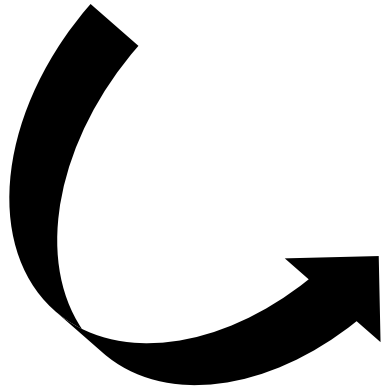


Love *Storybook* STEM?

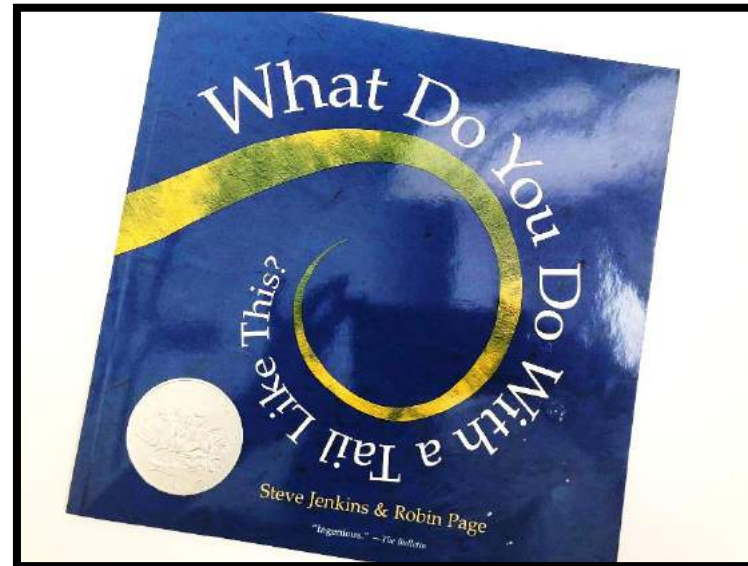
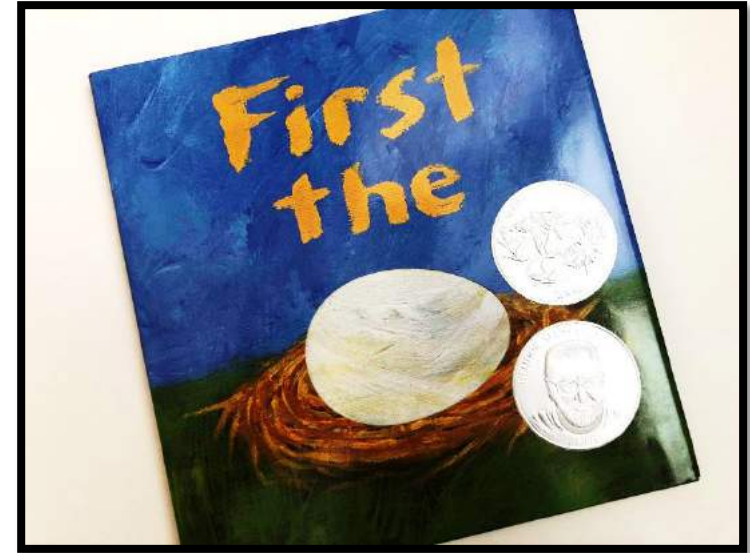
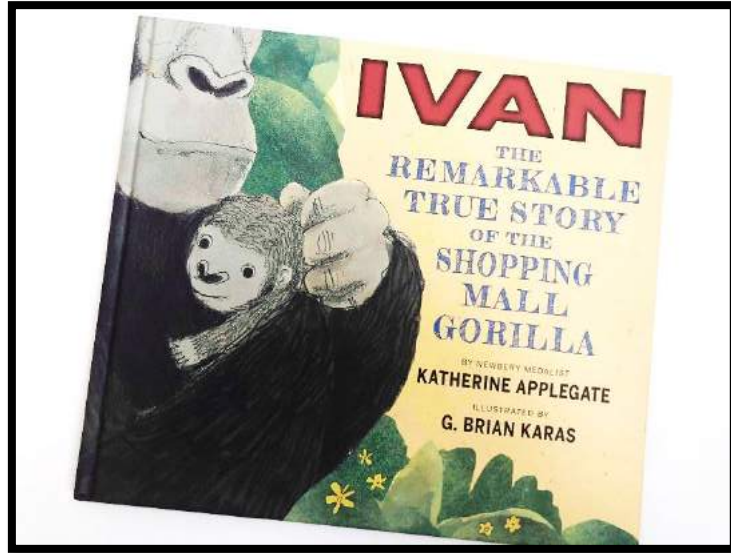
Save BIG with the Science Bundle!

**Click
Here!**




Animals BOOK SELECTIONS

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



Brooke Brown of Teach Outside the Box is a participant in the Amazon Services LLC Associates Program, an affiliate advertising program designed to provide a means for sites to earn advertising fees by advertising and linking to Amazon.com. This product contains affiliate links for Amazon. By purchasing an item on the Amazon site using these links, she will receive a small commission on your purchase.



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WHAT DO YOU DO WITH A TAIL LIKE THIS? BY STEVE JENKINS

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ELA

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Dig Deeper Into the Text!



Teacher Questions for IVAN: The Remarkable True Story Of the Shopping Mall GORILLA

*What do we as a class know about gorillas?

*A group of gorillas is called a "troop". What other animal group names do you know?

*How does the baby gorilla learn? Do you think you learn through play too?

*Can you imagine how scared the baby gorillas were in the box away from their moms? Why would the poachers take them?

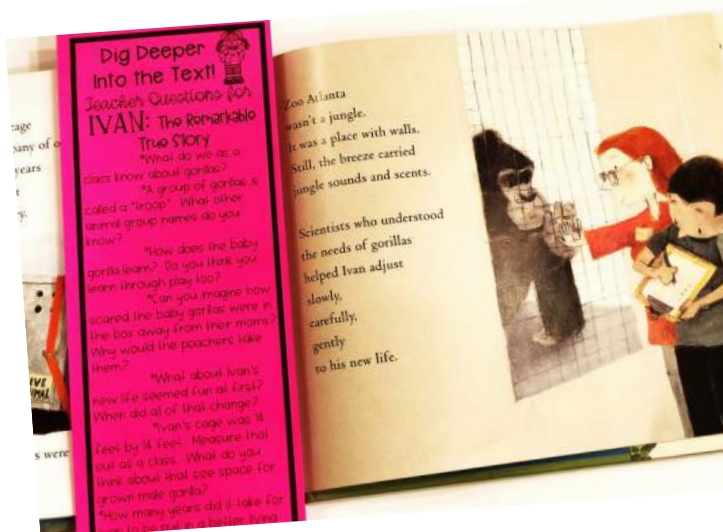
*What about Ivan's new life seemed fun at first? When did all of that change?

*Ivan's cage was 14 feet by 14 feet. Measure that out as a class. What do you think about that size space for grown male gorilla?

*How many years did it take for Ivan to be put in a better living space? How do you feel about this?

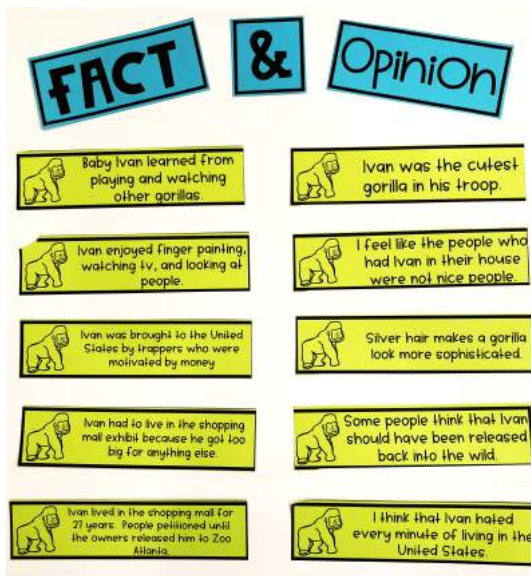
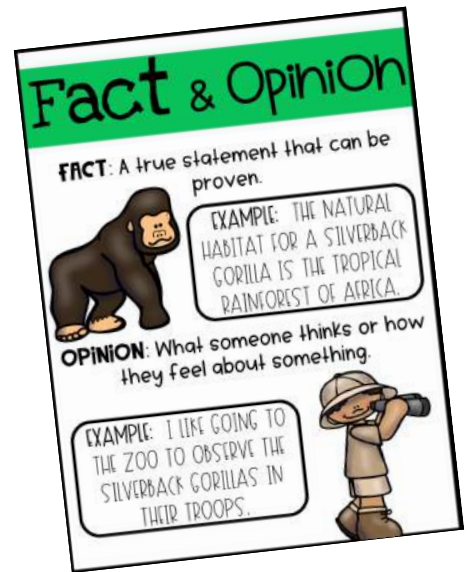
Teachers: Print on colored paper and laminate. Use this bookmark year after year to help extend students' thinking! You can even tape it in the front cover so you always know where it is!

Intended
Use



IVAN

1. Read *Ivan: The Remarkable True Story of the Shopping Mall Gorilla*. Use the bookmark to guide the discussion, but also give students time to discuss what stuck out to them. Go over the Fact and Opinion poster.



2. Create the whole class anchor chart together as a class. Sort the ten sentences between fact and opinion.

3. Ask students to write their own fact and opinion from the book. Glue the flip-flap in a notebook or have students write on the back!



IVAN

Name: _____

Fact & Opinion

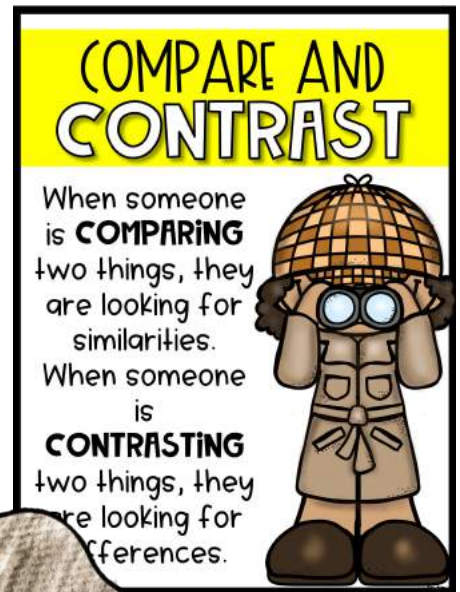
Choose one topic to write a fact and opinion about.

FACT	OPINION
_____	_____
_____	_____
_____	_____

4. This half sheet can be used as an exit slip to check for understanding of how students gained information.

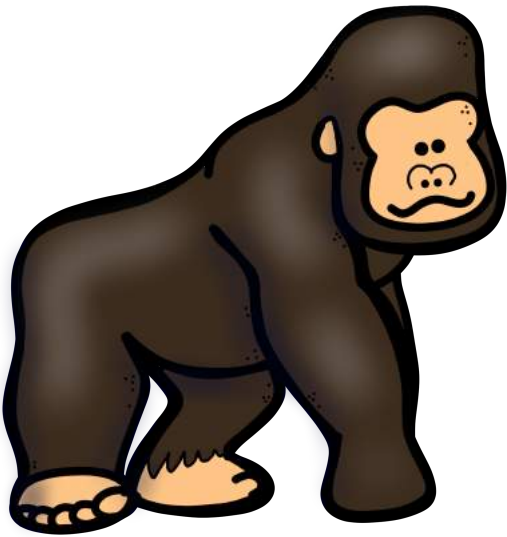
5. Optional High Flyer activity: Go over the Compare and Contrast poster. Tell students they are to look at Ivan's main habitats: the exhibit at the mall and the enclosure at Zoo Atlanta. Glue the gorilla head as if he was peeking over the top.

*The "same" section may be hard but talk to students how both are considered "captivity" although one is much more humane than the other.



Fact & Opinion

FACT: A true statement that can be proven.



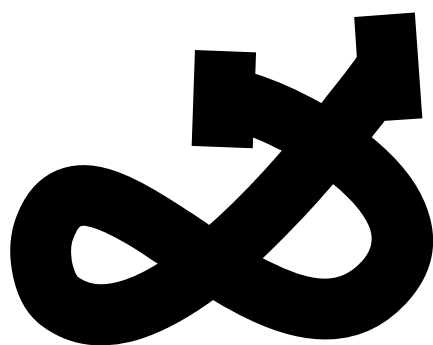
EXAMPLE: THE NATURAL HABITAT FOR A SILVERBACK GORILLA IS THE TROPICAL RAINFOREST OF AFRICA.

OPINION: What someone thinks or how they feel about something.

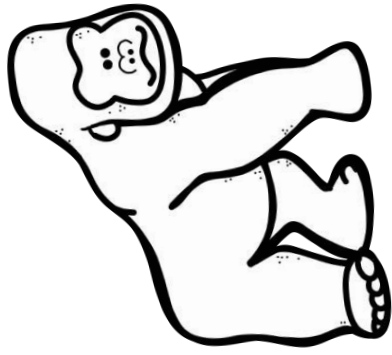
EXAMPLE: I LIKE GOING TO THE ZOO TO OBSERVE THE SILVERBACK GORILLAS IN THEIR TROOPS.



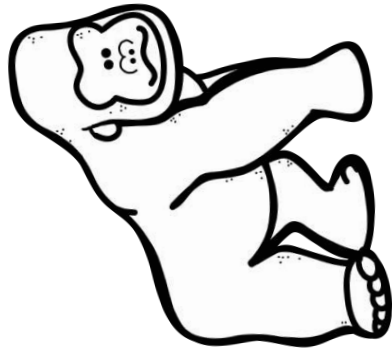
FACT



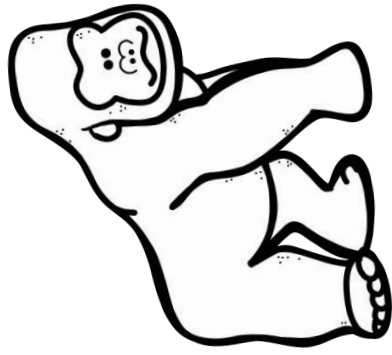
Opinion



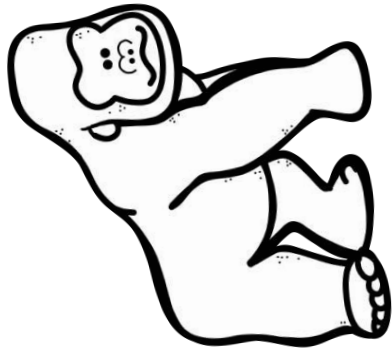
Ivan was the cutest
gorilla in his troop.



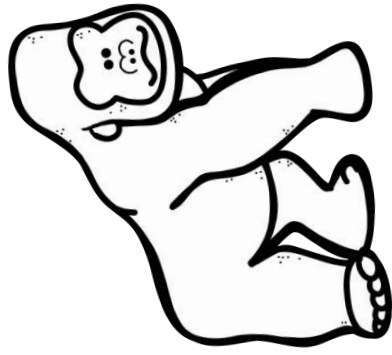
Baby Ivan learned from
playing and watching
other gorillas.



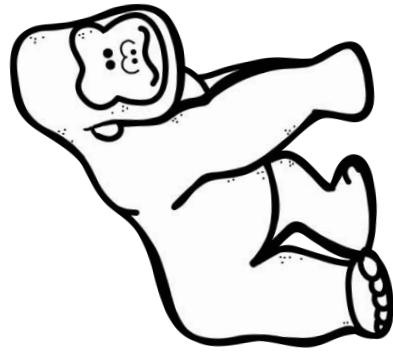
Ivan was brought to the United
States by trappers who were
motivated by money



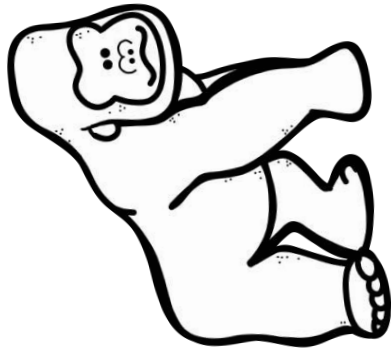
I feel like the people who
had Ivan in their house
were not nice people.



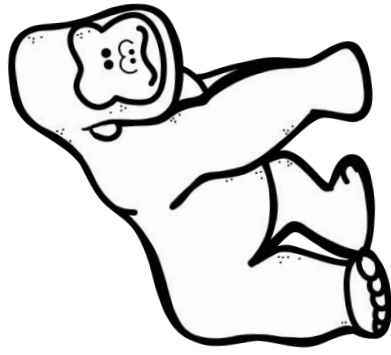
I think that Ivan hated
every minute of living in the
United States.



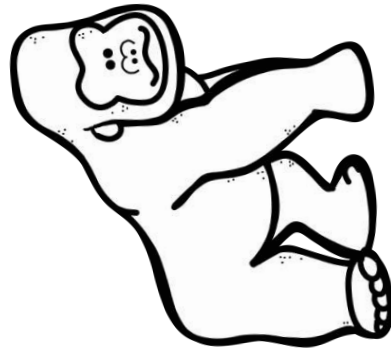
Ivan had to live in the shopping
mall exhibit because he got too
big for anything else.



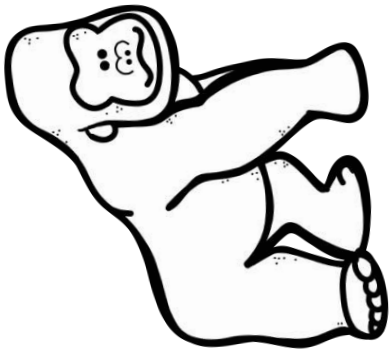
Silver hair makes a gorilla
look more sophisticated.



Ivan enjoyed finger painting,
watching tv, and looking at
people.

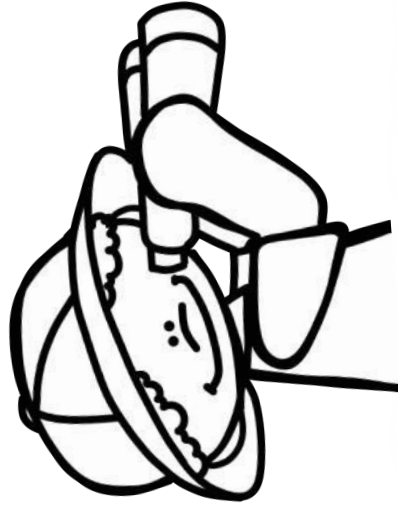
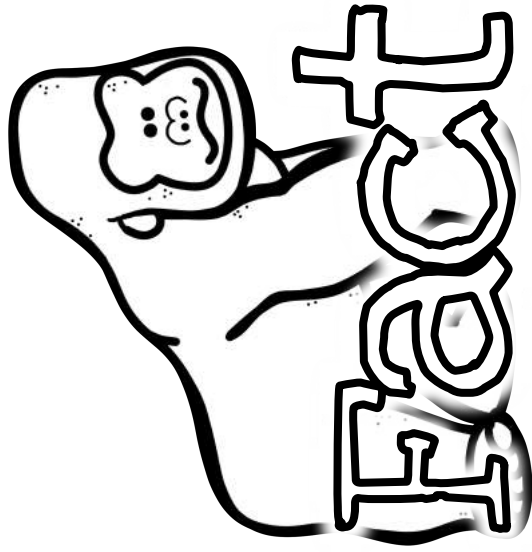


Ivan lived in the shopping mall for
27 years. People petitioned until
the owners released him to Zoo
Atlanta.



