Love Storybook STEM?

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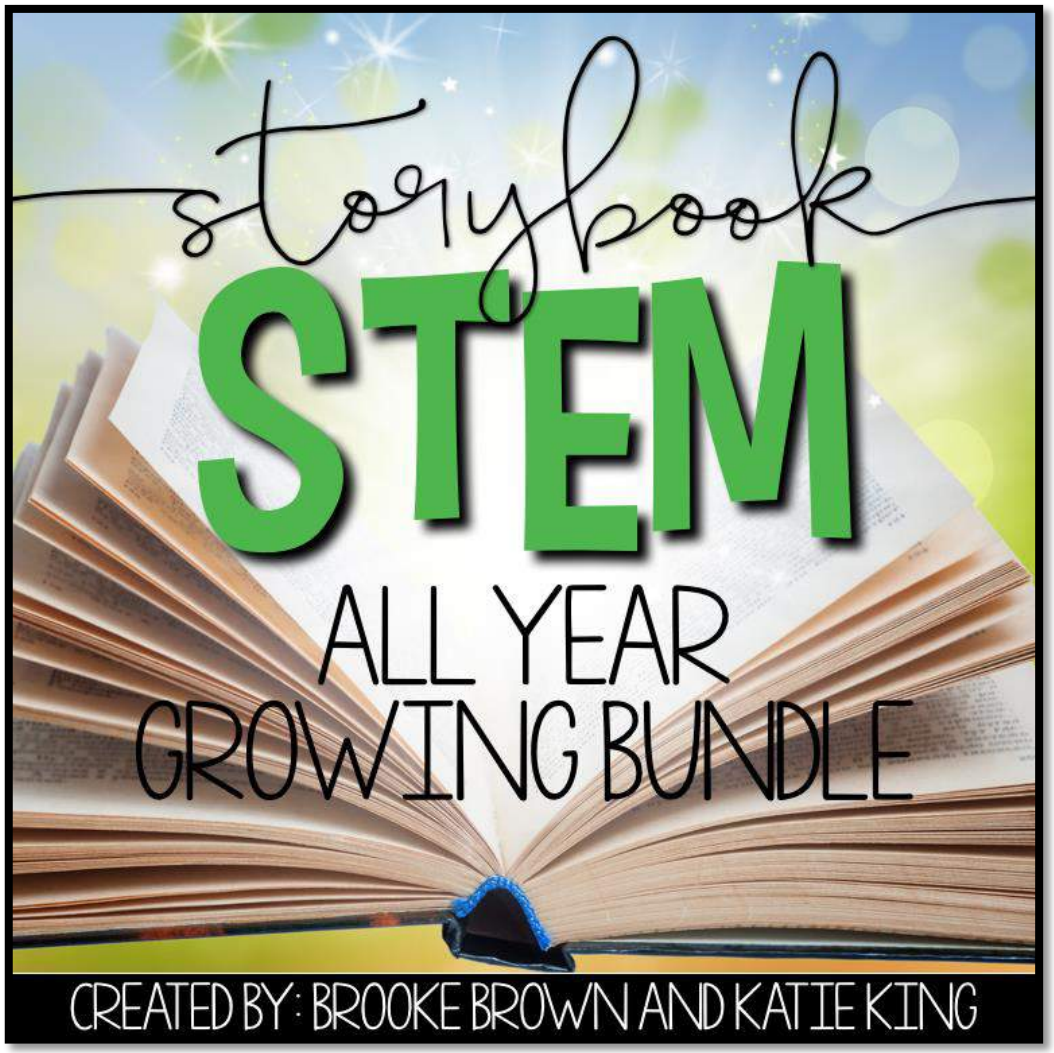
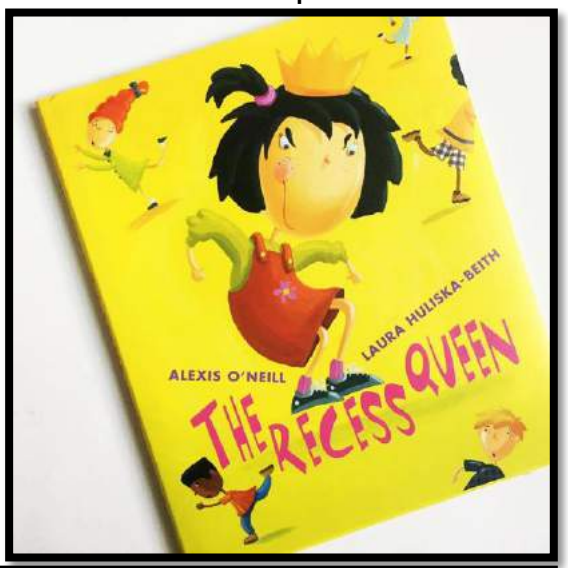
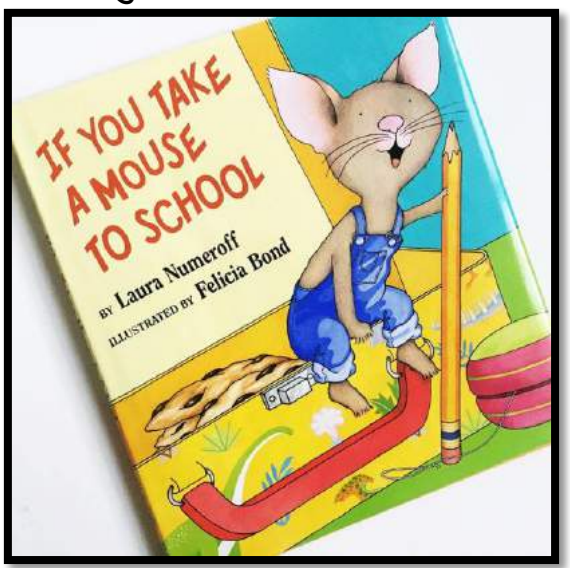
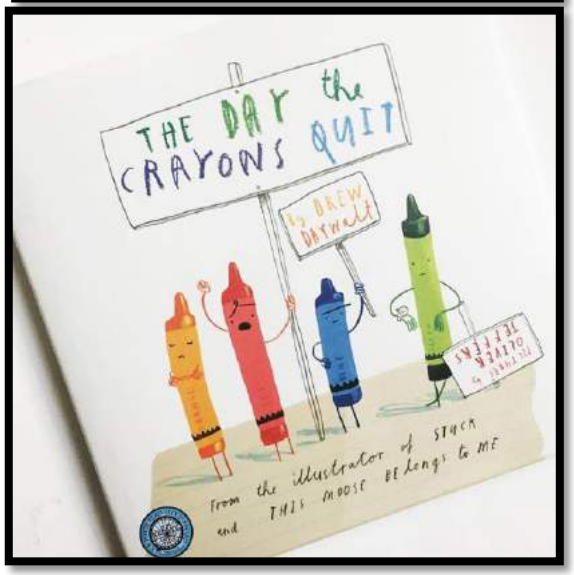


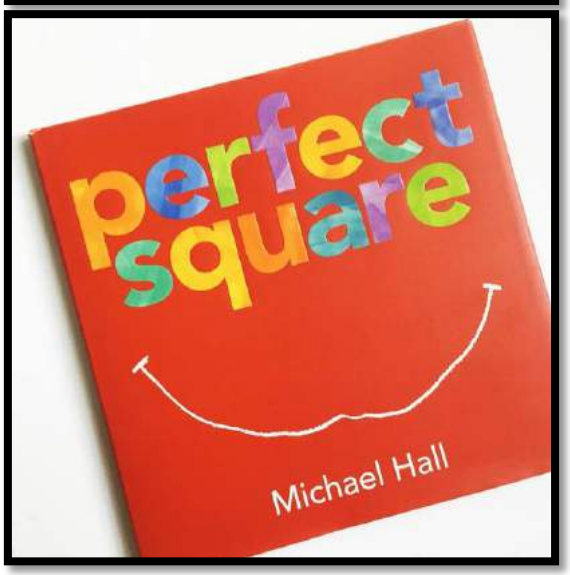
September
BOOK SELECTIONS

Click the pictures below to purchase each book through Amazon Affiliate links on my website.



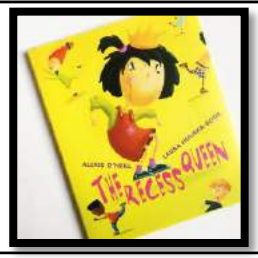
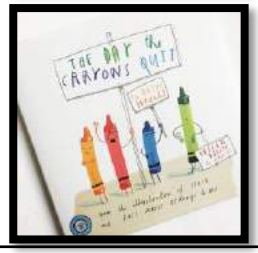
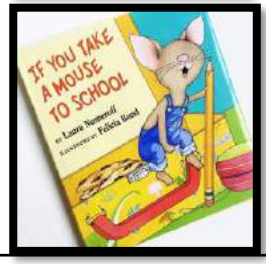
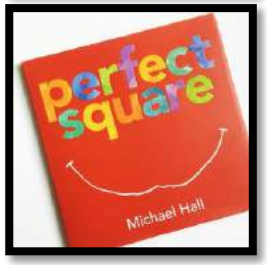






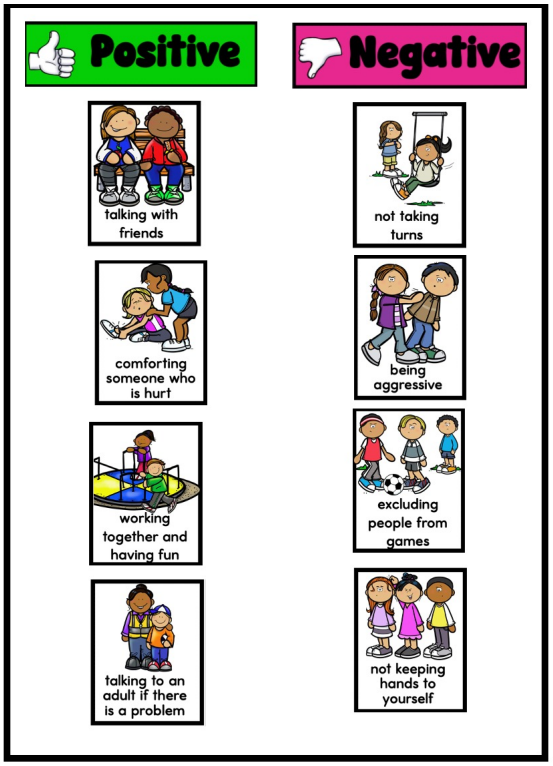
contents

September Storybook STEM

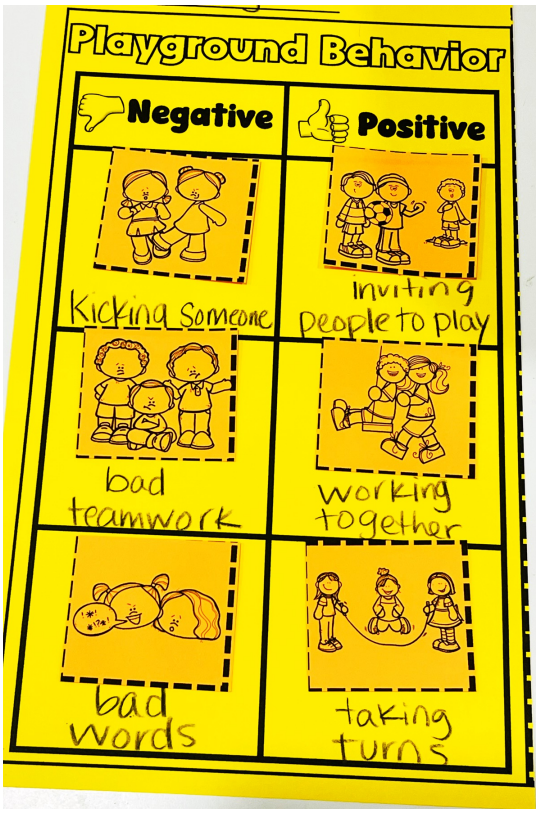
Read Aloud (20 minutes)	Comprehension and Grammar (30 minutes)	Vocabulary (30 minutes)	Math (10 minutes)	STEM Whole Group Intro (10 minutes)	STEM Challenge (40 minutes)	STEM Whole Group Reflection (10 minutes)
	Characters Change & How to be a Recess Queen	4 vocab words: charged, snarled, amused, gaped	Skip Counting	•Share challenge and introduce materials and vocabulary •Discuss playground features and how they use simple machines.		•Share successes, struggles and improvements •Review science, engineering, and math skills that were practiced
	Problem and Solution & Speech Bubbles	4 vocab words: workload, congratulate, stubby, occasional	Capacity	•Share challenge and introduce materials and vocabulary •Discuss crayon boxes and ways that we can improve them. Discuss volume and capacity.		•Share successes, struggles and improvements •Review science, engineering, and math skills that were practiced
	Describing Characters & If/Then Scenarios	4 vocab words: experiment, tuck, probably, chances	Schedules	•Share challenge and introduce materials and vocabulary •Discuss mazes and magnetic forces (attract/repel).		•Share successes, struggles and improvements •Review science, engineering, and math skills that were practiced
	Sequence of Events & Learning a Lesson	4 vocab words: babbled, shred, shatter, confining	Partitioning Shapes	•Share challenge and introduce materials and vocabulary •Discuss 2D and 3D paper sculpture techniques.		•Share successes, struggles and improvements •Review science, engineering, and math skills that were practiced

COMPREHENSION

1. Recess Queen lends itself naturally to a lesson about how we should treat people on the playground. I have included eight cards, but students will most likely have their own ideas to add to the chart!

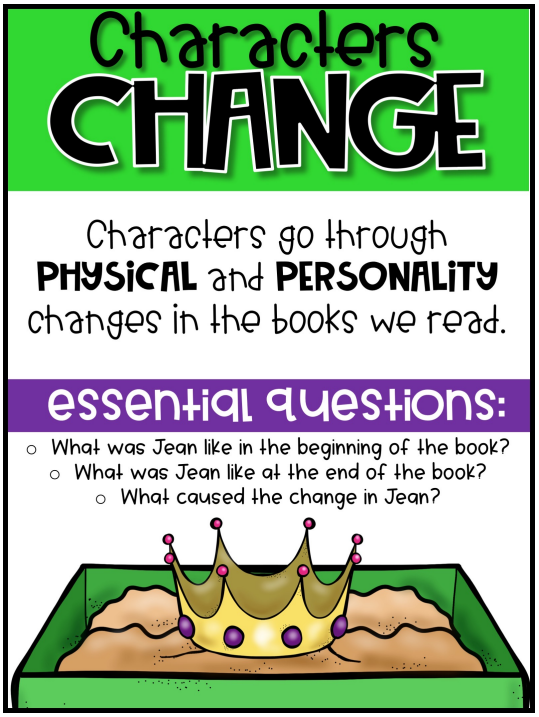


2. Students should complete the printable that mirrors the class anchor chart. There is enough room in each box for students to label the behavior.

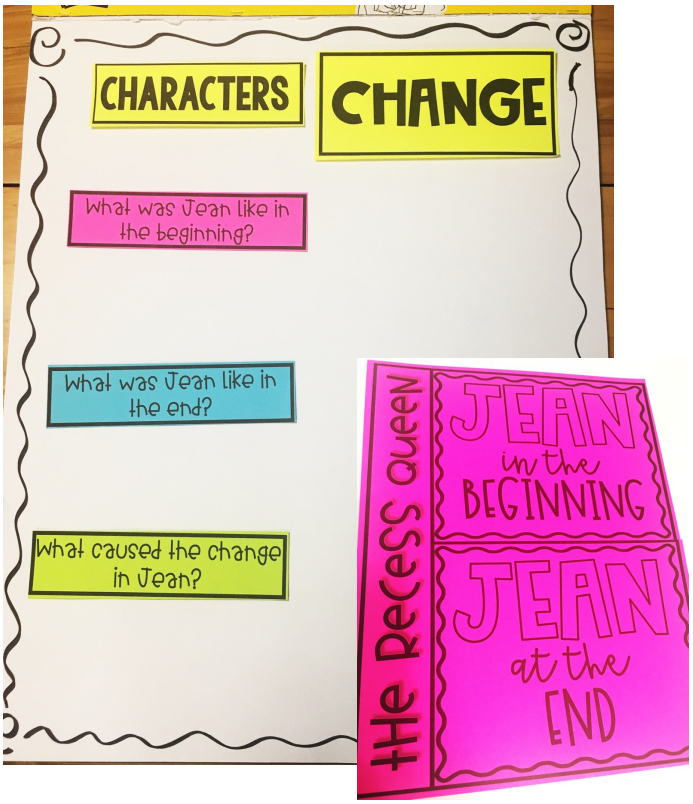


COMPREHENSION

3. After you have read the book, discuss changes that characters can go through in a book. Talk to students about the changes that we go through in our own lives and make connections to the Recess Queen!

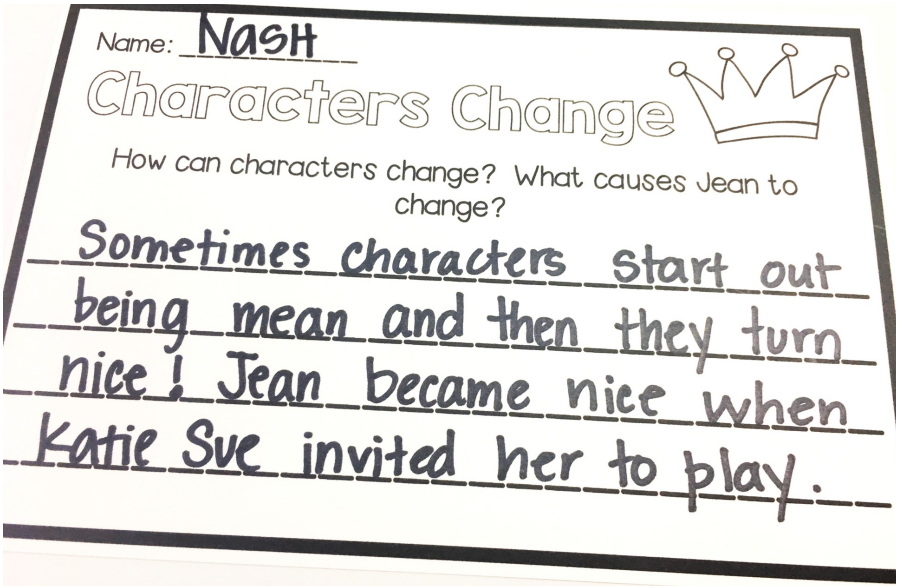


4. Make a class anchor chart to dive deep into why Jean changes throughout the book. Students should complete the flip flap with you while you make the chart.

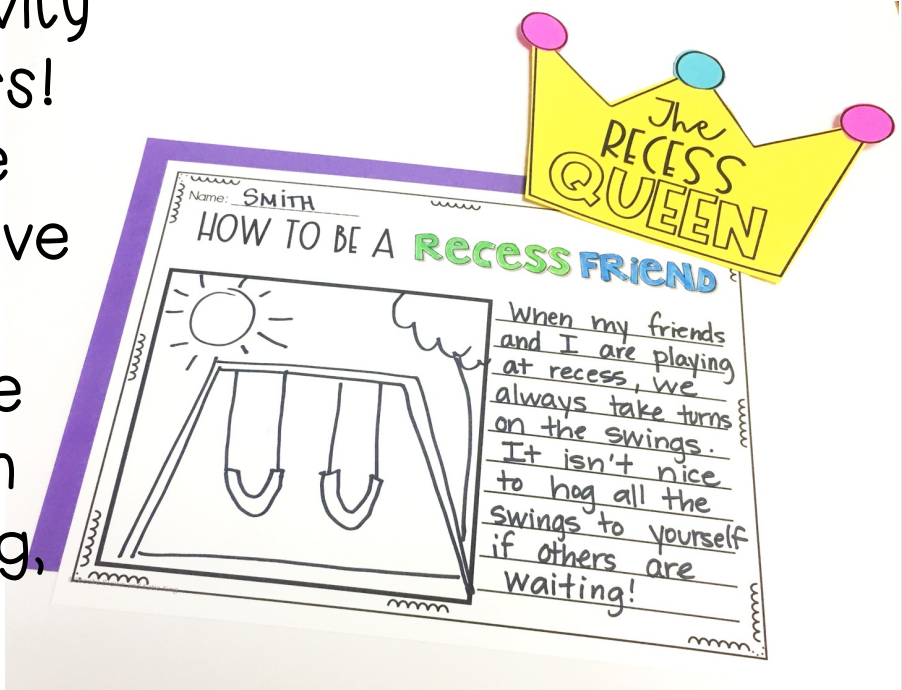


COMPREHENSION

5. Have students write about how characters change and why Jean changed.



6. Optional Extension Activity for High Flyers! Go over the poster and have students complete the simple crown craft, drawing, and writing!



Dig Deeper Into the Text!

Teacher Questions for RECESS QUEEN

How did the illustrator show that Jean is mean on the first page?

Is the word "'em" proper grammar? It is the shortened version of what word? Why did the author shorten the word?

On the page where Jean is on top of the slide, what observations can you make based on the drawings?

Have you ever been the new kid? How did it make you feel?

It seems like sometimes the author makes up words to keep with the rhyme. Can you find examples of this strategy?

No one had ever asked Jean to play. Do you think Mean Jean was always so mean?

Is Katie Sue the only friend that Jean makes?

TEACHERS: PRINT ON COLORED PAPER AND LAMINATE. USE THIS BOOKMARK YEAR AFTER YEAR TO HELP EXTEND STUDENTS' THINKING!

INTENDED USE

Negative

Positive

not taking turns

being aggressive

excluding people from games

not keeping hands to yourself

talking with friends

comforting someone who is hurt

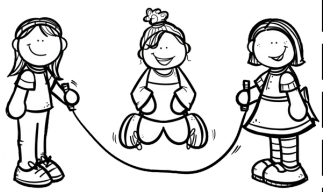
working together and having fun

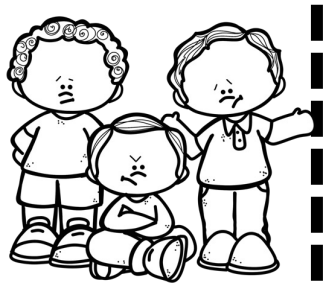
talking to an adult if there is a problem

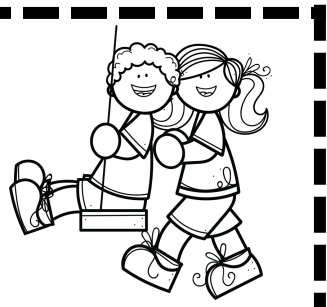
Name: _____

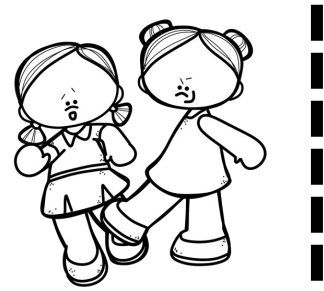
Playground Behavior

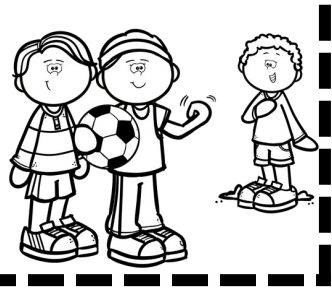
Negative	Positive









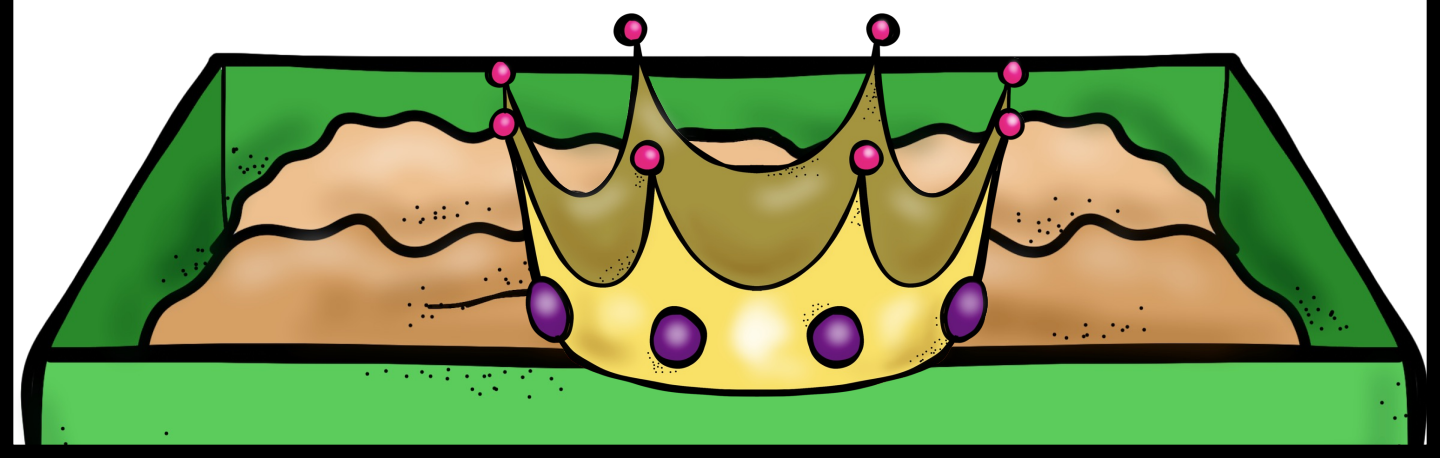


Characters CHANGE

Characters go through physical and emotional changes in the books we read.

Essential Questions:

- What was Jean like in the beginning of the book?
- What was Jean like at the end of the book?
- What caused the change in Jean?



CHARACTERS

CHANGE

What was Jean like in the beginning?

What was Jean like in the end?

What caused the change in Jean?

The Recess Queen

JEAN in the BEGINNING

JEAN at the END

Name: _____

Characters Change

How can characters change? What causes Jean to change?

