?
- What type of people create or use color? Can you think of someone who uses color for their job?

Hand out the *Making Color Predictions Worksheet*. Ask the following questions and allow students enough time to make a prediction for each:

- If I were to mix the colors blue and red, what do you think would happen?
- If I were to mix the colors yellow and red, what do you think would happen?
- If I were to mix the colors yellow and blue, what do you think would happen?

Target Skills

CCSS – Reading: Informational Text

- Describe the connection between two individuals, events, ideas, or pieces of information (RI.1.3)

Explain to students that good readers are able to make connections between the important ideas in a text. They are also able to identify similarities and differences in text content.

Tell students:

While we are reading, I want you to think about the different ways you use colors, and how you use colors to create. I would also like you to think about the connection that colors have to each other.

During Reading

Close Reading Prompts

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Assist students in discovering the connections between and among information and ideas in the text. Educators should ask questions that keep students focused on the important points, encourage them to return to previous predictions, and to use comprehension strategies as they read and monitor their understanding. Words such as "mix, add, both, and" may also indicate that there is a connection.

Prompt 1: Teacher Modeling

Turn to page 8. Write the words "red," "blue," and "yellow" on the white board. Tell students to look at the picture displayed. Ask:

- What other colors are in the rainbow besides those written on the board? How does the text suggest that the other colors are created?

Explain to students that the connection between all the colors in the rainbow is that they are created with primary colors.

Ask students if there are any other words on the page that give clues that there is a connection between the primary colors and other colors on the page. Write the words "mix" and "add" on the white board. Discuss what the words "mix" and "add" mean.

Prompts for Independent Close Reading

- Turn to page 10. Read the words "primary" and "secondary". On page 6 we learned that "primary" means first. What conclusions can we then make about the meaning of the word "secondary"? What is the connection between the secondary colors and the primary colors? How do the words "primary" and "secondary" let the readers know there is a connection? How would you describe/explain this connection?
- Students should be given time to look at their *Making Color Predictions Worksheet* after reading page 12 of the text.
- Look at page 14. How does the book let us know there is a connection? How would you describe the connection between light blue, blue, and dark blue? What would this look like if we applied to same rule to the color green?
- On page 16, we learn that cool colors can make people feel calm. What is the connection between all of the cool colors? How would you best describe this connection?

After Reading

Hand students the *I See Color Worksheet*. This worksheet reinforces their understanding of the connections between primary and secondary colors. It also encourages them to recognize words that may allude to a connection between pieces of information.

Students will draw a picture in an attempt to convey a particular mood and/or feeling. Students will describe the connection between the color(s) they have chosen and the feeling/mood created in their artwork. A vocabulary component will complete the exercise.

After students have completed the worksheets, have them submit them. Review the worksheets for comprehension. Ensure that students were able to identify and describe the connection.

Accommodations and Extensions

- Review the high frequency and academic vocabulary on page 2 of the book. Use the words to participate in a word-sorting activity.
- Complete a demonstration of how primary colors are mixed together to create secondary colors using paint or another medium. Allow students time to explore what happens when other color combinations are mixed together (i.e. blue and orange). Have students record their observations and describe what happened.
- Students will write their own page(s) about color and include at least two pieces of information that is connected in some manner. Students will share their piece with a partner. The partner will attempt to identify the connection.

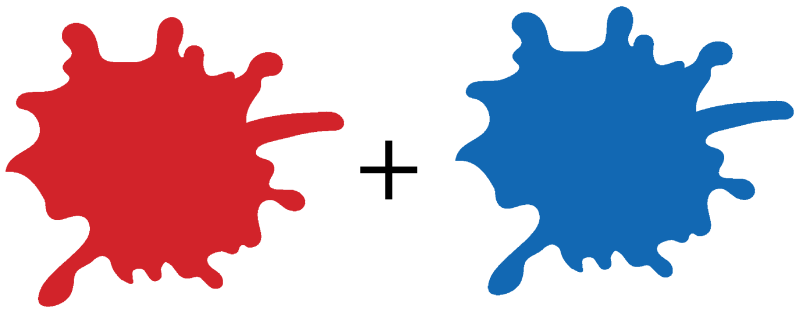
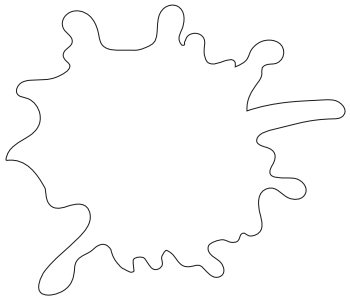
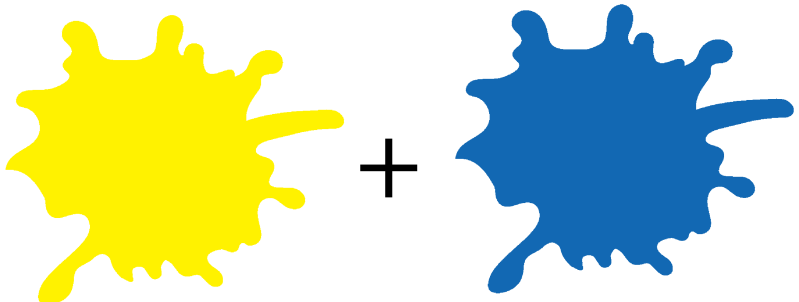
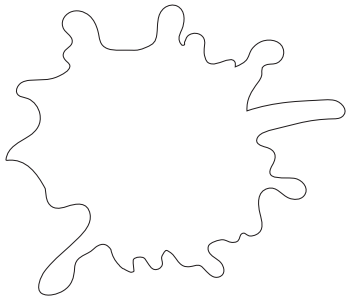
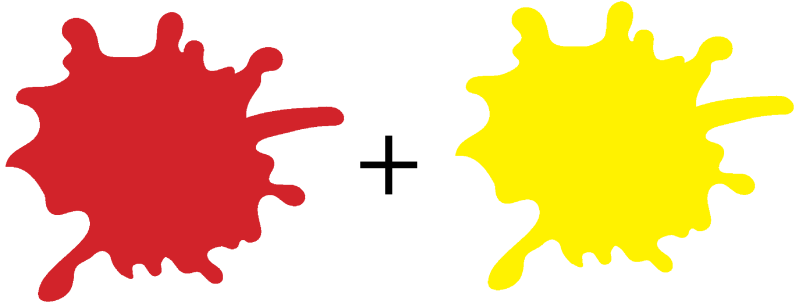
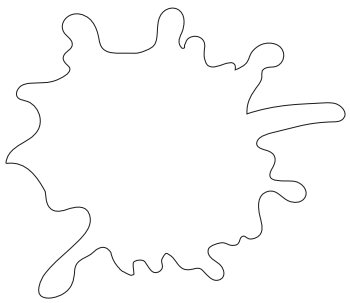
ELL Support

- Support learning and understanding by asking students to draw small pictures utilizing the corresponding colors being discussed during activities and close readings.
- Where possible, text words should be displayed in the color they represent.

Name: _____ **Date:** _____

Making Color Predictions

In the chart below, make predictions about which colors would be created, if the two given colors were mixed.
You may write the word (i.e. purple) OR use a colored pencil crayon/marker to color the blank space.

I Predict that...	Will make...
 **Red** + **Blue**	
 **Yellow** + **Blue**	
 **Red** + **Yellow**	

Name: _____ **Date:** _____

I See Colors!

In *Creating Colors*, we learned that cool colors like blue and purple can make us feel calm, and warm colors like red and orange can make us feel excited. In the space below, draw a picture that makes your audience feel a certain way. Do you want your audience to feel happy? Sad? Tired? Use colors that you feel help create this emotion.

Draw your picture here:

How did the colors you used help the audience feel a certain way?

_____

_____

_____

_____

Circle the words below that hint that there is a connection between two events, ideas or pieces of information.

SAME **ADD** **HAPPY** **BOTH**

DIFFERENT **FUN** **MIX**

How Do Artists Tell Stories?

Book Synopsis

Not every story comes from a book or is written by an author. In fact, there are many ways to tell stories. In *How Do Artists Tell Stories?*, read about the different ways painters, musicians, dancers, and other artists tell their stories. Discover how these stories make their audience feel different emotions.

Materials

- *How Do Artists Tell Stories?* book
- Prop(s) such as a photo, book cover, song, etc.
- *What is in a Story? Worksheet*
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Ask the class what they think of when they hear the word "story". Encourage students to visualize what a story is in their mind. Ask the questions:

- What does a story look like? What does it sound like?
- How can stories be told?

Students will participate in a "Think, Pair, Share" activity in which they will brainstorm various ways stories can be told. Students may voluntarily share their thoughts on what stories are to them, and responses can be written on the white board.

Show students a picture of a painting and ask them:

- Can this painting tell a story? What do you think the story is?"

Discuss different elements of the painting and how it contributes to what the class believes about a story. Review what students feel the painted is telling the audience.

Target Skills

CCSS – Reading: Informational Text

- Identify the reasons an author gives to support points in a text (RI.1.8)

Explain to students that it is important that authors support what they write by giving reasons. Reasons can be facts or examples that help prove that something is true. They help the audience understand the material and make the content more credible.

As readers, we must be able to identify the reasons an author uses to support points. Provide the following scenario to the class:

- Which of the following statements gives a reason?
  - I wouldn't go outside right now
  - I wouldn't go outside right now because its pouring rain

Tell students:

Today, we are going to be editors! We need to make sure that the author of the book How do Artists Tell Stories? has supported their points with reasons. While we read, make sure you keep your eyes peeled for reasons! We can use the pictures to help us find reasons, too.