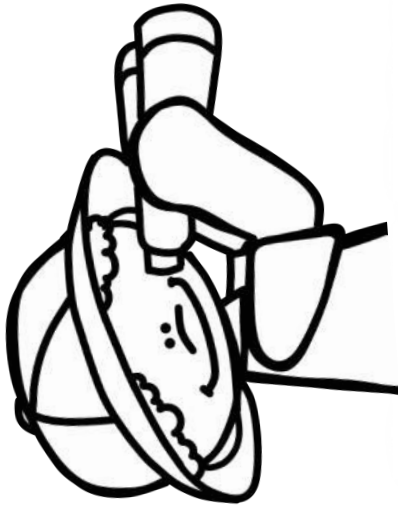
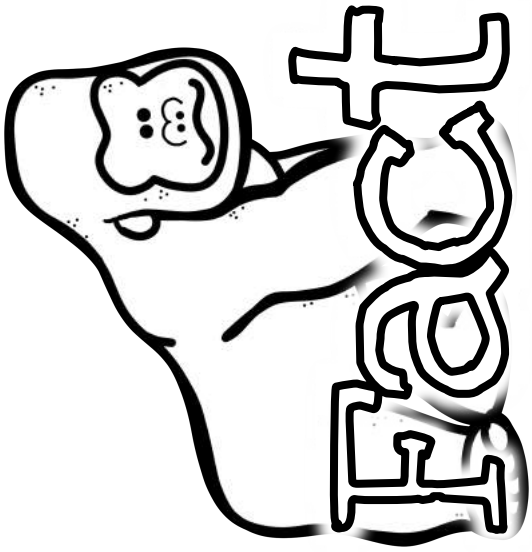
Some people think that Ivan
should have been released
back into the wild.

WHAT about IVAN?



OPINION

WHAT about IVAN?



OPINION

Name: _____

Fact & Opinion



Choose one topic to write a fact and opinion about.

FACT

OPINION

Name: _____

Fact & Opinion



Choose one topic to write a fact and opinion about.

FACT

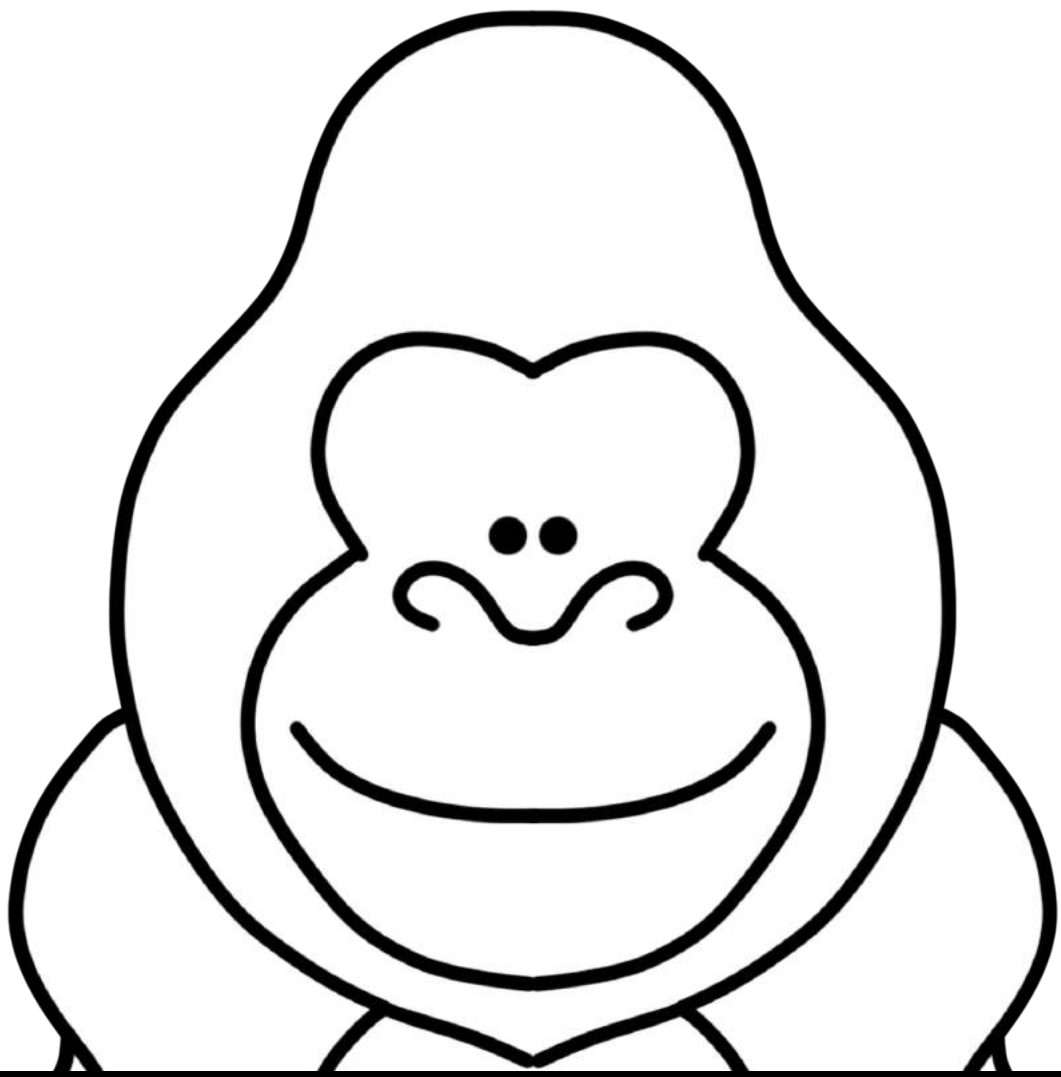
OPINION

COMPARE AND CONTRAST

When someone
is **COMPARiNG**
two things, they
are looking for
similarities.

When someone
is
CONTRASTiNG
two things, they
are looking for
differences.





Color and then glue to the
back of Flap-book.



**SHOPPING
MALL**

Same

**ZOO
ATLANTA**

venn diagram fLAP-BOOK

Fold on the dark black line, cut on the two dotted lines.

Compare and contrast the two places that Ivan lived.

Name: _____

Date: _____

VOCABULARY



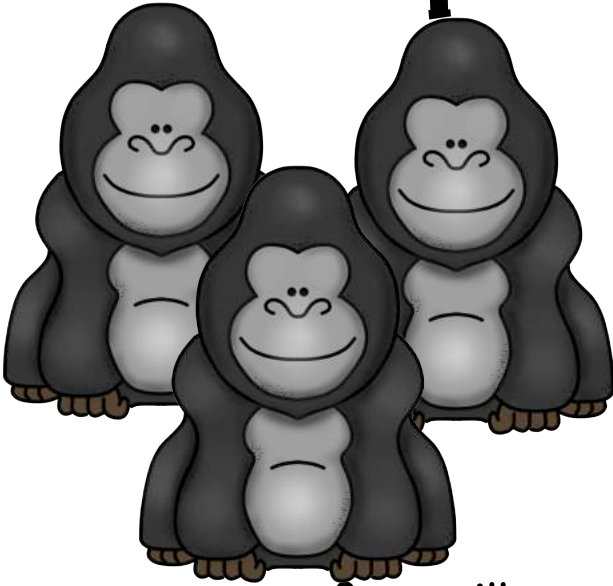
After going over the definitions, teachers can use the cards in all kinds of ways. Have students pair up. Put one of the cards up on the projector and ask the students to come up with a sentence. Another option would be to have the students act out the words together.

Keep vocabulary words displayed in the classroom or add them to a ring and use during a word work station.

Teachers: Print the black and white versions on colored paper and have students hold them up as you give examples, synonyms, or antonyms. Be creative! Use this as a quick way to gauge understanding! Scan the room to look for the color you are looking for!

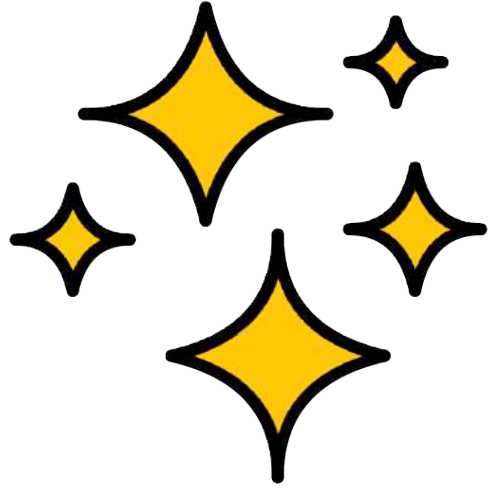


troop



a group of gorillas
that live together

shimmer



to shine with soft
light

petition



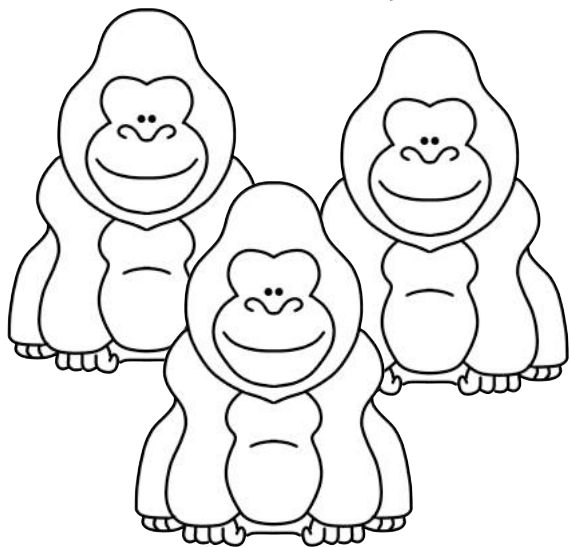
a formal written
request

adjust



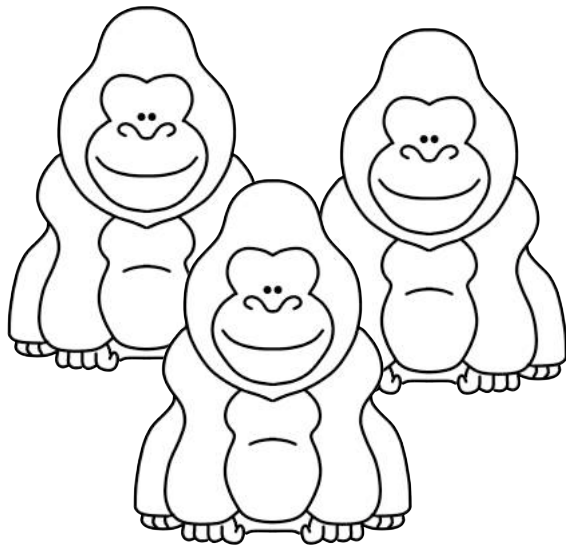
to make changes

troop



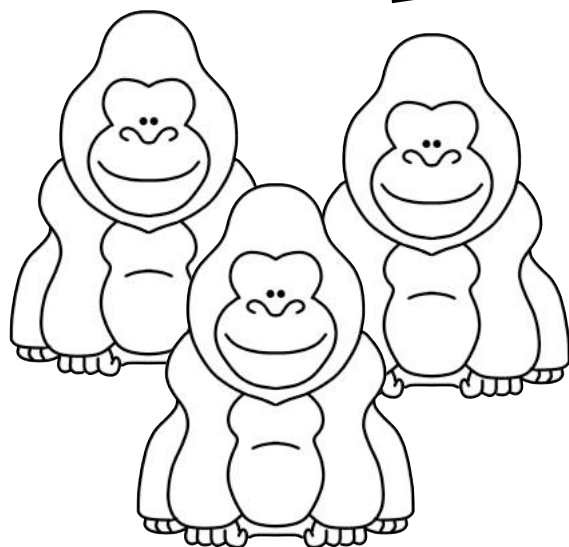
a group of gorillas
that live together

troop



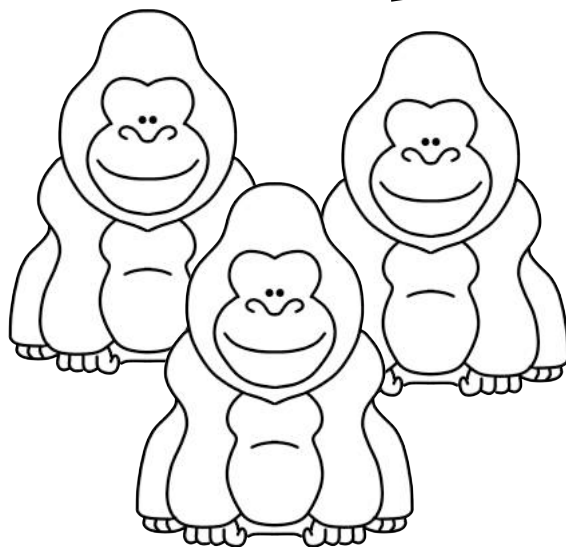
a group of gorillas
that live together

troop



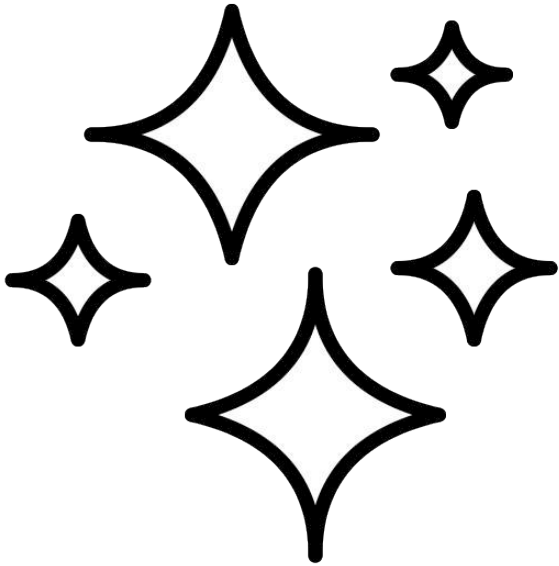
a group of gorillas
that live together

troop



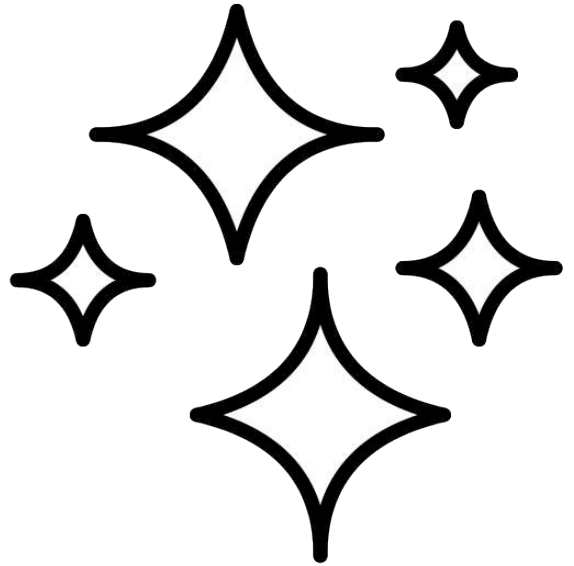
a group of gorillas
that live together

shimmer



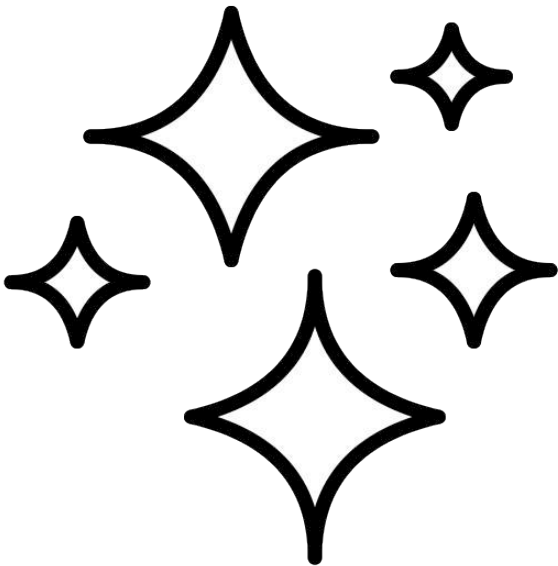
to shine with soft
light

shimmer



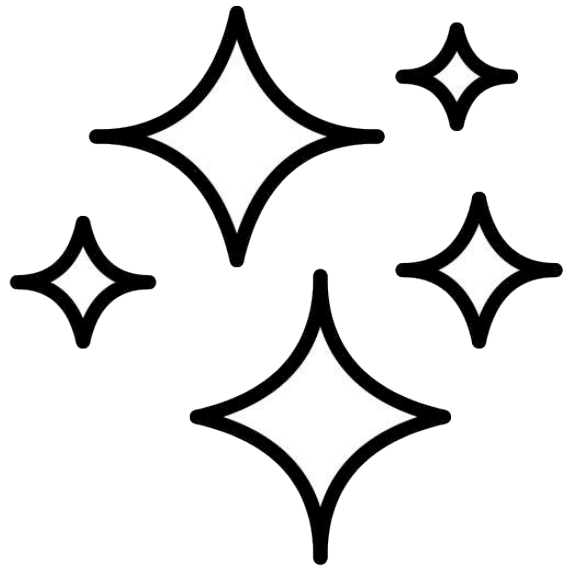
to shine with soft
light

shimmer



to shine with soft
light

shimmer



to shine with soft
light

petition



a formal written
request

petition



a formal written
request

petition \



a formal written
request

petition



a formal written
request

adjust



to make changes

adjust



to make changes

adjust



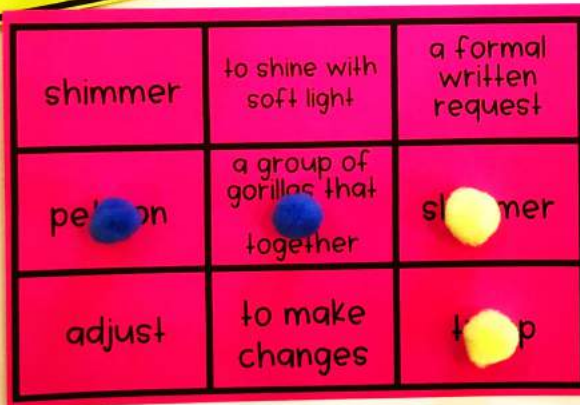
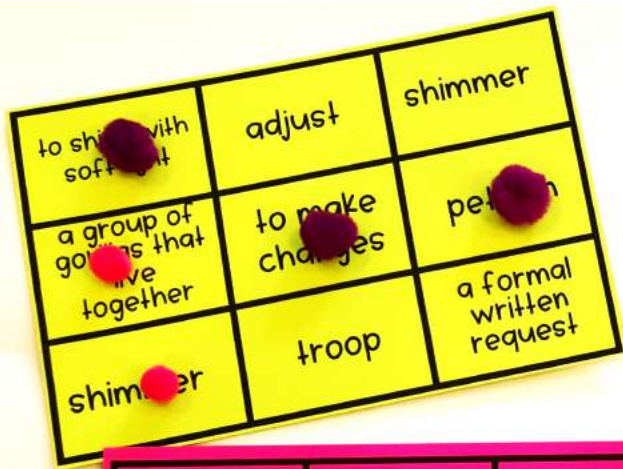
to make changes

adjust




to make changes

VOCAB TIC-TAC-TOE




Name: _____


Vocabulary

WORD: _____ PICTURE: 


SENTENCE: _____

WORD: _____ PICTURE: 

SENTENCE: _____

WORD: _____ PICTURE: 

SENTENCE: _____

WORD: _____ PICTURE: 

SENTENCE: _____

DIRECTIONS FOR SET-UP: Print a board on colored paper. Use pom-poms or any other small pieces to act as the x's and o's.