Name: _____

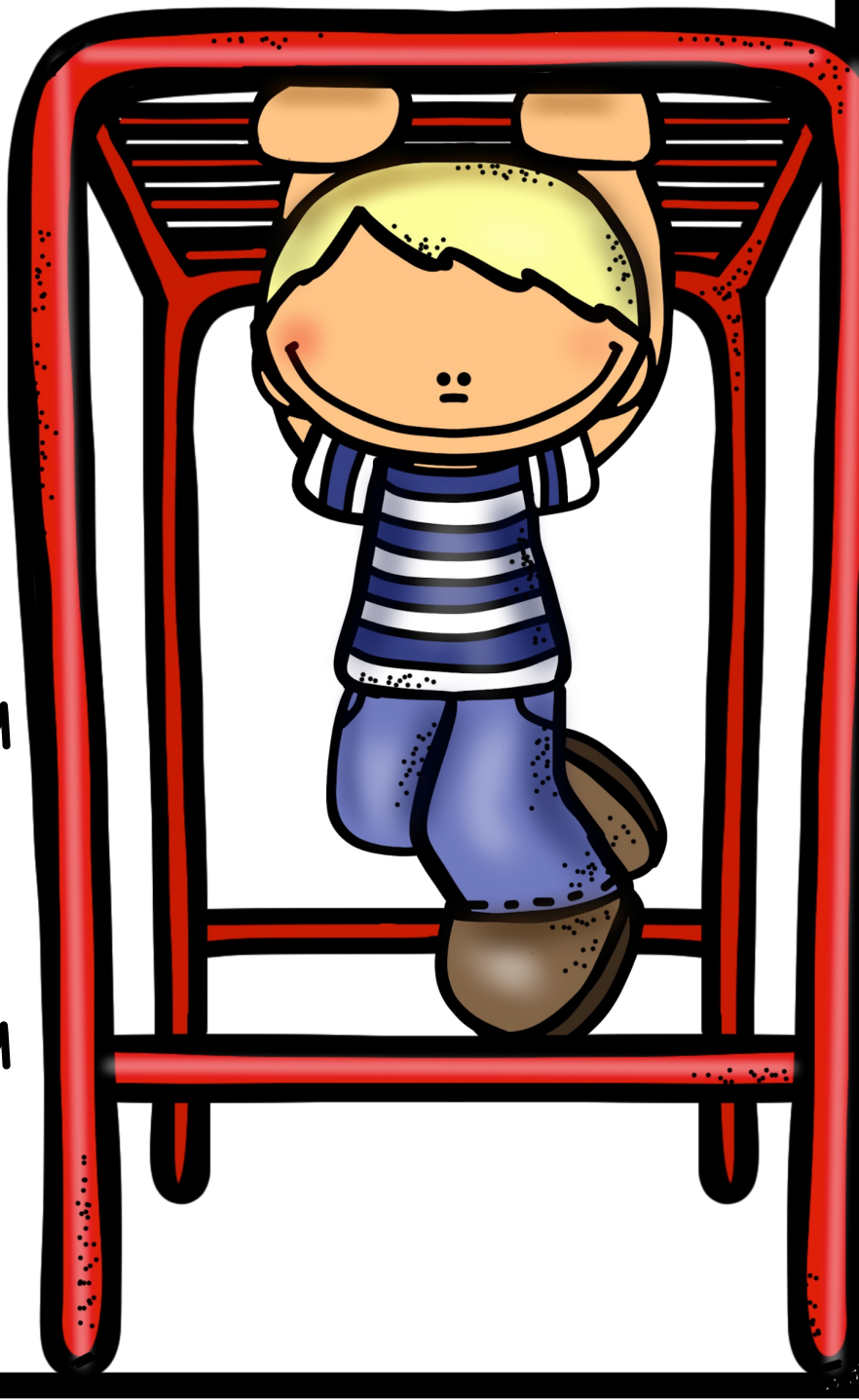
Characters Change

How can characters change? What causes Jean to change?

MAKE A CONNECTION

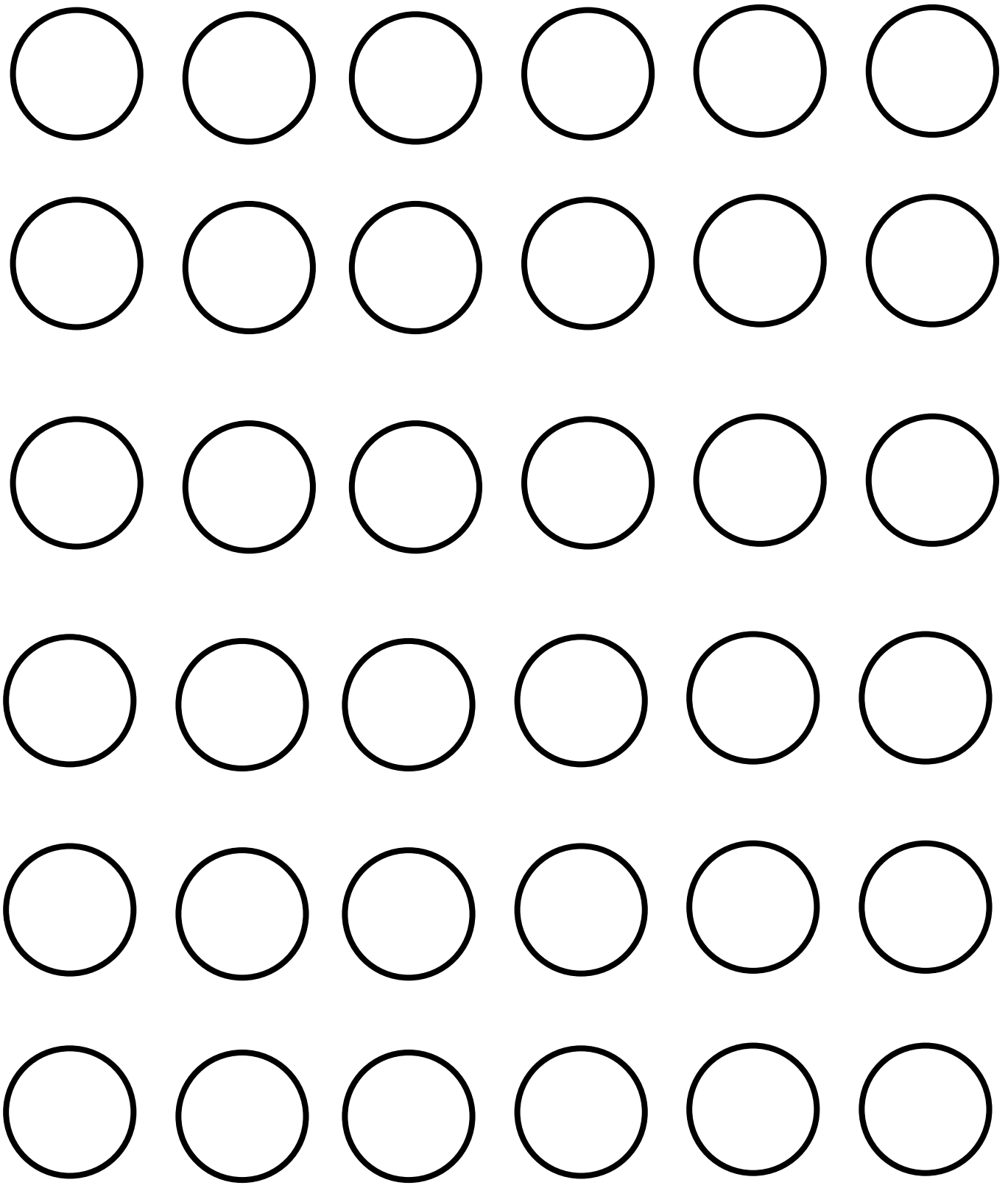
What did you learn from Mean Jean and Katie Sue?

How can you relate to this lesson? How can you be a recess friend?



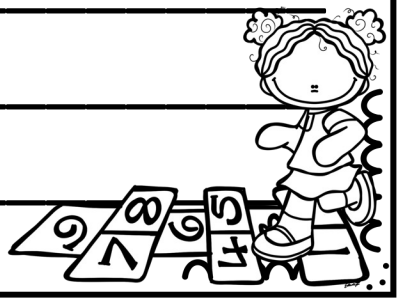
Each student needs a crown on yellow paper

Each student needs three "jewels"



Name: _____

How to be a Recess Friend



charged

ran forward with force

snarled

growled angrily

amused

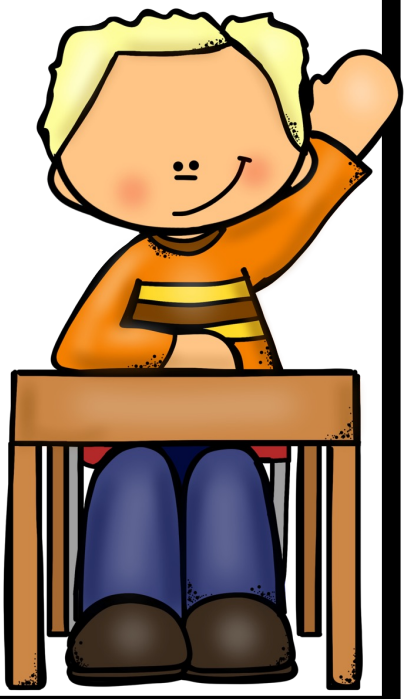
found something funny

gaped

stared with mouth open

Teacher Talk

*After going over the definitions, teachers can use the cards in all kinds of ways. Have students pair up. Put one of the cards up on the projector and ask the students to come up with a sentence. Another option would be to have the students act out the words together.



TEACHERS: PRINT ON COLORED PAPER AND HAVE STUDENTS HOLD UP. USE THIS AS A QUICK WAY TO GAUGE UNDERSTANDING! SCAN THE ROOM TO LOOK FOR THE COLOR YOU ARE LOOKING FOR!

charged

ran forward with force

charged

ran forward with force

charged

ran forward with force

charged

ran forward with force

snarled

growled angrily

snarled

growled angrily

snarled

growled angrily

snarled

growled angrily

amused

found something funny

amused

found something funny

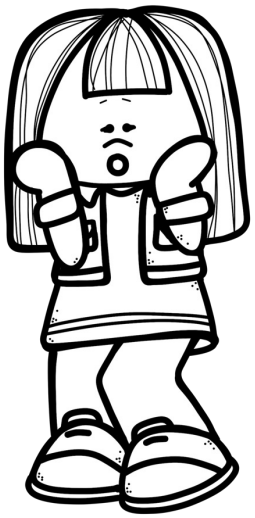
amused

found something funny

amused

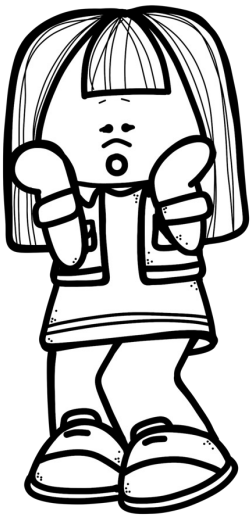
found something funny

gaped



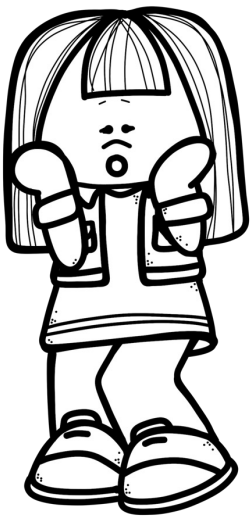
stared with mouth open

gaped



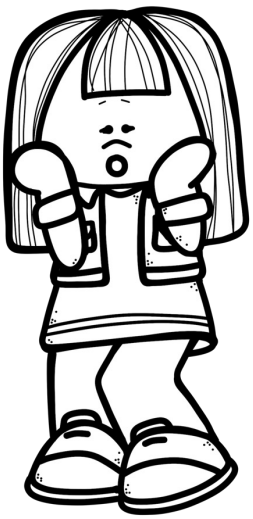
stared with mouth open

gaped



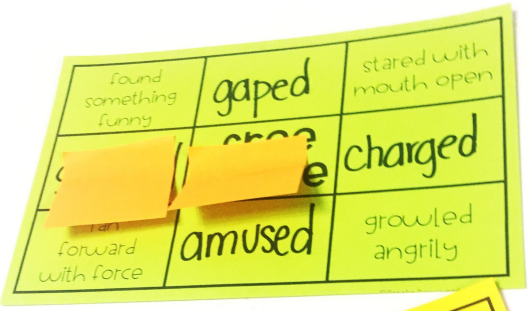
stared with mouth open

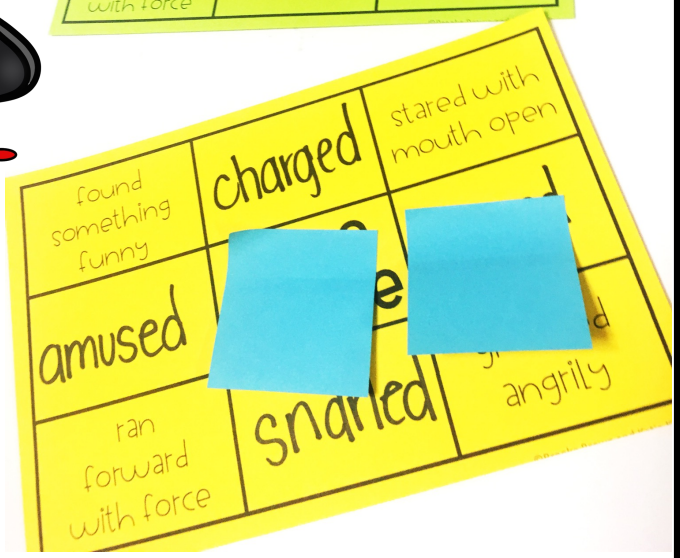
gaped



stared with mouth open

Vocab 3-IN-A-ROW





Directions for Set-Up: Each player needs a game board. Students fill in the empty spaces with their four vocabulary words. The students also need "Markers" of some kind to cover the words or definitions.

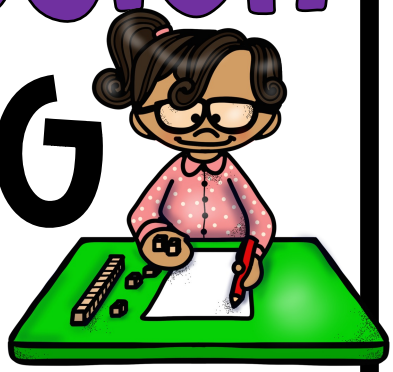
Directions to Play: Teacher will call out either a word or a definition. The students should cover up the matching square. For example- Teacher "amused" Student covers up " found something funny." When a student has three in a row, they yell out "Three in a Row!"

found something funny		growled angrily
	Free space	
stared with mouth open		ran forward with force

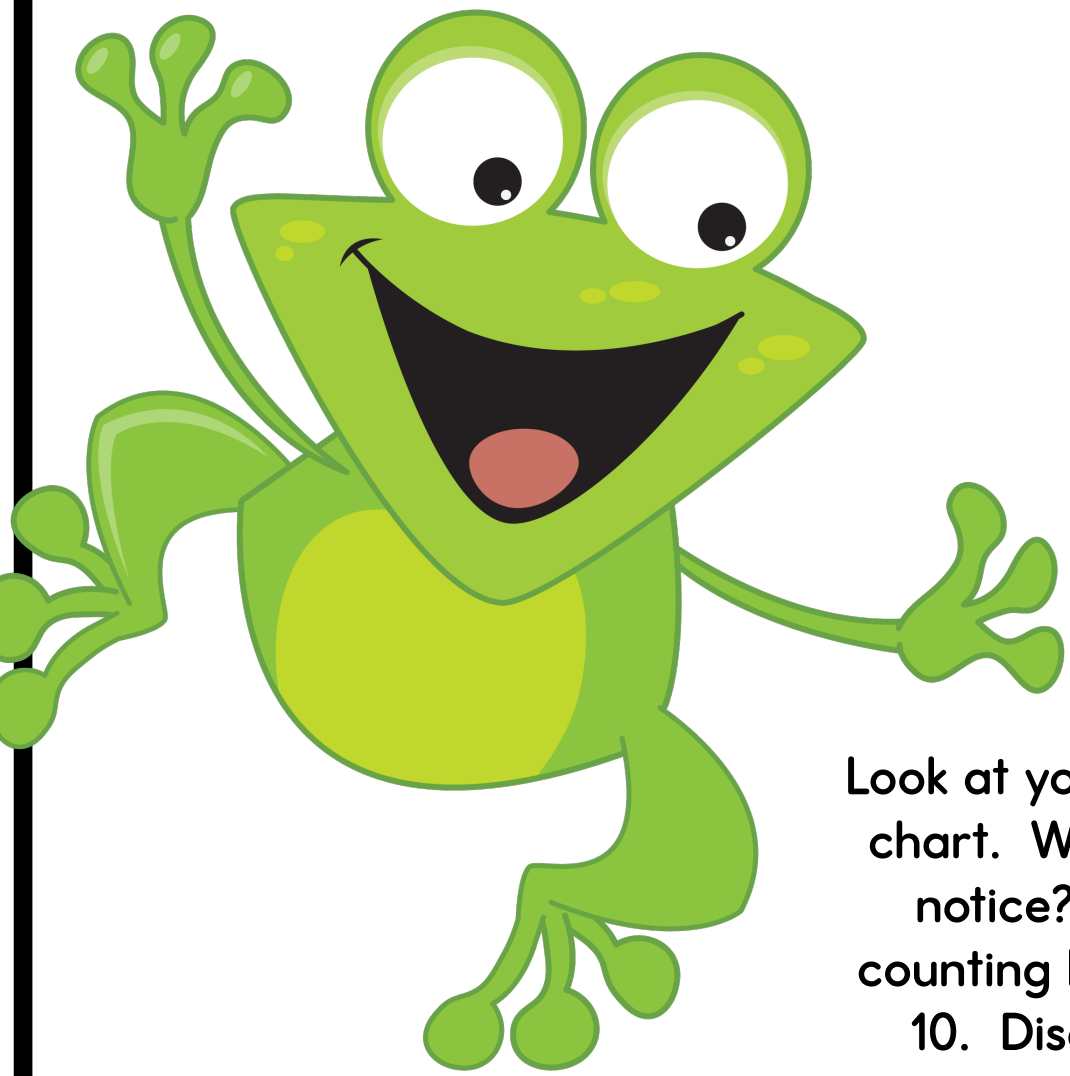
found something funny		stared with mouth open
	Free space	
ran forward with force		growled angrily

Math Connection

SKIP COUNTING



When counting forwards or backwards by a number other than one, you create a pattern!



2

5

10

Look at your class 100 chart. What do you notice? Try skip counting by 2, 5, and 10. Discuss your observations.

STEM CHALLENGE: PAPER PLAYGROUND

NGSS Standard Alignment: 2-PS1-3: Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object, K-PS2-1: Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object, K-PS2-2: Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or pull, K-2-ETS1-1: Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool, K-2-ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. Science: Simple Machines

Challenge Description: Students will work in groups of 3-4 and use only toilet paper/paper towel rolls, construction paper, tape, and scissors to construct a working paper playground that contains at least two simple machines. They may cut and assemble the pieces however they choose to create the different playground features. They may also use gummy bears to "test" the different features of their playgrounds such as slides, swings, seesaws, tunnels, and merry-go-rounds. Students will learn about some of the simple machines such as levers and ramps as they construct.

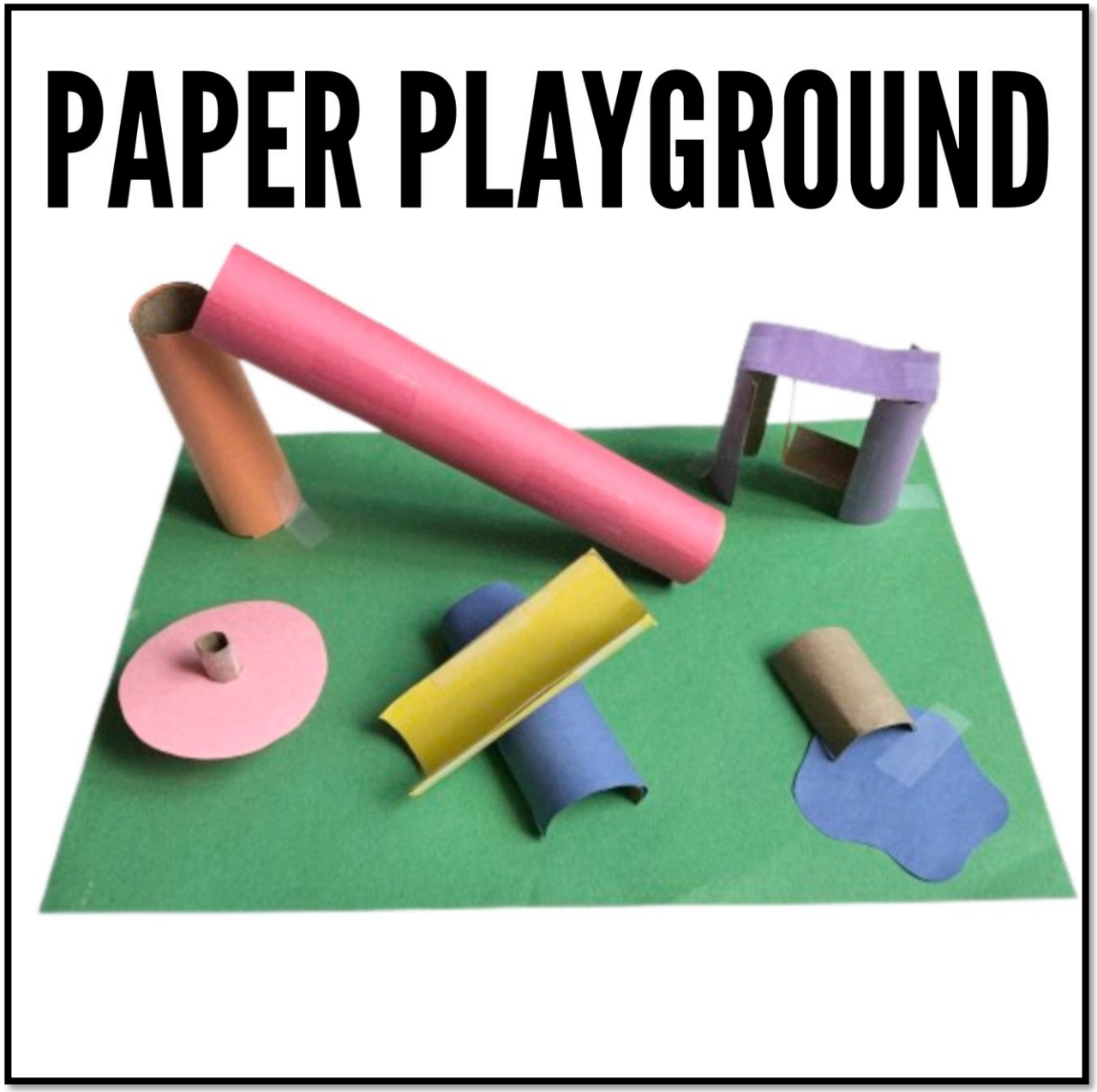
Suggested Materials: 12" x 18" sheet of construction paper (1 piece per group for base of playground), toilet paper/paper tower rolls (10-12 per group), 9" x 12" sheets of construction paper (8-10 per group), scotch tape, scissors, OPTIONAL: gummy bears (2-3 per group)

LESSON PLAN

1. Ask students to brainstorm different play features that are found on playgrounds and how they work. Project Google Images of playgrounds and discuss the similarities and differences between different play areas. Point out the use of many different simple machines that are used in playgrounds such as levers in seesaws, ramps in slides, and wheels and axles in merry-go-rounds. Ask students to brainstorm different pushes and pulls that are used in those simple machines. Record student ideas on the provided teacher chart.
2. Share video clips about playgrounds and simple machines and introduce key vocabulary.
3. Introduce permitted materials and share the challenge instructions. Brainstorm and model different ways that students can cut and assemble their paper rolls. (i.e., paper strips, half cylinders, short cylinders, rectangular prisms, slots and tabs) Allow students time to brainstorm playground ideas, create their playground features, test their features with gummy bears, and record in their STEM journals.
4. Hold a whole class closing discussion and reflection, allowing students to present their playgrounds to the class and point out the different simple machines included in their play areas.

PAPER PLAYGROUND

Possible Product

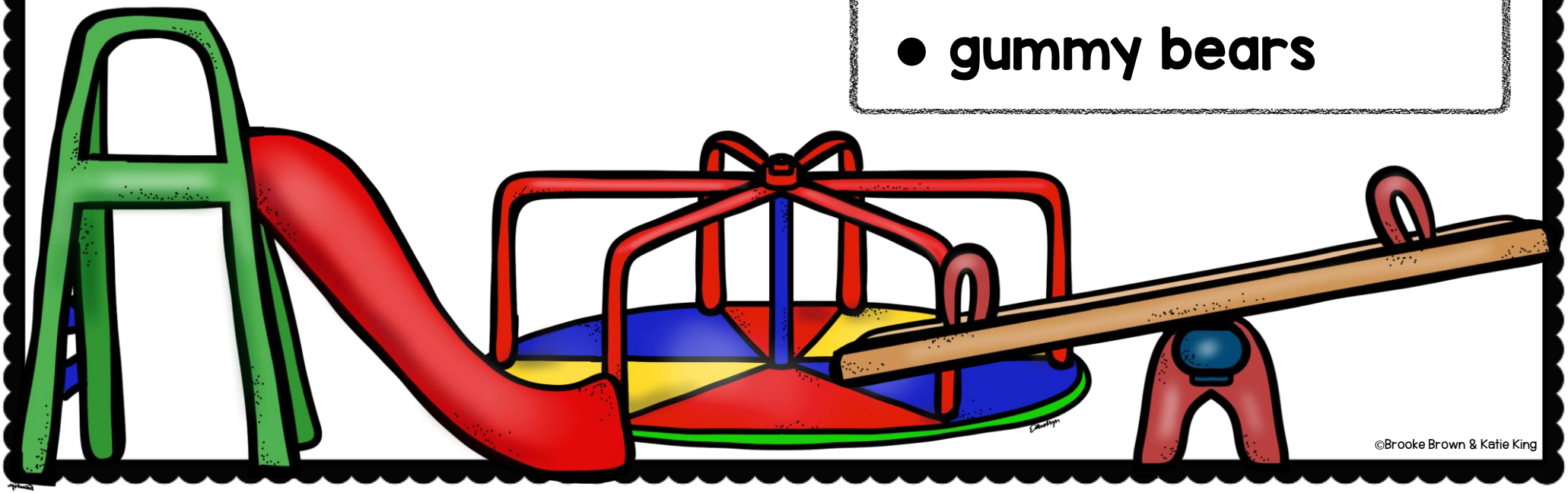


PAPER PLAYGROUND

Can you design a working paper playground with at least two simple machines?