During Reading

Close Reading Prompts

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Find examples in *How Do Artists Tell Stories?* in which the author uses reasoning to support their points in a text. Prompt them to notice the statement, then the reason given to support it.

- For example, turn to page 10. Ask students to look at the picture and read the caption. Identify the statement as "The character is sad." Identify the reason as "The actor cries."

Prompt 1: Teacher Modeling

Turn to page 8. Ask students:

- What is the author arguing or stating about art?

Students may raise their hands to answer the question. Explain that the author is claiming that artists tell stories through art. Art, therefore, can have characters, settings, and plots.

Write the words "characters", "setting", and "plot" on the white board. Have the students look at the picture. Ask students of they see any of the three elements of a story in the painting (i.e. Does the painting have characters? What is the setting? What kind of story is this painting telling us?). Pose the question:

- How does the author support her claim that art can have the elements of a story?

Prompts for Independent Close Reading

- Turn to page 14. The author writes that pictures can tell stories and that artists use specific colors to show different feelings. How does the author support this point?
- Turn to page 20. What statement is the author making? How do we know this? What reasons are given as support?

After Reading

Following the close reading, students will complete the *What is in a Story? Worksheet*. This worksheet reinforces students' understanding and develops skills related to being able to identify an argument and the corresponding supportive reasoning.

Students will make a statement about a story they enjoy. This can be a story read in class, or one that students are familiar with independently. Students will make a statement about the story, and provide reason(s) that support their points. Students will share their worksheet with a peer. Each student will identify the point being made by their partner, and the reasons that support their statement (this may be completed through a discussion or a written component).

After students have completed the worksheet, students will submit them. Review the worksheets for comprehension and understanding. Follow-up with students where required. The worksheets may be used as a form of formative assessment.

Accommodations and Extensions

- Review high frequency and academic vocabulary found on page 2 of the book. Use the words to create and then play a word scramble.
- Provide students with a statement and supporting reason. Students will then illustrate it.
- Students will create three points on a subject matter of their choosing. Students will provide a statement that has a supporting reason and one that does not for each idea.

ELL Support

- Classroom discussions and prompts may be administered as small group discussions. Students will discuss questions with peers so that ELL learners can practice their language in a more low-risk setting.
- Pre-teach elements and aspects of a story so that students are more familiar with the vocabulary related to the lesson.

Name: _____ **Date:** _____

What is in a Story?

In this lesson, we learned that an author needs to provide reasons when they make statements.

In the space below, write a statement about a story you enjoy. Give reason(s) to support your statement.
Then, draw a picture that shows your statement and reason(s).

My statement is: _____

_____

My reason(s) are: _____

_____

_____

Here is a picture of what I mean:

Name: Completed Example

What is in a Story?

In this lesson, we learned that an author needs to provide reasons when they make statements.

In the space below, write a statement about a story you enjoy. Give reason(s) to support your statement. Then, draw a picture that shows your statement and reason(s).

My statement is: Little Red Riding Hood was very scared when she found out that the Big Bad Wolf was disguised as her grandmother.

My reason(s) are: Her face looked scared in the picture, and her mouth was open. She screamed, "AHHH!"

Here is a picture of what I mean:

Making Art from Anything

Book Synopsis

There is an expression that you are only limited by your imagination. This saying certainly rings true in *Making Art from Anything*. In this fun and exploratory title, students will be exposed to the various mediums used to create art. From trash to old bicycle parts, children will learn that there is no limit to the materials that can be used to create masterpieces.

Materials

- *Making Art from Anything* book
- Mark Jenkins artwork, found at **http://www.xmarkjenkinsx.com/outside.html**
- *Context Clues Graphic Organizer*
- Anchor chart paper
- White board or chalkboard with markers or chalk

Before Reading

Activate Prior Knowledge

Show students photos of art done by Mark Jenkins.
http://www.xmarkjenkinsx.com/outside.html

Pose the following questions:

- Are these good examples of art? Why or why not?
- What do you think these sculptures are made of?

Show students photos of ice sculptures and follow-up with the same questions.

After reviewing the tape and ice sculptures, ask students:

- Have you seen other works of art that were created with unusual objects? Write down examples on the white board.
- How do you think we should define the word "art"?
  - Students may share responses. Write down ideas on the board and create a working definition.
  - For example: Art is something that you create to show an idea(s) or feeling(s)

Show students the cover page of *Making Art from Anything*. Ask students:

- What is illustrated on the front of the book?
- Do you have any guesses as to the type art that might be found in the book?

Target Skills

CCSS – Reading: Informational Text

- Figure out the meaning of unfamiliar words and phrases by asking and answering questions (RI.1.4)

Explain to students that readers can use clues from within the text to help them figure out the meaning of a word that is unfamiliar to them, or that they do not know.

Tell students: While we read *Making Art from Anything*, we are going to pretend to be mystery solvers. We are going to solve the meanings of words we do not know. The way we can solve these word mysteries is by searching for context clues.

Write the following Context Clue Strategies on an anchor chart paper:

- Look for the definition in the sentence or surrounding words
- Look for a synonym (word what has the same meaning) in the sentence
- Look for an antonym (word that has the opposite meaning) in the sentence
- Look for an example in the words or pictures
- Make an inference (guess) based on what the text says and what you know
- Look for clues in the unknown word (prefix, suffix, root words)
- Look for pictures that may help you solve mysteries

During Reading

Close Reading Prompts

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Find examples within the text where unfamiliar words are apparent. Utilizing context clues in addition to other questioning and answering methods, guide students in their ability to figure out the meaning of words they do not know.

Prompt 1: Teacher Modeling

Turn to page 16. Write the word "mosaic" on the white board or chalkboard. Lead students to pronounce the word correctly.

Ask students if there are any clues on the page that would help them define the meaning of what a "mosaic" is. Pose the question:

- What do the examples of lids and bottle caps tell us about the objects being used to create this art?

Guide students to look at the caption and the picture. Ask:

- What do you notice about the picture?
- If many small bottle caps can create a mosaic, what does that lead us to understand about the word mosaic?

As a class, create your own definition for the word mosaic.
For example: A mosaic is a picture made up of small objects.
Write definition on an anchor chart.

Ask the class what context clues were used to figure out the meaning of the word. Students should recall that we looked at an example that was given in the sentence, and we also looked at the picture. Refer back to the Context Clue Strategies and identify the strategy that was used.

Prompts for Independent Close Reading

- Turn to page 8. Read the page. What is nature? What clues can you use from the page to help you find the meaning of it?
- Turn to page 15. Look at the word husks. What makes this word a little more difficult to define? What questions should we ask ourselves? What context strategy(ies) do you think would be the best to use in this example?

After Reading

Following the close reading, students will be handed the *Context Clues Graphic Organizer.* This organizer reinforces context strategies that students can use to decode and define the meaning of unfamiliar words.

Students will choose a word that is unfamiliar to them from the book, identify a context strategy that they will use to help them understand the word, and then create their own meaning of the word.

After students have completed the worksheet, have them submit them. Review the worksheet to ensure that context strategies were used correctly. Check if students were able to show their understanding of the words meaning. Review if needed.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create a student-created dictionary of once-unfamiliar terms.
- Students will explore a type of art that they are unfamiliar with. Students will choose a term and apply context strategies to help them define and explain the meaning. Students will draw a picture illustrating their term.
- Provide students with defining words that are supported with an illustration.

ELL Support

- Use decoding strategies that help English language learners to recognize different word parts and how they fit together.
  - Clap hands or use fingers to count syllables of a word, then clap or count as they segment the word.
  - Break up words into root word + ending
- Support students by modeling each context strategy and continue by scaffolding their understanding

Name: _____ **Date:** _____

Context Clues Graphic Organizer

Choose three unfamiliar words from the book *Making Art from Anything*.
Using the graphic organizer below, choose a context strategy and try to solve the meaning of the word!

The word I am unsure of is . . .	The strategy that I am going to use is . . .	I think that the word means . . .

The word I am unsure of is . . .	The strategy that I am going to use is . . .	I think that the word means . . .

The word I am unsure of is . . .	The strategy that I am going to use is . . .	I think that the word means . . .

Artists Use Tools

Book Synopsis

Different art forms require different kinds of tools. In this interesting title, readers will learn about the tools different artists use, such as brushes for painting, computers for digital art, and instruments for music. There is no limit to the materials that can be used to create masterpieces.

Materials

- *Artists Use Tools* book
- *Tool Sorting Worksheet*
- Some physical art tools
- White board or chalkboard with markers or chalk

Before Reading

Activate Prior Knowledge

Show students the cover of *Artists Use Tools*. Ask them what they think that they are going to learn about, based on the cover.

Ask students:

- What is a tool?
  - A tool is an object that helps us do work.
- What tools do you use?

Have students share some answers. Can scribe the list of students' tools on a piece of chart paper, or on the white board.

Turn conversation to artists and tools.

- Ask students if they recognize the tool on the front cover of the *Artists Use Tools* book.
  - Ask them if they have ever used that tool.
- Ask students if they can think of any other art tools, and talk about some answers.
- Look around the classroom (if there are art supplies in view) and identify some of the art tools they can see.

Target Skills

CCSS – Reading: Informational Text

- Figure out the meaning of unfamiliar words and phrases by asking and answering questions (RI.1.4)
- Identify information provided by words and pictures or illustrations in a text (RI.1.6)

Explain to students that good readers ask questions about unfamiliar words. They use pictures and other words in the book to figure out what unfamiliar words mean.