DIRECTIONS TO PLAY: Students will play the game in pairs. In order to cover a spot, they must be able to define the word OR identify the word, based on what is already on the board. If students tie, they will play again based on time allowed. A printable is provided to use at another time to check for individual student understanding.

shimmer

to shine with
soft light

a formal
written
request

petition

a group of
gorillas that
live
together

shimmer

adjust

to make
changes

troop

to shine with
soft light

adjust

shimmer

a group of
gorillas that
live
together

to make
changes

petition

shimmer

troop

a formal
written
request

Name: _____



Vocabulary

WORD: _____

PICTURE:

A large, empty rectangular box with a thick black border, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

WORD: _____

PICTURE:

A large, empty rectangular box with a thick black border, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

WORD: _____

PICTURE:

A large, empty rectangular box with a thick black border, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

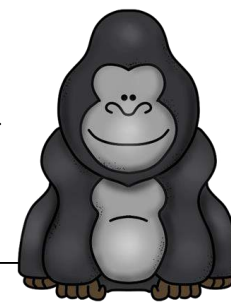
WORD: _____

PICTURE:

A large, empty rectangular box with a thick black border, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

SCIENCE SPARK



Ivan

THINK, TALK, SHARE:

- Do you think that we should keep animals in captivity in zoos or amusement parks? Why or why not?
- What are some ways that zoos, animal hospitals, and sanctuaries can help animals?
- Why are some animals endangered? How can we protect endangered animals?
- What are some important features of healthy zoo habitats?
- What features of zoo habitats might be unhealthy for animals?

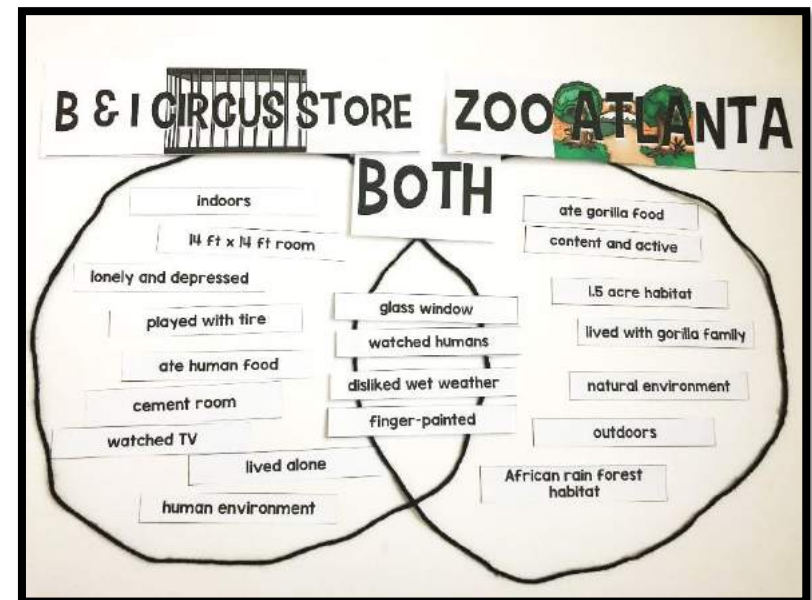
EXPLORE:

Use the QR Codes and links on the following page to help students explore more information about Animals in Captivity. OPTIONAL: Have students complete the foldable facts booklet. (This portion can also be completed as a science center.)

SPARK - CAPTIVITY COMPARISONS:

*Use the provided headings and large yarn circles to make a Venn diagram on the carpet to compare and contrast features of Ivan's shopping mall habitat to Ivan's zoo habitat. You may use the provided feature cards and also give student blank index cards to add their own features.

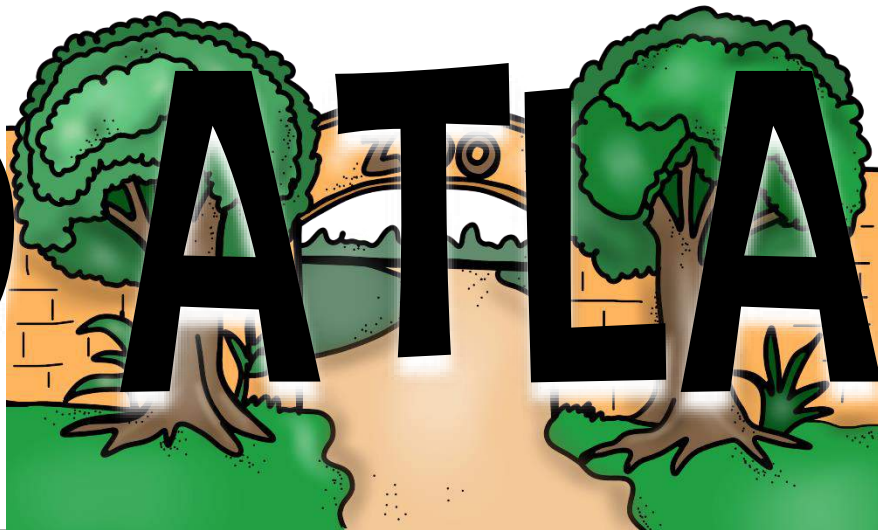
*Have a class discussion about which features of the habitats are most healthy for gorillas. Take those cards out of the Venn diagram to post in a separate area. These features will provide the basis for students' habitat designs that they create for the STEM challenge.



B & I CIRCUS STORE



ZOO ATLANTA

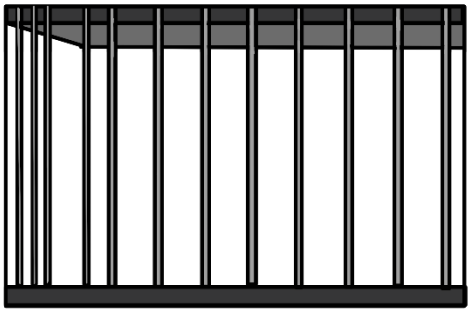


BOTH

cement room	African rain forest habitat
indoors	outdoors
human environment	natural environment
14 ft x 14 ft room	1.5 acre habitat
lived alone	lived with gorilla family
watched TV	finger-painted
disliked wet weather	played with tire
ate human food	ate gorilla food
watched humans	glass window
lonely and depressed	content and active

LET'S EXPLORE ANIMALS IN CAPTIVITY!

IVAN in the SHOPPING MALL



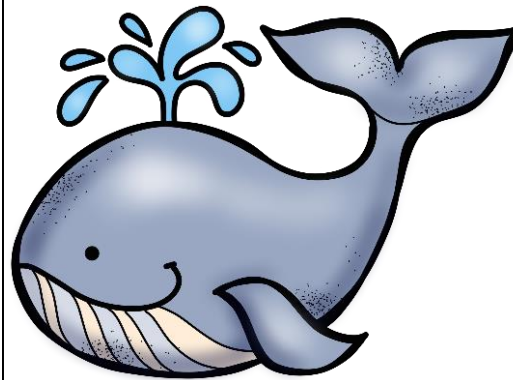
IVAN at ZOO ATLANTA

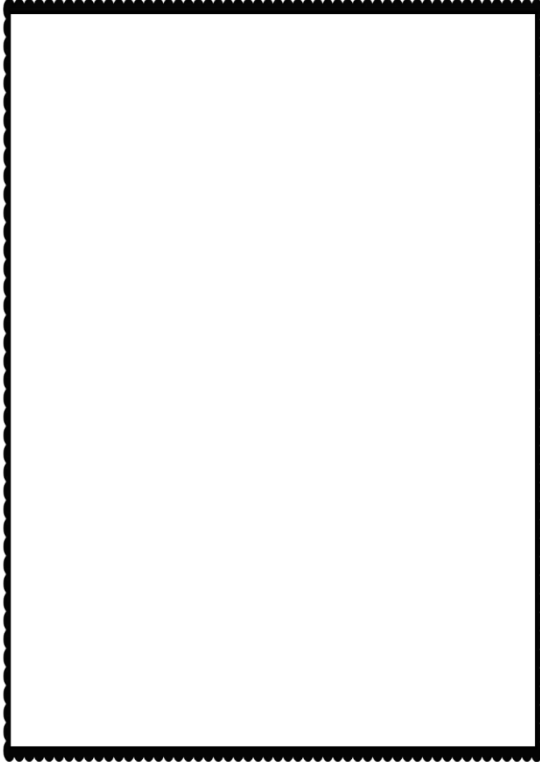


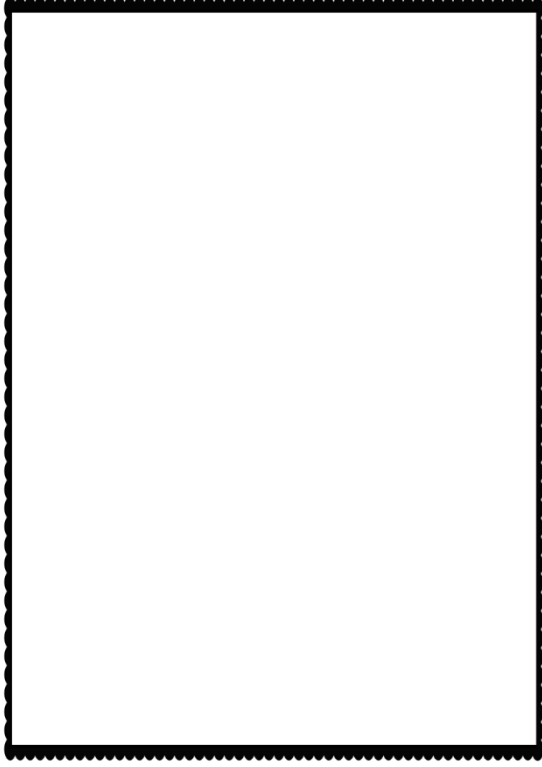
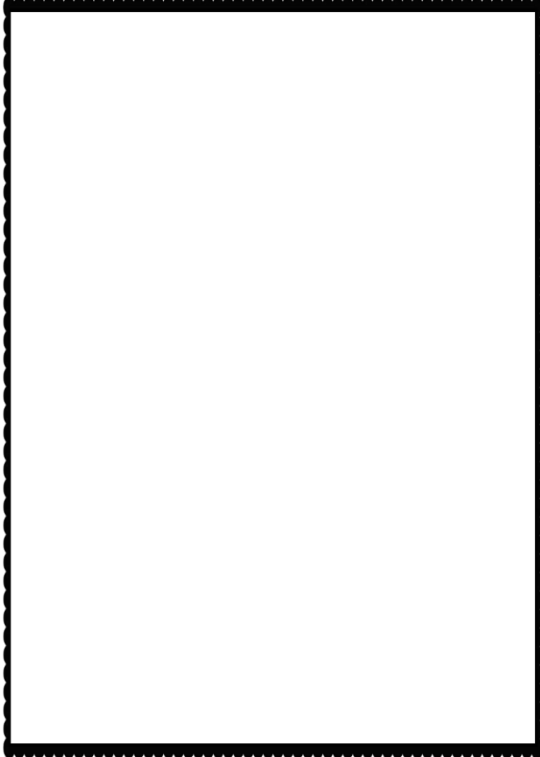
WILD ANIMAL SANCTUARY



ENDANGERED ANIMALS

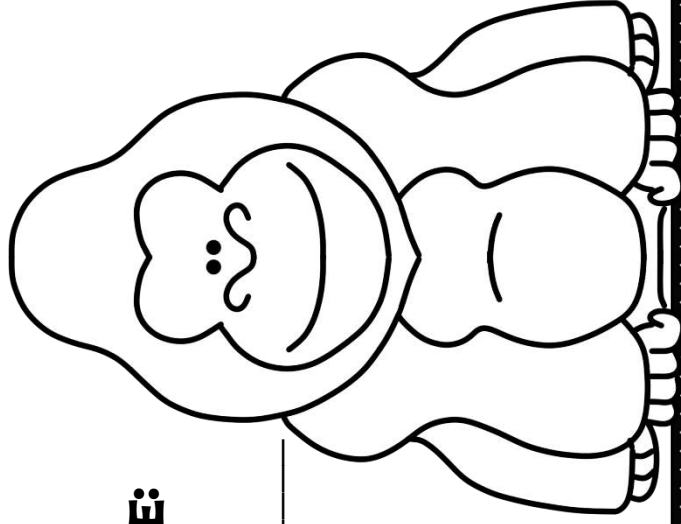




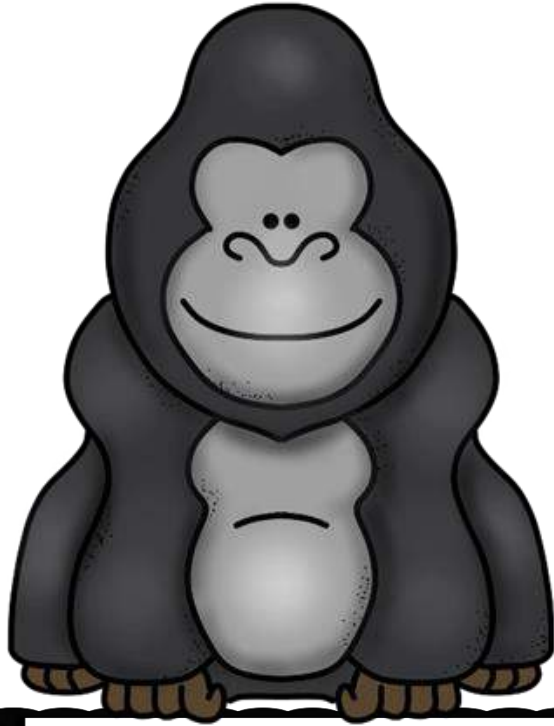


FACTS ABOUT ANIMALS IN CAPTIVITY

NAME: _____



STEM CHALLENGE: HEALTHY HABITAT



NGSS Standard Alignment: K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive. K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats, 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. *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: Measuring Area

Challenge Description: After exploring and researching features of healthy habitats for animals in captivity, students will map out a blueprint of an ideal zoo habitat for a gorilla family. They will use building bricks to represent the features of the habitat and also measure the area of each feature.

Suggested Materials PER PAIR OF STUDENTS: blueprint template, small tub of building bricks in a variety of sizes and colors

LESSON PLAN

1. **SCIENCE SPARK: CAPTIVITY COMPARISONS**
2. Ask students to share what they already know about what animals and captivity and about how zoos can be helpful and harmful to animals. Share the video clips and links on the **"LET'S EXPLORE ANIMALS IN CAPTIVITY"** page to prime their background knowledge.
3. Introduce permitted materials and share the STEM challenge and key vocabulary cards. Allow students 30-45 minutes with partners to plan their habitats and describe features, build habitats with building bricks, and measure the area of habitat features.
4. Hold a whole class closing discussion and reflection, allowing students to share what they learned about gorilla habitats/exhibits and animals in captivity. Record their ideas on the provided teacher chart and have them finish their individual booklets.