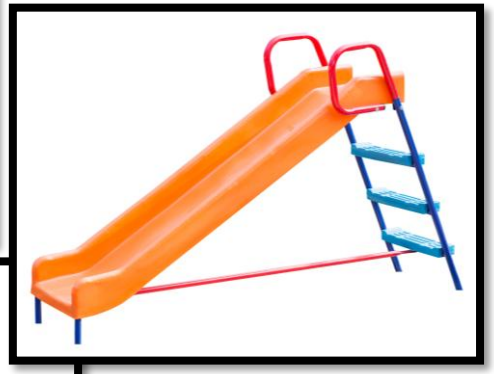
YOU MAY USE:

- paper rolls
- construction paper
- tape
- scissors
- gummy bears

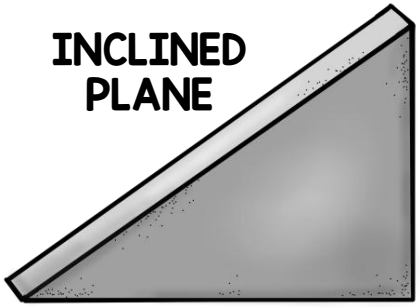


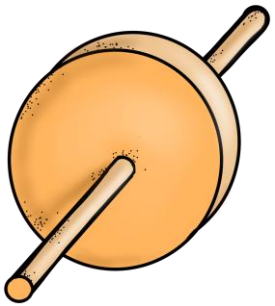
PAPER PLAYGROUND

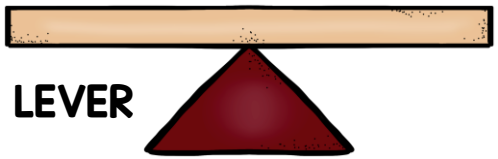
Real World Examples



Types of Simple Machines







What are some examples of pushes and pulls on a playground?

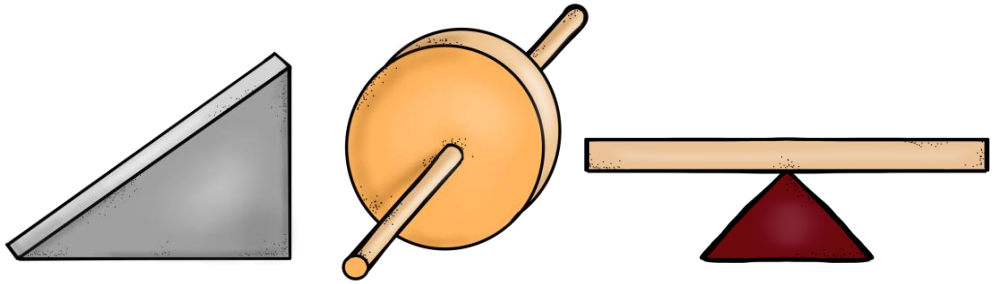
What are some examples of simple machines on a playground?

PAPER PLAYGROUND

FORCE

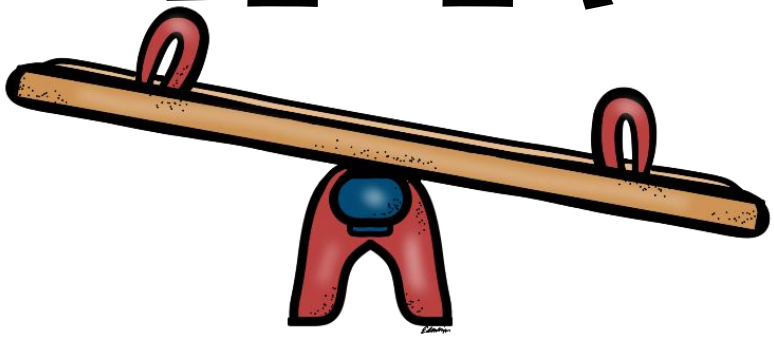
a push or pull on an object

SIMPLE MACHINE



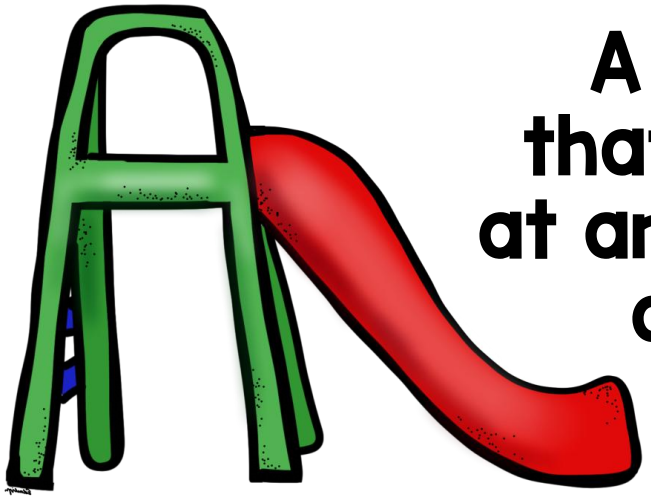
a basic device that applies force and makes work easier

LEVER



a bar that rests on a fulcrum that is used to move a load with one end when pressure is applied to the other end

INCLINED PLANE

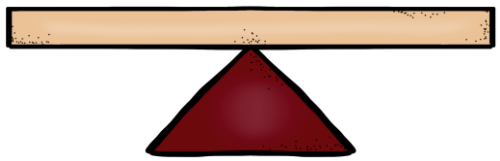


A ramp that slopes at an upward angle

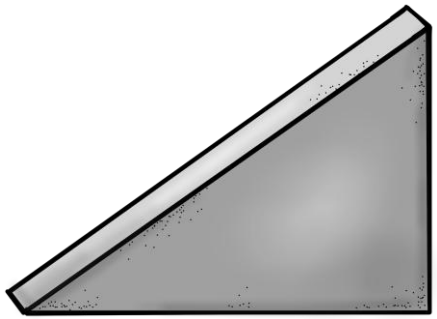
LET'S EXPLORE SIMPLE MACHINES!

PLAYGROUND FORCES

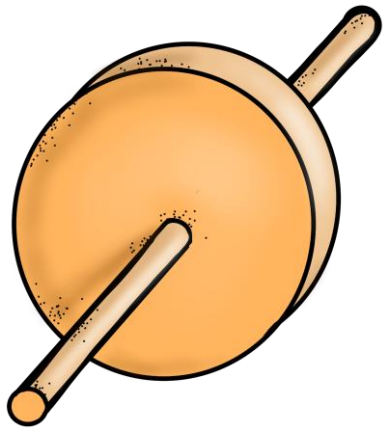
LEVERS



INCLINED PLANES



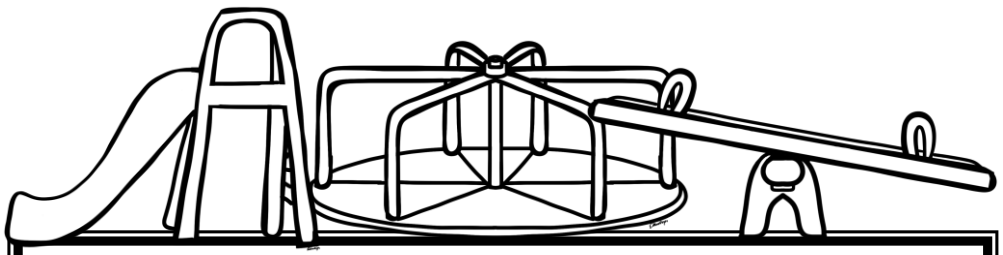
SIMPLE MACHINES



PAPER PLAYGROUND

The Recess Queen

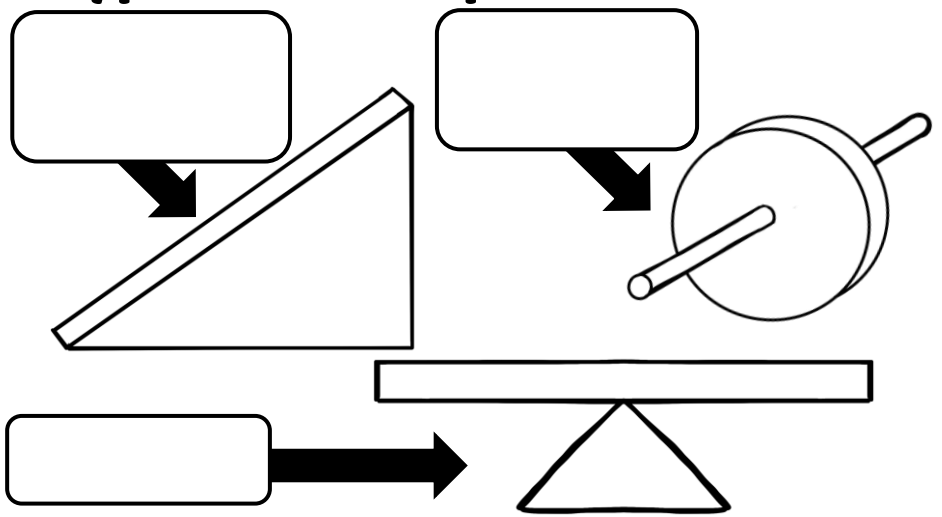
Name: _____



STEM CHALLENGE

Can you design a working paper playground with at least two simple machines?

Types of Simple Machines



My favorite part of our playground is:

_____

_____

_____

It's my favorite because:

_____

_____

_____

One new thing I learned about simple machines is:

_____

_____

_____

_____

_____

PLAYGROUND PLAN

PLAYGROUND FEATURE	DOES IT HAVE A SIMPLE MACHINE? IF SO, WHICH ONE?

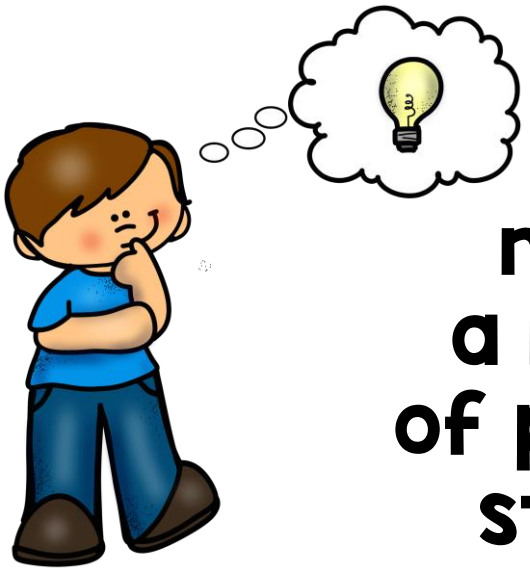
PLAYGROUND BLUEPRINT

Draw a picture of your playground.
Label the simple machines.

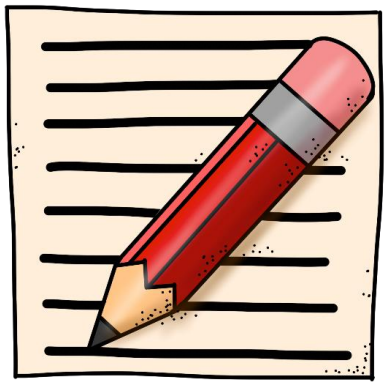
The Recess Queen

MAKER TASK CARDS

Use the following task cards in a Makerspace or with STEM Bins for students to make more creations.

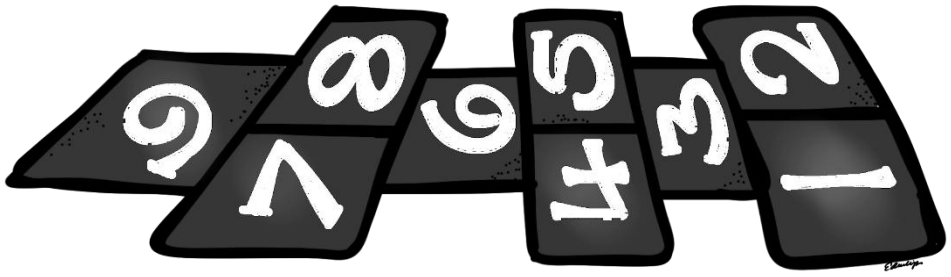


Make a model of a new type of playground structure.



Make a poster about playground safety rules.

Make up a new outdoor recess game.



Make up a new indoor recess game.

Dig Deeper Into the Text!

Teacher Questions for

The Day the Crayons Quit

Duncan has to deal with crayons being mad at for him for two extremely opposite reasons. What are those two reasons?

Why is beige sad?

What is your favorite color and how does that crayon feel? Why?

Why does Gray suggest that Duncan color baby penguins and pebbles?

If I tell you that Green is trying to mediate for yellow and orange, what do you think that means? How did you figure it out?

What does Pink mean about being a girl's color? How do you feel about this statement?

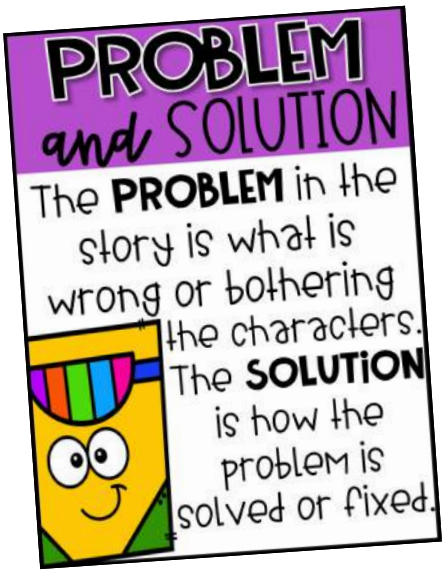
How did Duncan resolve the conflicts in his crayon box? Do you have any more ideas?

TEACHERS: Print on colored paper and laminate. Use this bookmark year after year to help extend students' thinking!

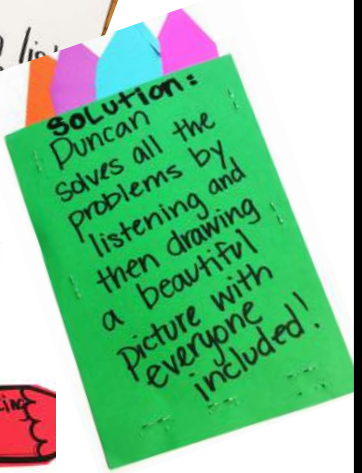
Intended Use

COMPREHENSION

1. After you have read the book, discuss/review Problem and Solution with your students. Discuss how the crayons all have different problems in this book, but Duncan solves them with one solution.

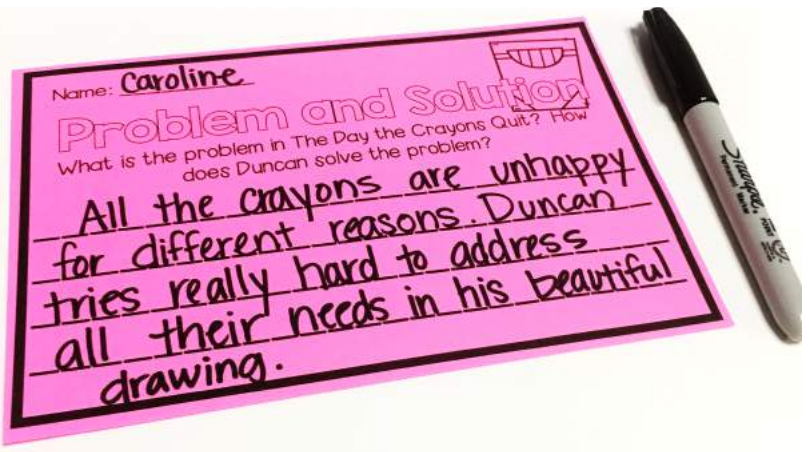


2. Make a large class anchor chart to map out all of the crayons' different problems and the one solution. Use the crayon box and crayons to showcase students' understanding!

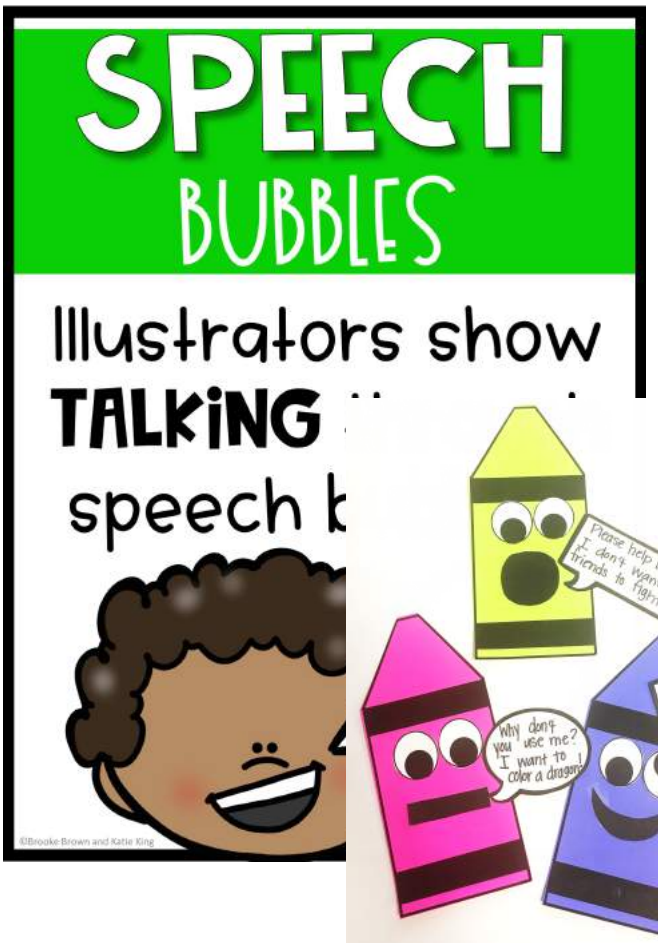


COMPREHENSION

3. Have students write about the problem and solution in *The Day the Crayons Quit*.

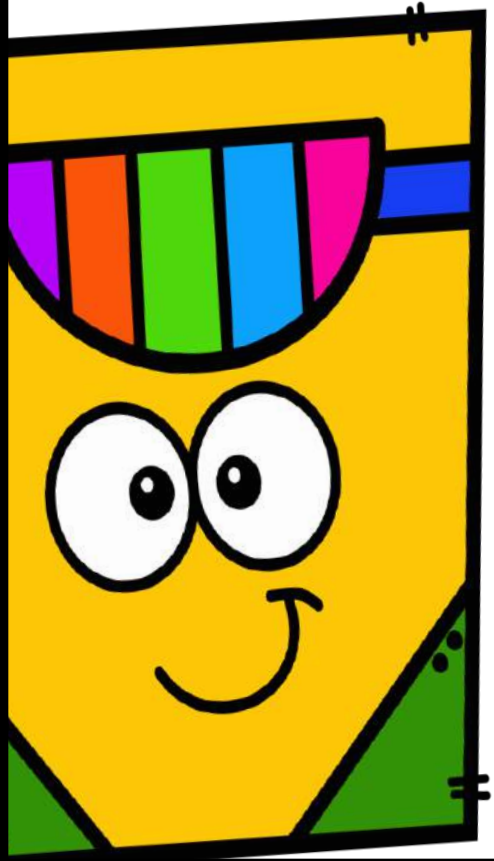


4. Optional Extension Activity for High Flyers! Go over the poster about speech bubbles. Students should complete the crayon craft with a speech bubble based on the book.



PROBLEM and SOLUTION

The **PROBLEM** in the story is what is wrong or bothering the characters.

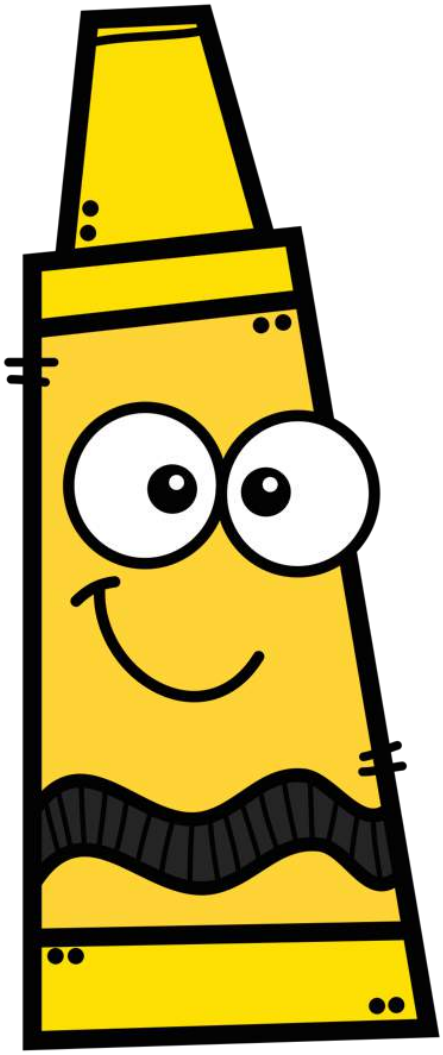


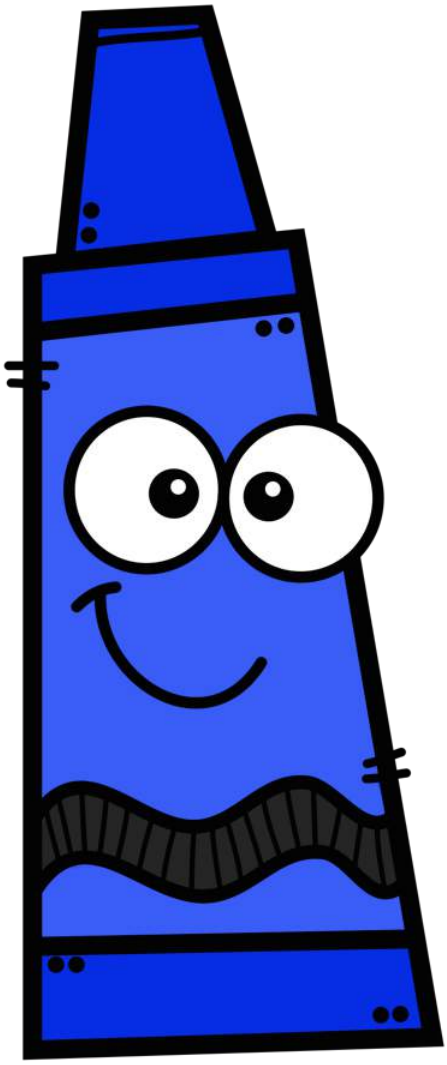
The **SOLUTION** is how the problem is solved or fixed.

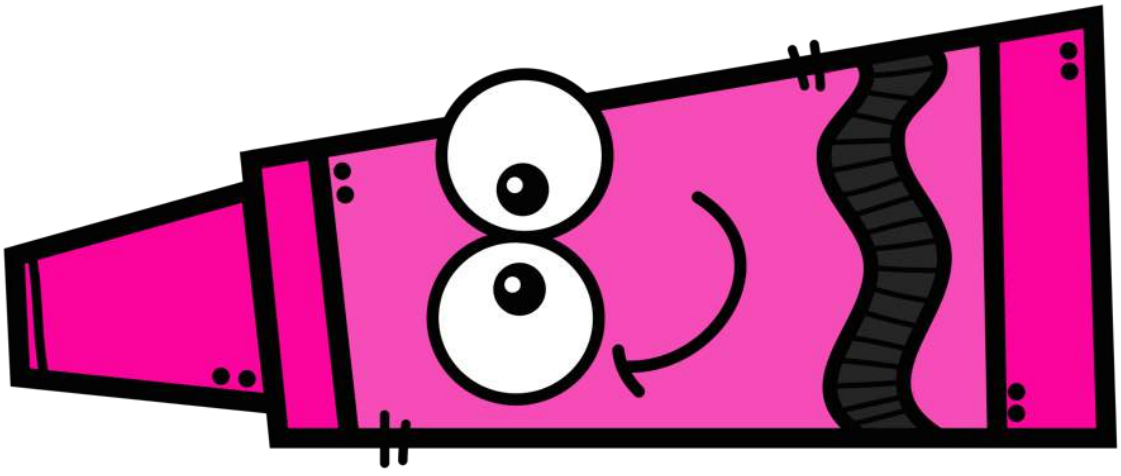
PROBLEM

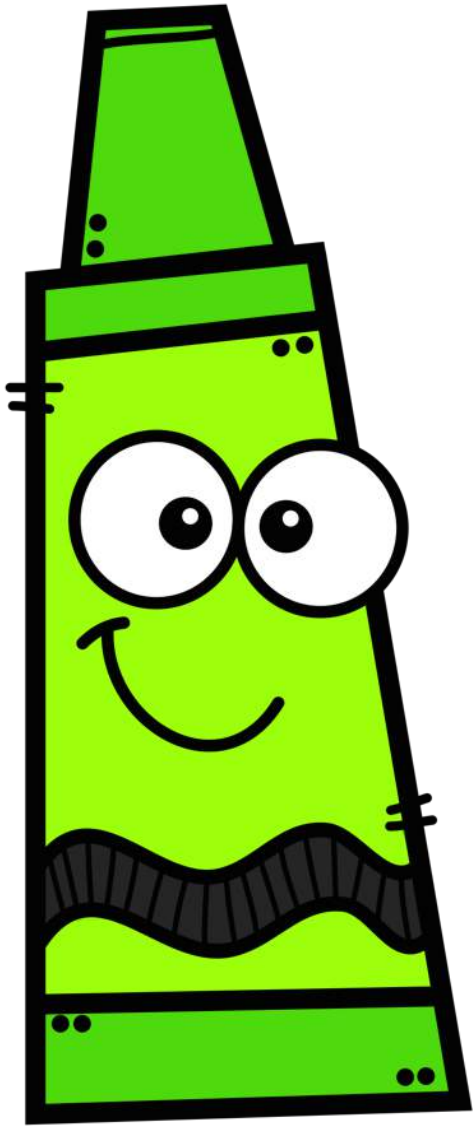
Solution

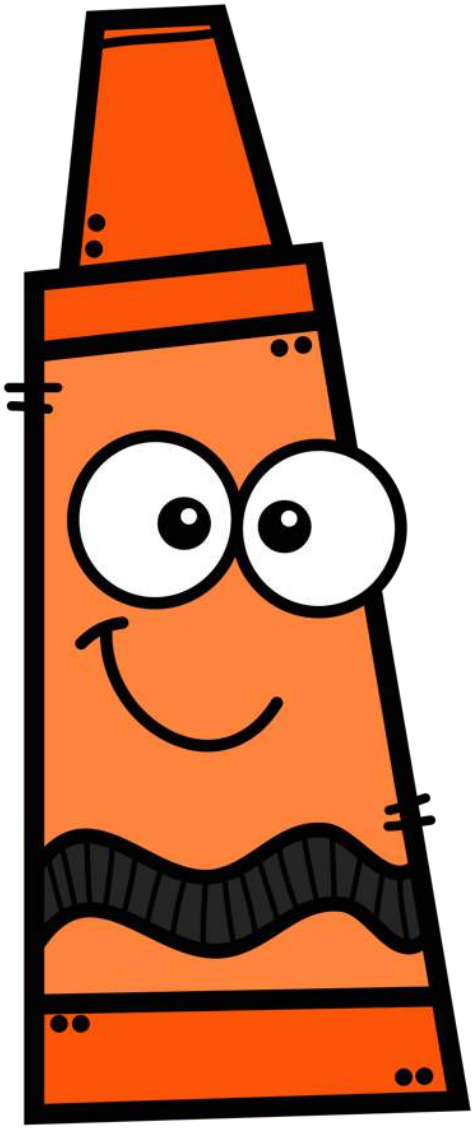
and









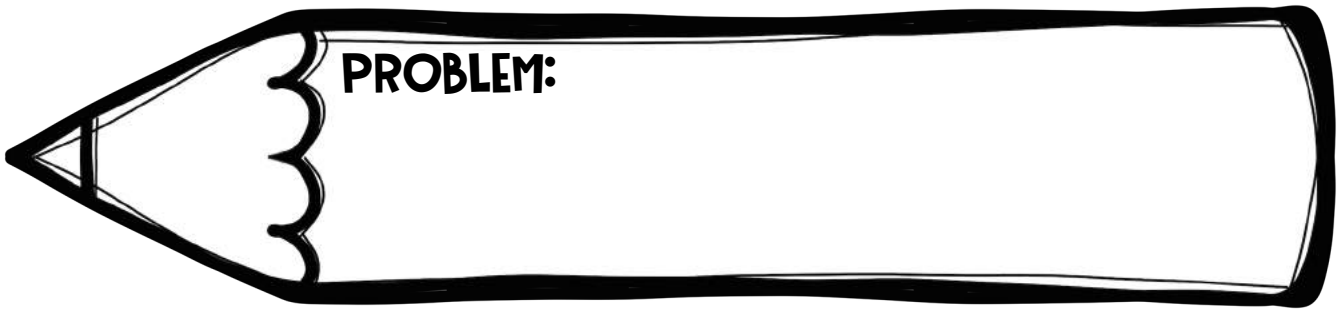


Print one for each student on yellow paper

Print one for each student on green paper. Staple this paper on the back of the yellow like a pocket. Leave an opening to get the crayons into the "box."