Tell students:

Today, we're going to be word detectives! We are going to notice words that are new to us. We are going to be on the look out for words we already know, because they can help us figure out new words. We can use pictures to help us understand new words, too! You can be a picture detective to help look for clues about new words in the pictures you see.

During Reading

Close Reading Prompts

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Find instances in *Artists Use Tools* where unfamiliar words may arise. Pictures support some unfamiliar words. Others are not supported by pictures. Be sure to prompt students to figure out the meaning of the words using both their own decoding strategies, and by looking at a picture.

Prompt 1: Teacher Modeling

Turn to page 7. Write the word "stencil" on the white board or chalk board. Break up the word into its syllables: "sten"—"cil". Ask students if the word reminds them of any other words they know. Point them to think about the beginning or ending sounds. Students may think of "pencil". Lead students to pronounce the word correctly.

Ask students if any clues on the page help them understand what a stencil is. Move to examine the picture. Read the caption together. Ask students:

- What does the stencil look like?
- What is the stencil helping the artist make?
- How is the artist using the stencil?

Ask students to think about how the picture of the stencil helped them understand the unfamiliar word. What new information does the picture tell us that we did not know before looking at it?

Prompts for Independent Close Reading

- Turn to page 16. Read the chapter heading. Do you know the word "performing" or "perform"? How can you break up the word into smaller words to try and read it on your own? Are there any clues on the page that tell you what the word "perform" means?
- Look at the pictures of cameras on pages 14 and 15. What can you learn about cameras from each picture? What information does each picture tell you? How is the information the same? How is it different?
- Turn to page 20. Read the page. Stop when you get to the word "stylus". What is a stylus? How do you know?

After Reading

Hand students the *Tool Sorting Worksheet*. This worksheet reinforces their comprehension and their ability to decode and understand the meaning of unfamiliar words. They need to identify, then sort each art tool into the category in which it belongs. The categories are based on the use of the tool, requiring students to demonstrate that they can understand the meaning of unfamiliar words.

After students have completed the worksheets, have them submit them. Then review the worksheets for comprehension. Check if students were able to decode the words and show their understanding of meaning. Review this skill if needed.

Accommodations and Extensions

- Provide examples of physical art tools for students to explore and manipulate. Give them the chance to use some of the tools to create art. Have them explain verbally or on a piece of paper how the tool is used. Assess their comprehension after they are given the chance to physically try the tool.
- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create and then play a game of word bingo.
- Have students think of a tool that a teacher uses to teach in the classroom. In pairs, have students draw a picture of the teacher's tool and write a caption that explains how that tool is used.

ELL Support

- Use decoding strategies that help English language learners to recognize different word parts and how they fit together.
  - Clap hands or use fingers to count syllables of a word, then clap or count as they segment the word.
  - Break up words into root word + ending
- Help students come up with their own definition of tool. They can think of or demonstrate examples of tools and how they are used.

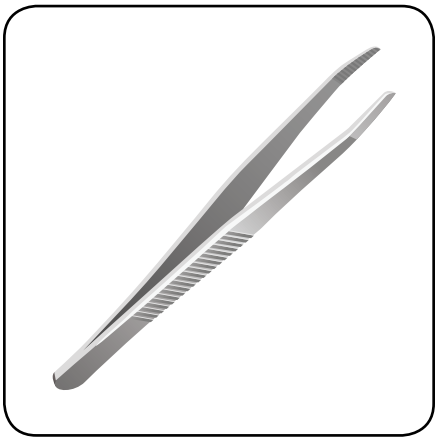
Name: _____ **Date:** _____

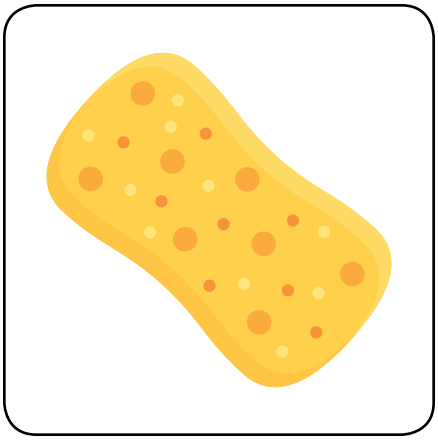
Tool Sorting Worksheet

Sort each tool into the chart based on what it is used for.

Tools that add color or draw	Tools that make shapes	Tools for performing


STENCILS





Creating Art Together

Book Synopsis

Have you ever drawn a picture or sang a song to demonstrate how you were feeling? Art has always been a powerful way to express feelings, emotions, and ideas. Art can be beautiful or interesting to look at, listen to, and watch. Did you know that a piece of art can be made by more than one artist? In *Creating Art Together*, students will learn how artists can combine or put together their ideas and skills to make truly remarkable pieces of art!

Materials

- *Creating Art Together* book
- Computer (video)
- White board or chalkboard with markers or chalk
- *Connecting Art to Art Worksheet*

Before Reading

Activate Prior Knowledge

As a class, watch the short film *The Present* (**https://bit.ly/1T2BxFZ**). Pose the following questions:

- How many of you believe that this short film can be considered a form of artwork?
- For those who do believe it can be considered as such, why do you believe so? For those who do not, why not?"

Explain to students that films, such as *The Present*, are art forms that combine the skills of many different artists. The combination of all these skills work to create one, large, beautiful piece of art such as the short film.

Students will watch the short film a second time. Encourage students to think about the different types of art forms that were used to create the film. As a class, brainstorm the various artistic components of the film and write the responses on the white board (i.e. animators, musicians, screenplay, etc.).

Show students the cover of *Creating Art Together*. Ask students:

- Can you think of an art form where multiple people come together to create it?
- Have you ever worked on a school project where you and a partner had to use your individual strengths to ensure that the project was completed on time and how you envisioned it? What are some types of art that you think this book may show its readers?"

Target Skills

CCSS – Reading: Informational Text

- Describe the connection between two individuals, events, ideas, or pieces of information in a text (RI.1.3)

Explain to students that good readers are able to make connections between ideas and information presented in a text. Invite students to share examples of connections that have meaning to them. Guide students to make their connections by making cause/effect, problem/solution, or sequencing sentences (i.e. show students an image of a teacher and a school. Have students write a sentence describing the connection between the two objects).

Tell students:

As you read, think about what skills you have that makes you an artist. Think about how your skills could be used with the skills of other artists to create one spectacular piece. Think about artwork you may have seen in the past, and whether you believe it was created by one artist or many.

During Reading

Close Reading Prompts

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Find instances within the text where connections between information and ideas exist. At the end of the lesson, students should have an understanding that the examples in the book show how different types of art connect. Be sure to prompt students where necessary.

Prompt 1: Teacher Modeling

Turn to page 19 of the text. Write the words "dancer", "dress designer", "musician", and "make-up artist" on the white board. Without looking at any of the images, ask students what they believe the connection between the four art forms is. What kind of art would require the skills of a dress designer and a make-up artist? Is someone acting on a stage? Is someone singing to a crowd? Does their vision change as they add more of the artistic elements? What do they envision when they see the words on the board?

Direct students' attention to the image of the child dancing. Explain that ceremonial dress and face painting is an integral part of traditional Indigenous dance rituals. The dancer's attire, the music they dance to, and the type of dance they perform carry deep spiritual significance. The artists listed in the caption have combined their art to create a beautiful dance. Without one of the elements, the dance would tell a different story than the one being told in this photograph.

Prompts for Independent Close Reading

- Turn to page 7. What is the connection between the teacher and the student? How are they working together to create art? Are they still working together even though the student is the only one playing the instrument? How is teaching an art in this scenario?
- Turn to page 12. Direct students to the type of dance the dancers are performing. Each dancer needs to know the dance individually but the type of dance they are performing requires two dancers. What is the connection between the type of dance and the number of dancers needed to perform it?

After Reading

Following the close reading, students will complete the *Connecting Art to Art Worksheet*. This worksheet reinforces students' understanding of how content in a text connects by having them create their own connections using terms found within *Creating Art Together*.

Review the worksheets for comprehension and understanding. Follow-up with students where required. Note that the worksheets may be used as a form of formative assessment.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the text of the book. Use the words to create connection statements.
- *Connecting Art to Art Worksheet* may be modified by providing students with two terms that have a simple identifiable connection (i.e. "painting" and "art gallery"). Students will write a brief sentence stating the connection between the provided terms.
- Students will detail a plan that describes a type of art they would like to create (i.e. sculpture, dance, play, quilt, etc.). Students will detail what materials they will need to produce the art and what types of artists they will need to help with the project (if any).

ELL Support

- To support English Language Learners, classroom discussions and prompts may be less teacher-led and focus on small group discussions. Students will discuss questions with peers so that ELL learners can practice their language in a more low-risk setting.
- Pre-teach elements and aspects of a story so that students are more familiar with the vocabulary related to the lesson.
- Where possible, show short videos of the types of art depicted throughout the text that demonstrates the type of art in action (i.e. a performance of the dragon dance).

Name: _____ **Date:** _____

Connecting Art to Art

Look at the "Words to Know" section on page 22 of *Creating Art Together*. Pick two words listed on the page. Using the two words, create a story that explains how they connect. Draw a picture to show the connection.

The two words that connect information together are _____

and _____

My story that details this connection is _____

_____

_____

_____

_____

_____

_____

This connection looks like ...

The Five Parts of Art

Book Synopsis

There are many different forms of art. Art can be listened to, watched, read, or simply looked at. In *The Five Parts of Art*, students will explore how line, color, shape, space, and texture is used to enhance the type of art we look at. Discover how artists use some or all of these parts to create beautiful pieces that are meant for their viewers to look at and enjoy.