HEALTHY HABITAT

Ivan

Possible Product



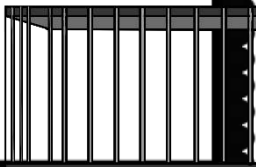
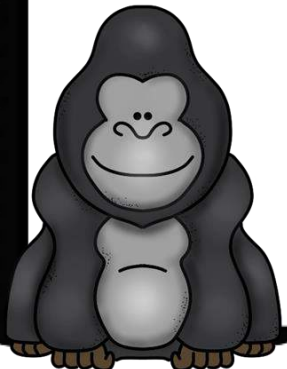
HEALTHY HABITAT

Features of Healthy Habitats

Features of Unhealthy Habitats

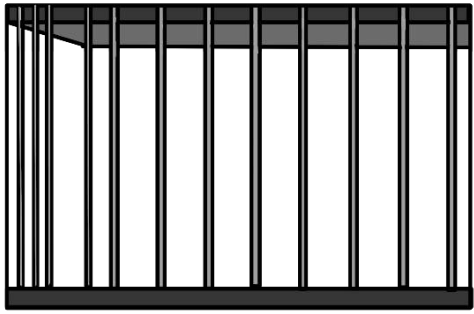
How zoos and sanctuaries can Help Animals

How zoos and Amusement parks can harm animals



HEALTHY HABITAT

CAPTIVITY



a state of being held, imprisoned, or confined

HABITAT



the natural home or environment of an animal, plant, or other organism

SANCTUARY



a natural place of refuge or safety for animals

ENDANGERED



an animal species that is seriously at risk of extinction

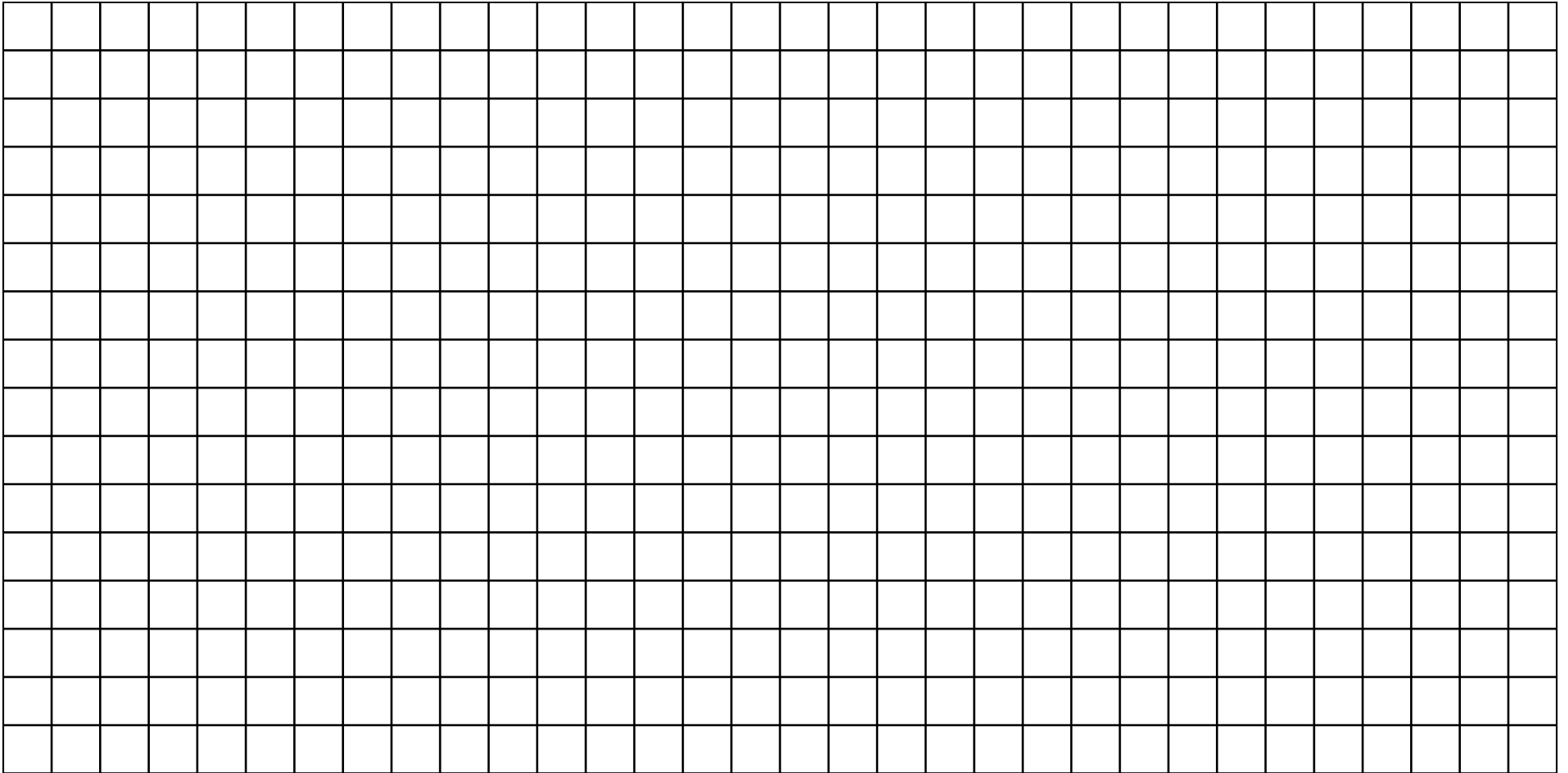


5 units

4 units

A rectangular array of 20 small squares arranged in 4 rows and 5 columns. The top row is labeled '5 units' and the left column is labeled '4 units'.

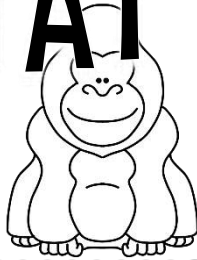
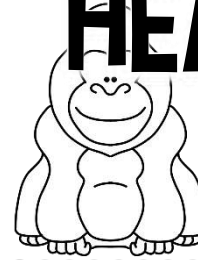
4 units x 5 units
= 20 units²



Habitat Measurements

FEATURE	AREA (TOTAL SQUARES)

HEALTHY HABITAT



Ivan

Name: _____

STEM CHALLENGE

Can you design a healthy zoo habitat for Ivan and his gorilla family?

What Gorilla Habitats need

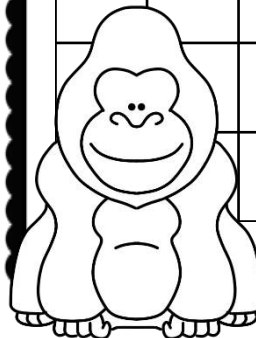
Habitat Requirements

- ☐ Moat (water area)
- ☐ Feeding area
- ☐ Nest (sleeping area)
- ☐ Trees and plants
- ☐ Rocks and shaded areas

Special Features

Feature	Purpose

IVAN'S HABITAT

A blank grid of 10 columns and 20 rows, with a cartoon gorilla illustration in the bottom-left corner.

Dig Deeper Into the Text!



Teacher Questions for WHAT DO YOU DO WITH A TAIL LIKE THIS?

*This is a Caldecott Honor book. What does that mean?

*Have you ever read another book by this author? What do you know about his books?

*Read the first page. What is the author asking you to do throughout the book? What do we call this skill and why is it helpful?

*Which nose and task would be the most humorous? Why do you think so?

*What kind of animal is a platypus? Why is he unique?

* Discuss how things would be different if your ears were on your knees like a cricket?

* Why is it important that the lizard's tail be able to break off?

* Which set of eyes do you find the most fascinating? Why?

*Pick an animal to imitate based on its feet.

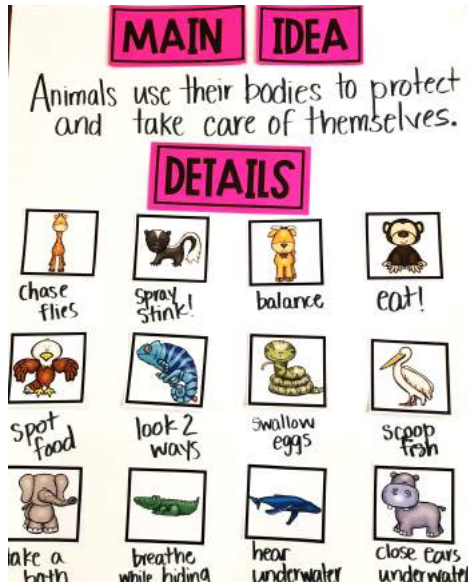
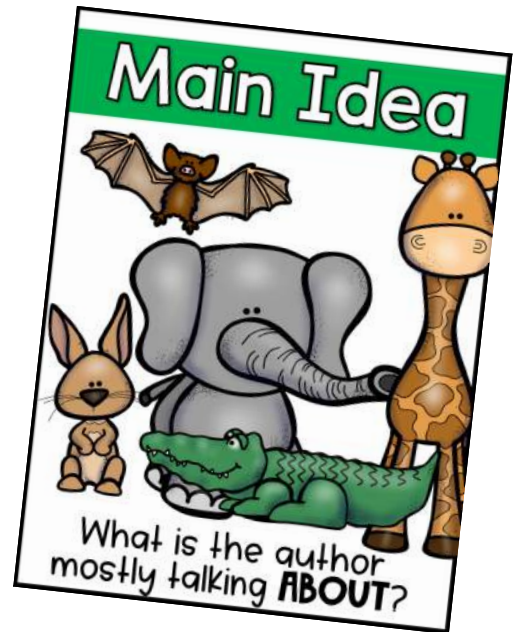
Teachers: Print on colored paper and laminate. Use this bookmark year after year to help extend students' thinking! You can even tape it in the front cover so you always know where it is!

Intended
Use



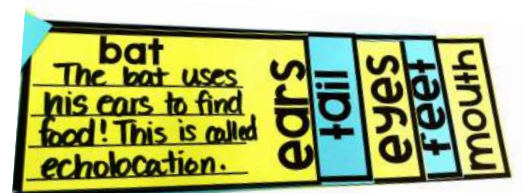
WHAT DO YOU DO WITH A TAIL LIKE THIS?

1. After reading *What Do You Do With a Tail Like This?* Discuss with students which animals they found most fascinating. Use the bookmark to guide discussion. Introduce the Main Idea poster.



2. Create a whole class anchor chart. Dwell on how each animal is a detail that supports the Main Idea. Next to each animal picture, talk about how a certain body part protects them or helps them take care of themselves.

3. Put together these booklets to continue digging into how each animal has a body part that helps them to protect themselves or take care of themselves.

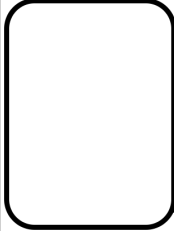



WHAT DO YOU DO WITH A TAIL LIKE THIS?

Name: _____

Main Idea

What is the author trying to get across with this book? What does he focus on?




4. This half sheet can be used as an exit slip to check for understanding of how students gained information.

5. Optional High Flyer activity:
Go over the Opinion Writing poster. Have students write and draw about their favorite animal! In the details they should discuss the same body parts that the book did.

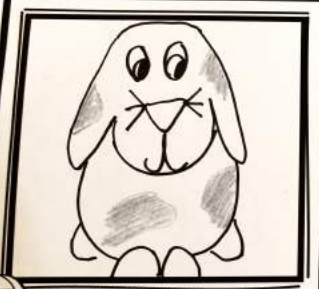
OPINION WRITING

How do you **FEEL** about something? When doing this type of writing, make sure to give a **REASON** to support your opinion.




©Brooke Brown and Katie King

MY FAVORITE ANIMAL




ANIMAL'S NAME: Holland Lop Rabbit

Mouth: teeth that keep growing Nose: smells well
Tail: small tail Foot: powerful
Ears: hang low Eyes: sees well



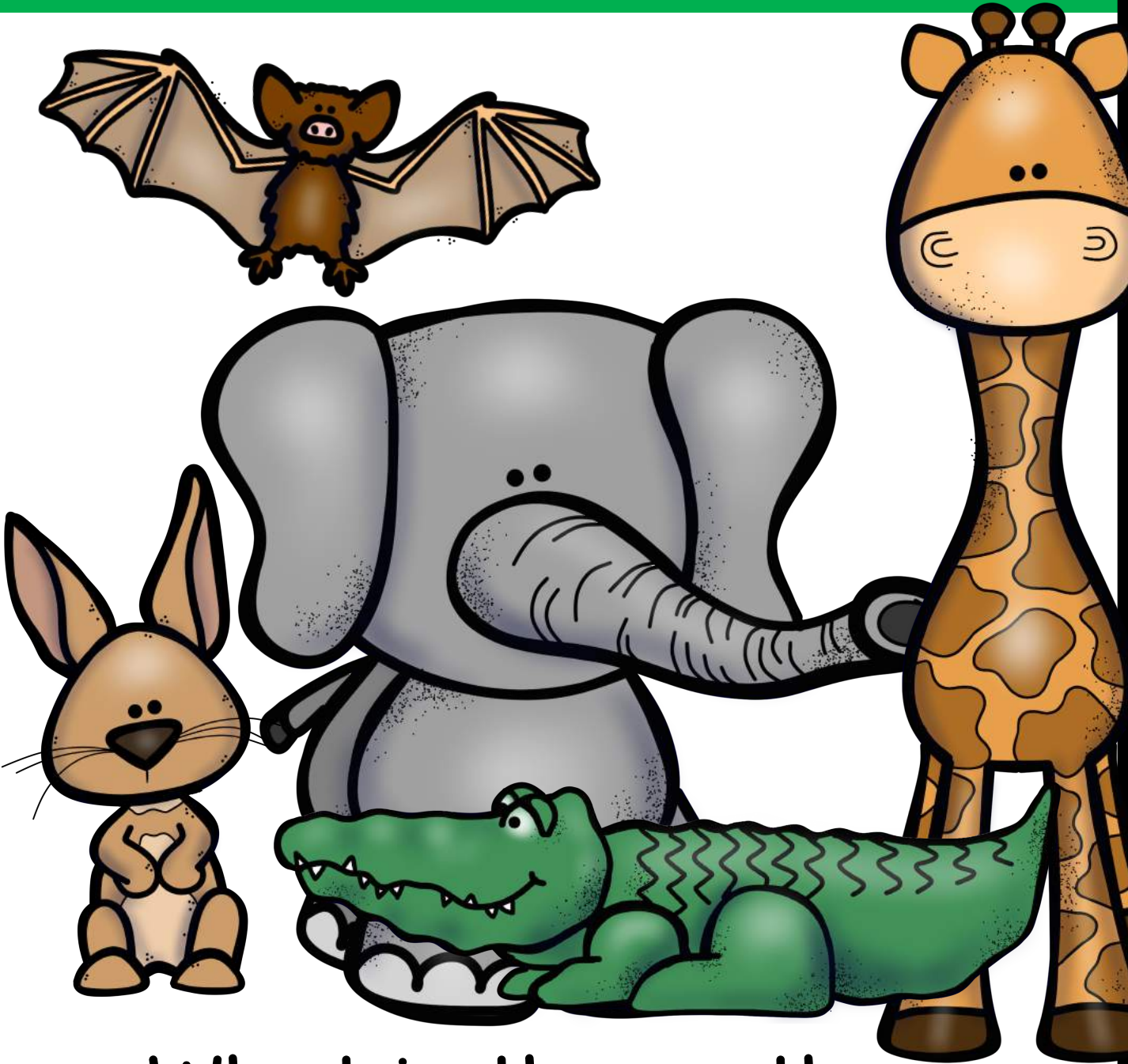
MY FAVORITE ANIMAL

My favorite animal is a Holland Lop Rabbit. We have two as pets! This type of rabbit doesn't do well in the wild because it is soft, fluffy, and sweet. It doesn't have much to protect itself with. It does have powerful feet and sharp claws though. It can also use those feet to dig and hop quickly. The Holland Lop Rabbit can also smell well—helping it find food and predators!



©Brooke Brown and Katie King

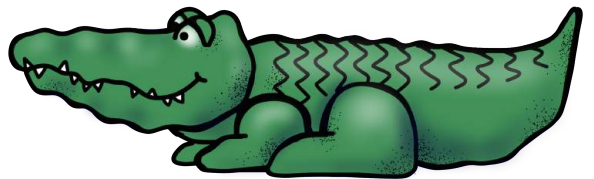
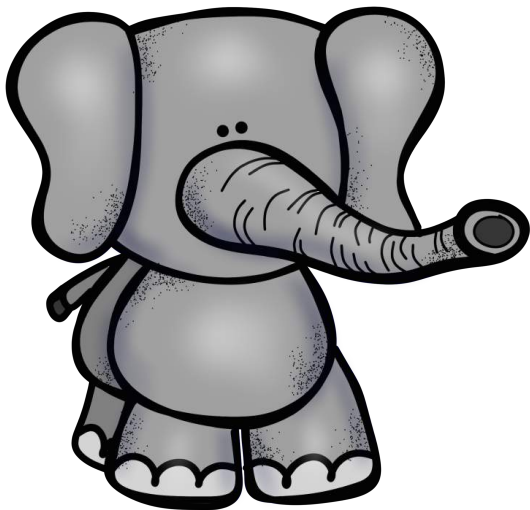
Main Idea

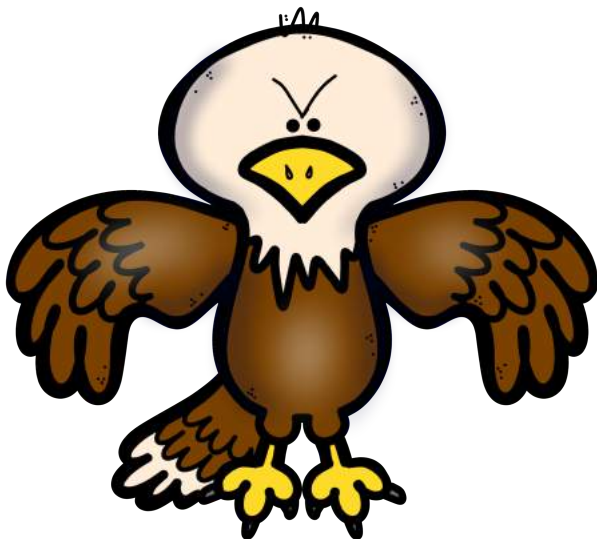
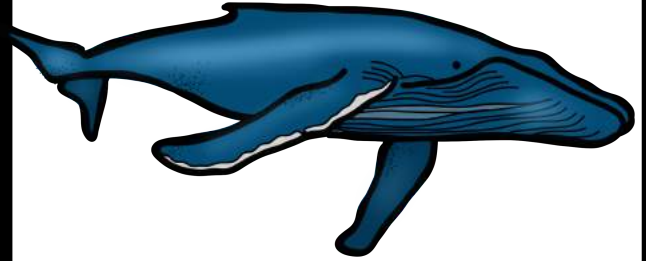
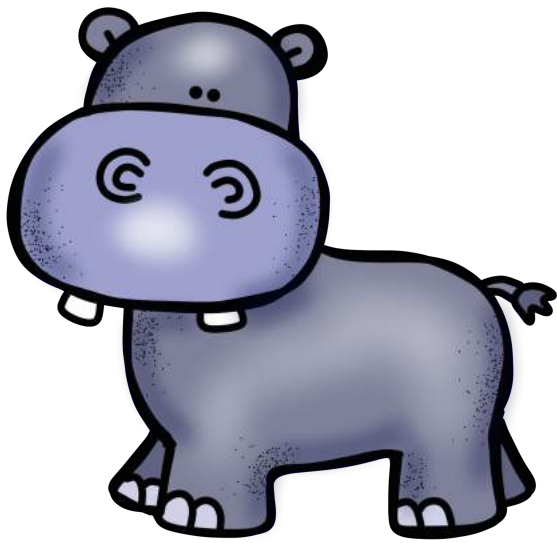


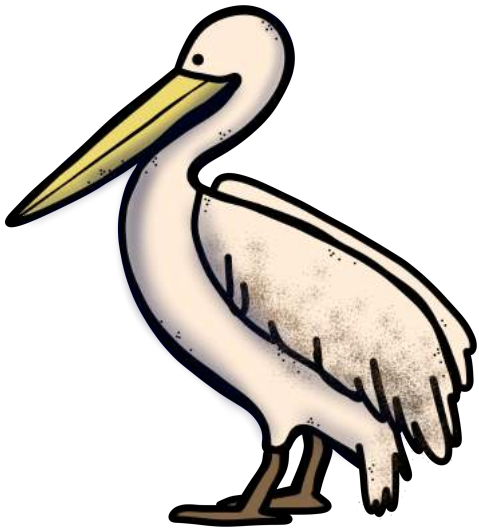
What is the author
mostly talking **ABOUT**?

MAIN

IDEA







DETAILS

ANIMAL PARTS



mole

nose

bat

ears

scorpion

tail

horned lizard

eyes

gecko

feet

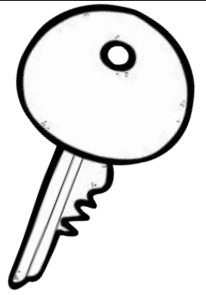
anteater

mouth

Name: _____

Main Idea

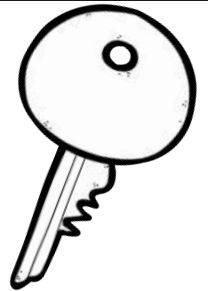
What is the author trying to get across with this book? What does he focus on?

A large, empty rounded rectangle with a thick black border, intended for a student to draw a picture related to their main idea.Four horizontal lines for writing, located to the right of the drawing area.