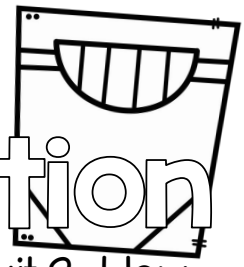
SOLUTION:

SOLUTION:



Print one for each student on lots of different colors

Name: _____



Problem and Solution

What is the problem in The Day the Crayons Quit? How does Duncan solve the problem?

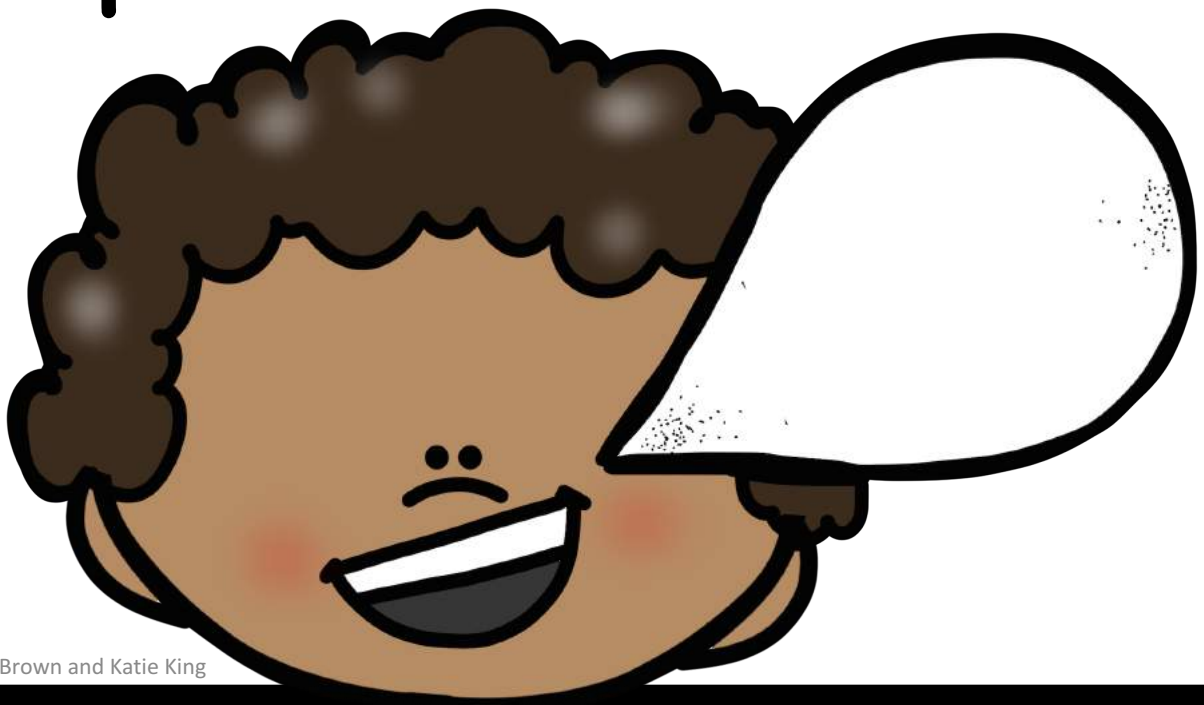
Name: _____

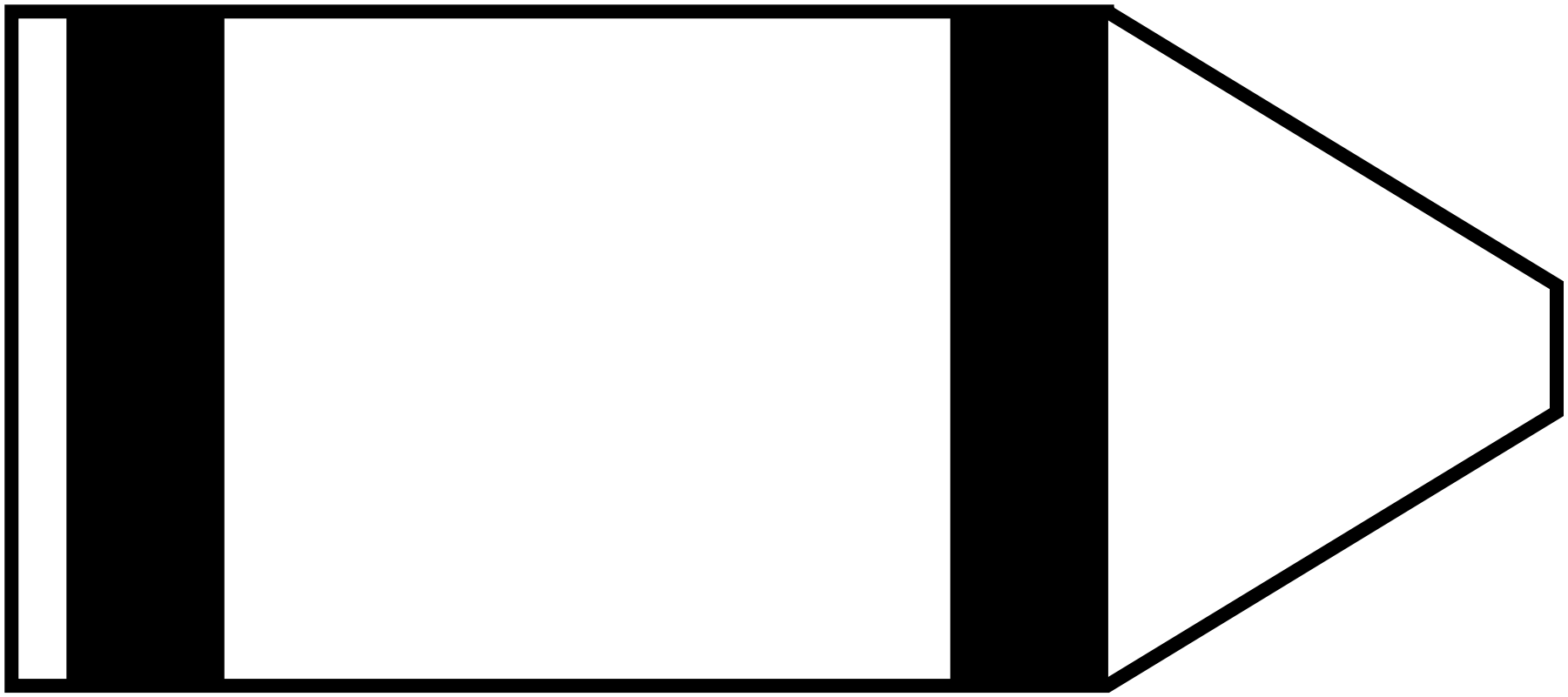
Problem and Solution

What is the problem in The Day the Crayons Quit? How does Duncan solve the problem?

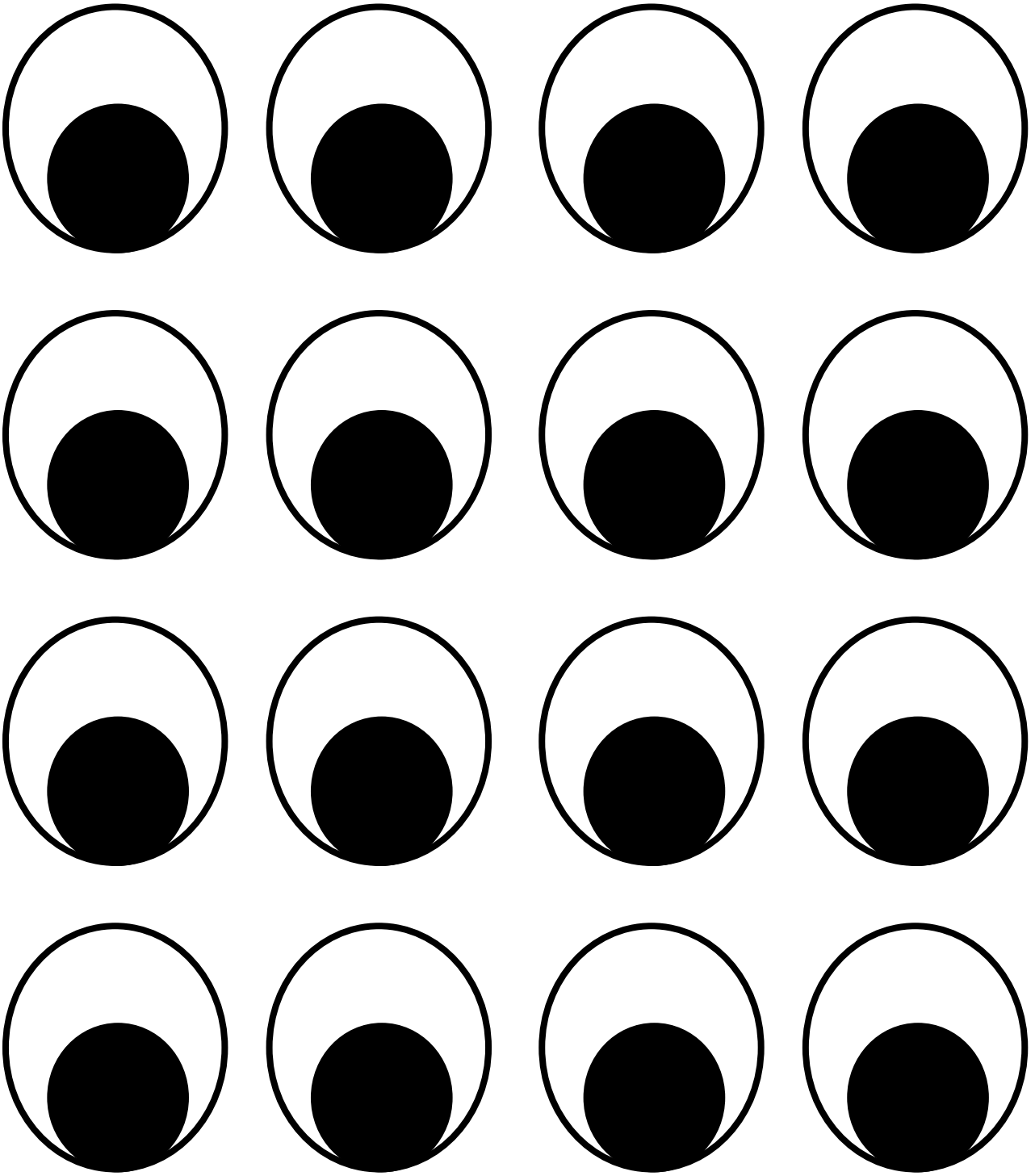
SPEECH BUBBLES

Illustrators show **TALKING** through speech bubbles.

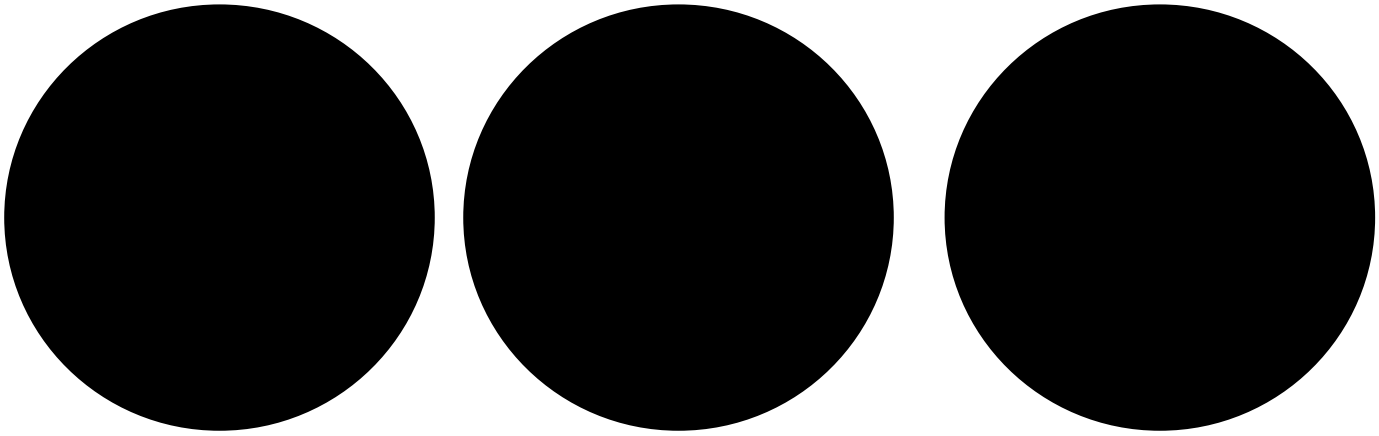




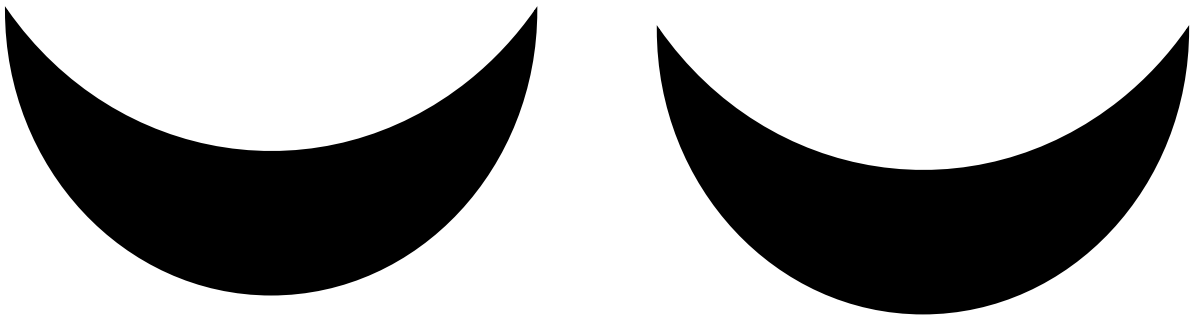
Print each student a crayon on any colored paper.

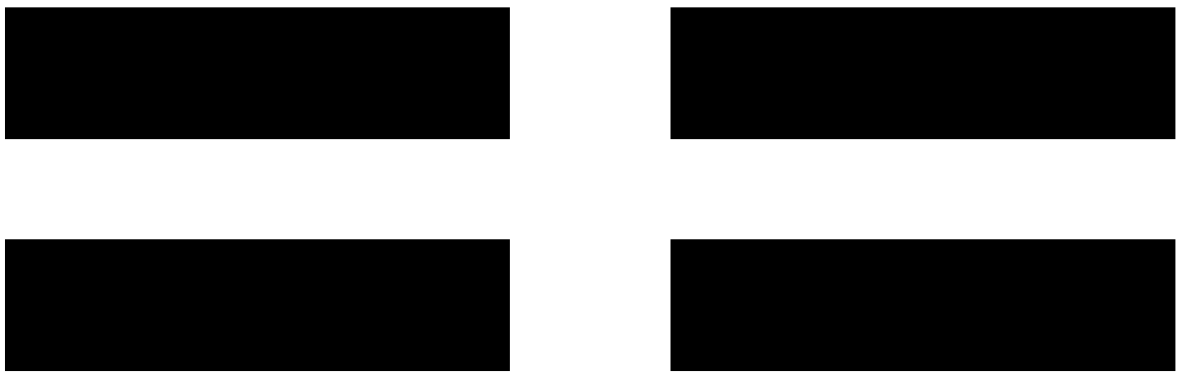


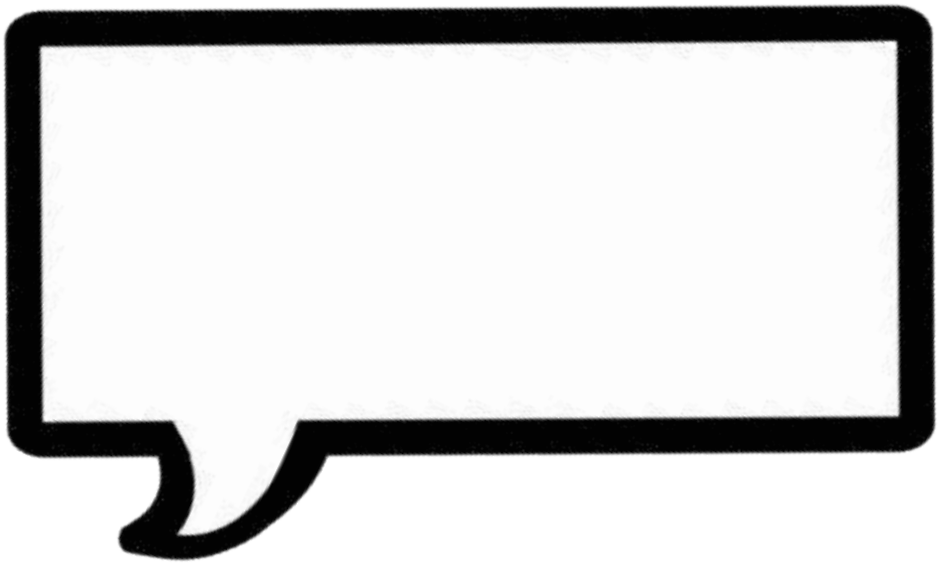
Give each student needs two eyes

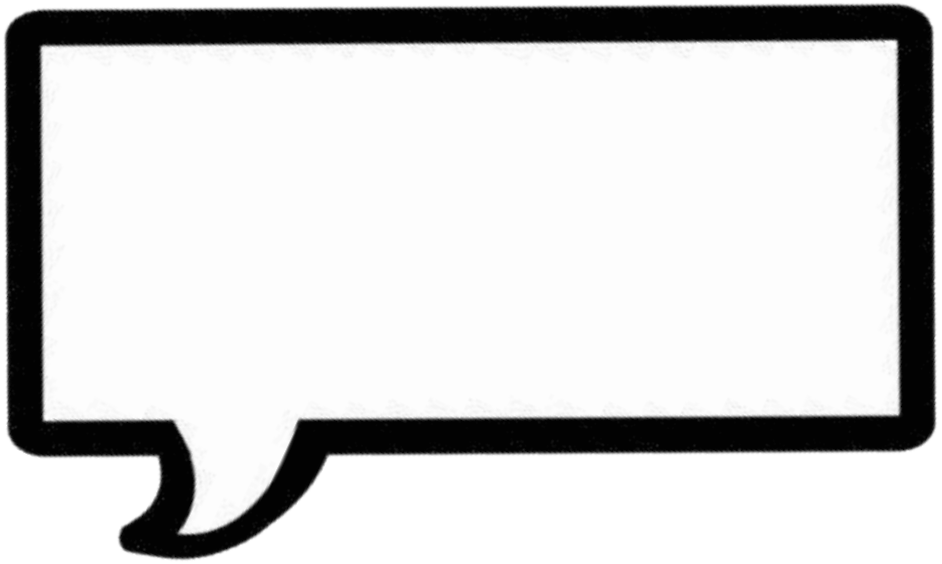


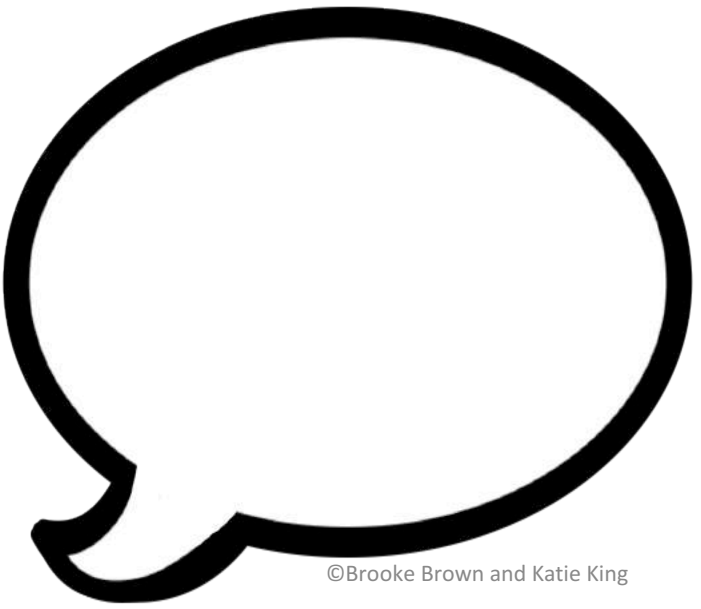
Give each student a mouth of their choice







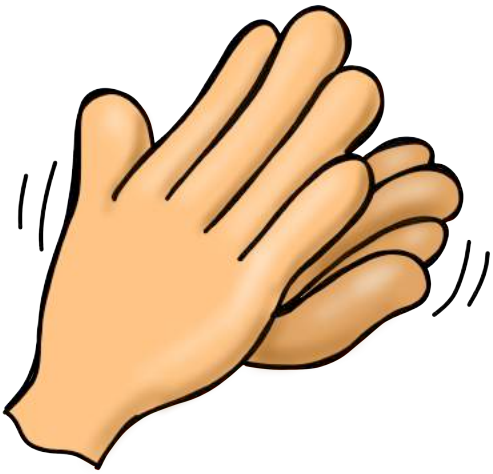




workload

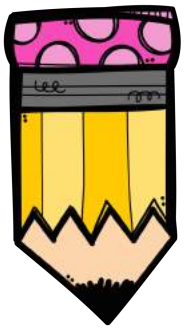
the amount of work to be done

congratulate



to give good wishes to someone on a job well done

stubby



short and thick

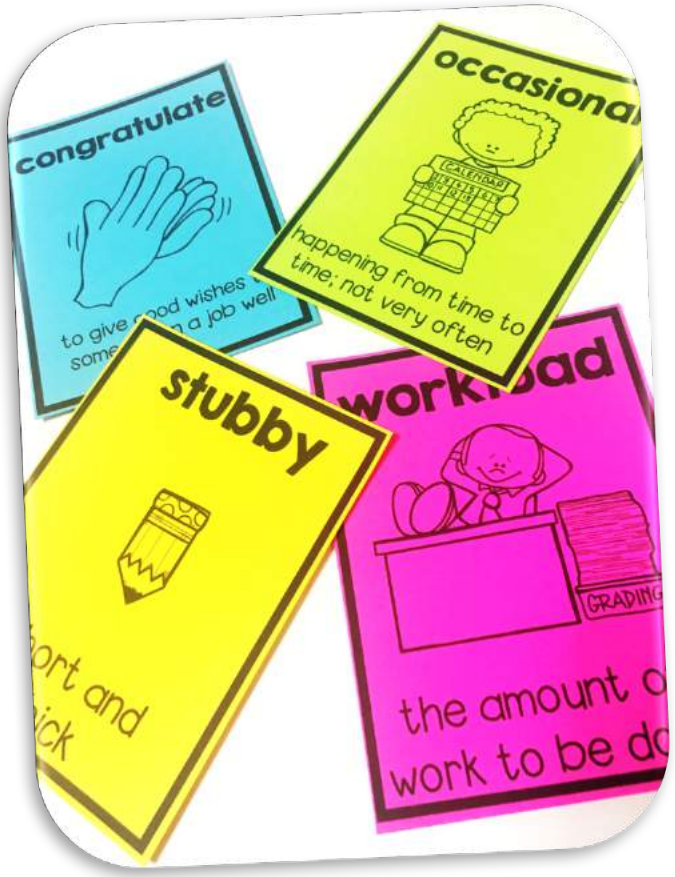
occasional

happening from time to time; not very often

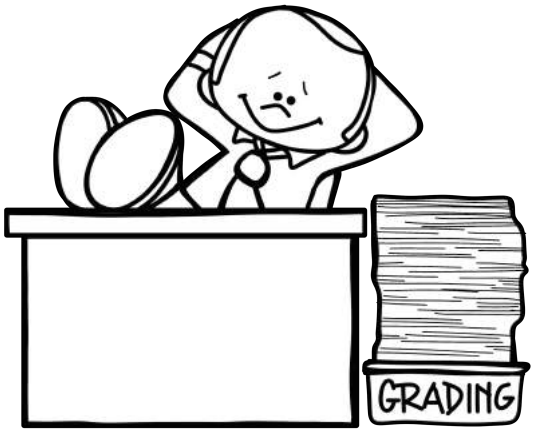
Teacher Talk

*After going over the definitions, teachers can use the cards in all kinds of ways. Have students pair up. Put one of the cards up on the projector and ask the students to come up with a sentence. Another option would be to have the students act out the words together.