Materials

- *The Five Parts of Art* book
- *Art Bingo Sheets*
- *Art Bingo Word Bank*
- Chart paper
- Thesauruses
- *Tell Me All About It Worksheet*
- Reading passages
- Sticky notes
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Show students the title page of *The Five Parts of Art*. Ask students:

- "What do you notice about the butterfly?
- Does the butterfly appear to be smooth or rough?
- Do you think that by using the technique we see here, that the artist was trying to make the butterfly realistic or interesting?
- Look at the colors used in the butterfly. Are the colors bright or dark? How do the colors make the butterfly stand out?"

Explain to students that there are five **elements** of art: **line**, **color**, **shape**, **texture**, and **space**. Write each of the elements on a piece of chart paper. Ask student volunteers to draw an example beside each of the elements on the anchor chart paper (i.e. dotted line).

Students will participate in a game of "Art Bingo". Provide each student with a blank *Art Bingo Sheet*. Draw each of the items listed in the *Art Bingo Word Bank* on the white board. Students will then draw each of the items on their bingo sheet. Play the Bingo game.

Target Skills

CCSS – Reading: Informational Text

- Identify the main topic and retell key details of a text (RI.1.2)
- Ask and answer questions to help determine or clarify the meaning of words and phrases in a text (RI.1.4)

Explain to students that it is important for readers to be able to determine the main topic of an informational text so that they understand the author's message. Key details support the main topic and help us gain a better understanding of the text. Furthermore, asking and answering questions and using context clues can help us to clarify the meaning of words and phrases. Understanding words and phrases expands our vocabulary and deepens our ability to comprehend the reading material.

During Reading

Close Reading Prompts

Prompts can be provided by the teacher during class or small-group read aloud. They can also be provided prior to students' independent reading.

Prompt 1: Teacher Modeling

Explain that the **topic** is one or two words that tell what the story is about. Read the title of the book out loud and ask students what they think the book is about. Facilitate a class discussion and point out how the topic is almost always very similar to the title. The topic in this example would be "art".

Another part of a book is the **main** or **big idea**. The big idea the most important point of the book and is usually only one or two sentences in length. Sometimes, we can find the big idea in the first couple of sentences or pages. Read pages 4 to 7. Ask students:

- What do you think the main idea of the story is?

Write student responses on the white board, encouraging and emphasizing responses relating to the five parts of art and how these elements are used to make art interesting.

During Reading

Finish reading the remainder of the book. Recount the topic and main idea of the text. Then introduce details. Ask students:

- What **details** support the main idea that the art we look at has five main parts?

Turn to page 8. Bring attention to the heading on the page. The heading gives us a clue that it is a key detail. We also know that the information on this page is important because page 6 lists "lines" as one of the techniques artists use in their art. Read the page as a class. Ask, "based on what we read about lines, how do you think lines make art interesting?"

Prompts for Independent Close Reading

- Turn to page 10. What key details support the main ideas and topic? How do we know what element is being discussed? How would you explain to someone what the book is saying about color?
- Turn to page 12. How do some artists use space in their artwork? Why do you think the way an artist used space in their paintings or drawings would make the piece more interesting to look at?

Prompt 2: Teacher Modeling

Tell students that they are going to learn how to figure out the meaning of words they don't know. The bold words in a book are words that the author would like you to know or to learn. We can begin to determine or clarify the meaning of those words by asking and answering questions. Write the following questions on the white board or a piece of chart paper for future reference:

- What is the word the author would like me to learn or know?
- What pictures are there that might help me to figure out the meaning of the unknown word?
- Are there any words right after the bold word that will assist me?
- Do the sentences around the bold word provide any clues as to the meaning?
- What are some synonyms of the word that I can use to help my understanding?
- Am I able to relate that word to something in my own life?
- What are some antonyms, or opposites, of the word?

Turn to page 4. Using the questions above, write a response for each using the word **create**. Provide student pairs with a thesaurus to aid them with the responses. Write your own definition of the term as a class. For example: **create** means to make something.

Prompts for Independent Close Reading

- Turn to page 6. What is the unknown word the author is drawing your attention to? What questions will you use to help you determine the meaning of the boldfaced word? Is there anything around you that has texture? How does this object help your understanding of the term?
- Turn to page 16. What do the two sentences tell us about the word **surface**? How about the image? Using your thesaurus, find a synonym that you believe deepens your understanding.

After Reading

Following the close reading, students will be provided with a *Tell Me All About It Worksheet* and an accompanying passage.

Passages may be found at **https://www.rif.org/literacy-central/collections/leveled-reading-passages**.

This worksheet reinforces the CCSS standards of identifying the main topic and retelling key details of a text as well as using ask and answer strategies to determine the meaning of words or phrases.

After students have completed the worksheet, students will submit them. Review the worksheets for comprehension and understanding. Note that the worksheet may be used as a formative assessment tool.

At the conclusion of the lesson, tell students:

- Today, we are going to tweet. We are going to make our own Twitter post. I am going to hand each of you your own sticky note and I would like you to tweet about what the difference between the topic and main idea of a text is.

Students will hand tweets to the teacher on their way out of class.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the text of the book. Use the words to create a word search.
- Provide students with leveled passages that are differentiated to each student's reading ability. Students who are grouped in the lowest reading level may be brought to a reading table where they read the story together several times. Once students have a good understanding of what the text says, provide guidance during the activity and scaffold learning where possible.
- Students will create a *Defining the Five Parts of Art* flipbook. Students will dedicate one page of their flipbook for each of the boldfaced words in the text. Using some or all of the parts of art detailed in the text, students will design each of the boldfaced words and provide their own definition for each.

ELL Support

- Support English Language Learners by playing a game of Beach Ball Scavenger Hunt: Elements of Art Edition. Using prompts that have been written on a beach ball, students will read the prompt closest to their right thumb when being tossed the ball and find the indicated example. Prompts and questions should be related to the content in the text (i.e. find a shape or object that has a smooth surface; find and name as many lines as you can; look for all the secondary colors)
- Support ELL students by providing one-on-one learning instruction to ensure their understanding of the content. Provide reading passages that are differentiated to their individual reading level and ask comprehension questions during guided reading sessions.

Name: _____ **Date:** _____

Art Bingo

Copy the images that have been provided to you on the white board into the spaces in your card below. You may put the items in whichever box you choose. Only place one of the items in your Bingo Card (No doubling!)

A	R	T	G	O

Art Bingo Word Bank

(Teacher Use Only)

Zigzag Line

Pattern

Space

Green [yellow + blue + ?]

Vase

Circle

Flowers

Mirror

Wavy Line

Paint Brush

Triangle

Dotted Line

Orange [red + yellow + ?]

Artist

Free Space

Sculpture

Museum

Painting

Star

Straight Line

Mosaic

Square

Texture

Pencil

Mural

Name: _____ **Date:** _____

Tell Me All About It

Directions: Read your passage and answer the following questions below.

1. The title of my passage is _____

2. The topic is _____

_____

3. The main idea is _____

_____

4. Some details that support the topic are: _____

_____

_____

_____

_____

_____

_____

5. A word I would like to find the meaning of is _____

6. I think this word means _____

_____

7. I think this because _____

_____

Full STEAM Ahead!
TEACHER'S GUIDE
Math Matters

Full STEAM Ahead! is a set of guided, non-fiction books that helps early readers build vocabulary, fluency, and comprehension skills, and provides them with an engaging introduction to STEAM subjects. Readers will delight in the expertly leveled text, bold images, and relatable examples on their journey to become enthusiastic and skilled readers. The *Full STEAM Ahead! Teacher's Guide* is a balanced literacy guide that supports reading, writing, speaking and listening, and language development. Lessons are specially tailored to each *Full STEAM Ahead!* title, and include accommodations, extensions, and English language learner support.

The *Math Matters* lessons encourage students to retell the main ideas in a book, ask and answer questions about key details, and describe connections between pieces of information. Students will take part in prediction, close-reading, reflection, and extension activities while building their skills in all areas of literacy.

These lesson plans are tailored for grade 1 and include connections to core math concepts, from understanding when and how to use subtraction, to the basics of place value. Each lesson is accompanied by one or more reproducible worksheets. The titles in *Full STEAM Ahead!* are:

Science Starters

- Day and Night
- The Four Seasons
- From Seed to Pumpkin
- The Life Cycle of a Rabbit
- The Right Material for the Job
- What Makes It Move?

Engineering Everywhere

- Engineering in My Community
- How Engineers Solve Problems
- Mistakes Help Us Learn
- Testing with Models
- What Does an Engineer Do?
- What Is the Best Solution?

Math Matters

- Building Tens with My Friends
- Building with Shapes
- I See 3-D
- Place Value at Playtime
- Skip Counting My Way to School
- Subtraction in Action

Technology Time

- Parts Work Together
- Robots at Work
- Technology and You!
- Technology Then and Now
- Think Like a Computer Scientist
- What Is Technology?

Arts in Action

- Artists Use Tools
- Creating Art Together
- Creating Colors
- The Five Parts of Art
- How Do Artists Tell Stories?
- Making Art from Anything

Ontario
Ontario Media Development Corporation
Made possible with the support of the Ontario Media Development Corporation.

CRABTREE
PUBLISHING COMPANY
WWW.CRABTREEBOOKS.COM

Building Tens with My Friends

Book Synopsis

Discover different ways to build groups of ten! Read *Building Tens with My Friends* to learn how to construct sets of ten and how counting by tens helps us count to larger numbers quicker. Students will find that this book will help them get better at working with numbers and place values.