Name: _____

Main Idea

What is the author trying to get across with this book? What does he focus on?

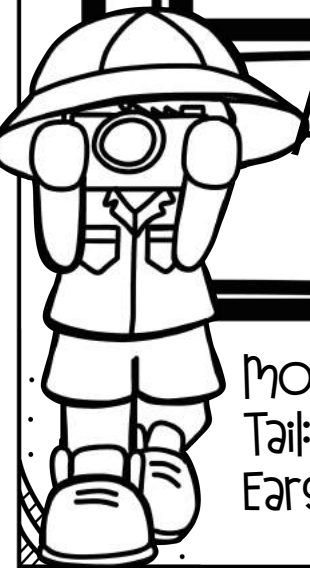
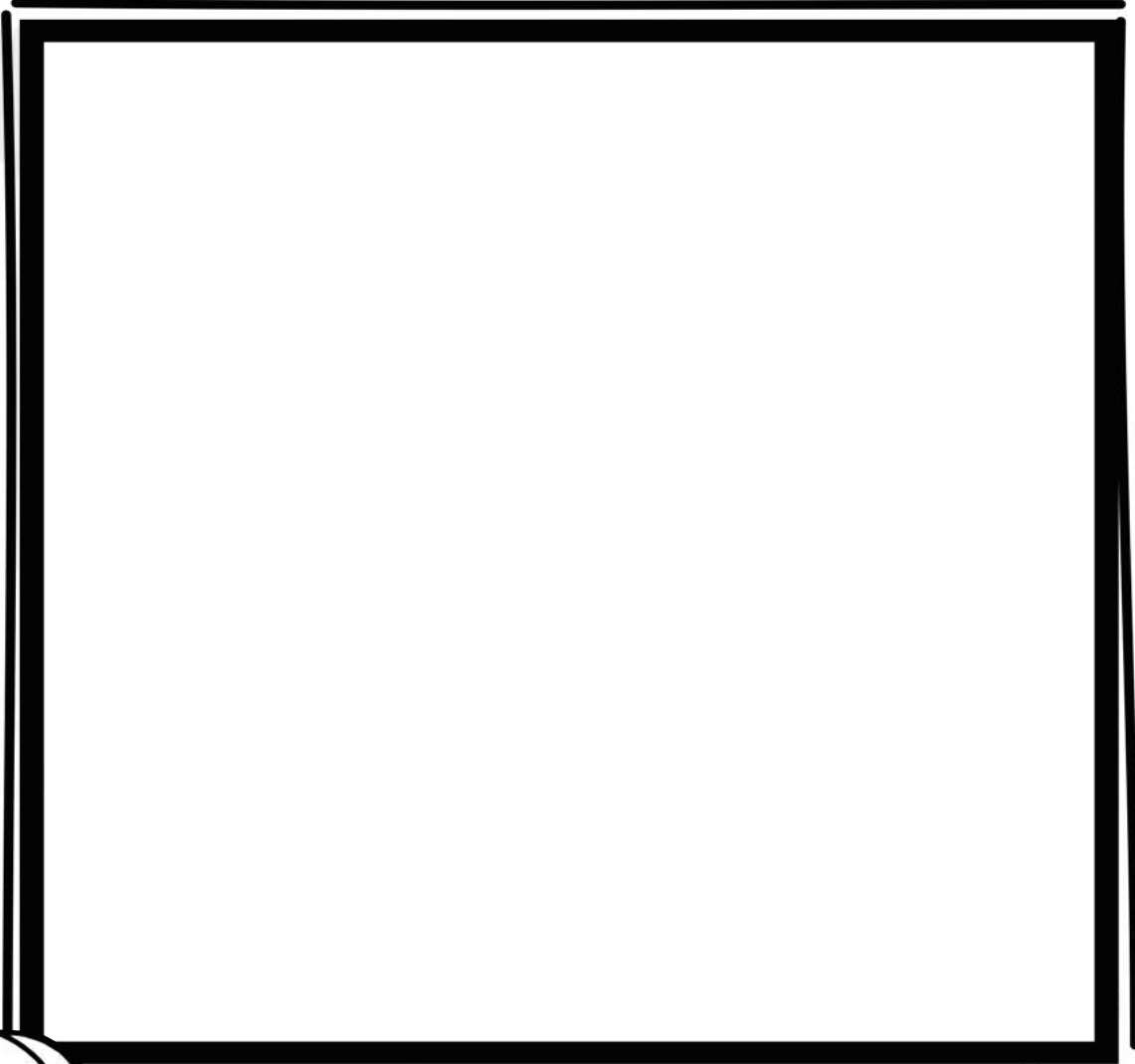
A large, empty rounded rectangle with a thick black border, intended for a student to draw a picture related to their main idea.Four horizontal lines for writing, located to the right of the drawing area.

OPINION WRITING

How do you
FEEL about
something?
When doing
this type of
writing, make
sure to give
a **REASON** to
support your
opinion.



MY FAVORITE ANIMAL



ANIMAL'S
NAME:

Mouth: _____

Tail: _____

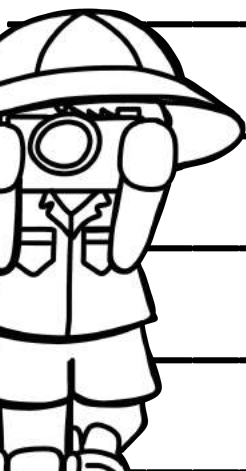
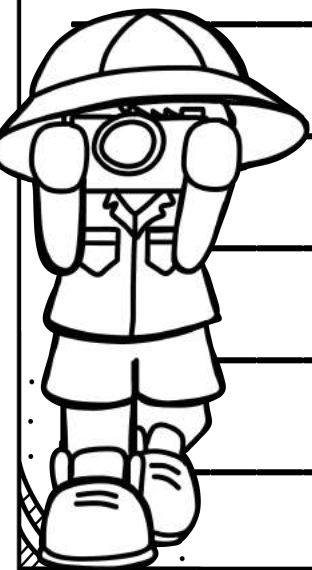
Ears: _____

Nose: _____

Feet: _____

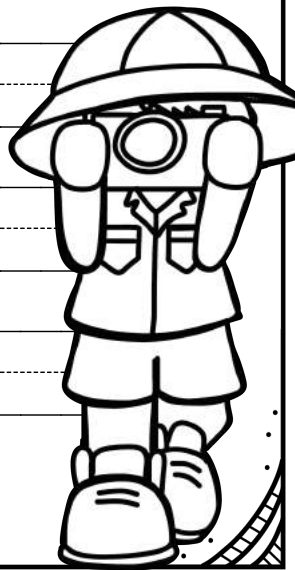
Eyes: _____

MY FAVORITE ANIMAL

A black and white line drawing of a cartoon explorer. The explorer is wearing a wide-brimmed hat with a band, a jacket with buttons, and shorts. They are holding binoculars to their eyes. The explorer is positioned on the left side of the page, with their body partially cut off by the edge. The rest of the page is filled with horizontal lines for writing.

MY FAVORITE ANIMAL

Handwriting practice lines consisting of solid top and bottom lines with a dashed midline for letter height guidance. The page contains 12 sets of these lines.



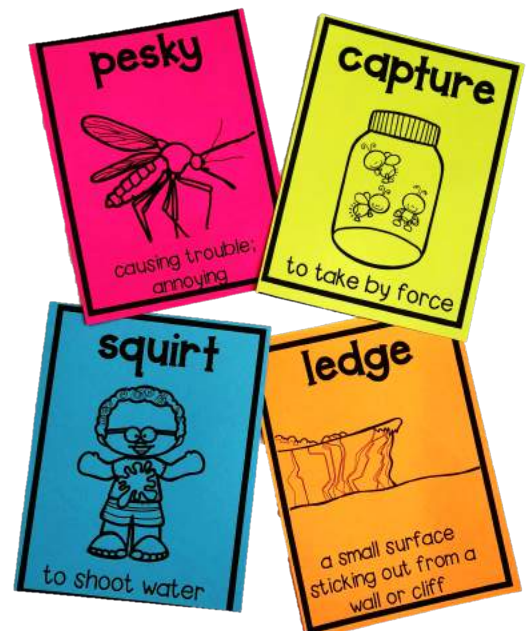
VOCABULARY



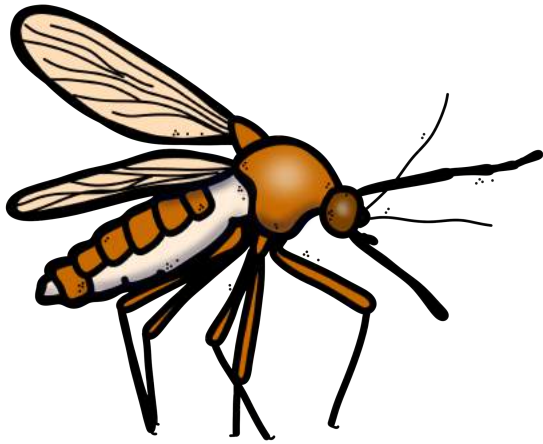
After going over the definitions, teachers can use the cards in all kinds of ways. Have students pair up. Put one of the cards up on the projector and ask the students to come up with a sentence. Another option would be to have the students act out the words together.

Keep vocabulary words displayed in the classroom or add them to a ring and use during a word work station.

Teachers: Print the black and white versions on colored paper and have students hold them up as you give examples, synonyms, or antonyms. Be creative! Use this as a quick way to gauge understanding! Scan the room to look for the color you are looking for!

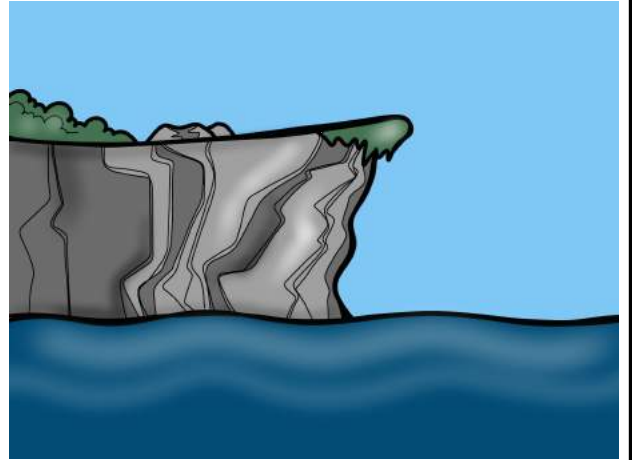


pesky



causing trouble;
annoying

ledge



a small surface
sticking out from a
wall or cliff

capture



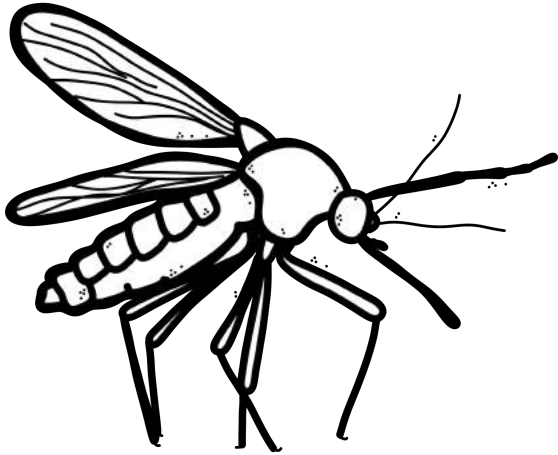
to take by force

squirt



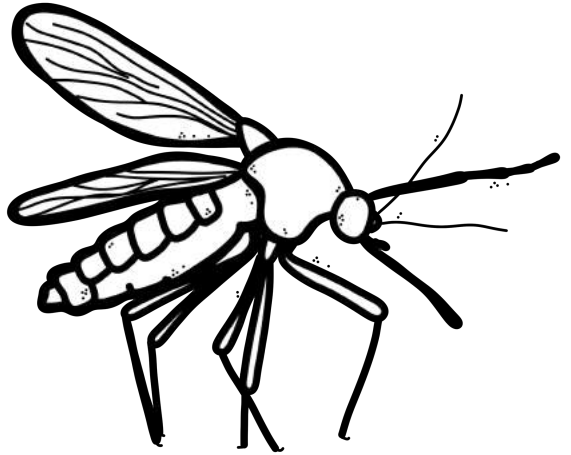
to shoot water

pesky



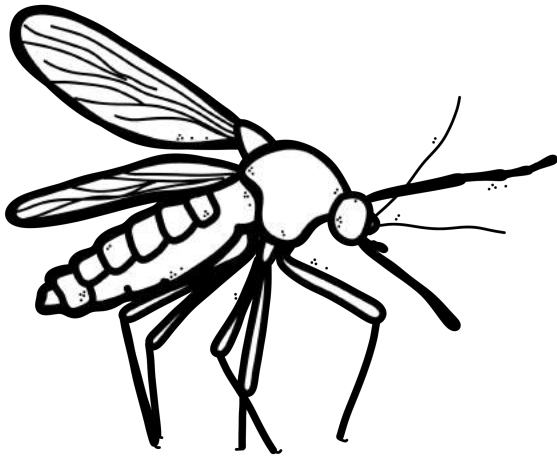
causing trouble;
annoying

pesky



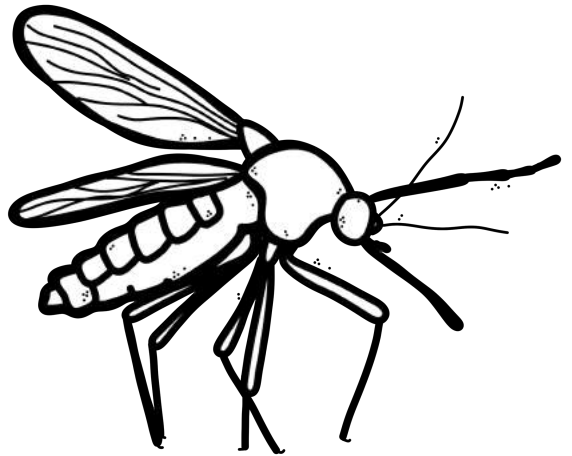
causing trouble;
annoying

pesky



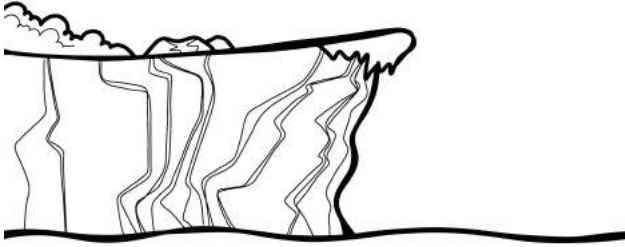
causing trouble;
annoying

pesky



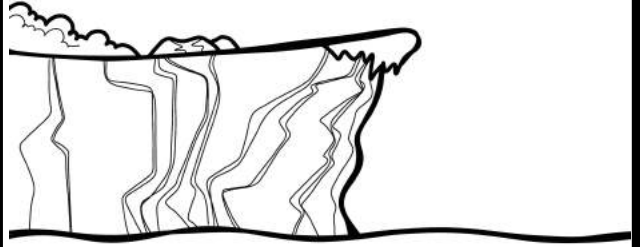
causing trouble;
annoying

ledge



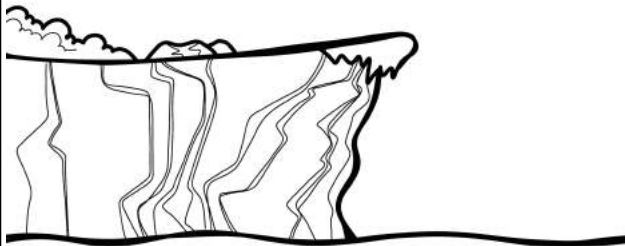
a small surface
sticking out from a
wall or cliff

ledge



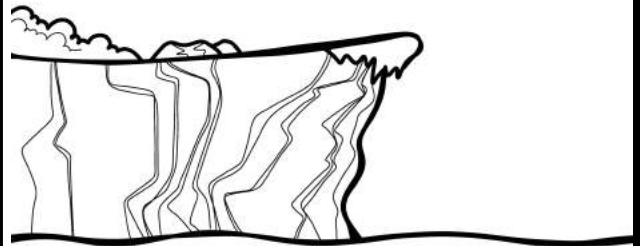
a small surface
sticking out from a
wall or cliff

ledge



a small surface
sticking out from a
wall or cliff

ledge



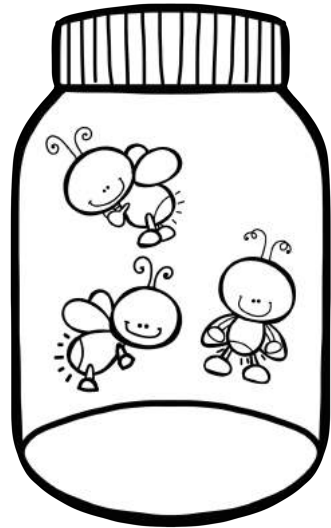
a small surface
sticking out from a
wall or cliff

capture



to take by force

capture



to take by force

capture



to take by force

capture



to take by force

squirt



to shoot water

squirt



to shoot water

squirt



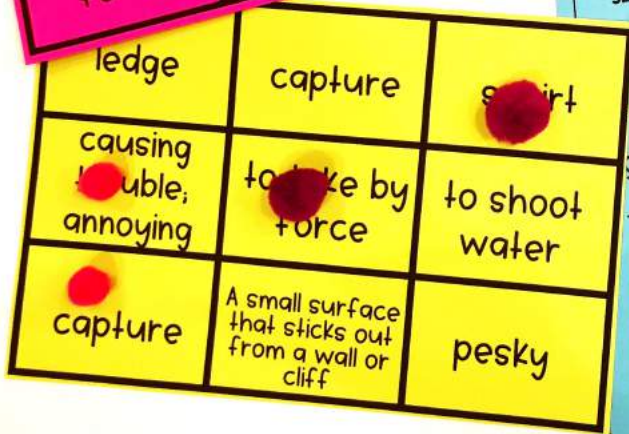
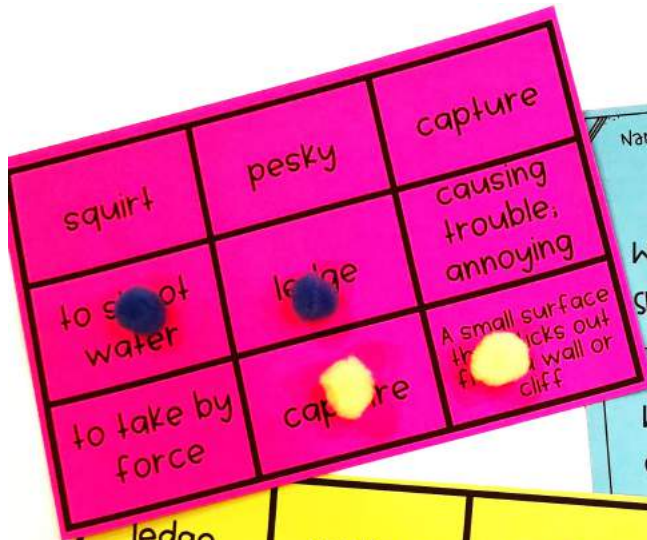
to shoot water

squirt



to shoot water

VOCAB TIC-TAC-TOE



Name: _____

Vocabulary

WORD: _____ PICTURE:

SENTENCE: _____

WORD: _____ PICTURE:

SENTENCE: _____

WORD: _____ PICTURE:

SENTENCE: _____

DIRECTIONS FOR SET-UP: Print a board on colored paper. Use pom-poms or any other small pieces to act as the x's and o's.