<u>Teachers</u>: Print on colored paper and have students hold up. Use this as a quick way to gauge understanding! Scan the room to look for the color you are looking for!

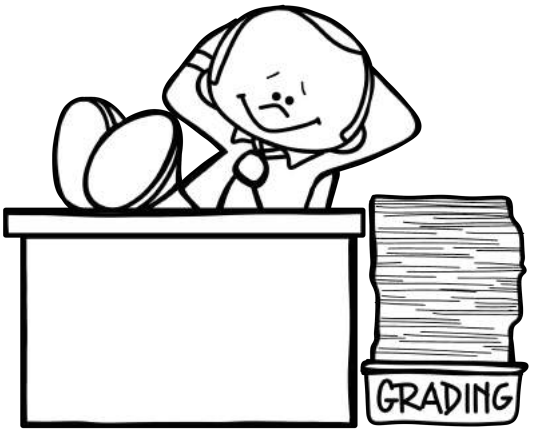


workload



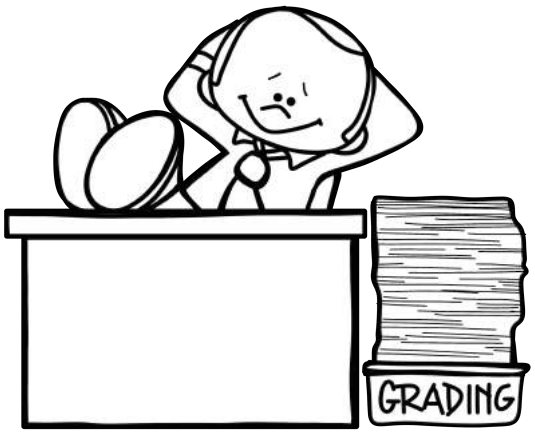
the amount of work to be done

workload



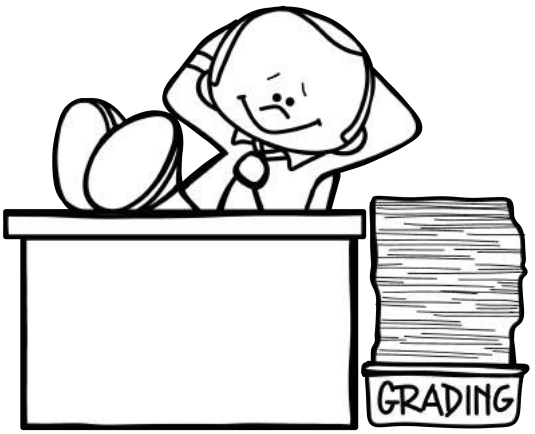
the amount of work to be done

workload



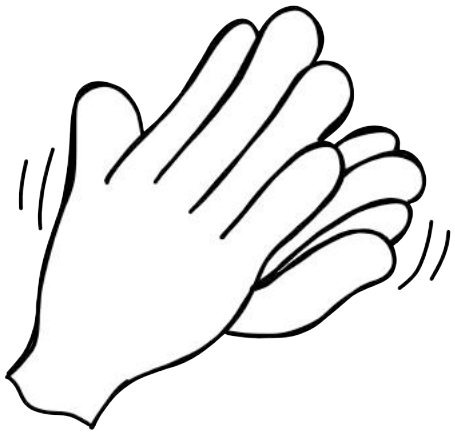
the amount of work to be done

workload



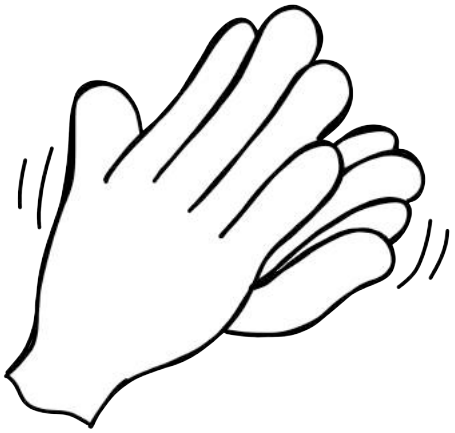
the amount of work to be done

congratulate



to give good wishes to someone on a job well done

congratulate



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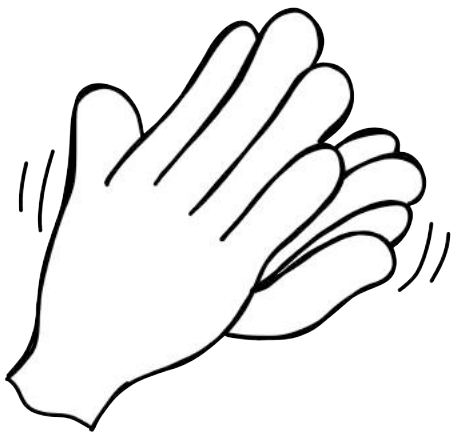

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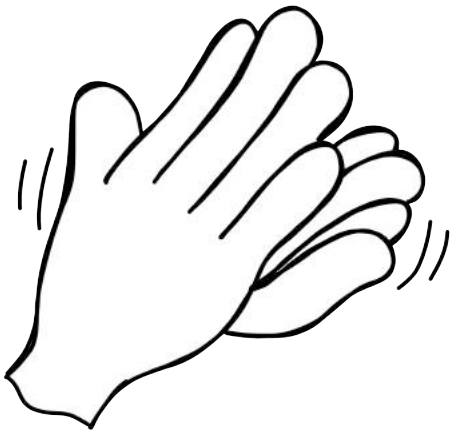
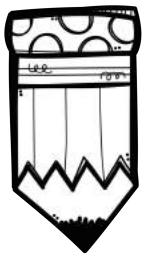


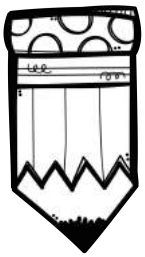
to give good wishes to someone on a job well done

stubby



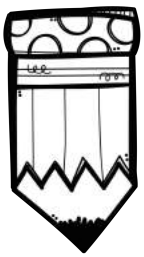
short and thick

stubby



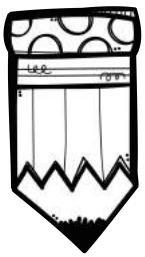
short and thick

stubby



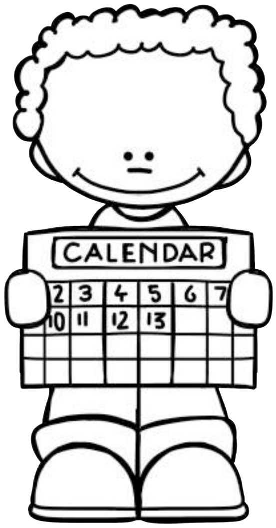
short and thick

stubby



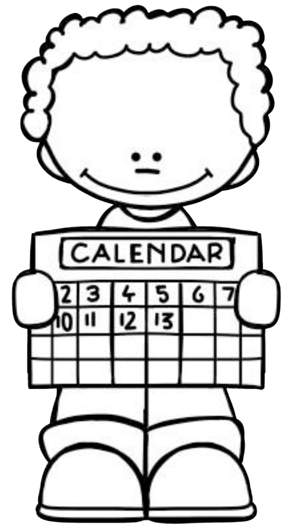
short and thick

occasional



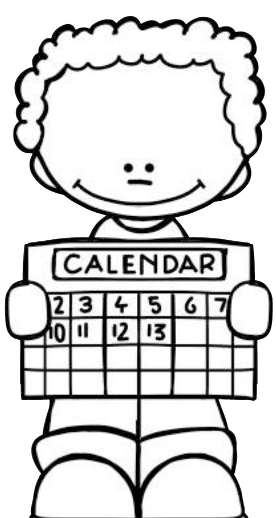
happening from time to time; not very often

occasional



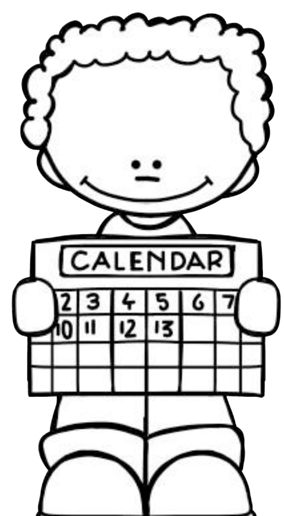
happening from time to time; not very often

occasional



happening from time to time; not very often

occasional



happening from time to time; not very often

Vocab 3-in-a-Row

Directions for Set-Up: Each player needs a game board. Students fill in the empty spaces with their four vocabulary words. The students also need "Markers" of some kind to cover the words or definitions.

Directions to Play: Teacher will call out either a word or a definition. The students should cover up the matching square. For example- Teacher "tilt" Student covers up " to move to an angle." When a student has three in a row, they yell out "Press Here."

short and thick		to give good wishes to someone on a job well done
	free space	
happening from time to time; not very often		the amount of work to be done

happening from time to time; not very often		short and thick
	free space	
to give good wishes to someone on a job well done		the amount of work to be done

MATH CONNECTION

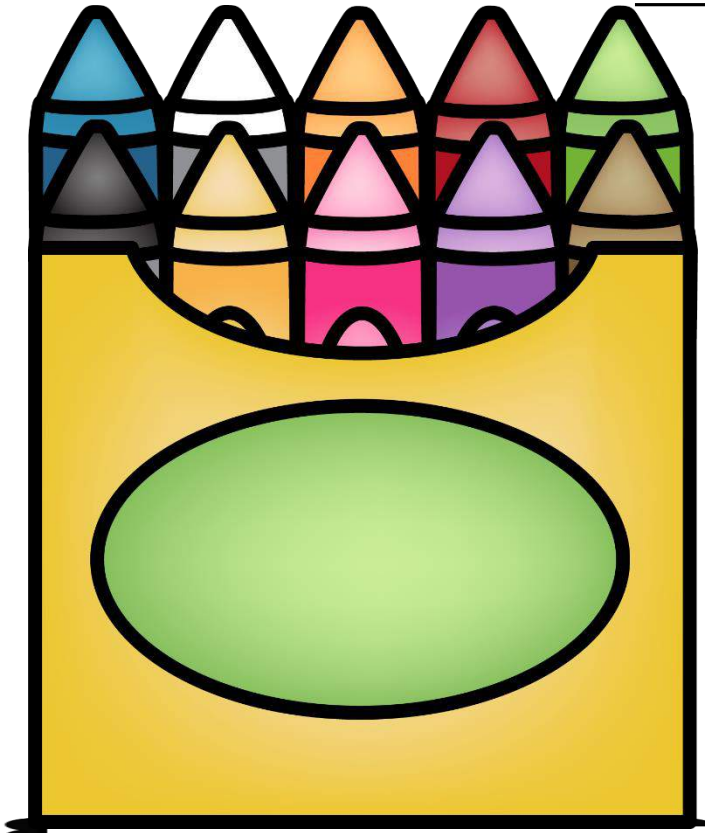
Capacity

THE AMOUNT OF SPACE INSIDE A CONTAINER

Estimate how many base ten blocks can fit inside a pencil box. Now check to see how close you are! Did you estimate well?

Crayon Container

The Day the Crayons Quit



NGSS/CCSS Standards: 2-PS1-3: Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object, K-2-ETS1-1: Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool, K-2-ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem, MATH: Volume and Capacity

Challenge Description: Students will create a sturdy crayon box out of building bricks that will hold at least 24 crayons. The box must hold the crayons in an upright position without falling out. They will discover basic concepts of volume and capacity as well as useful features of containers.

Suggested Materials: 1box of building bricks (i.e. LEGO, linking cubes, plastic building bricks from Target) per group, 24 crayons per group

Lesson Plan

1. Project or display real Google images of crayon boxes. Discuss the designs and purposes of crayon boxes, different useful features (i.e. shape of a rectangular prism, crayons usually stand upright, a base and or lid keeps the crayons from falling out). Discuss ways that we might be able to improve crayon boxes, such as making them more sturdy or useful. Discuss the difference between boxes that hold many crayons and boxes that only hold 8-16 crayons. Introduce the concepts of **volume** and **capacity**. Refer to the provided vocabulary cards as needed throughout the lesson and display them in your classroom.
2. Introduce permitted materials and share the challenge instructions. Allow students at least 45 minutes with partners or small groups to assemble their crayon boxes and test them to see how many crayons they will hold upright without falling out. Allow them time to record test results in their journals.
3. Hold a whole class closing discussion and reflection, allowing students to share their crayon boxes and what they learned about volume and capacity. Record their ideas on the provided teacher chart and have them finish their individual booklets.

Crayon Container

The Day the Crayons Quit

Possible Product

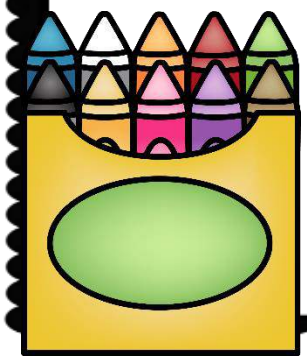
Crayon Container

The Day the Crayons Quit

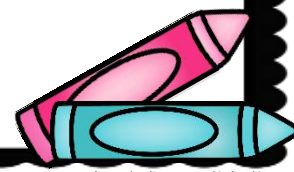
What is the purpose of crayon boxes?

How can we improve crayon boxes?

What are some important parts of crayon boxes?

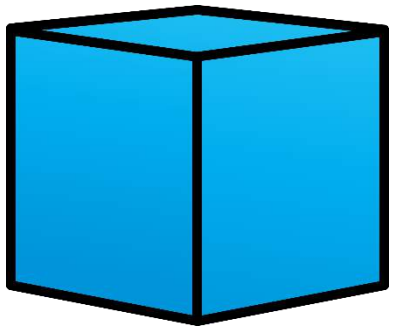


How many crayons did our boxes hold?



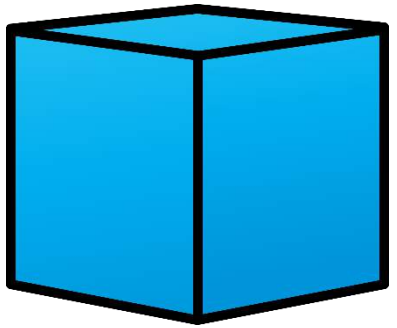
Crayon Container

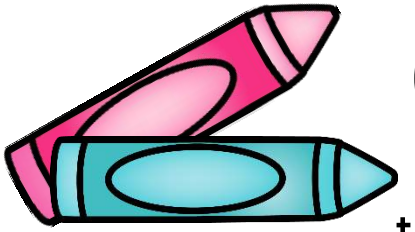
Vocabulary Cards



volume

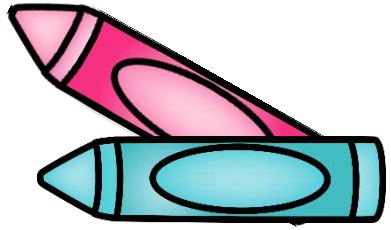
the amount of space enclosed in a container

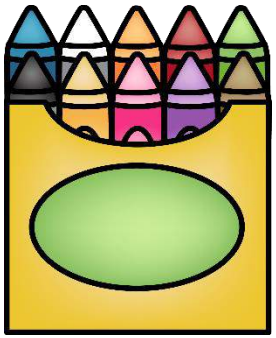




capacity

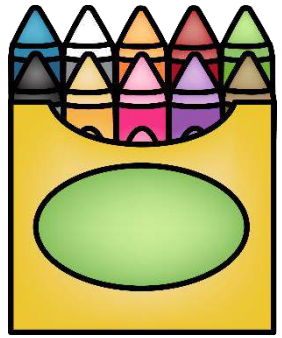
the maximum amount that something can contain

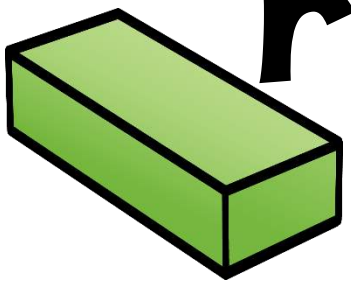




container

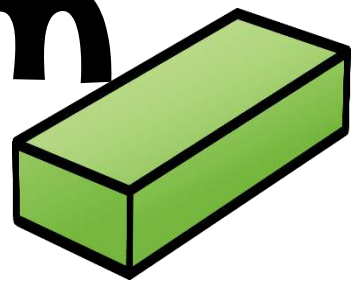
an object that is used to hold or transport something





rectangular prism

a solid object which has 5 faces that are rectangles

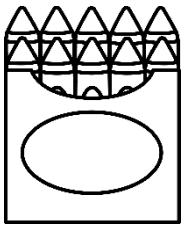


Capacity Tests

TEST	How many crayons did your box hold?
1	
2	
3	

How is your crayon box SIMILAR to real crayon boxes?

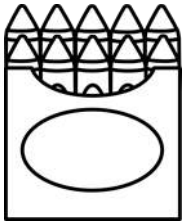
How is your crayon box DIFFERENT from real crayon boxes?



Crayon Container

The Day the Crayons Quit

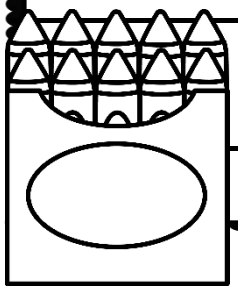
Name: _____



STEM CHALLENGE

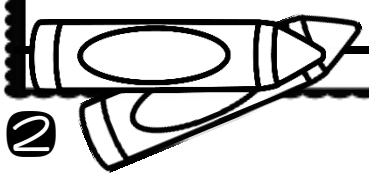
Can you create a new and improved crayon box that will hold at least 24 crayons?

Important parts of a crayon Box

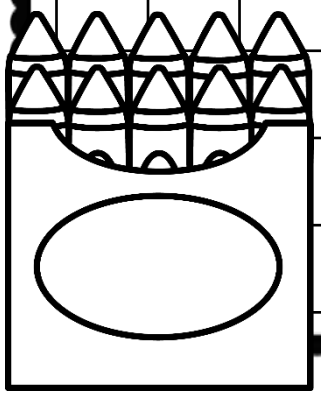


What are some PROBLEMS with real crayon boxes?

How can we IMPROVE crayon boxes?



My crayon container

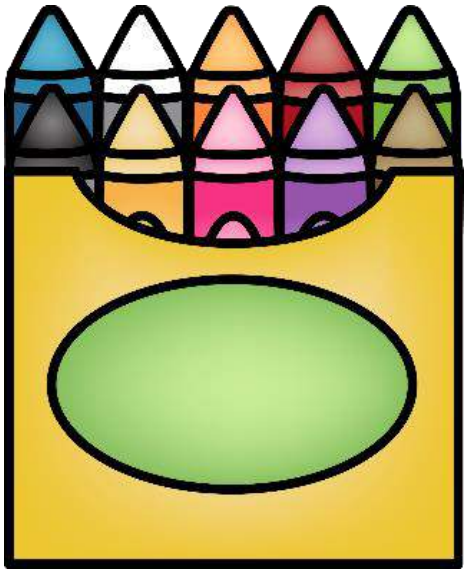


The Day the Crayons Quit

Maker Task Cards

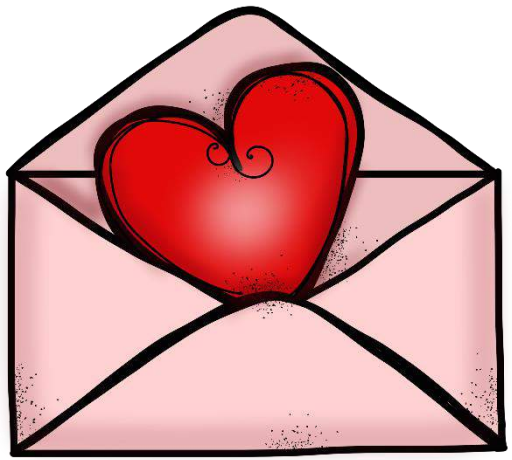
Use the following task cards in a MakerSpace or with STEM Bins for students to make more creations.

Make up 5 new colors for your crayon box.

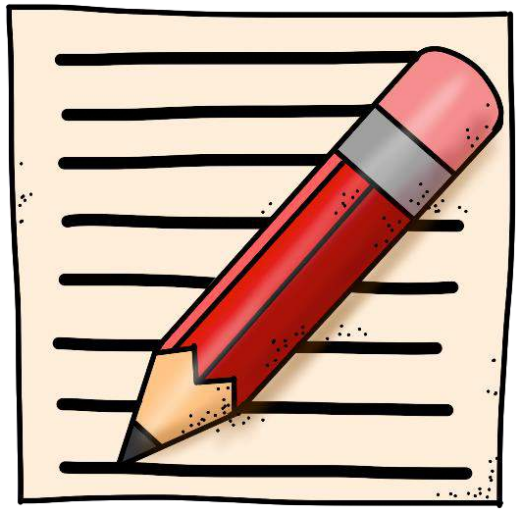


Write a poem or song about your favorite color.

Write a letter to a new friend.



Make a colorful poster all about your favorite things.



Dig Deeper Into the Text!

Teacher Questions for If you Take A Mouse to School

Laura Numeroff uses a a pattern in her books. What is that pattern?

If this book was real life what would be the problem with bringing mice to school?

If you had to choose a shape to describe this story, what would it be? Explain your thinking.

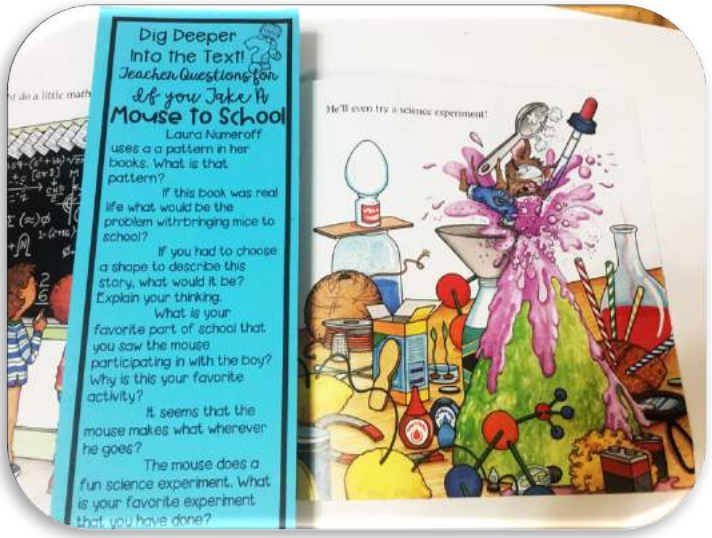
What is your favorite part of school that you saw the mouse participating in with the boy? Why is this your favorite activity?

It seems that the mouse makes what wherever he goes?

The mouse does a fun science experiment. What is your favorite experiment that you have done?

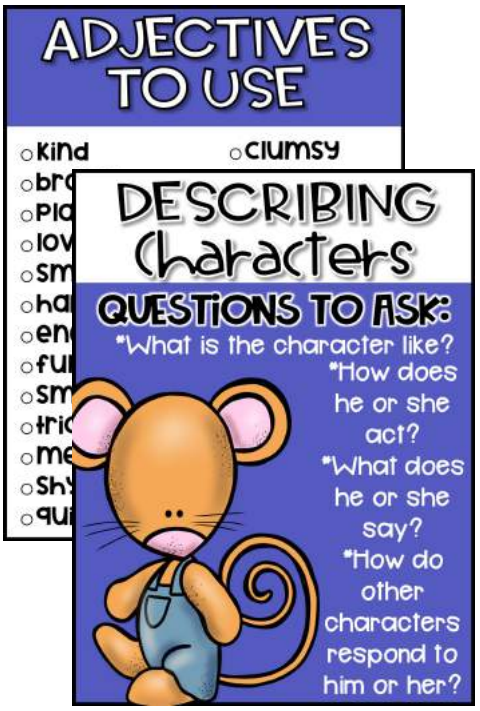
TEACHERS: PRINT ON COLORED PAPER AND LAMINATE. USE THIS BOOKMARK YEAR AFTER YEAR TO HELP EXTEND STUDENTS' THINKING!

Intended Use

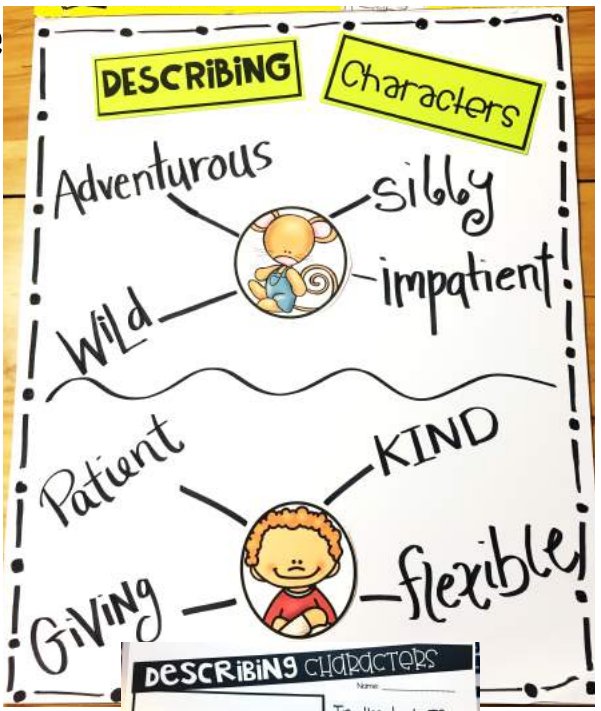


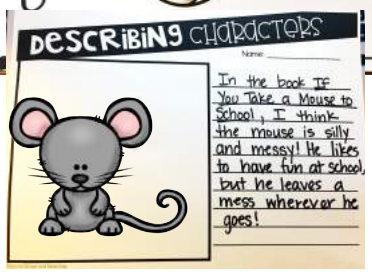
COMPREHENSION

1. After reading *If You Take a Mouse to School*, introduce digital anchor charts to students. Remind them what adjectives are. If students are ready for it, use the term "character traits." You also may want to discuss a different popular character that the students all know before discussing the mouse or boy.