Materials

- *Building Tens with My Friends* book
- Beads
- Math journal
- *Counting Squares*
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Provide each student with thirty beads. Students will count how many beads they have and write a sentence in their math journals explaining what method they used when they counted (i.e. counting each bead individually, dividing the beads into groups of two, etc.). Teachers may find that students will most likely count the beads individually. Invite students to share some of their counting strategies.

Pose the following question:

- Do you think counting to thirty is quicker counting by tens or by ones?

Demonstrate the efficiency of counting by tens by grouping beads into bundles and subsequently counting to thirty. Explain that counting in tens is quicker than counting by ones, especially when we are counting to very large numbers.

Show students the cover of the book, *Building Tens with My Friends* and ask them what they think "building tens" means. Ask students:

- What examples can we come up with where it would help us to group objects in tens? Write student examples on the white board.

Target Skills

CCSS – Reading: Informational Text

- Identify the main topic and retell key details of a text (R1.1.2)
- Describe the connection between two individuals, events, ideas, or pieces of information in a text (R1.1.3)

Explain to students that good readers are able to make connections and retell key details of a text. Tell students:

Today, as we read, I would like you to be on the look out for connections between the information or ideas presented in the book. You will become a math wizard and be able to explain to me and your peers what this book is all about!

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Find instances within the text where connections between information and ideas exist. Identify the problem and the solution where possible. Support students in their understanding of the content by looking at pictures, reading text, and modeling some of the concepts. Students should feel confident in explaining the main topic and the key details at the conclusion of the lesson.

Prompt 1: Teacher Modeling

Turn to page 6. Read the text as a class. Using the *Counting Squares*, students will cut out ten individual squares and one large bundle of ten squares (ten frame). Use the following prompting questions:

- According to the text, what is the connection between the individual squares and the ten frame you cut out?
- How would you explain the relationship between a bundle, ten beads, and tens?

During Reading

Have students return their attention to the illustration located on page 6 of the text. Ask students which of the descriptions (bundle, tens, or ten ones) best describes the picture. Students may turn to their partner and discuss. Invite students to share their responses and provide an explanation for their reasoning.

Explain to students that the three terms are all synonymous, meaning they represent the same idea (ten individual beads put together is one bundle of ten, which is also a group of tens).

Prompts for Independent Close Reading

- Turn to page 12 and 13. Read the text. What is the problem we need to solve? What information connects the problem and the solution? What is the connection between the amount the teams need to win and the number of points the teams currently have?
- Turn to page 16 and 17. What is the connection between a bundle and individual ones? Why are some numbers considered to be "leftovers"?

Prompt 2: Teacher Modeling

Following the initial reading of the book, discuss the main topic as a class. Pose the following questions:

- What do you believe is the main topic of the book? Remember that the topic is the main subject the book is about and is usually described in a couple of words.
- What are some words that you found were repeated often throughout the book?
- Look at the pictures and illustrations. Do they help readers understand what the main topic of the book is about?

Write "counting in tens" on the white board and ask students if they agree to this statement being a reflection of the main topic of the text. Allow time for discussion and questioning.

Turn to page 8. Explain that key details support the main topic and are usually expressed as sentences. Ask students:

- How does the information found on this page of the book support the main topic?
- Why is it beneficial to count by tens?
- How do the pictures of the crayons illustrate the point being made? Try counting each crayon individually and then in tens. What did you find?

Prompts for Independent Close Reading

- Turn to page 6. What are all of the terms referring to? Notice that they all refer to one number. How does this support the main topic?
- On page 16, we learn that the term bundle only applies to objects in ten and that any number added to a bundle are a considered ones. Why is this important information? Why is the separation between ones and bundles important to the main topic?

After Reading

Students will participate in a three-step interview. Students will be separated in small groups of three and complete the following:

1. Students will label themselves as either A, B, or C.
2. Each student will answer the questions:
   What was the main topic of the book *Building Tens with My Friends*?
   What was a connection you made in the text?
3. Student A will interview B, while C records the response
4. The roles will then rotate after each interview to ensure all members of the group had an opportunity to be interviewed, and to listen and record peers' responses.

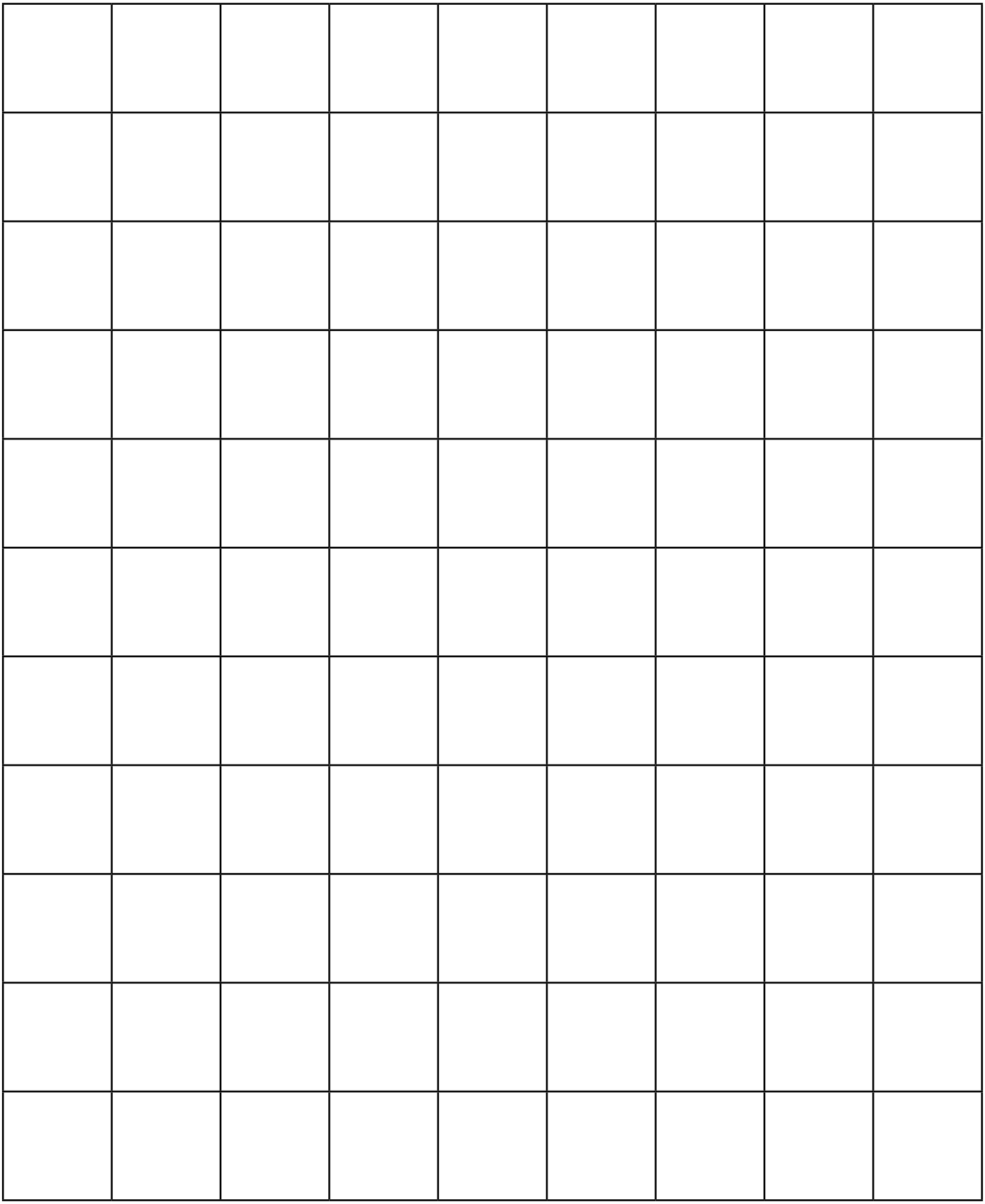
Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create a list of interview questions and use them to interview peers about the content in the text.
- During prompting, students may draw pictures which illustrate their understanding of the learning objectives and draw connections between main topic and the key details that support it.
- Invite students to write their own connection using the main topic as their guide. Students will write their own problem and illustrate it, as exemplified in the text. Students will write a statement that includes the solution to the problem and explain how they know the solution is correct.

ELL Support

- Give students objects (i.e. math blocks, paper clips, etc.) and have them demonstrate building tens and explain their understanding.
- In small groups of three, students will create a speaking "rap" about the main idea of the book, and perform the rap as a team in front of the class.

Counting Squares



Skip Counting My Way to School

Book Synopsis

What is skip counting and how is it a useful strategy for counting all kinds of numbers? Read *Skip Counting My Way to School* and follow a group of friends as they play a game on their way to school by counting forwards and backwards by twos, fives, and tens!

Materials

- *Skip Counting My Way to School* book
- *Skip Counting Chart*
- Sticky Notes
- *I am an Investigator Organizer*
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Show students the cover of *Skip Counting My Way to School* and brainstorm some ideas as to what the book will be about. Pose the following questions:

- What does it mean to skip count?
- Can we skip count by any number?
- Do you think some numbers are easier to skip by than others? Why or why not?
- What is the purpose of skip counting? Can you think of any scenarios where skip counting helps us?

Hand students the *Skip Counting Chart*. Individually or in pairs, students will provide examples of items that can be used to skip count by the corresponding number. Ask students to share some of the examples they came up with for each number.