DIRECTIONS TO PLAY: Students will play the game in pairs. In order to cover a spot, they must be able to define the word OR identify the word, based on what is already on the board. If students tie, they will play again based on time allowed. A printable is provided to use at another time to check for individual student understanding.

squirt

pesky

capture

to shoot
water

ledge

causing
trouble;
annoying

to take by
force

capture

A small surface
that sticks out
from a wall or
cliff

ledge

capture

squirt

causing
trouble;
annoying

to take by
force

to shoot
water

capture

A small surface
that sticks out
from a wall or
cliff

pesky

Name: _____



Vocabulary

WORD: _____

PICTURE:

A large, empty rectangular box with a black border, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

WORD: _____

PICTURE:

A large, empty rectangular box with a black border, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

WORD: _____

PICTURE:

A large, empty rectangular box with a black border, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

WORD: _____

PICTURE:

A large, empty rectangular box with a black border, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

SCIENCE SPARK



What Can You
Do With a
Tail Like This?

THINK, TALK, SHARE:

- How do animals use their body parts to help them get food or create shelters?
- How do animals use their body parts to communicate with one another?
- How do animals use their body parts to protect themselves from harsh weather?
- How do animals use their body parts to protect themselves from predators?
- How do animals blend in with their environments?
- What are some other ways that animals use their special body parts?

EXPLORE:

Use the QR Codes and links on the following page to help students explore more information and build background knowledge about Animal Parts.

OPTIONAL: Have students complete the foldable facts booklet. (This portion can also be completed as a science center.)

SPARK - ANIMAL SUPERPOWERS:

*After reading the book aloud, have students sort animals from the book into categories based on their "superpowers" for eyes, nose, tail, feet, mouth or ears.

*Have students try to recall what makes each animal's body part so special and how it helps the animal get food, create shelters, communicate, keep clean, or protect itself from predators or harsh weather.



**SUPER
EYES**

**SUPER
NOSE**

**SUPER
FEET**

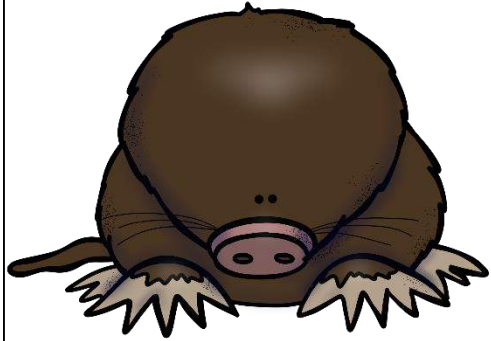
**SUPER
MOUTH**

**SUPER
EARS**

**SUPER
TAIL**

Animal Superpowers

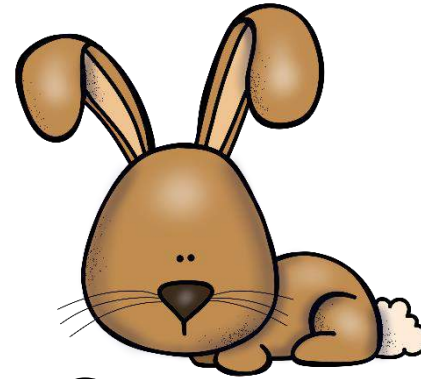
Cut animal cards apart for students to sort into categories.



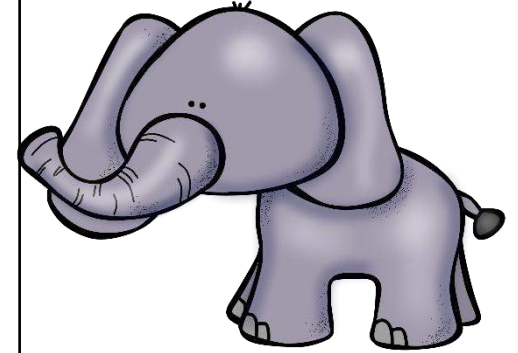
Mole



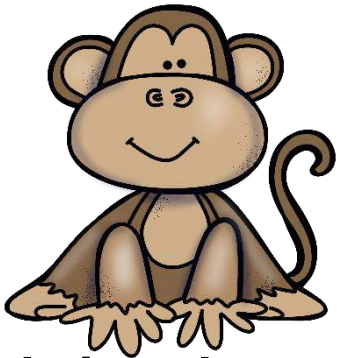
Skunk



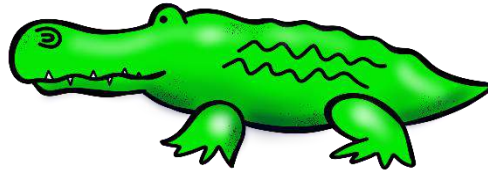
Rabbit



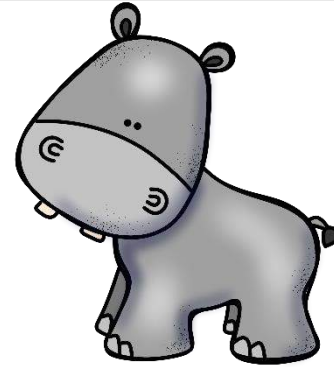
Elephant



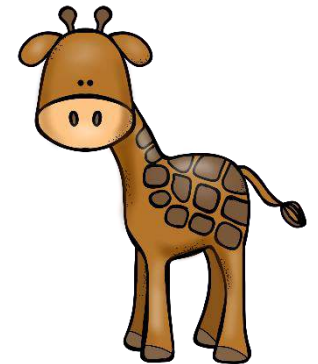
Monkey



Alligator



Hippo



Giraffe



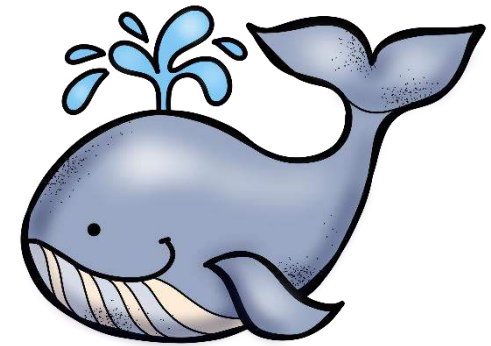
Snake



Bat



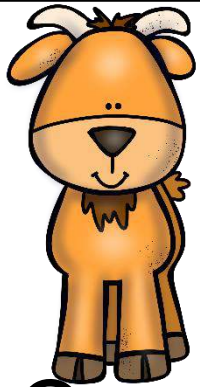
Hyena



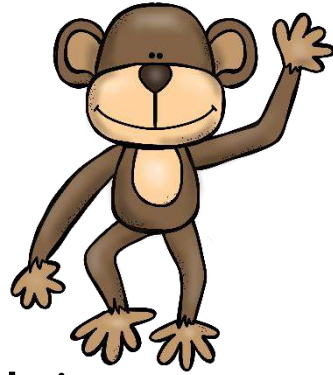
Whale

Animal Superpowers

Cut animal cards apart for students to sort into categories.



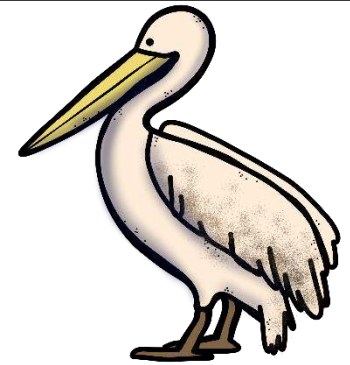
Goat



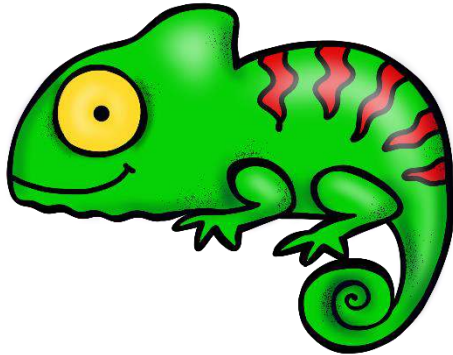
Chimpanzee



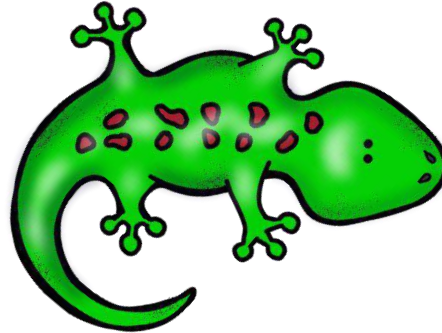
Eagle



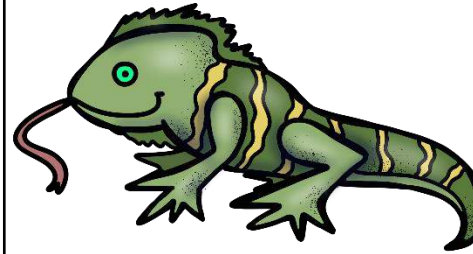
Pelican



Chameleon



Gecko



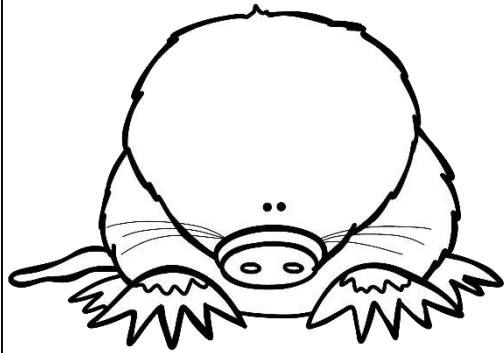
Lizard



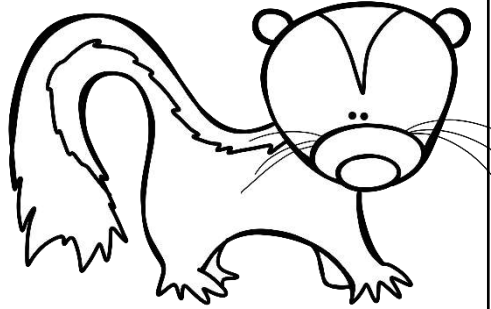
Push Baby

Animal Superpowers

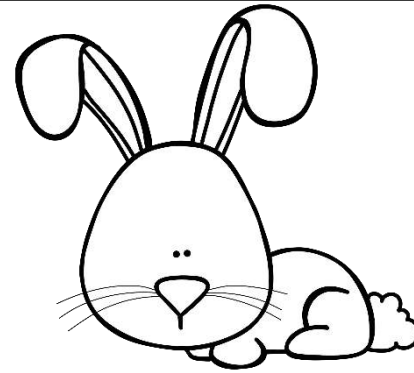
Cut animal cards apart for students to sort into categories.



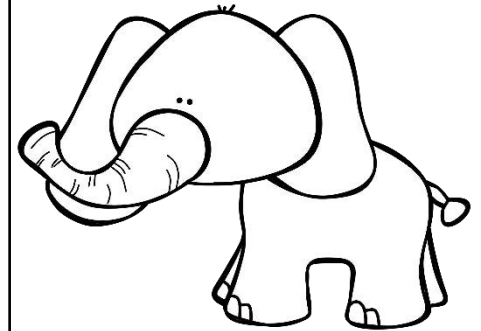
Mole



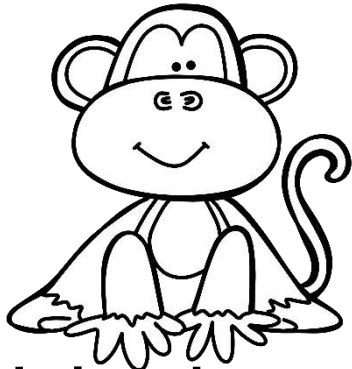
Skunk



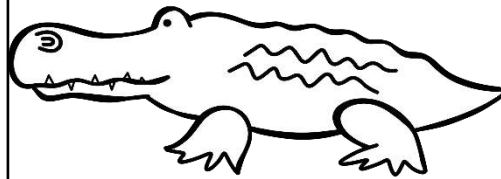
Rabbit



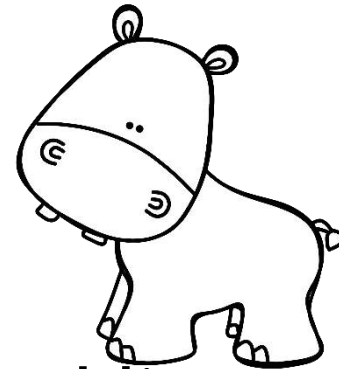
Elephant



Monkey



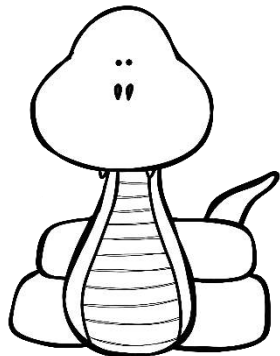
Alligator



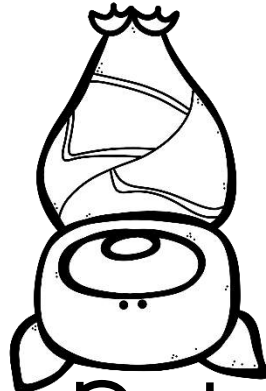
Hippo



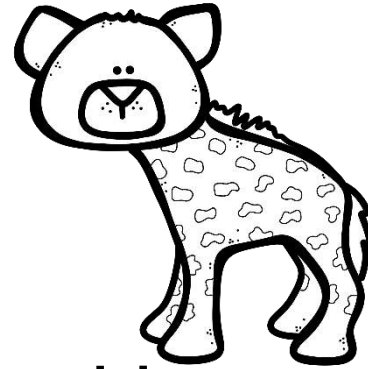
Giraffe



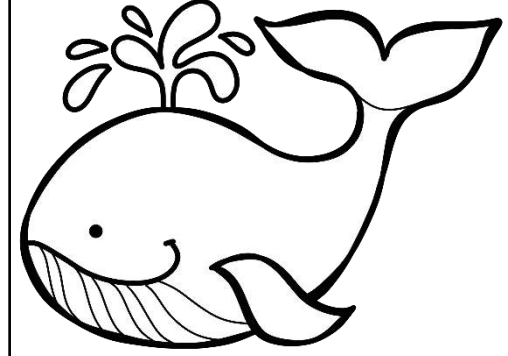
Snake



Bat



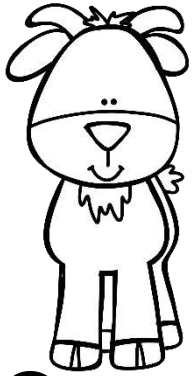
Hyena



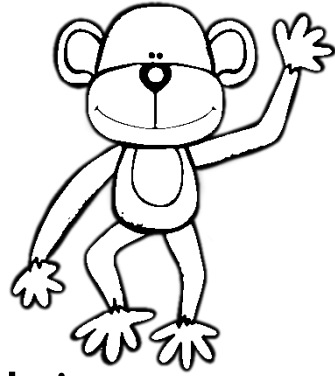
Whale

Animal Superpowers

Cut animal cards apart for students to sort into categories.



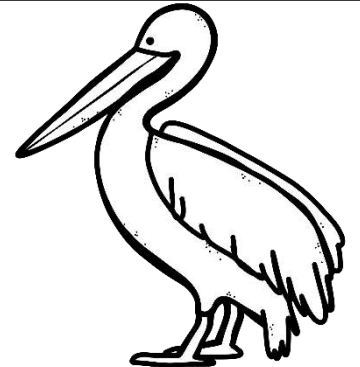
Goat



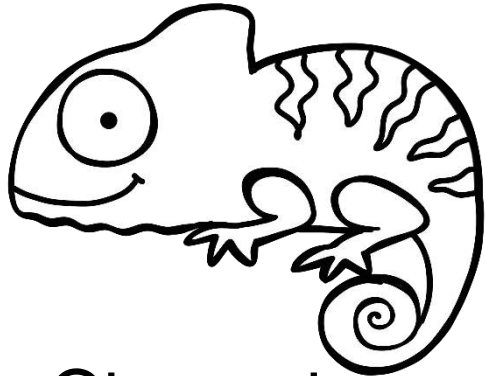
Chimpanzee



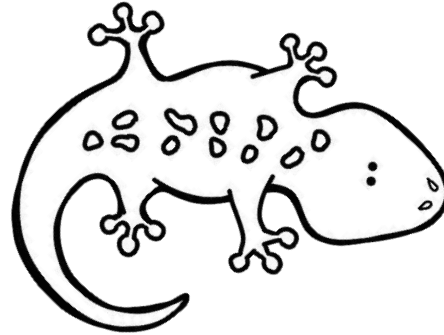
Eagle



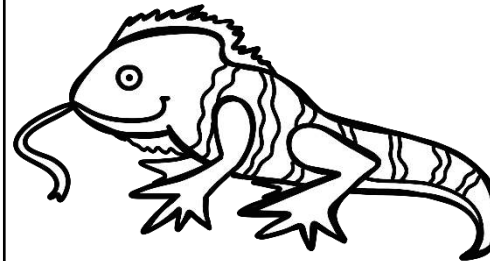
Pelican



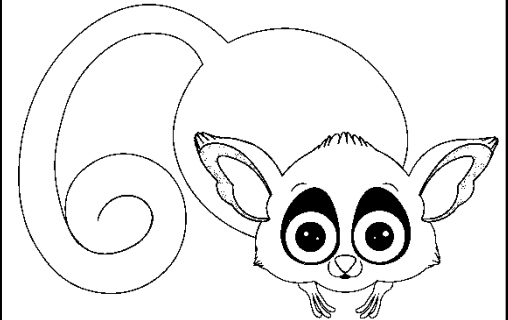
Chameleon



Gecko



Lizard



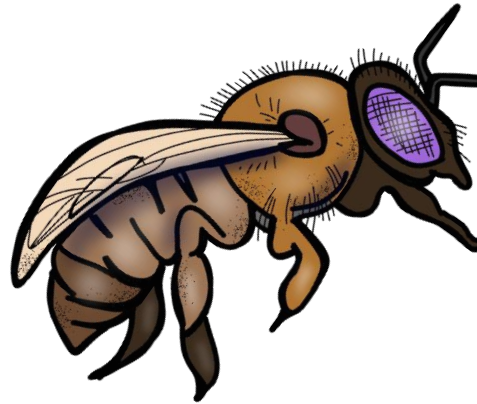
Push Baby

LET'S EXPLORE ANIMAL PARTS!