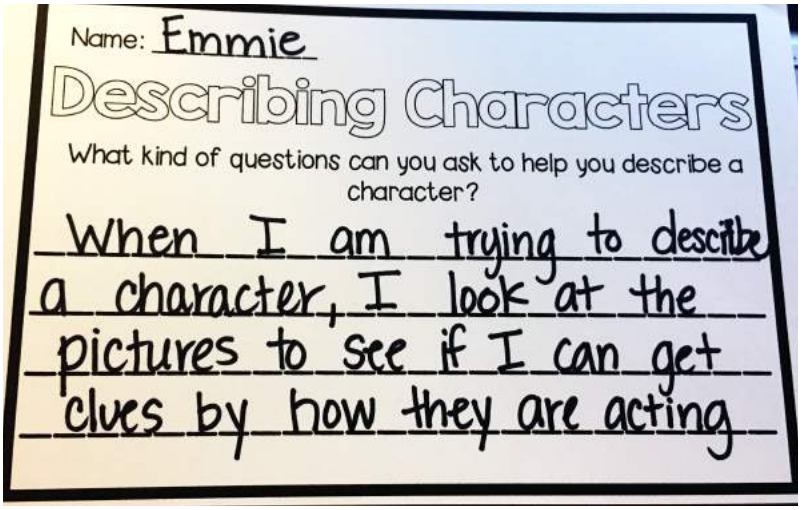
2. Make a large class anchor chart to show how the students would describe the mouse and the boy. You could do this whole class OR you could give the students post-it notes and let them add character traits.



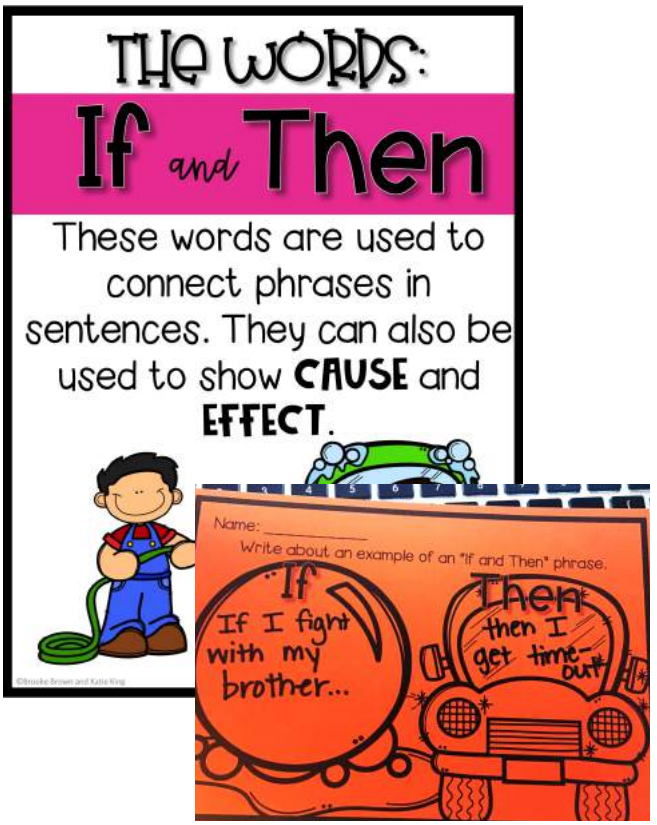


COMPREHENSION

3. Have students write about what helps them figure out character traits.

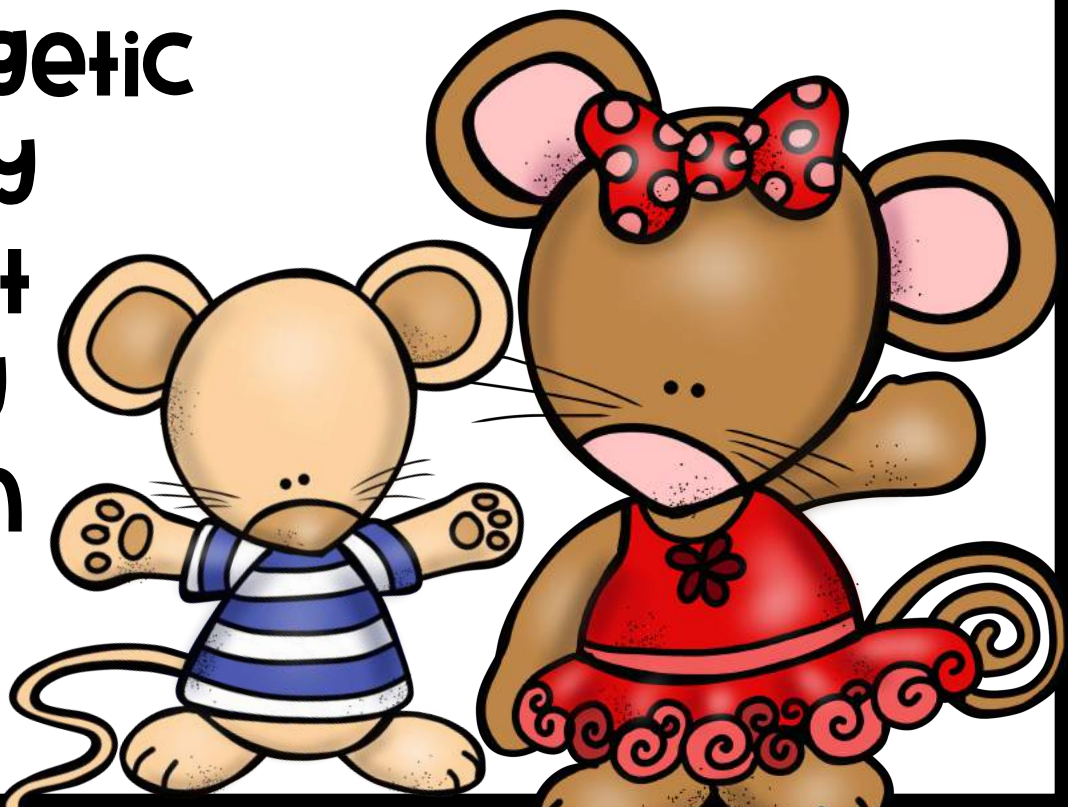


4. Optional Extension Activity for High Flyers! Go over the poster and have students write or draw about an example of an "If/Then" scenario. Lay the groundwork for Cause and Effect.



ADJECTIVES TO USE

- kind
- brave
- playful
- loveable
- smart
- hardworking
- energetic
- funny
- smart
- tricky
- mean
- shy
- quiet
- clumsy
- chatty
- serious
- silly
- sloppy
- patient



DESCRIBING Characters

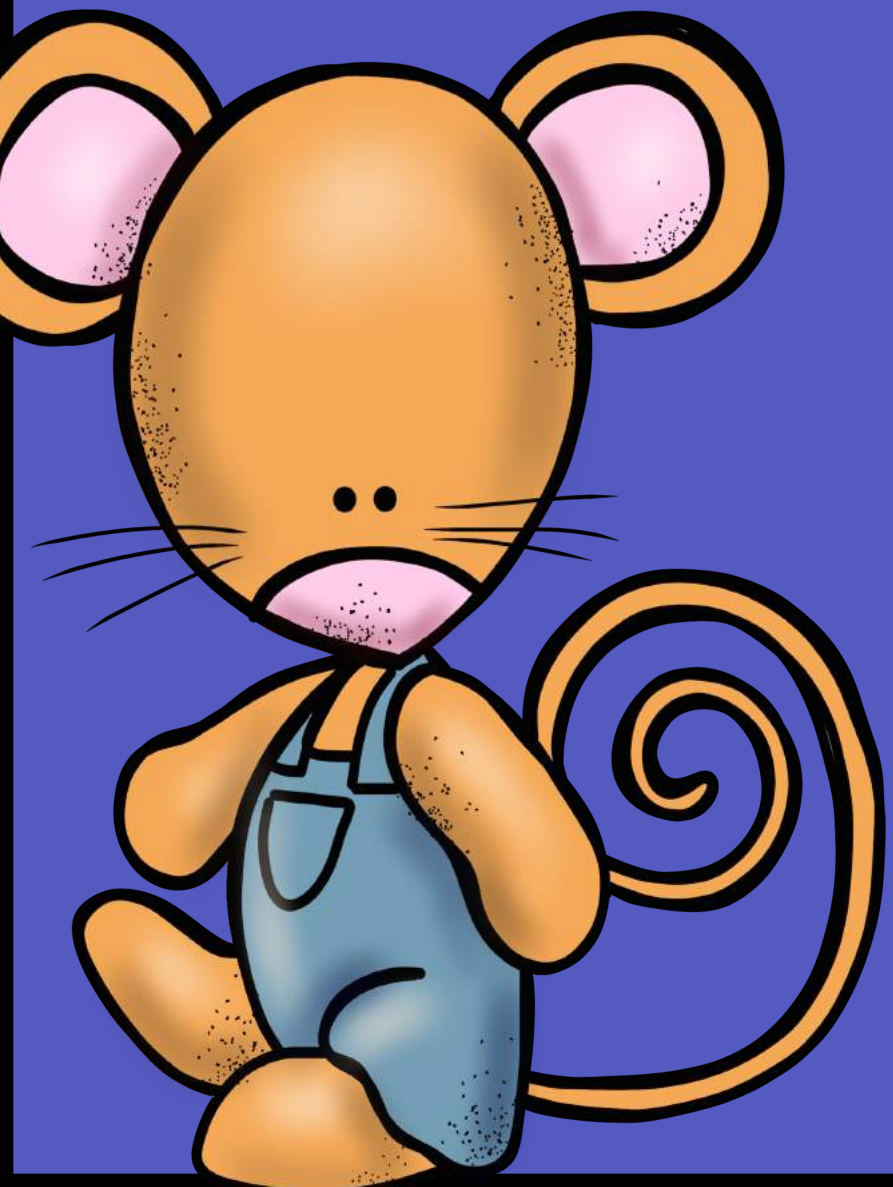
QUESTIONS TO ASK:

*What is the character like?

*How does he or she act?

*What does he or she say?

*How do other characters respond to him or her?

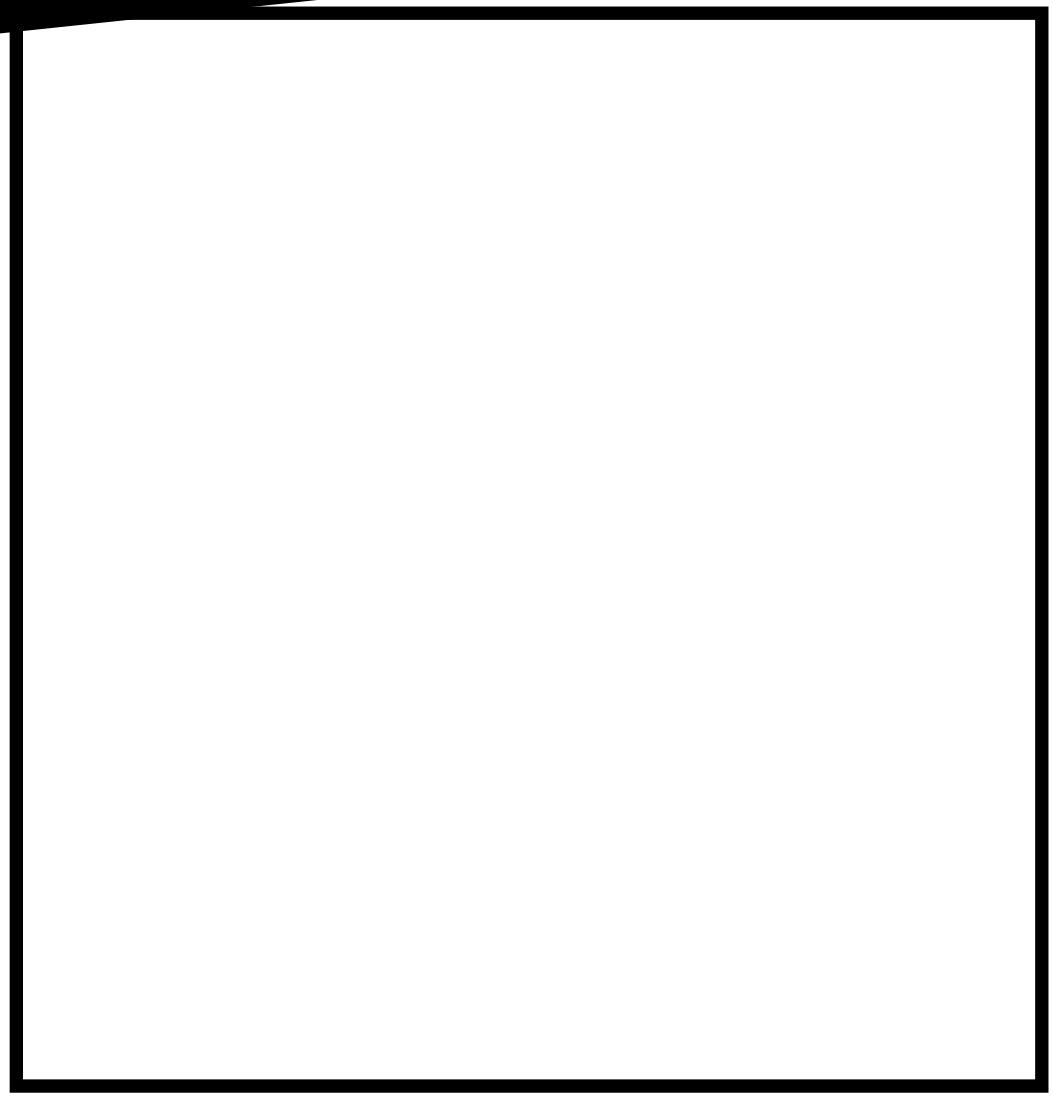


DESCRIBING

Characters

Describing Characters

Name: _____



Name: _____

Describing Characters

What kind of questions can you ask to help you describe a character?

_____

_____

_____

_____

Name: _____

Describing Characters

What kind of questions can you ask to help you describe a character?

_____

_____

_____

_____

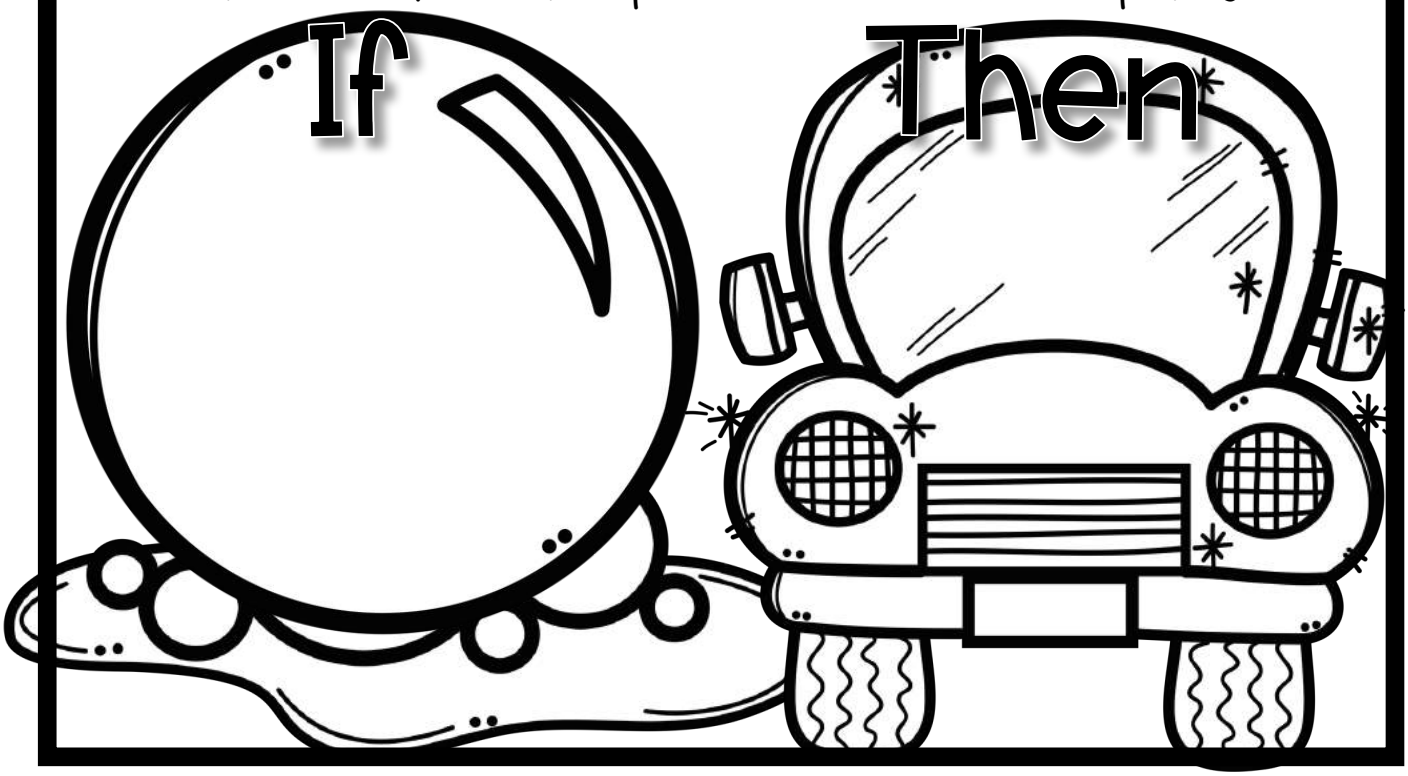
THE WORDS:

If *and* Then

These words are used to connect phrases in sentences. They can also be used to show **CAUSE** and **EFFECT**.

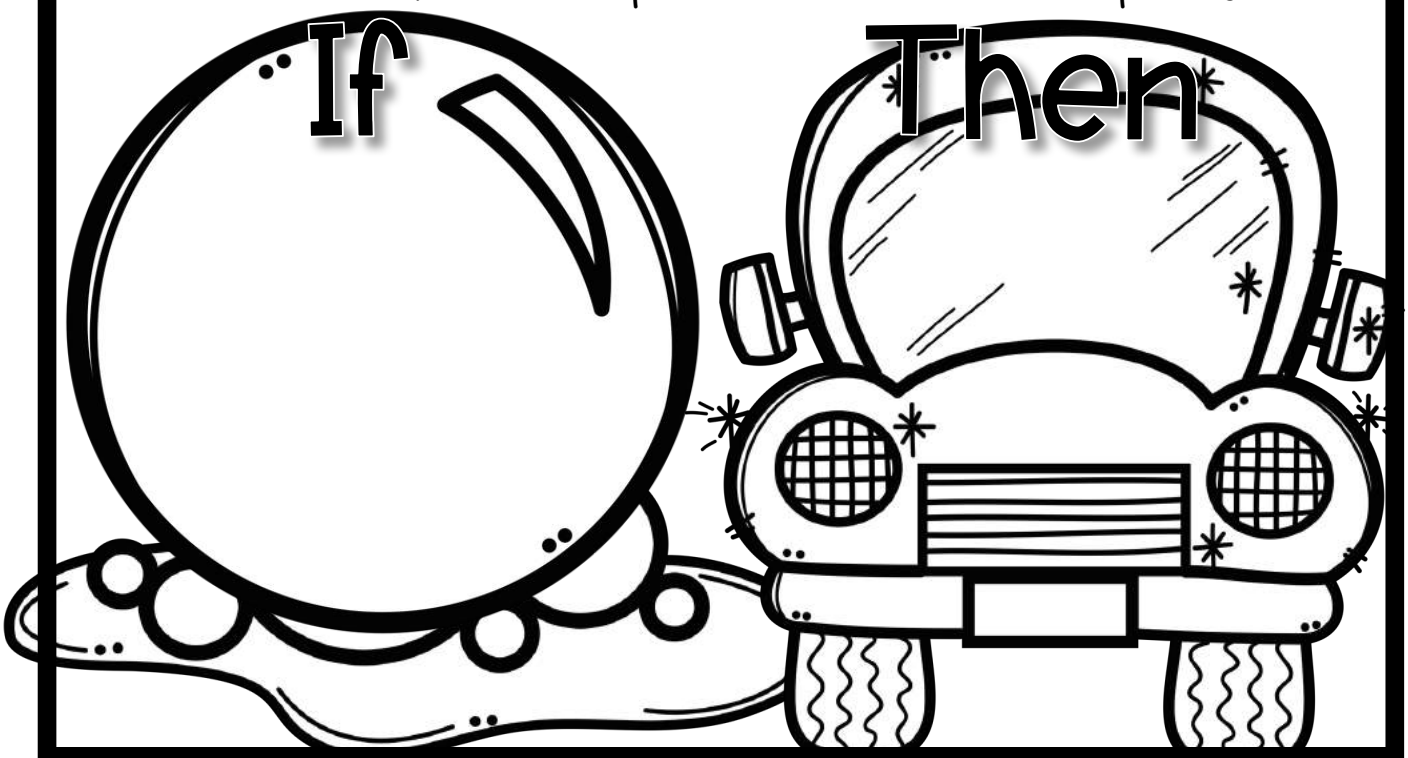
Name: _____

Write about an example of an "If and Then" phrase.



Name: _____

Write about an example of an "If and Then" phrase.



experiment

A scientific procedure used to make a discovery

tuck

to put in a safe place

probably

almost always

chances

the possibility of something

Teacher Talk

*After going over the definitions, teachers can use the cards in all kinds of ways. Have students pair up. Put one of the cards up on the projector and ask the students to come up with a sentence. Another option would be to have the students act out the words together.

<u>Teachers</u>: Print on colored paper and have students hold up. Use this as a quick way to gauge understanding! Scan the room to look for the color you are looking for!

experiment

A scientific procedure used to make a discovery

experiment

A scientific procedure used to make a discovery

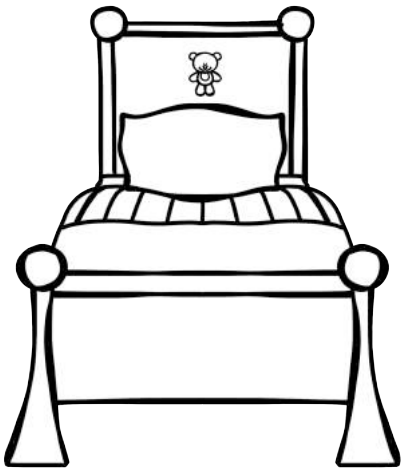
experiment

A scientific procedure used to make a discovery

experiment

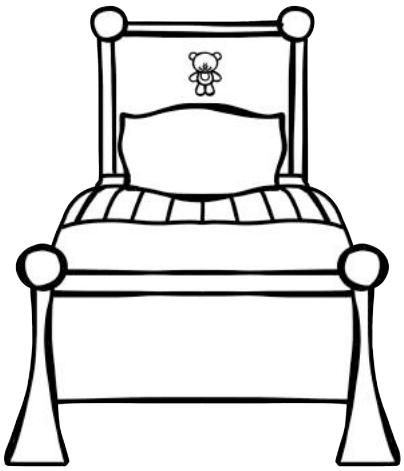
A scientific procedure used to make a discovery

tuck



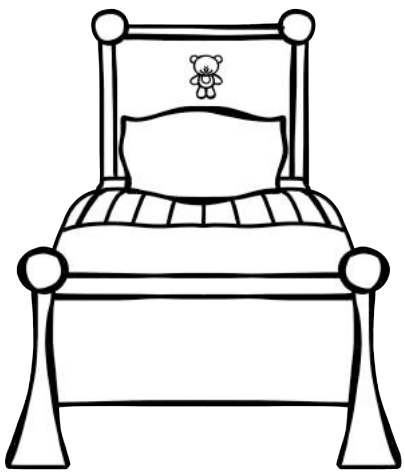
to put in a safe place

tuck



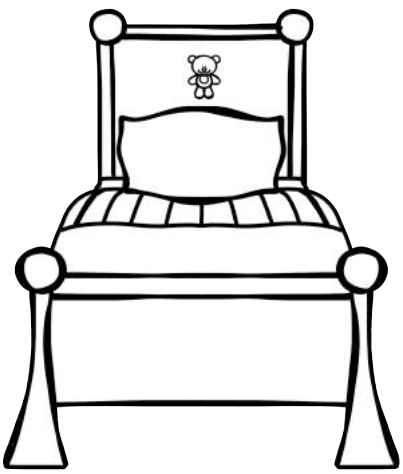
to put in a safe place

tuck



to put in a safe place

tuck



to put in a safe place

probably

almost always

probably

almost always

probably

almost always

probably

almost always

chances

the possibility of something

chances

the possibility of something

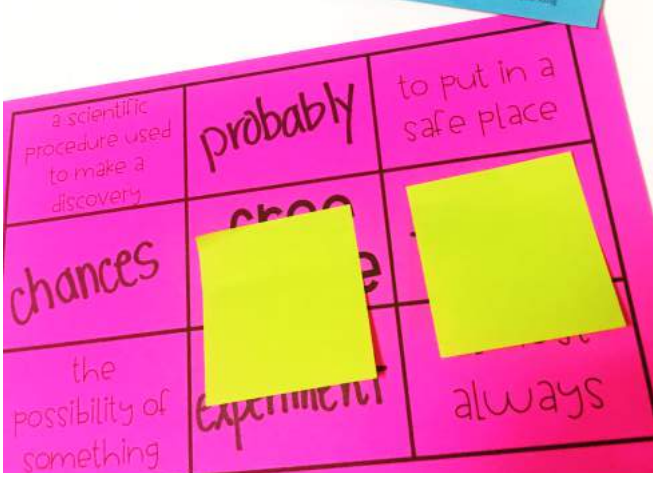
chances

the possibility of something

chances

the possibility of something

vocab 3-in-a-Row



Directions for Set-Up: Each player needs a game board. Students fill in the empty spaces with their four vocabulary words. The students also need "Markers" of some kind to cover the words or definitions.