Target Skills

CCSS – Reading: Informational Text

- Ask and answer questions about key details in the text (RI.1.1)
- Identify the main topic and retell key details of a text (RI.1.2)

Provide students with a sticky note and allow them to write a question they have about the text. Collect the sticky notes and discuss the students' questions. Discuss where answers could be found in the text and ask them:

- Why is it important to ask and answer questions about what we read?

Explain to students that asking and answering questions about a text helps us to become better readers. If we have the answers to a lot of the questions we have, it is easier to identify information and retell key details of the text.

Tell students:

Today, we are going to be text investigators! One really important job about an investigator is that they ask questions and provide answers. They also have to have a keen eye for detail so that they can retell necessary information. While we read the text, I want you to be on the look out for clues that tells us key details of what the book is about and what the main topic is. At the end of the lesson, we will ask each other investigative questions.

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Encourage students to read the text closely and to examine the pictures and illustrations. Support students by asking them about important details, and demonstrating various types of questions that may be asked about a text to better inform the reader.

Prompt 1: Teacher Modeling

Turn to page 6. Read the text and look at the image below. The author states that skipping numbers helps us to count more quickly. Ask the students the following questions:

- Why do you think that skip counting helps us to count more quickly?
- Looking at the image, which number do you think would be most suitable to skip count by? Why is this?
- Is it possible to count by fives and tens given the amount of shoes? Why would skip counting by these numbers make the least amount of sense?

Explain to students that shoes come in pairs, meaning two. Therefore, it makes the most sense to skip count shoes in twos.

Prompts for Independent Close Reading

- Turn to page 10. What is a pattern? What does the text mean when it states that when we skip count, we can start at any number? How do we know this?
- Turn to page 15. Read the text. What are some questions we can ask ourselves in order to solve the problem? Would it be best to skip count forward or backward? How do you know that the method you have chosen is the quickest?

Prompt 2: Teacher Modeling

Explain to students that the "main topic" is one or two words that describe the whole text. We can find the main topic of a text by looking at the title or for words or ideas that are repeated often.

- Read the text aloud and highlight skip count(ing) every time it appears throughout the book to reinforce how skip counting is the main topic.

Turn to page 10. Read the text. Ask students what information we learn on this page that is important to understanding skip counting. How do the pictures help represent this idea?

Demonstrate to the class how we can start counting at any number once we are able to establish what the pattern is.

Prompts for Independent Close Reading

- Turn to page 7. How do we know that we can skip count by any number? How can we prove this? Why is this an important detail to the book and the main topic?
- What details do you see on page 12 and 13? How do you know this information is important? How does it add to your understanding of the main topic?

After Reading

Students will complete the *I am an Investigator Organizer*.

Students will create three questions about important details in the text. Then, students will trade organizers with a partner and use the text to answer their partner's questions. After students have completed the organizer, they will submit them.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create and then play a word search.
- Students will share a common agreement they had during the after reading activity with the class. Students will use the following statement(s) when presenting:
  "_____ raised a good point because _____.
  We agreed that _____."
- Students will create an information page explaining how to identify a main topic and key details, using examples in the book to support their explanation.

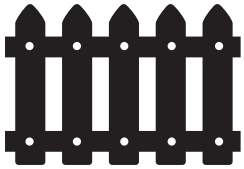
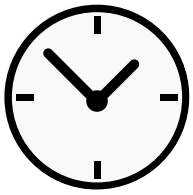
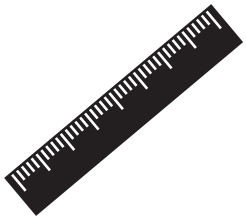
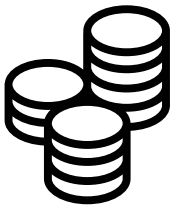
ELL Support

- Have students create their own skip counting exemplar and write an accompanying statement
- Students will illustrate a skip counting exemplar. Students will trade illustrations with a partner and guess the number that their partner based their illustration on.
- Provide students with a numbers chart when discussing number concepts.

Name: _____ **Date:** _____

Skip Counting Chart

Think of some everyday items that can be used for skip counting by different numbers. You can draw your item or write the name of it. Examples have been provided for you in each category.

Counting By	Perfect for Counting
2	 
5	 
10	 

Name: _____ **Date:** _____

Partner's Name: _____

I am an Investigator

Think of three questions about important details in *Skip Counting My Way to School*. Write them in the organizer. Beside each question, write down your thoughts about a possible answer to the question. Ask your questions to a partner and write down their responses. Make sure you include what clues from the text helped you with your answer.

Questions	What you thought/clues	What you partner thought/clues

BONUS

Retell one detail you learned from the text that you will use to help you in the future.

_____

_____

Subtraction in Action

Book Synopsis

In *Subtraction in Action*, we visit a farm and follow Leo and Angelica as they explore different parts of a farm. Throughout the text, the friends share their subtraction strategies. Students will read about subtraction clues and various strategies that they can use to figure out how many objects remain when some are taken away.

Materials

- *Subtraction in Action* book
- Math unit blocks
- *Subtraction! Subtraction! Subtraction! Worksheet*
- White board or chalkboard and markers or chalk
- Anchor chart paper

Before Reading

Activate Prior Knowledge

Provide students with math unit blocks (approximately six each will suffice).

Have students put six math blocks together. Ask students to remove or take away two of the blocks and ask how many of the blocks remain. Pose the following question:

- We just had six blocks and removed two of them, which left four remaining. What is the word that explains the process of what we just did?"

Show students the cover of *Subtraction in Action*. Explain to students that removing or taking away the two blocks was another way of saying subtracting.

Bring students' attention to the baby chicks and discuss different ideas as to why or what they have to do with the subject (i.e. the relationship between "action" and the baby chicks could allude to the daily activities on a farm).

Target Skills

CCSS – Reading: Informational Text

- Describe the connection between two individuals, events, ideas, or pieces of information in a text (RI.1.3)
- Ask and answer questions about key details in the text (RI.1.1)

Explain to students that in order to become more knowledgeable about a subject and to be more informed readers, they need to ask and answer questions about key details and be able to describe the connection between the ideas, details, or information in the text. We can find connections by looking at an event that happened (cause) and the event that follows (effect).

Tell students:

Oh no! The teacher that usually teaches the math class has forgot their lesson on subtraction. Now they have no idea what to do. They need your help to explain what they should teach. Read *Subtraction in Action* and follow the prompts so you can become an expert and save the day!

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Begin close reading of *Subtraction in Action* by assisting students in recognizing key details in a text and then move to find instances where recognizable connections exist among the information. Students will analyze the cause of content and the subsequent effect it causes in relation to mathematical content.

Prompt 1: Teacher Modeling

Turn to page 5. Read the text as a class. Ask students:

- What is the first piece of information that is important for us, the reader, to know about the chickens? Write the number ten on the white board.
- What is the second key detail that we should make note of? Write the number six on the white board.
- Is there any other information on the page that is important for the reader to know?

Guide students to read the caption below the photograph. Write "how many are missing?" on the white board. Pose the question:

- What word tells us that this will be a subtraction question?

Prompts for Independent Close Reading

- Turn to pages 14 and 15. Stop reading at "how many more baskets did Angelica pick?" What are some key details we as readers can pinpoint? What word tells us what we need to do with this information?
- Turn to pages 10 and 11. What are some important questions we can ask about the pig problem? How can we help Leo and Angelica find the number of pigs not in the mud?

Prompt 2: Teacher Modeling

Turn to page 8 and 9. Read the text as a class. Ask students:

- How many eggs did Leo and Angelica have altogether?
- What event took place that changed the original number of the eggs?

Explain to students that the five eggs falling out of the basket is considered a cause (an event that happens first).

- What has now happened because of the eggs falling out of the basket?

Explain to students that there are now five less eggs in the basket than Leo and Angelica started with; this is an effect (an event that follows the cause).

Write the definitions of cause and effect on an anchor chart paper so students may refer to it when needed.

Prompts for Independent Close Reading

- On page 10, Leo shows Angelica the pig pen. The cause is that four pigs roll around in the mud. What is the effect?
- Turn to page 12. Read the text about the cows. What is the cause? What is the effect? Describe using subtraction terms.
- Review pages 18 to 21. Use subtraction terms (look back on page 6) to describe some causes and effects with an elbow partner. (For example: The cause is three blocks were taken away from six. The effect is that three blocks are left.)

After Reading

Hand students the *Subtraction! Subtraction! Subtraction! Worksheet.* Students will be provided with scenarios in which they will determine the cause and effect of specific events. Students will also be provided with a passage in which they will answer and highlight the evidence.

After students have completed the worksheet, have them submit it. Review the worksheets for comprehension.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create a word/definition matching activity worksheet.
- Invite students to write their own subtraction statement using one of the subtraction terms on page 6. Students will create their own subtraction scenario that has elements of cause and effect and includes an illustration and mathematical statement.
- Students will work in groups to act out the subtraction equations written in the text. This may be done on a voluntary basis.
- Students will fill an effect for a given cause.

ELL Support

- When discussing or making statements about numbers, ensure that each number is represented on the board numerically ("2"), and in word form (two). Numbers can also have a visual and/or physical component (picture or modeling blocks).
- Act out the subtraction equations wherever possible for visual representation.
- Provide students with a worksheet where the cause and effect have already been underlined. Students will have to identify whether the underlined words are the cause or the effect.

Name: _____ **Date:** _____

Subtraction! Subtraction! Subtraction!

Write the **cause** and **effect** of each of the statements below.