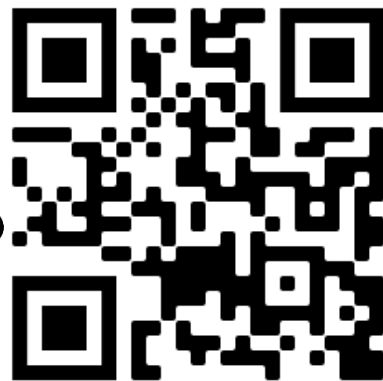
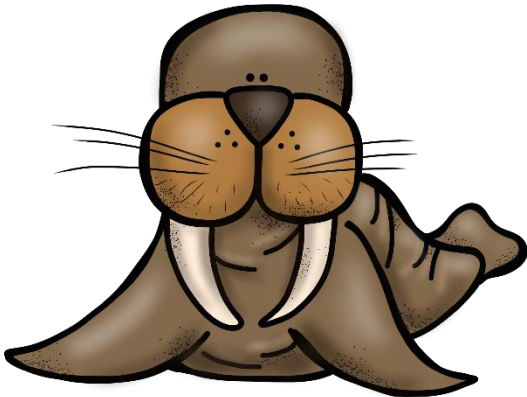
CAMOUFLAGE



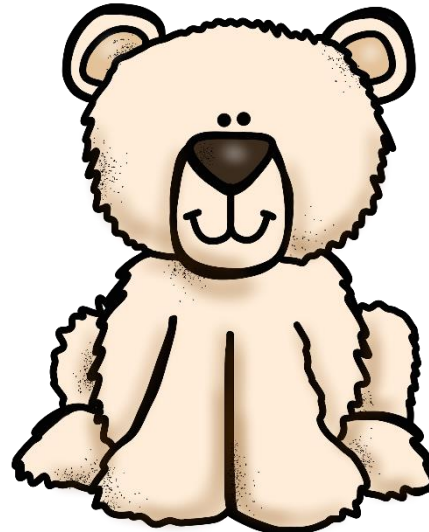
ANIMAL TRICKSTERS



WEIRD ANIMAL TEETH

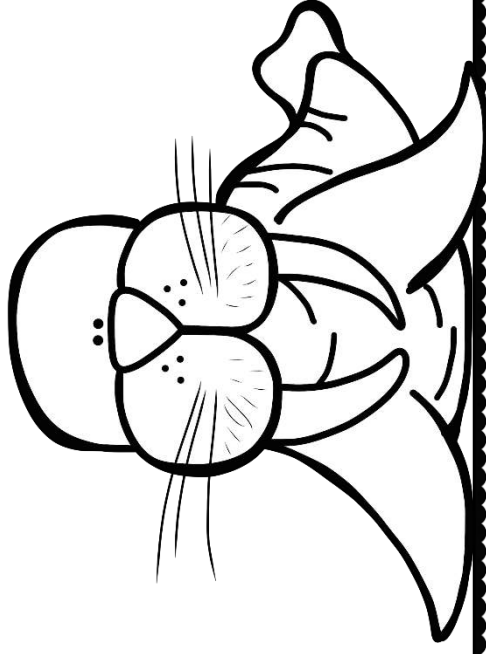


WINTER COATS

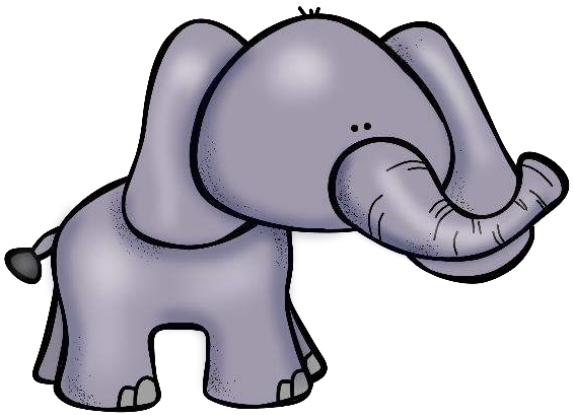


FACTS ABOUT ANIMAL PARTS

NAME: _____



STEM CHALLENGE: SUPER ANIMAL



NGSS Standard Alignment: K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive, 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. 3-LS4-2: Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing, 3-LS4-3: Construct an argument with evidence that in a particular habitat some organisms survive well, some survive less well, and some cannot survive at all. 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. 3-5-ETS1-1: Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

Challenge Description: After reading about the parts of their bodies that animals use to help them survive, students will design and build "super animals" using Dixie cups and collaged animal parts from the book, What Do You do With a Tail Like This?

Suggested Materials PER PAIR OF STUDENTS: 3 PAPER Dixie cups, 1 pencil, 1 roll of Scotch tape, 1 copy of animal parts for students to cut and tape, crayons/markers

LESSON PLAN

1. **SCIENCE SPARK: ANIMAL SUPERPOWERS**
2. Ask students to share what they already know about animal parts and how they help animals find food, communicate, travel, defend themselves, hide, build shelters, protect themselves from harsh weather, or engage in other unique behaviors. Share the video clips and links on the **"LET'S EXPLORE ANIMAL PARTS!" page** to prime their background knowledge.
3. Introduce permitted materials and share the STEM challenge and key vocabulary cards. Allow students 30-45 minutes with partners to build their super animals and write reasons for the parts they chose. They may create two different super animals and mix and match body parts by twisting the cups. They will describe both super animals in their student booklets.
4. Hold a whole class discussion for students to present their super animals and share the reasons why they chose each part.

SUPER ANIMAL

What Do You Do With a Tail Like This?

Possible Products

..... SUPER ANIMAL



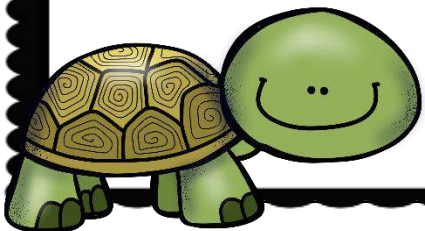
SUPER ANIMAL

**Animal parts That protect
Against predators**

**Animal parts That Help
Find Food**

**Animal parts That protect
Against Harsh weather**

Other special Animal parts



SUPER ANIMAL

CAMOUFLAGE



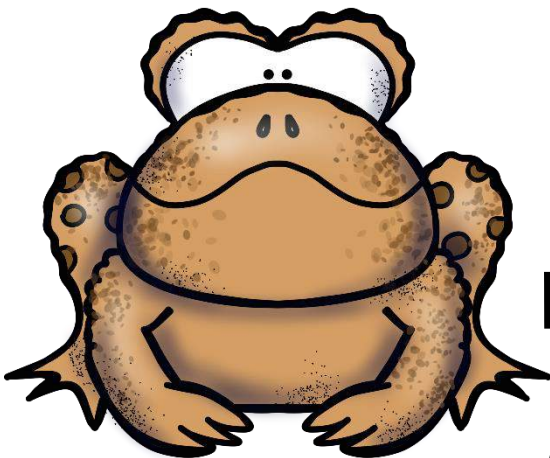
an animal's natural coloring or form that enables it to blend in with its surroundings

DEFENSE



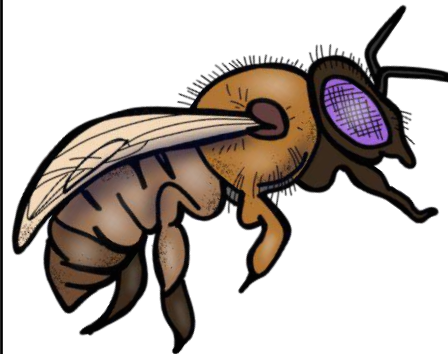
the act of protecting oneself or resisting attack

ADAPTATION

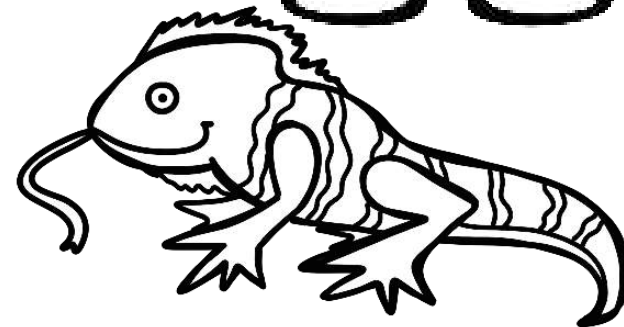
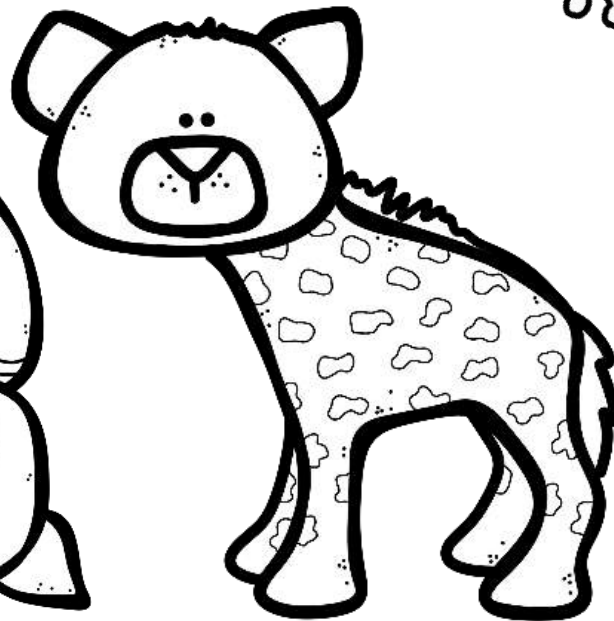
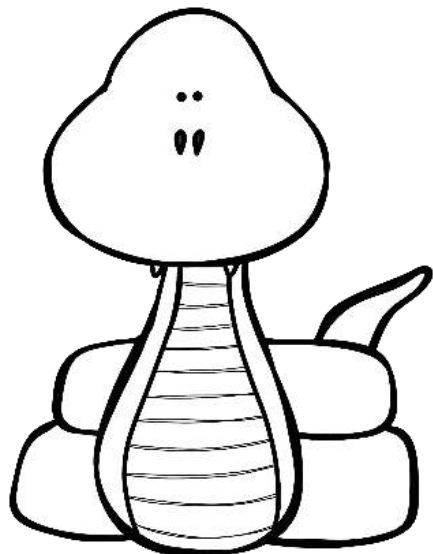
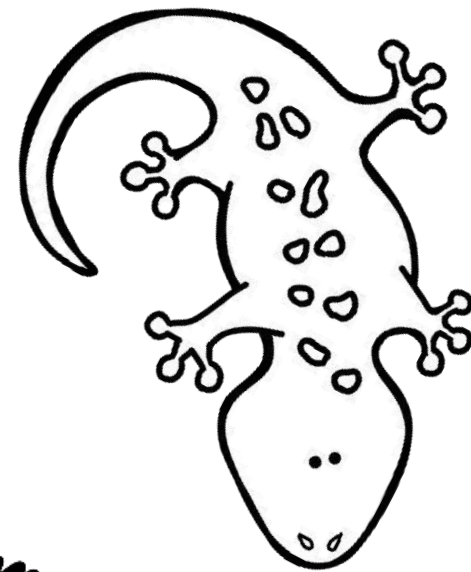
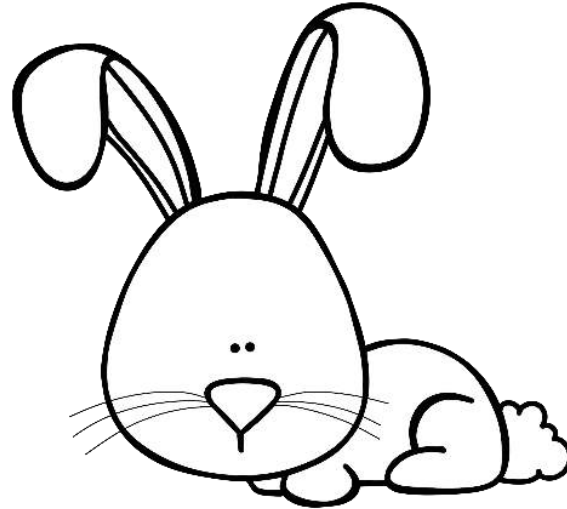
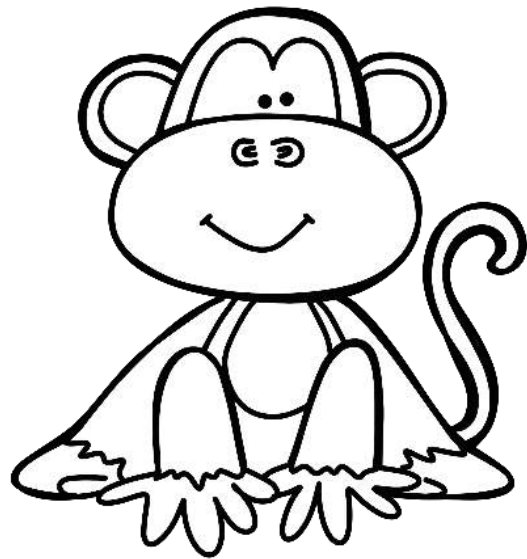
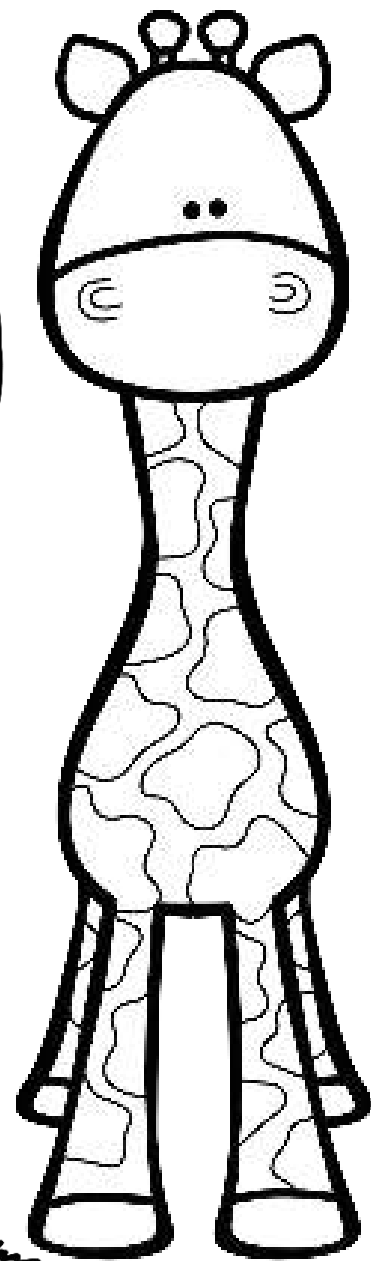
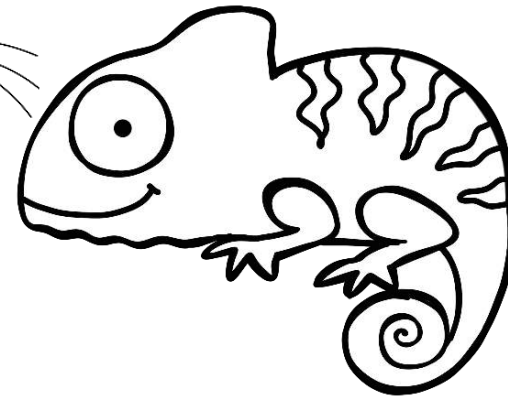
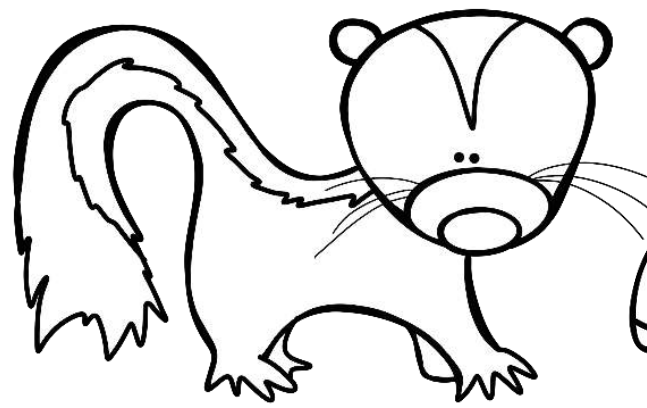
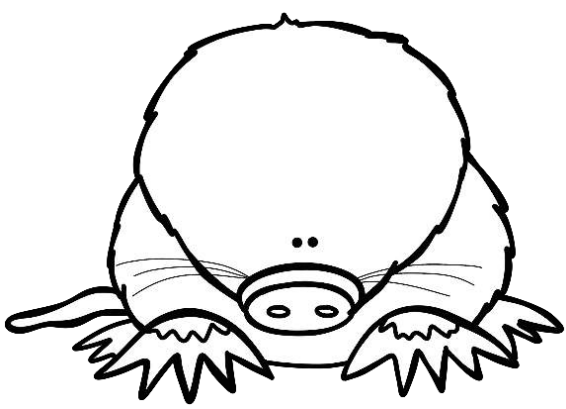


a change in which an animal becomes better suited to its environment

MIMICRY



the resemblance of one animal to another in its surroundings for concealment or protection from predators





SUPER ANIMAL 1

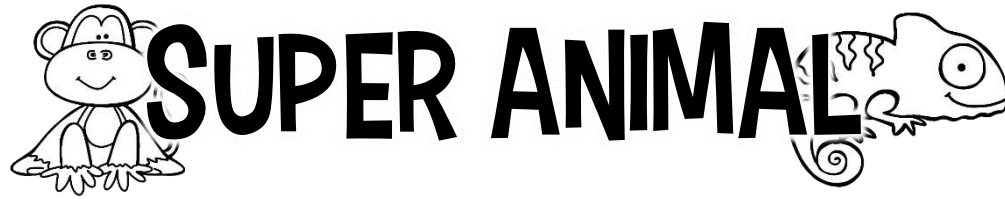
Body Part

SUPERPOWER

SUPER ANIMAL 2

Body Part

SUPERPOWER



What Do You Do With a Tail Like This?

Name: _____

STEM CHALLENGE

Can you create super animals with body parts that help them to survive?

How do animals use their body parts to help them survive?

SUPER ANIMAL 1

Don't forget to label the body parts!

SUPER ANIMAL 2

Don't forget to label the body parts!

Dig Deeper Into the Text!



Teacher Questions for FIRST THE EGG

*What do you think about the fact that this book has won two awards?

*Read the inside jacket to hear what this book is going to be about. What are transformations?

*After reading the first two pages, really examine the the cut-outs and how much thinking it would take to organize this book.