Directions to Play: Teacher will call out either a word or a definition. The students should cover up the matching square. For example- Teacher "tilt" Student covers up " to move to an angle." When a student has three in a row, they yell out "Press Here."

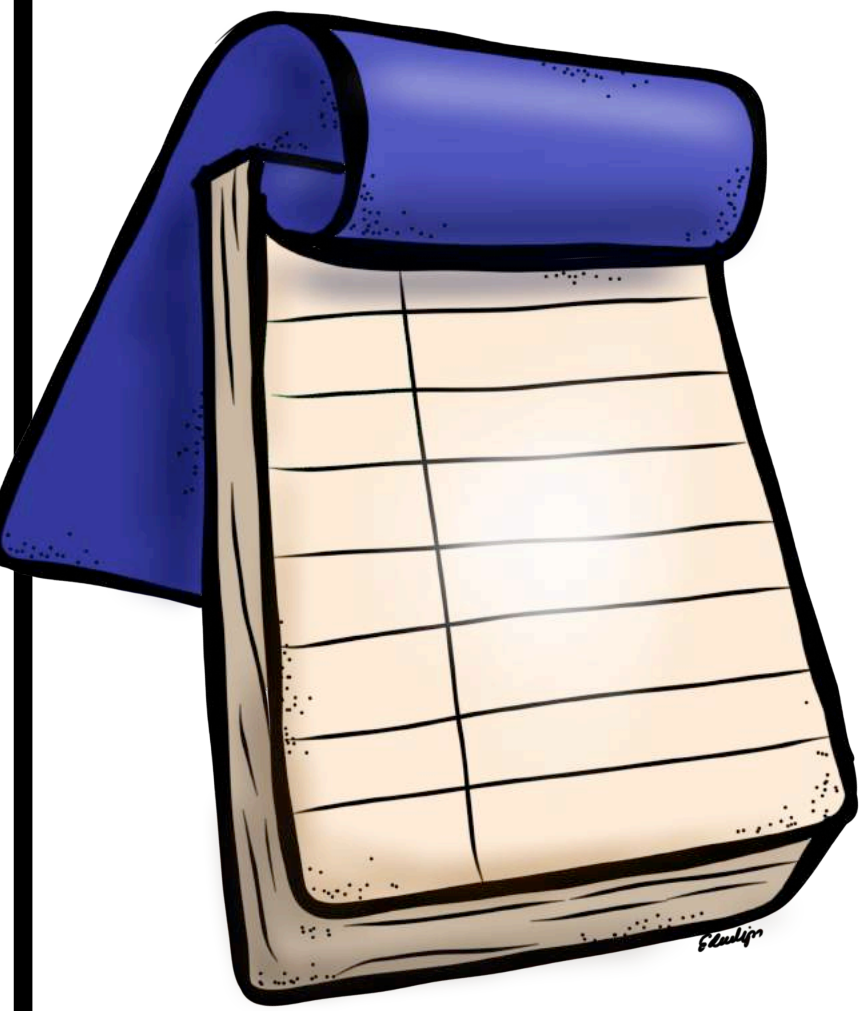
a scientific procedure used to make a discovery		to put in a safe place
	free space	
the possibility of something		almost always

the possibility of something		almost always
	free space	
a scientific procedure used to make a discovery		to put in a safe place

MATH CONNECTION

schedules

A PLAN THAT HELPS KEEP SOMEONE ON TRACK THAT USUALLY INCLUDES TIMES



Do you have a schedule posted in your classroom? What slot is given the most time? What slot is given the least amount of time?

Make a schedule that shows what your morning BEFORE school is typically like.

Magnetic Mouse Maze

If You Take a Mouse to School

NGSS Standard Alignment: K-2-ETS1-1: Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool, K-2-ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem, Magnetic Forces

Challenge Description: Students will draw a simple maze on piece of construction paper and use important parts of the book to glue along the maze in sequence. They will use a magnetic stick on the back of the paper to guide a paperclip mouse through the maze in the correct order.

Suggested Materials: construction paper (1 piece per group), black markers (1 per group), mouse maze cutouts (1 set per group), liquid glue, paperclip (1 per group) taped to the back of the mouse, jumbo popsicle stick with strong button magnet attached to the end (1 per group)

LESSON PLAN

1. Ask students to retell the different main events from the book If You Take a Mouse to School in order. Project Google images of mazes and ask students to share the similarities, differences, and important parts, as well as the importance of navigating a maze in a certain order. Record student ideas on the provided teacher chart and have them add ideas to their individual booklets.
2. Introduce permitted materials and share the challenge instructions. Discuss how magnetic forces (attract/repel) will be used to move the mice through the mazes. Refer to the provided vocabulary cards as needed throughout the lesson and display them in your classroom. Allow students time to construct and test their magnetic mouse mazes and record in their STEM journals.
3. Hold a whole class closing discussion and reflection, allowing students to trade mazes and try to navigate their mice. Have students share what they discovered about magnetic forces. Record their ideas on the provided teacher chart and have them finish their individual booklets.

Magnetic Mouse Maze

If You Take a Mouse to School

Possible Product

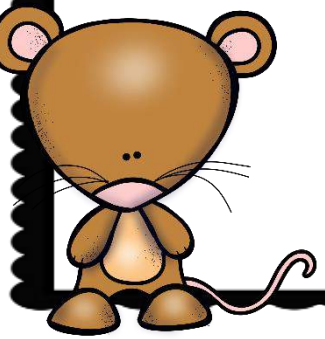
Magnetic Mouse Maze

If You Take a Mouse to School

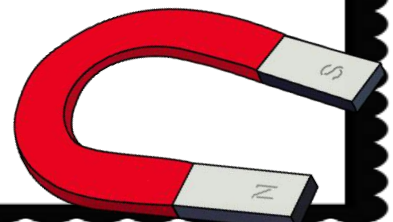
Important Parts of Mazes

Things that are Magnetic

How Mazes are Useful

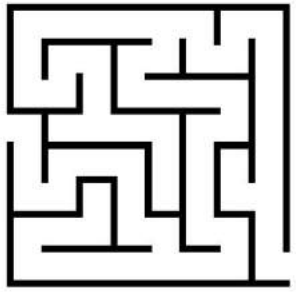


How Magnets are Useful

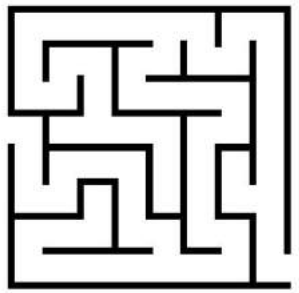


Magnetic Mouse Maze

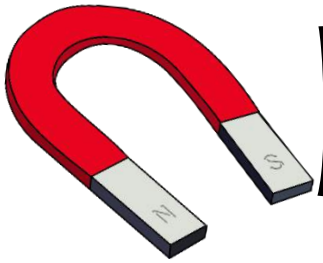
Vocabulary Cards



sequence

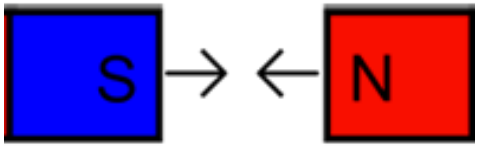


to arrange in a specific order

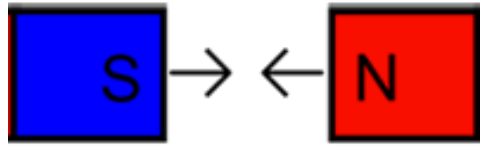


magnetic

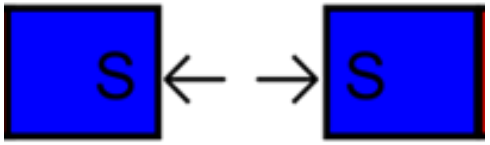
a physical force that attracts objects together by using a magnetic field



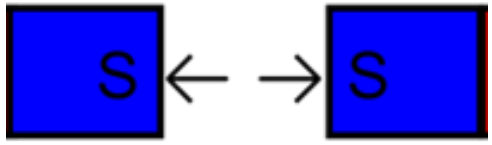
attract



to bring together by using magnetic force with opposite poles



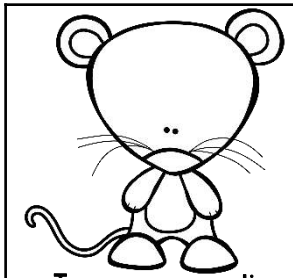
repel

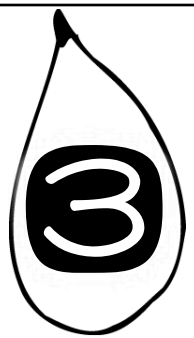


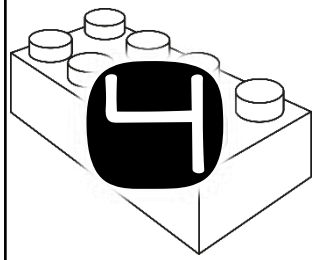
to push away by using magnetic force with like poles

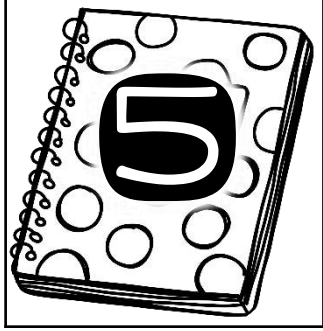
Magnetic Mouse Maze

Draw your maze on your construction paper.
Cut apart the pieces below.
Tape a paperclip to the back of the mouse.
Glue the START at the beginning of your maze.
Glue the 6 main story events in order.
Glue the END at the end of your maze.


Tape paperclip on the back.

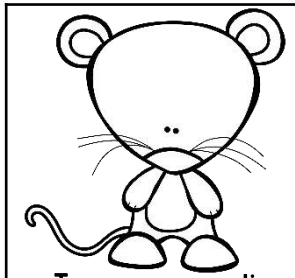


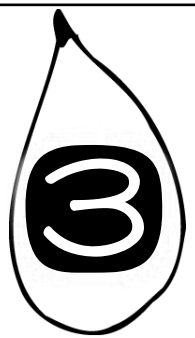


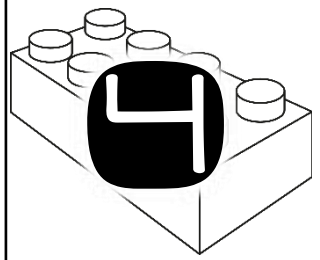


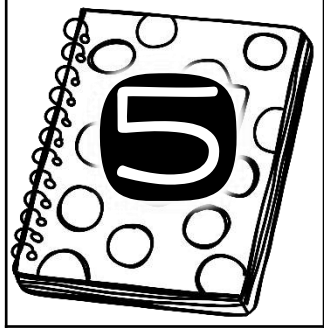
Magnetic Mouse Maze

Draw your maze on your construction paper.
Cut apart the pieces below.
Tape a paperclip to the back of the mouse.
Glue the START at the beginning of your maze.
Glue the 6 main story events in order.
Glue the END at the end of your maze.


Tape paperclip on the back.







Maze Tests

TEST	Did your mouse complete the maze?
1	
2	
3	

One thing that was EASY:

One thing that was HARD:

One new thing I LEARNED:

Magnetic Mouse Maze

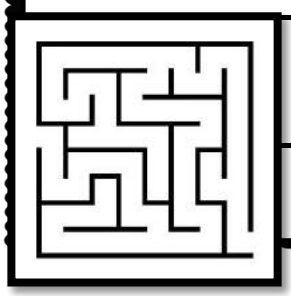
If You Take a Mouse to School

Name:_____

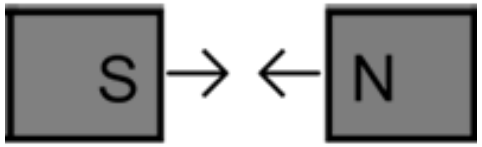
STEM CHALLENGE

Can you create a maze and use magnets to move a mouse through the maze from start to finish?

Important Parts of Mazes

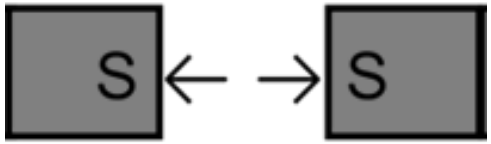


How Magnets Work



Magnets with opposite poles will

_____.

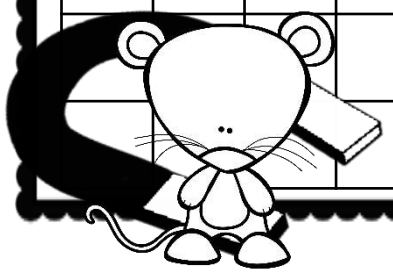


Magnets with like poles will

_____.

Things That are Magnetic

My Magnetic Maze



If You Take a Mouse to School

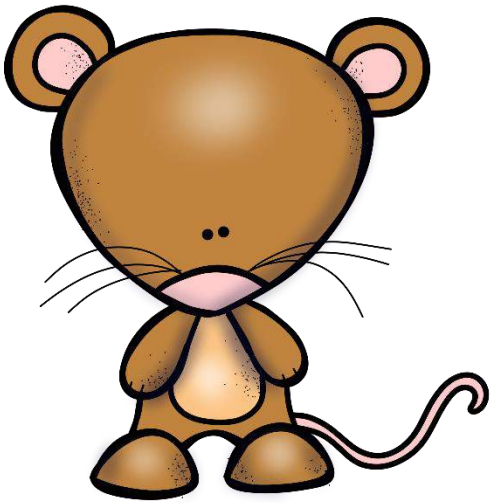
Maker Task Cards

Use the following task cards in a MakerSpace or with STEM Bins for students to make more creations.

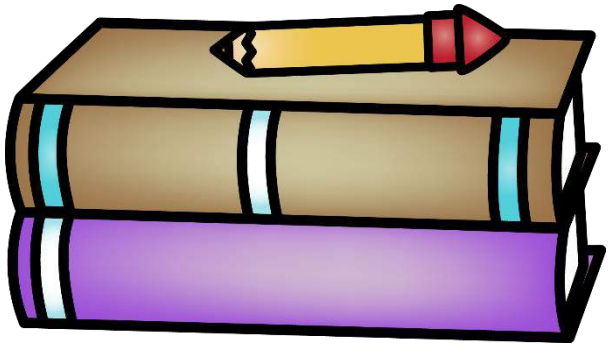
Design a new and improved lunchbox.

Design a new and improved backpack.

Make a house for a mouse.



Make a book about a mouse adventure.



Dig Deeper Into the Text!

Teacher Questions for Perfect Square

How does the square feel at the beginning of the book?

How does the author sequence the events in the story?

Why do you think the author chose a square for this book? If it is a shape that needs to be "perfect" why does square work well?

On the page where the square is shattered, what kind of glass does this make you think of? How is stained glass made?

How did the shape change in terms of its personality throughout the book? How do you know this?

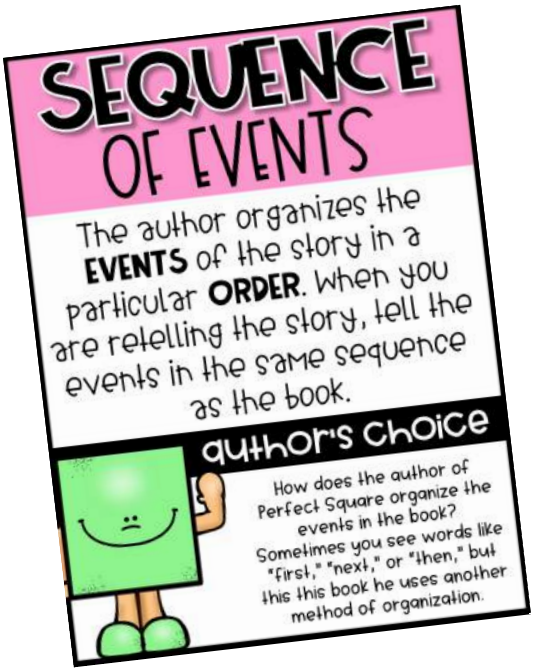
How could this story relate to someone who has gone out and traveled the world?

TEACHERS: PRINT ON COLORED PAPER AND LAMINATE. USE THIS BOOKMARK YEAR AFTER YEAR TO HELP EXTEND STUDENTS' THINKING!

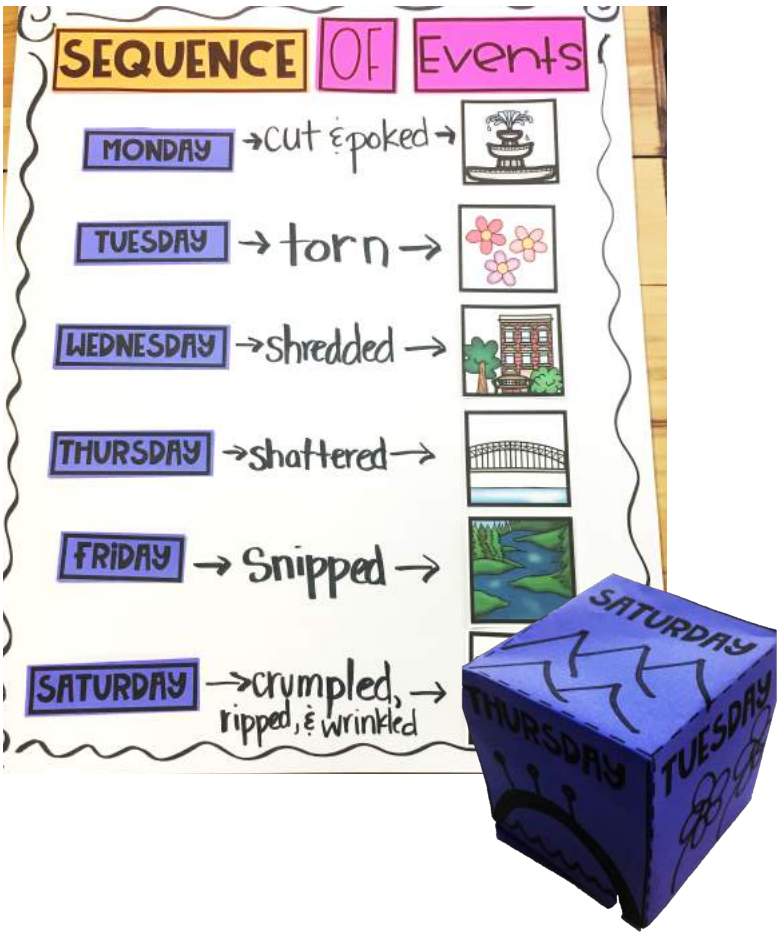
Intended Use

COMPREHENSION

1. After you have read the book, discuss sequencing events when retelling a story. How did Michael Hall organize *Perfect Square*?

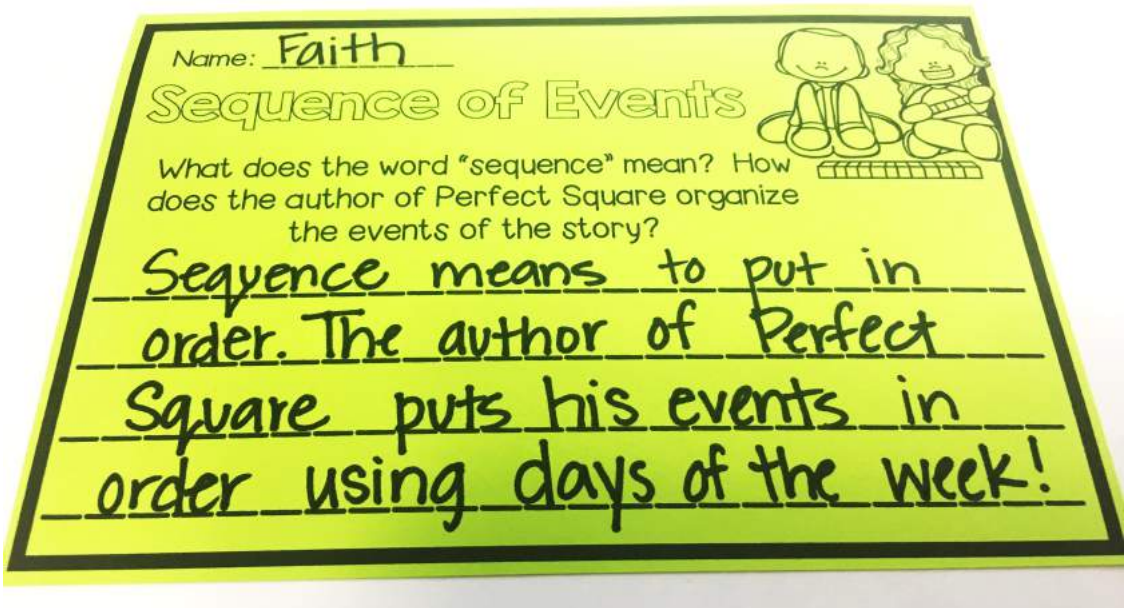


2. Make a large class anchor chart to show the days of the week, how the square was changed, and what it was changed into. Let the students draw what happened on each day and fold it up into cube.



COMPREHENSION

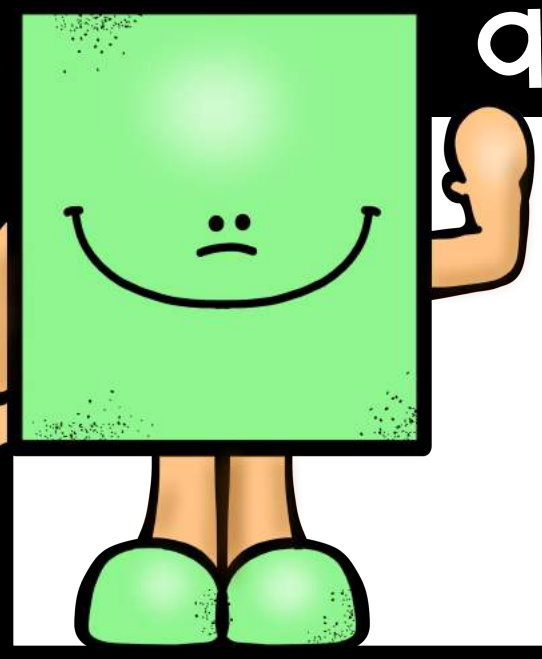
3. Have students explain what sequence means and how the author of *Perfect Square* organized the text.



4. Optional Extension Activity for High Flyers! Use the Learning a Lesson poster to review what a "lesson" is. Have students decorate their own perfect square and write about the lesson.

SEQUENCE OF EVENTS

The author organizes the **EVENTS** of the story in a particular **ORDER**. When you are retelling the story, tell the events in the same sequence as the book.

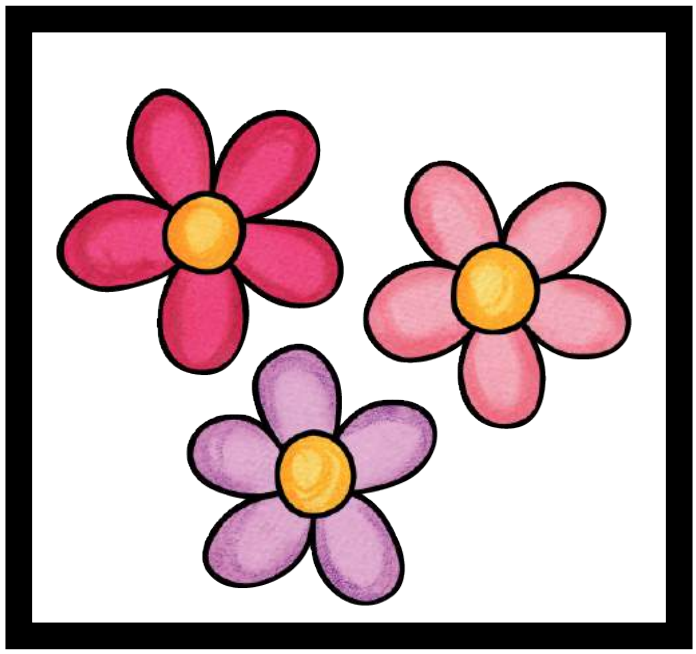


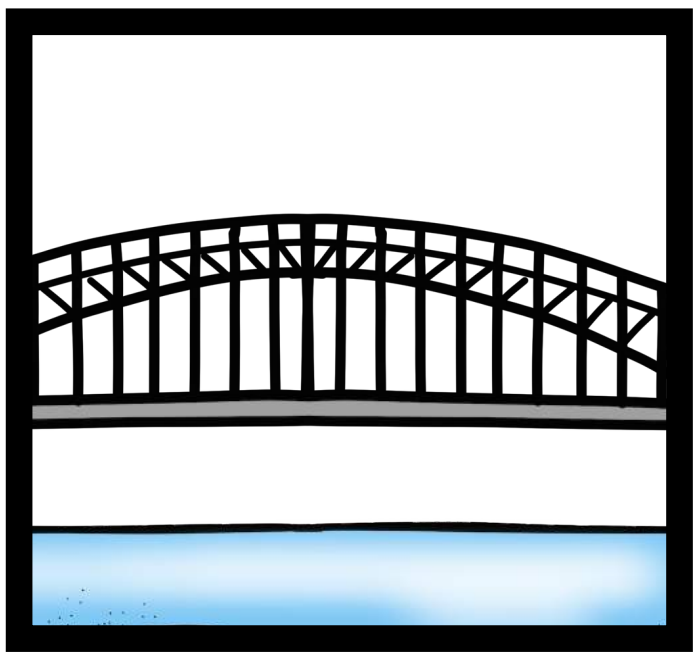
author's choice

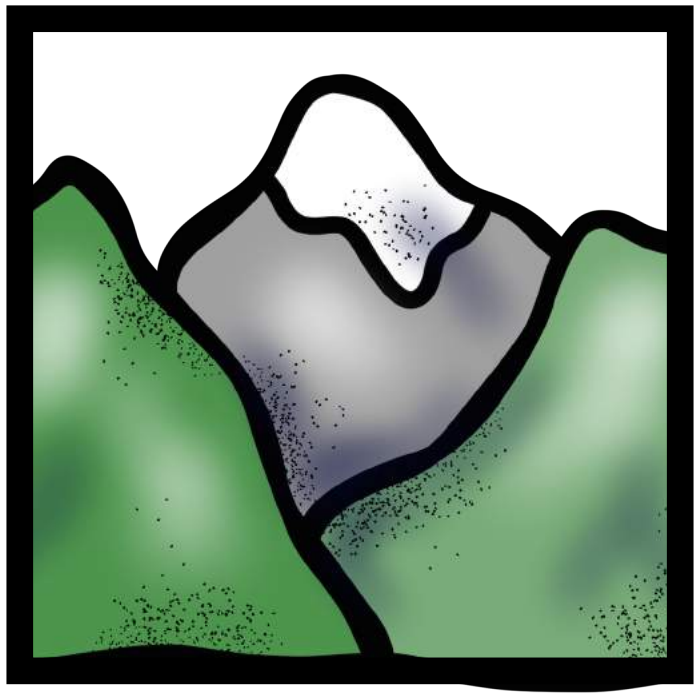
How does the author of Perfect Square organize the events in the book? Sometimes you see words like "first," "next," or "then," but in this book he uses another method of organization.