1. Tina was carrying a tray of 10 cookies when she tripped and fell, making 6 of the cookies to crumble to the floor.

Cause: _____

_____

Effect: _____

_____

2. George's friend Timothy forgot his pencil case, so he lent him 2 of his 8 pencils.

Cause: _____

_____

Effect: _____

_____

3. Troy and Katy were carrying a bag of 18 soccer balls for their gym class when the bag ripped. 4 soccer balls rolled down the hill into the parking lot.

Cause: _____

_____

Effect: _____

_____

Read the story below and answer the questions. Highlight where in the story you found your answers.

Cousin Charlie is a handful. He throws terrible temper tantrums. Worst of all, he loves to play with ***your*** toys! He has taken your new train. You can't find him, but you see a trail of little wheels leading from your bedroom into the family room. You know there were **12** wheels on the train, because you counted them yourself. You see that there are **5** little wheels on the floor. You pick them up and run to stop Charlie. Charlie is sad that he broke your favorite toy. It's a good thing Mom can help you fix it. You tell Charlie he needs to ask next time he wants to play with one of your toys. He nods and asks you to play with some blocks. That Cousin Charlie can be quite the handful, but there is nothing better than playing blocks with your little cousin!

How many tires did Charlie take off the train? _____

_____

How many tires remained on the train? _____

_____

How did Charlie feel when he was caught playing with the train? _____

_____

What is a question you would have for Charlie? _____

_____

_____

_____

Building with Shapes

Book Synopsis

Did you know that we can find 2-D shapes in many of the objects that make up our community? Read *Building with Shapes* and follow a group of friends as they work to identify the shapes of things in their neighborhood, create new shapes by joining and separating existing ones, and discover why certain shapes are useful for building structures.

Materials

- *Building With Shapes* book
- Colored construction paper
- Wooden pattern blocks
- *Connecting With Shapes Worksheet*
- Anchor chart paper
- White board or chalkboard and markers or chalk

Before Reading

Activate Prior Knowledge

Begin lesson by asking students what a shape is. As a class, create a definition for "shape" and write it on an anchor chart piece of paper. An example definition may be:

- A shape is the form of an object or its outline.

As a class, discuss and write a list of shapes on the white board. Using colored construction paper, students will cut out each of the shapes listed and create an "All About Me Shape Wall". On each shape, students will write a name for the shape, the number of sides it has, and an object that it looks like

- (i.e. for a triangle – "My name is Terry Triangle. I have 3 sides. I look like a slice of pizza!").

Students will glue each of their shapes on an anchor chart piece of paper in order to create their shape wall.

Show students the cover of *Building With Shapes*. Ask them what they believe they will be learning about, based on the cover. Encourage students to look at the images. Ask students what shapes they see and whether they see other shapes when two or more of these shapes are joined together.

Target Skills

CCSS – Reading: Informational Text

- Describe the connection between two individuals, events, ideas, or pieces of information in a text (RI.1.3)

Explain to students that making connections among the content in the text is important. Students are thinking while they make connections, therefore, making them more engaged in the reading experience. It is important that they gain a deeper understanding of the text and they can accomplish this by establishing connections between ideas.

Tell students:

Today, we are going to be shape detectives! As we read the text, I would like you to be on the look out for shapes in the images and illustrations. Pay particular attention to how shapes can come together to create other shapes. You will be using the knowledge you gain from this book to hunt for and locate shapes throughout your classroom and school.

During Reading

Prompts can be provided by teacher during class or small group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Find instances within the text that highlight connections between two ideas or pieces of information. Help students understand how joining two or more shapes can work to create an entirely new shape, or to help an object work as it should.

At the end of the lesson, students should have an understanding of how 2-D shapes are joined in different ways.

Prompt 1: Teacher Modeling

Turn to pages 4 and 5. Read the text. Ask students:

- How do we know that a sandwich is the shape of a square?

Read the captions and then move to look at the image. Prompt students further by asking:

- What happens when a sandwich is cut diagonally down the center? What shape(s) are created by doing this?
- What is the connection between two triangles and a square? Is there any way that we could confirm this?

Provide each student with two wooden geometric triangles. Students will place the triangles together in order to demonstrate the connection described in the text.

Prompts for Independent Close Reading

- Turn to page 14. Read the text. What is the connection between the triangles and circles? What do they work to accomplish? Why do you think the dome is strong enough to hold a lot of students? Do you think joining shapes helps make objects stronger? Why or why not?
- Turn to page 17. Look at the images of the school and the playground. What do you notice about these images? How many different shapes are you able to identify? What is the connection between all these shapes and the objects we use in the images? Would these objects exist without combining the shapes together?

After Reading

Hand students *Connecting With Shapes Worksheet*. Students will be provided with various combinations of shapes. They will connect the shapes to build an object that is familiar to them. Students will then describe the connection between these shapes and their drawing.

Students will demonstrate that they are able to make, identify, and describe connections between shapes.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the book. Use the words to create a scavenger hunt.
- Provide students with blank outlines of shapes and have students color shapes inside the outlines that could possibly be combined to make that shape (i.e. for an outline of a circle, students may choose to draw two semi-circles or six triangles).
- The *Connecting With Shapes Worksheet* may be modified by providing students with the combination of shapes and students identifying the shapes used to create the object in question.

ELL Support

- Provide students with shape blocks or modeling clay. While reading through the text, students will model the 2-D shape examples provided in the book in order to help them understand the concepts and connections being drawn upon.
- Have students join 2-D shapes together using blocks and explain, in their own words, how they fit together to make new shapes.
- Draw shapes on an anchor chart piece of paper and illustrate as many ways as possible that a shape may be formed by one or two shapes put together (i.e. a square can be formed by putting two triangles together or three rectangles).

Name: _____ **Date:** _____

Connecting With Shapes

In the chart below, draw a familiar object with the provided shapes. Look around the classroom or take a walk around the school to get some ideas! Describe the connection between the shapes in the space provided.

Shapes	Object	Describe the Connection
		The circle and the triangle can be joined together to make an ice cream cone.
		
		
		
		
		
Bonus: Create your own!		

I See 3-D

Book Synopsis

Did you know that many 3-D shapes are made up of one or more 2-D shapes? In *I See 3-D*, we follow friends Talia and Dante as they explore a carnival in search of 3-D shapes that are disguised as familiar objects. Students will read about the difference between 2-D and 3-D shapes and how 3-D shapes take the form of many objects we use in our daily life.

Materials

- *I See 3-D* book
- *Do We Connect? Worksheet*
- *The Carnival Activity Sheet*
- White board or chalkboard and makers or chalk

Before Reading

Activate Prior Knowledge

Begin the lesson by drawing a rectangle on the white board and holding up a Kleenex box (you may use an alternative three-dimensional object). Ask students to think-pair-share which object is two-dimensional, and which one is three-dimensional with their elbow partner. Invite students to share their responses and reasoning with the class.

Show students the cover of *I See 3-D* and brainstorm some ideas as to what the book will be about. Pose the following questions:

- What does it mean if something is three-dimensional?
- What three-dimensional objects are shown on the cover page?
- Can anyone tell me the name for the three-dimensional objects we see?
- What other three-dimensional objects can you think of?

Teach students the following 3-D shape rhyme to help them connect to the text. Students will create their own rhyme at the conclusion of the lesson:

3-D shapes are fat not flat, a cone is like a party hat,

A sphere is a bouncy ball, a prism is a building tall,

A cylinder is like a can of pop, a cube is like the dice you drop,

3-D shapes are here and there, 3-D shapes are everywhere!

Target Skills

CCSS – Reading: Informational Text

- Describe the connection between two individuals, events, ideas, or pieces of information in a text (RI.1.3)
- Use the illustrations and details in a text to describe its key ideas (RI.1.7)

Explain to students that readers are able to gain a deeper understanding of a text when they make authentic connections. We can make text-to-self connections, text-to-world connections, or text-to-text connections.

While we read, we are going to use the illustrations and details in our text to describe its key ideas and to help us make those important connections so we can become more knowledgeable about three-dimensional shapes!

While we are reading, ask yourself, what does this remind you of in the real world? Does anything in this text remind you of anything in your own life? What connections are being made between pieces of information in the text itself?"

Tell students:

Today, we are going to be architects! Architects use 3-D shapes to make objects, such as buildings, interesting. While we read, I See 3-D, think about what three-dimensional shapes you would use if you were asked to create something for the carnival.

During Reading

Prompts can be provided by the teacher during class or small-group read aloud. They can also be provided prior to students' independent reading.

Close Reading Prompts

Begin close reading of *I See 3-D* by assisting students in finding instances where recognizable connections exist among the information. At the end of the lesson, students will understand that we can find two-dimensional shapes in many three-dimensional objects.

Prompt 1: Teacher Modeling

Turn to pages 8 and 9. Read the text as a class. Direct students' attention to the image of the rectangular prism. Encourage students to ask questions in order to find connections between information. Ask questions such as:

- What do you notice about the faces of the rectangular prism?
- What parts of the prism are similar to those of a 2-D rectangle?
- Why do you think that a rectangular prism is a 3-D object?

Explain to students that there is a connection between the name of the 3-D shape and the type of 2-D shapes that can be found within it. A rectangular prism gets its name because of the rectangle faces that it is made up of.

Prompts for Independent Close Reading

- Turn to pages 10 and 11. What 3-D shape is being described? Draw your attention to the name of the shape. What connection is there between the name and the type of 2-D shape that comprises its only faces? Can you think of anymore objects that are cylindrical?
- Turn to page 14. Notice how a sphere does not have any defined faces. What does this mean? Can we find any two-dimensional shapes in a sphere? What objects are similar to a sphere?