SEQUENCE

OF Events

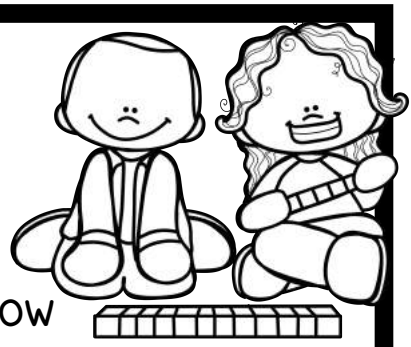






Name: _____

Sequence of Events



What does the word "sequence" mean? How does the author of Perfect Square organize the events of the story?

_____

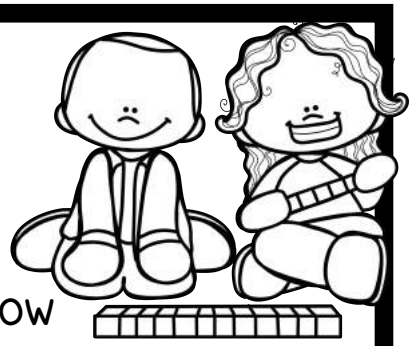
_____

_____

_____

Name: _____

Sequence of Events



What does the word "sequence" mean? How does the author of Perfect Square organize the events of the story?

_____

_____

_____

_____

LEARNING A LESSON

What did the square learn about **PERFECTION**?

How can you apply this **LESSON** to your own life?

PERFECT SQUARE
Lessons

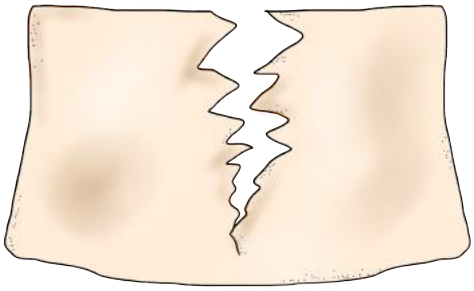
PERFECT SQUARE
Lessons

Each student needs a square to decorate

babbled

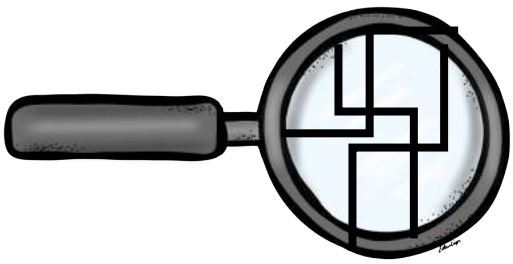
making sound of water flowing over rocks

shred



to tear into small pieces

shatter



to break into small pieces

confining

limited space; tight fit

Teacher Talk

*After going over the definitions, teachers can use the cards in all kinds of ways. Have students pair up. Put one of the cards up on the projector and ask the students to come up with a sentence. Another option would be to have the students act out the words together.

TEACHERS: PRINT ON COLORED PAPER AND HAVE STUDENTS HOLD UP. USE THIS AS A QUICK WAY TO GAUGE UNDERSTANDING! SCAN THE ROOM TO LOOK FOR THE COLOR YOU ARE LOOKING FOR!

babbled

making sound of water flowing over rocks

babbled

making sound of water flowing over rocks

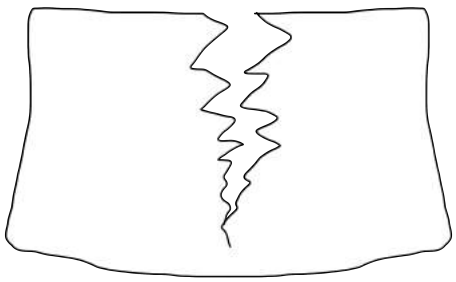
babbled

making sound of water flowing over rocks

babbled

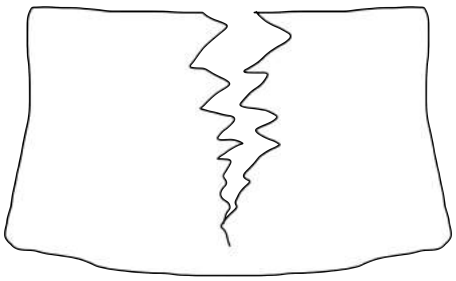
making sound of water flowing over rocks

shredded



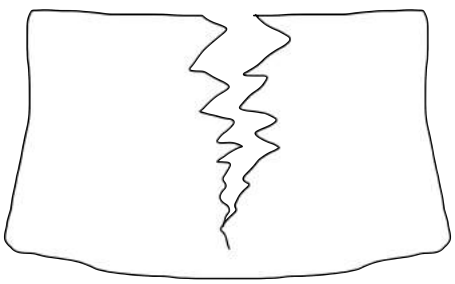
to **tear** into small pieces

shredded



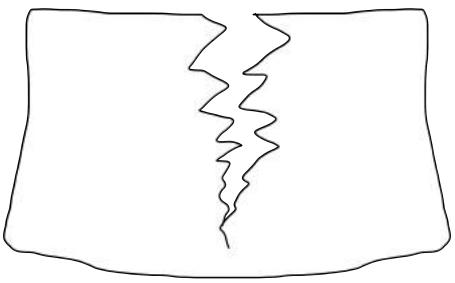
to **tear** into small pieces

shredded



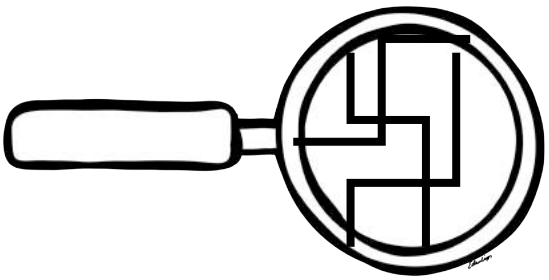
to **tear** into small pieces

shredded



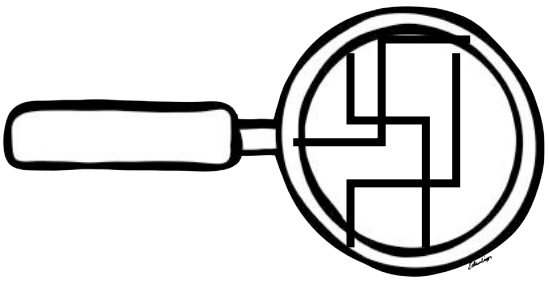
to **tear** into small pieces

shatter



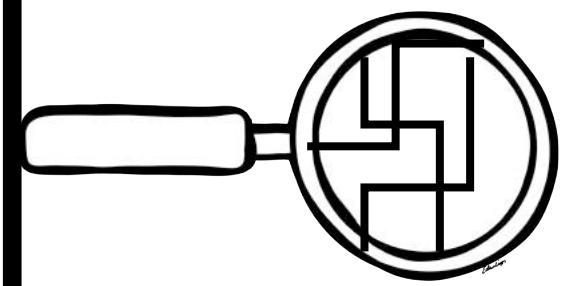
to **break** into small pieces

shatter



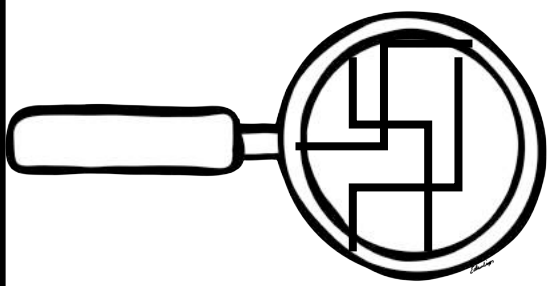
to **break** into small pieces

shatter



to **break** into small pieces

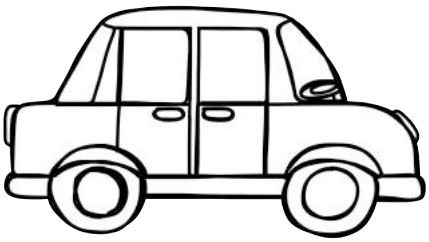
shatter



to **break** into small pieces

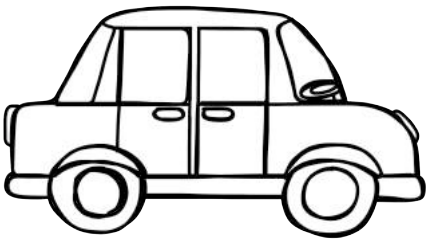
©Brooke Brown and Katie King

confining



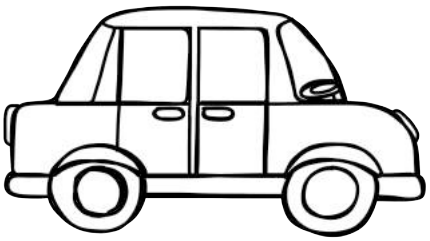
limited space;
tight fit

confining



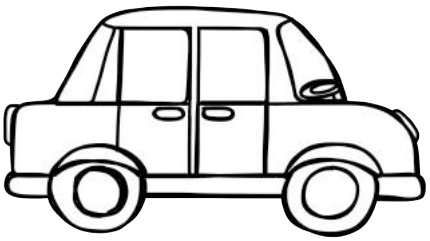
limited space;
tight fit

confining



limited space;
tight fit

confining



limited space;
tight fit

vocab 3-in-a-Row

Directions for Set-Up: Each player needs a game board. Students fill in the empty spaces with their four vocabulary words. The students also need "Markers" of some kind to cover the words or definitions.

Directions to Play: Teacher will call out either a word or a definition. The students should cover up the matching square. For example- Teacher "tilt" Student covers up " to move to an angle." When a student has three in a row, they yell out "Press Here."

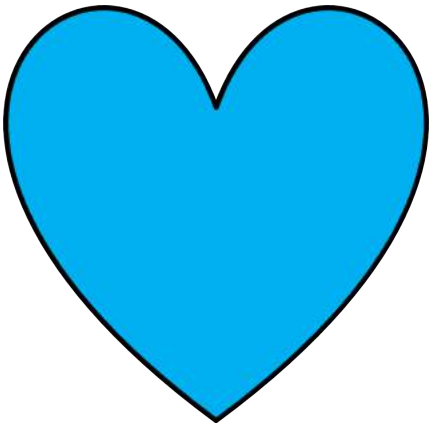
to **tear** into small pieces		limited space; tight fit
	free space	
to **break** into small pieces		making sound of water flowing over rocks

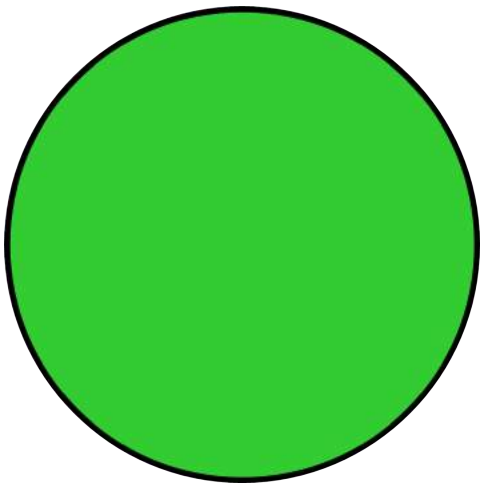
making sound of water flowing over rocks		to **tear** into small pieces
	free space	
to **break** into small pieces		limited space; tight fit

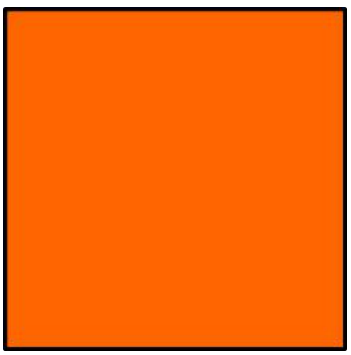
MATH CONNECTION

Partitioning shapes

DIVIDING SHAPES INTO EQUAL PARTS



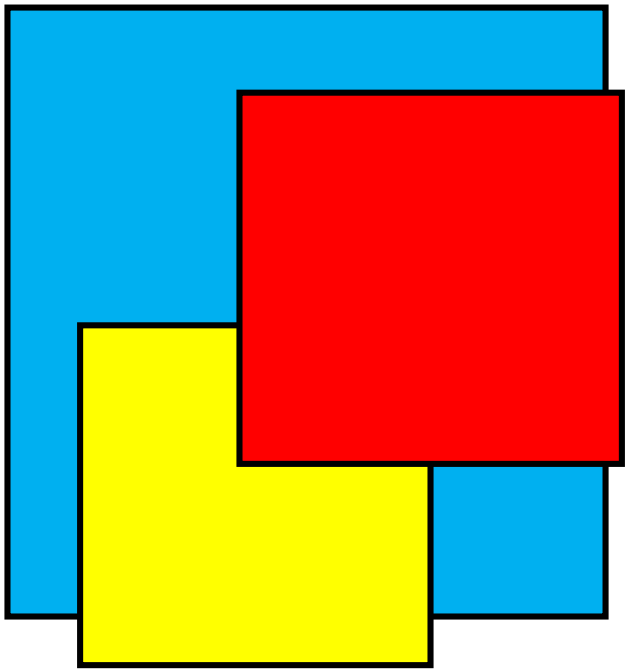




Use a stencil to draw four different shapes. Practice drawing lines to break the shapes into equal parts.

Square Sculptures

Perfect Square



NGSS/CCSS Standard Alignment: 2-PS1-3: Make observations to construct and evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object, K-2-ETS1-1: Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool, K-2-ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. Identify and Describe Shapes, Analyze, Compare, Create, and Compose Shapes, Reason with shapes and their attributes.

Challenge Description: Using various paper sculpting techniques, students will turn one construction paper square into a two-dimensional picture or three-dimensional sculpture of their choosing. They will cut and tear paper and tape or glue pieces together to make their creations.

Suggested Materials: 1 construction paper square and 1 piece of regular construction paper for base (per pair of students), scotch tape, glue, scissors

Lesson Plan

1. Ask students to brainstorm different ways that we can make two-dimensional shapes and three-dimensional structures out of construction paper. Record their answers on the teacher chart and have them list ideas in their student booklets. Share the provided paper sculpture chart and model some of the techniques if necessary. Refer to the provided vocabulary cards as needed throughout the lesson and display them in your classroom.
2. Introduce permitted materials and share the challenge. Ask them to share different things that their squares can turn into, including examples from the book, Perfect Square. Allow students at least 45 minutes with partners or small groups to make their square creations and record in their STEM journals. Encourage them to use all the pieces of their squares as details in their creations.
3. Hold a whole class closing discussion and reflection, allowing students to share what they created and compare and contrast different designs and techniques.

Square Sculptures

Perfect Square

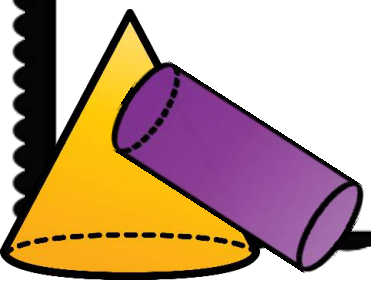
Possible Product

Square Sculpture

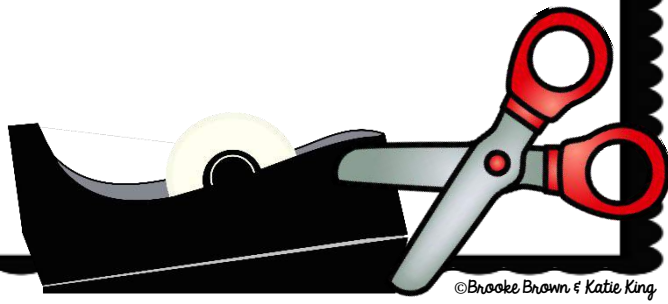
Perfect Square

2D Shape Ideas

3D Structure Ideas

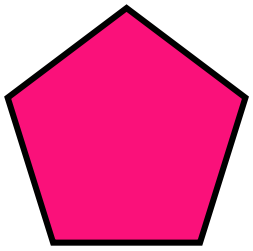


What can we turn our squares into?



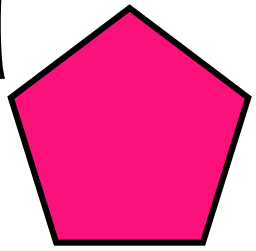
Square Sculptures

Vocabulary Cards

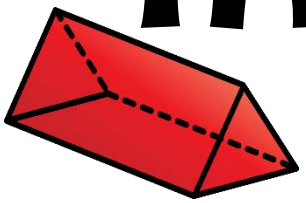


two-dimensional

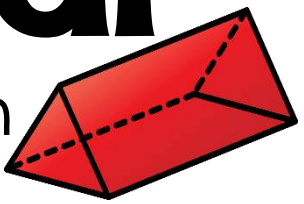
a flat shape with length and width



three-dimensional



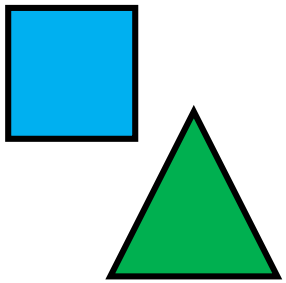
a solid structure with length, height, and depth



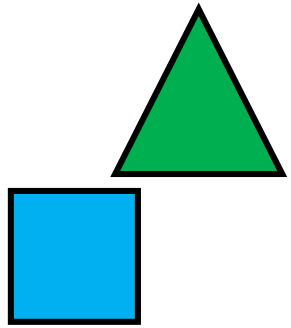
sculpture

a three-dimensional form, usually created by
by carving, molding, or putting shapes together

rearrange



to move something to a different position

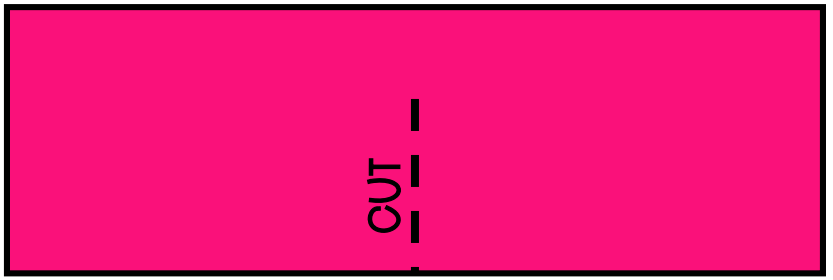


Paper Sculpture Techniques

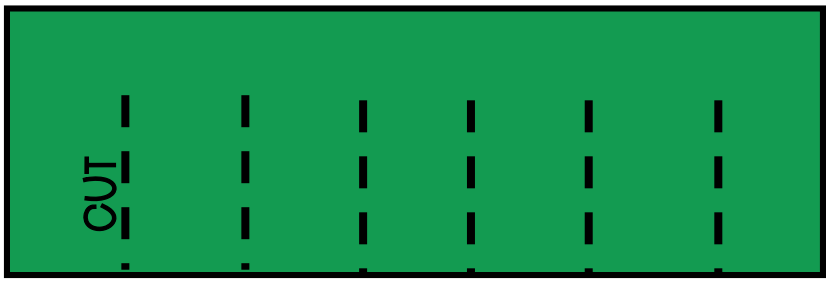
cone

cylinder/roll/curl

slot

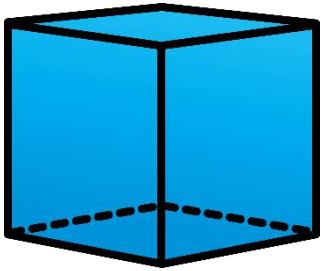


fringe (straight or curled)

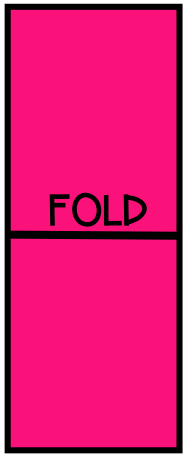


accordion fold

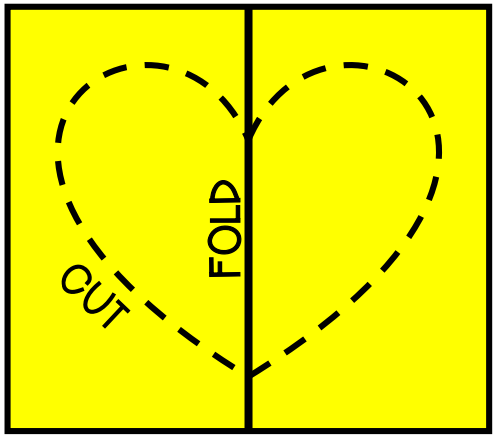
cube



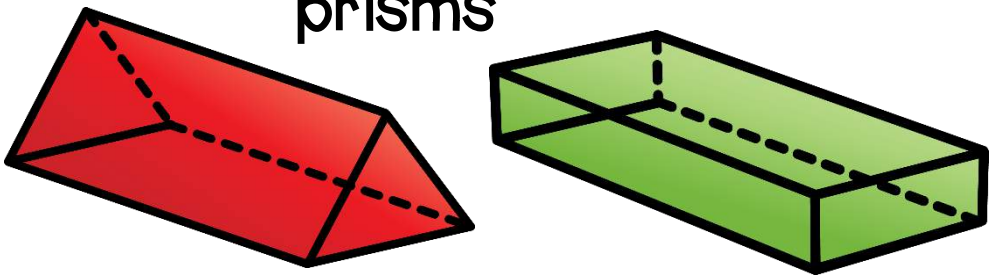
prop up



symmetry



prisms



My Friends' Square Creations

Square Sculptures

Perfect Square

Name:_____

STEM CHALLENGE

Can you create something new out of a square?

Square Creations From the Book

2D Shape Ideas

3D Sculpture Ideas

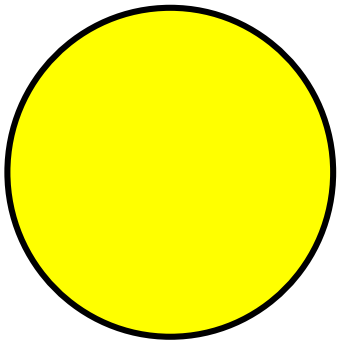
Creation Ideas

My Square Sculpture

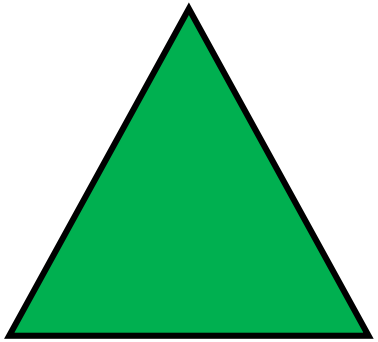
Perfect Square

Maker Task Cards

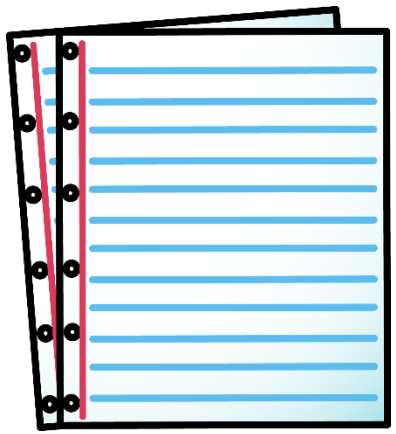
Use the following task cards in a MakerSpace or with STEM Bins for students to make more creations.



Make something new out of a circle.



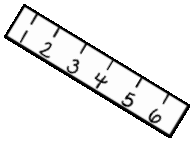
Make something new out of a triangle.



Make something useful out of paper.

Make a poster about all the shapes you know.

STEM Challenge Assessment Rubric



Challenge: _____

Date: _____

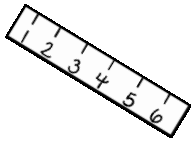
Student Name: _____

3	2	1
Student followed all instructions for challenge.	Student followed some instructions for challenge.	Student did not follow instructions for challenge.
Student used best effort and perseverance on challenge.	Student used good effort and perseverance on challenge.	Student did not show effort or perseverance on challenge.
Student completed assigned blueprint and reflection sheet.	Student partially completed assigned blueprint and reflection sheet.	Student did not complete assigned blueprint and recording sheet.
Student showed accuracy in testing, calculating, and measuring.	Student showed some accuracy in testing, calculating, and measuring.	Student did not show accuracy in testing, calculating, or measuring.
Student fully cooperated with group members and contributed fairly.	Student partially cooperated with group members and contributed fairly.	Student struggled to cooperate with group members and/or failed to contribute.
Student fully participated in class discussions.	Student somewhat participated in class discussions.	Student did not participate in class discussions.

TOTAL POINTS: _____ /18

Comments: _____

STEM Challenge Assessment Rubric



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TOTAL POINTS: _____ /18

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Comments: _____

We Need Supplies for Storybook STEM!

Dear Families,

We are learning all about Science, Math, Engineering, and Technology through Storybook STEM lessons, and we need your help! If you are able to donate any of the following supplies for our STEM Challenges, please detach and return the form below and send back to school with your child. We greatly appreciate your support and generosity!

We are in need of the following items by _____.

Thank you so much for supporting our Storybook STEM Lessons!
Please contact me at _____ with any questions.

Sincerely,

_____

If you are able to donate, please detach and return the form below:

Parent Name(s): _____

Child's Name: _____

I am able to donate: _____

credits

Thank you for your purchase!

Created by
Brooke Brown & Katie King