Prompt 2: Teacher Modeling

Explain to students that authors use illustrations and details to show information. Some of those details can be found in the **captions** which are statements about what is happening in the image. Turn to pages 16 and 17 in the text. Read the captions and look at the images. Ask:

- What details support the fact that a cube is a 3-D shape?
- How do the images deepen our understanding? What do all the objects have in common?
- What key ideas are being supported within these two pages?

Prompts for Independent Close Reading

- Turn to pages 18 and 19. Look at the images and captions below each shape. Without reading the main content on page18, what idea is being supported by the details? Compare the image of the sphere and cone. What is different between the two? How do the details support our understanding?
- Turn to page 12. What are the key details being supported? Using the images and captions only, how do you know this?

After Reading

Hand students *Do We Connect? Worksheet* and *The Carnival Activity Sheet.* In *Do We Connect?,* students will determine whether or not there is a connection between the two items shown. If they believe there is a connection, they will indicate how those two items are connected. In *The Carnival*, students will read a friendly letter and complete a picture using the information found within the passage.

After students have completed both worksheets, have them submit them. Review the worksheets for comprehension and ensure that they have completed the work in a way that demonstrates that they are confident in the standards set out in this lesson.

With an elbow partner, students will create their own rhyme about 3-D shapes. Invite students to share their creations with the class.

Accommodations and Extensions

- Review the high frequency and academic vocabulary found on page 2 of the text. Use the words to create a mix and match activity page.
- Working in pairs, students will draw a detailed image and provide that image to their peer. Once provided with their peer's drawing, they will then write a detailed letter that explains what they believe is happening in the image.
- Invite students to design their own building or object using 3-D shapes. Students will draw their creation and label each 3-D shape that they have incorporated into their design.
- The passage provided to each student may be leveled based on a student's abilities

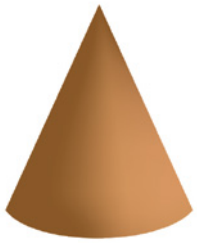
ELL Support

- Introduce a "shape bag" into the lesson. At the conclusion of the text, have students feel the shapes in a bag without looking (use 3-D wooden blocks). Students will try and identify each shape using only their sense of touch. Discuss how each of the shapes feel, asking questions such as: does it have pointy corners? Does it feel round? Are there a lot of flat faces?
- Provide each student with a 3-D shape (use 3-D wooden blocks). The class will sing the following song to the tune of "If you're happy and you know it". Repeat the song replacing the shape until each student has had an opportunity to stand:
  If you are holding a cube stand up, if you are holding a cube stand up, if you are holding a cube, if you are holding a cube, if you are holding a cube stand up!

Name: _____ **Date:** _____

Do We Connect?

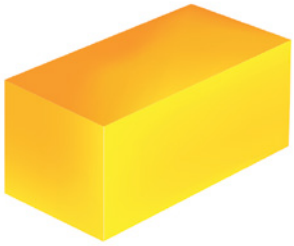
Describe the connection between the objects below. If you believe there is no connection, draw a line through both of the objects.



_____

Connection: _____

_____



_____

Connection: _____

_____

_____

Connection: _____

_____

Name: _____ **Date:** _____

Read the letter that Talia wrote to her grandmother about her time at the carnival. Then draw a picture about carnival using the information you learned from her letter.

Dear Grandma,

I am enjoying my time at the carnival!

Today, my friend Dante and I searched for all the 3-D shapes we could find. Did you know that 3-D shapes are all around us?

We first bought our tickets from a ticket booth that reminded me of a rectangular prism. Dante and I bought as many tickets as we could because we wanted to make sure we got on all the rides. My favorite ride is the Ferris wheel. I went on it three times. When I am at the top I feel as though I could touch the clouds! Dante wanted to go on the roller coaster but that makes me feel sick.

Dante loves to play the carnival games. He always plays the game where he has to knock down the cans. They are like cylinders. He has won so many prizes already. He even won me a prize! I picked out a large stuffed bear. I can't wait for you to see it.

Mom said that we could each have a treat, so I had some cotton candy and Dante had bubble gum ice-cream. Did you know that cotton candy and ice-cream are held in cones?

I can't wait to see you next week and tell you more about my time here. Next time I would like to take you here. Maybe you could come on the jumping castle with me! They are made up of many 3-D shapes.

Love,
Talia

Name: _____ Date: _____

The Carnival

Place Value at Playtime

Book Synopsis

Practice counting tens and ones with friends Julio, Mia and Christopher! In *Place Value at Playtime*, readers will follow along as the friends work to bundle objects together and determine the best method for counting the total number of each item. Learn how place value charts can make counting easier as we add and subtract tens and ones.

Materials

- *Place Value at Playtime* book
- Marbles
- Math journal
- White board or chalkboard and markers or chalk
- Chart paper
- *I Can Write Questions About a Story Worksheet*

Before Reading

Activate Prior Knowledge

Provide students with marbles (approximately thirteen will suffice but number may be altered depending on resources). Invite students to work with their elbow partner if needed. Ask students:

- If I were to ask you to bundle the marbles, how many marbles would you group together?

Invite students to demonstrate a bundle by grouping ten of the marbles together. Ask students:

- Does anyone know the term we would use for the remaining three marbles?

Explain to students that ten is a bundle of ten ones. Numbers that are not part of the bundles (i.e. leftovers), are ones. Thirteen is a bundle of one with three leftover.

Show students the cover of *Place Value at Playtime*. Explain to students that a **place value** is the value of its digit based on its place in a number. Write the numbers 76, 67, 43, and 34 on the white board and ask students to order them from greatest to least. Ask students, "how do we know that 76 is the greatest number? How do we know that 43 is larger than 34 even though they contain the same digits?"

Write the following song on a piece of chart paper and sing it with the class:

I don't know but I've been told, tens are tall, and ones are small,

First you count up all the tens, then add the ones on to the end

Target Skills

CCSS – Reading: Informational Text

- Ask and answer questions about key details in a text (RI.1.1)

Tell students:

Today, we are going to ask and answer questions about our informational text. Asking questions about what we read is something good readers do in order to understand the information better. The book we are looking at today is *Place Value at Playtime*.

We can ask questions before, during, and after we read. Look carefully at the cover page of the book and think about the title. With your elbow partner, create and discuss some questions you have about the story before we begin reading. Discuss and share the questions as a class.

Have students choose two of the questions shared and write those questions in their math journal. Students will read the text and write responses to their questions in their math journal.

During Reading

Close Reading Prompts

Prompts can be provided by teacher during class or small-group read-aloud. They can also be provided prior to students' independent reading.

Explain how to formulate questions that are meaningful and speak to the key details of the text. Good questions encourage readers to go back to the text to answer it and help readers understand the material and/or subject matter. A good question can also be one about what the reader is still wondering about. Questions must start with *who, what, when, where, why* or *how*. Answers must incorporate text evidence.

Prompt 1: Teacher Modeling

Turn to pages 10 and 11. Read the text as a class. Explain to students that it is important that we ask questions about the content of the text. Content questions aim to deepen our understanding compared to surface level questions (i.e. where are Mia, Julio and Christopher playing, doesn't assist us in our understanding of place values). Write the following question on the white board:

- How do the charts help organize the information and help the reader understand the concept of "tens" and "ones"?

Remind students that good answers, incorporate evidence from the text. Have students turn to their elbow partner and discuss and write down their answer in their math journals. Invite students to share their responses.

Prompts for Independent Close Reading

- Turn the page 14. Think about a question that would help us to understand why it is useful to use a chart to count by tens. Look at the one's column represented in the image. Write a question that reflects the change in the one's column when we count by tens.
- Turn the page 16. What kind of question could we write that would compare how we add and subtract? Read your question to a partner. Do you think your question would deepen our understanding of place values?

After Reading

Students will re-read their original questions in the "before reading" activity. Students will write a response to each of their questions. Students will reflect on the type of question they asked and consider whether it was a surface level question or a content question.

Students will complete *I Can Write Questions about a Story Worksheet* and submit them. Review the worksheets for comprehension and ensure that they have asked content level questions rather than surface level questions. Worksheet may be utilized as a formative assessment tool.

Accommodations and Extensions

- Review the high frequency vocabulary found on page 2 of the text. Use the words to play "Oh, No!" Each of the high frequency words will be written on an individual card and placed in a container. Students will pull a card and read the word reflected on it. If they read the word correctly, they get to keep the word. When an "Oh, no!" card is pulled, they must place all their cards back in the container. Whoever has the most cards at the end of the game, wins! Students may play in pairs or in threesomes.
- Working in pairs, students will write a statement about information that can be found within the text (i.e. charts help us to show how many bundles of ten and leftover ones are in a number). Partners will write a question that represents the statement as an answer.
- Students will create their own lesson on the importance of asking good questions. Students will answer the following questions and provide their own examples to support their reasoning: Why does a good reader ask questions? What makes a good question? How do we know that someone has provided a good answer? What is the difference between a surface level question and a content question? (Students may add questions to their lesson.)

ELL Support

- Support English language learners by providing students with manipulatives. Students will demonstrate their understanding of the content by mirroring each example in the book with their given items.
- Invite students to create their own place value example. Students will draw their items and represent their images in a numbers chart.

Name: _____ Date: _____

I Can Write Questions About a Story

Write questions that can be answered by reading *Place Value at Playtime*.

Who: _____

_____

What: _____

_____

Where: _____

_____

When: _____

_____

Why: _____

_____

How: _____

_____