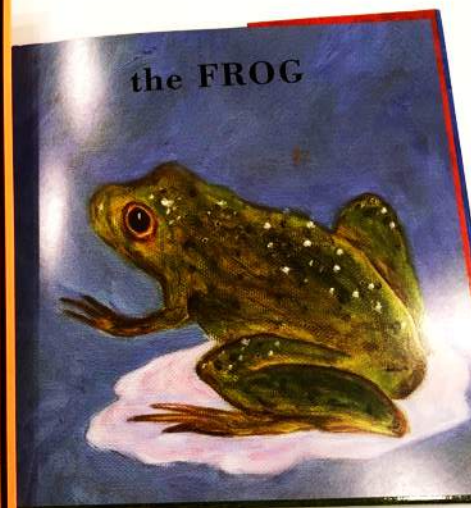
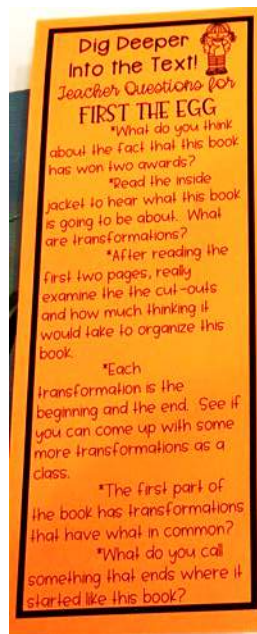
*Each transformation is the beginning and the end. See if you can come up with some more transformations as a class.

*The first part of the book has transformations that have what in common?

*What do you call something that ends where it started like this book?

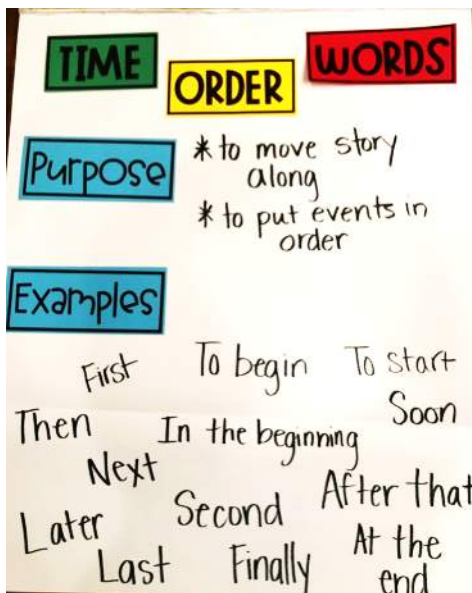
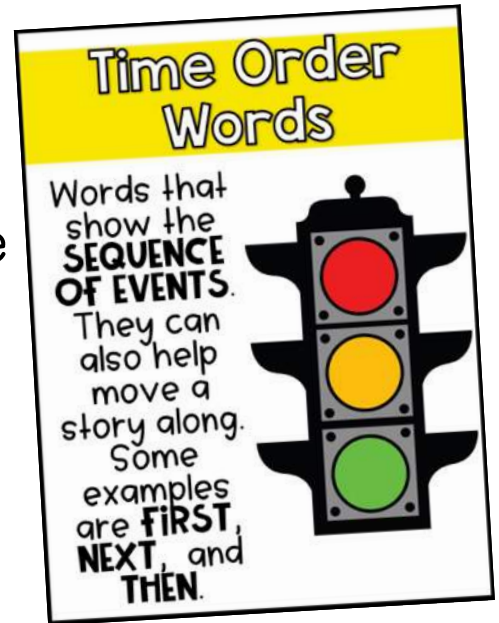
Teachers: Print on colored paper and laminate. Use this bookmark year after year to help extend students' thinking! You can even tape it in the front cover so you always know where it is!

Intended
Use



FIRST THE EGG

1. Read *First the Egg*. Take your time and let kids really marvel at the craftsmanship in creating the cut-outs. Point out that we see the same two words over and over again. Tell students that these are called Time Order Words. Then introduce the poster and discuss!



2. Make a whole class anchor chart to go over the purpose and examples of more Time Order Words.




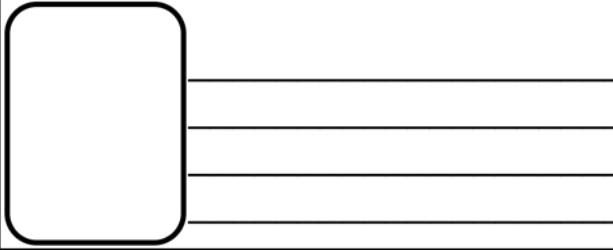
3. Leave the whole class anchor chart up for reference. Have students make little booklets with Time Order Words to use in the beginning, middle, or end of procedural writing or when they are telling a story.

FIRST THE EGG

Name: _____

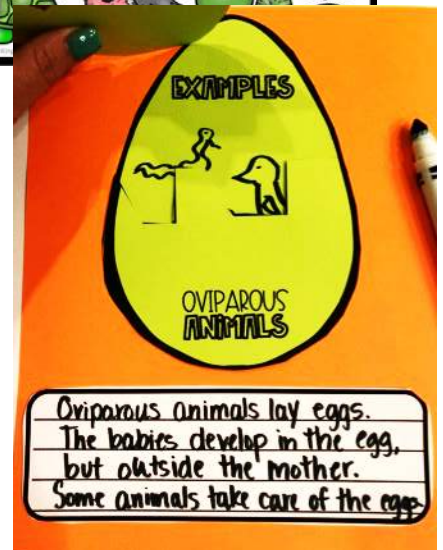
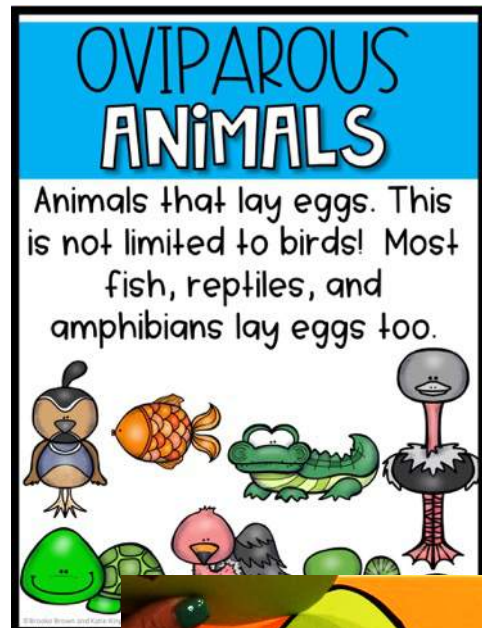
Time Order Words

Use Time Order Words to tell us how to make you bed.

4. This half sheet can be used as an exit slip to check for understanding of how students gained information.

5. Optional High Flyer activity:
Go over the Oviparous Animals poster. *I would highly recommend listening to "Chickens aren't the Only Ones" (I used YouTube). Then have students do the writing and craft. Students should glue the example egg down first. Then cut the "Oviparous Animals" egg on the crack. Glue just the top and bottom of the middle so it can be opened for examples. Then have students write about what they have learned about Oviparous Animals.

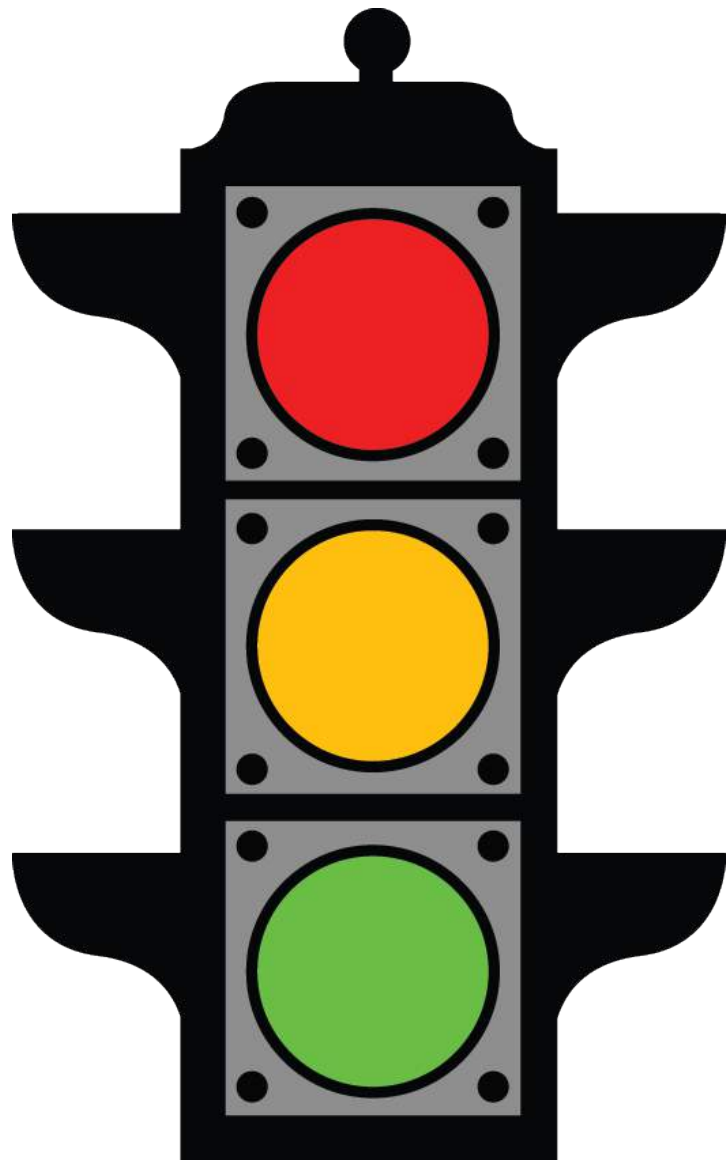


Time Order Words

Words that show the **SEQUENCE OF EVENTS**.

They can also help move a story along.

Some examples are **FIRST**, **NEXT**, and **THEN**.



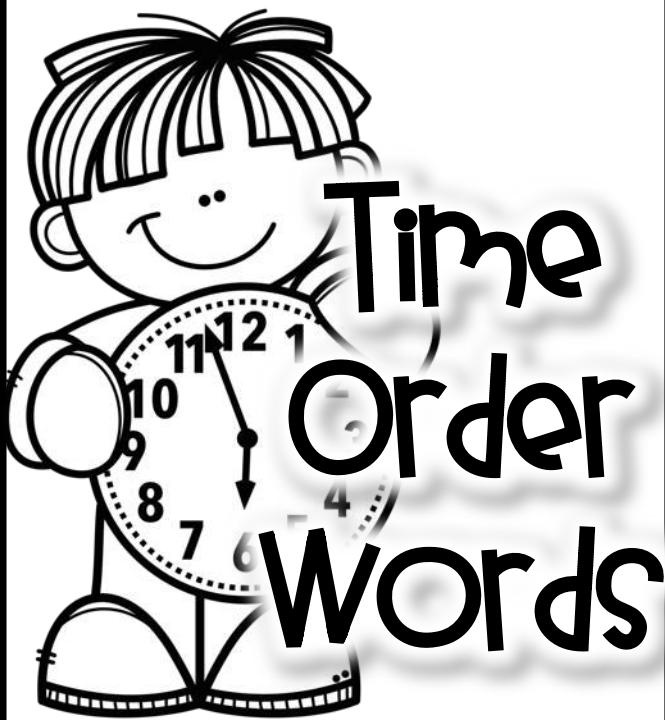
TIME

ORDER

WORDS

Purpose

Examples



Words to get
Started with:

BEGINNING

Words to get
Started with:

BEGINNING

Words to keep it
moving:

MIDDLE

Words to keep it
moving:

MIDDLE

Words to end
with:

END

Words to end
with:

END

Name: _____

Time Order Words



Use Time Order Words to tell us how to make your bed.

A large, empty rounded rectangle with a thick black border, intended for a child to draw a picture of their bed.

Name: _____

Time Order Words

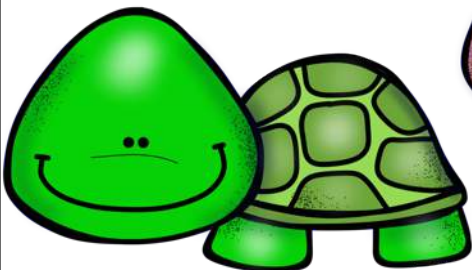
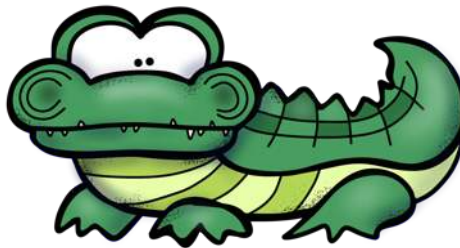
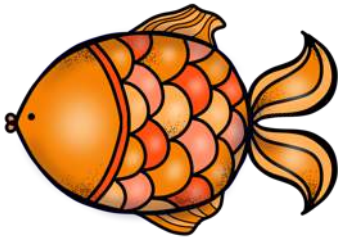
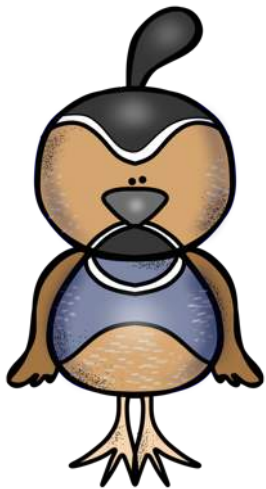


Use Time Order Words to tell us how to make your bed.

A large, empty rounded rectangle with a thick black border, intended for a child to draw a picture of their bed.

OVI PAROUS ANiMALS

Animals that lay eggs. This is not limited to birds! Most fish, reptiles, and amphibians lay eggs too.



EXAMPLES

**OVIPAROUS
ANIMALS**

VOCABULARY



There are no challenging words in this book, so I picked four words that apply to eggs! 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. Keep vocabulary words displayed in the classroom or add them to a ring and use during a word work station.

Teachers: Print the black and white versions on colored paper and have students hold them up as you give examples, synonyms, or antonyms. Be creative! Use this as a quick way to gauge understanding! Scan the room to look for the color you are looking for!



fragile



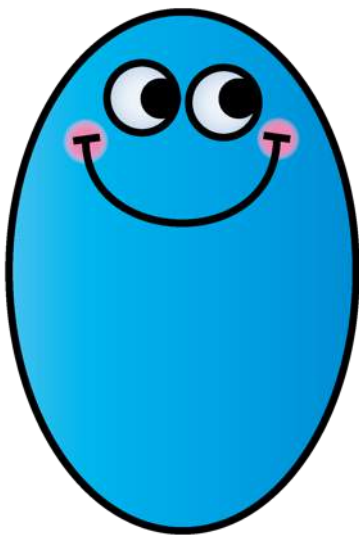
easily broken;
delicate

nutritious



a good source of
food

oval



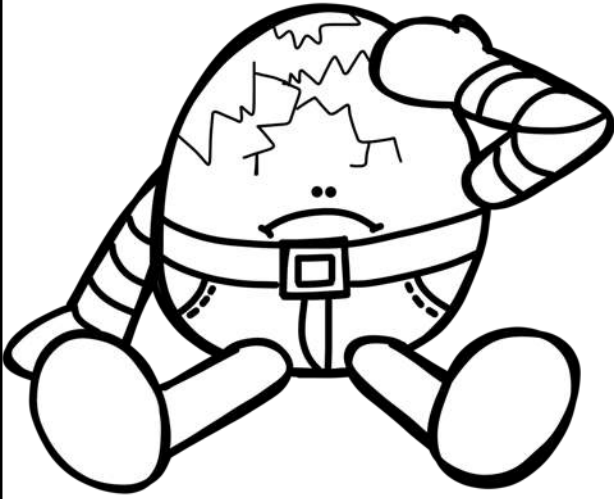
a rounded 2-d shape that
looks stretched out

oviparous



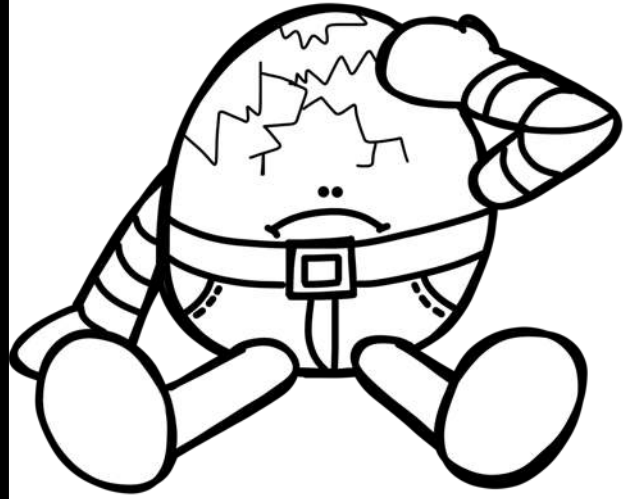
an animal that lays
eggs

fragile



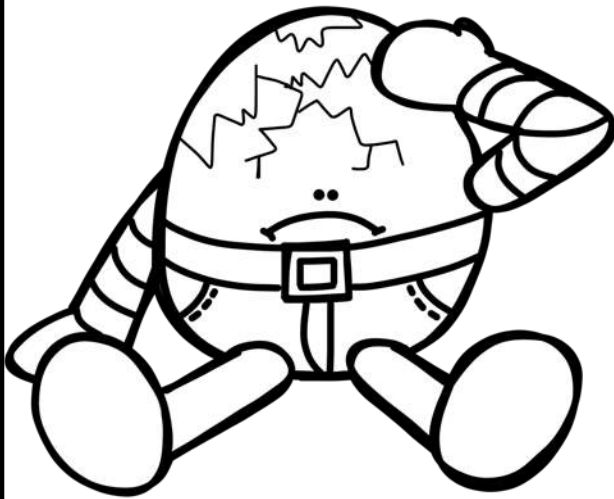
easily broken;
delicate

fragile



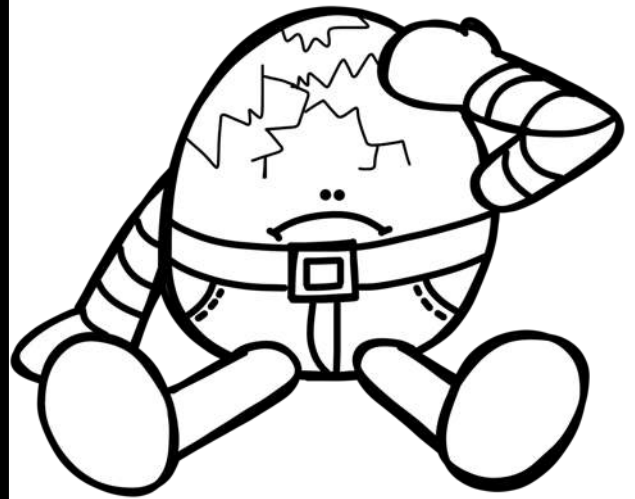
easily broken;
delicate

fragile



easily broken;
delicate

fragile



easily broken;
delicate

nutritious



a good source of
food

nutritious



a good source of
food

nutritious



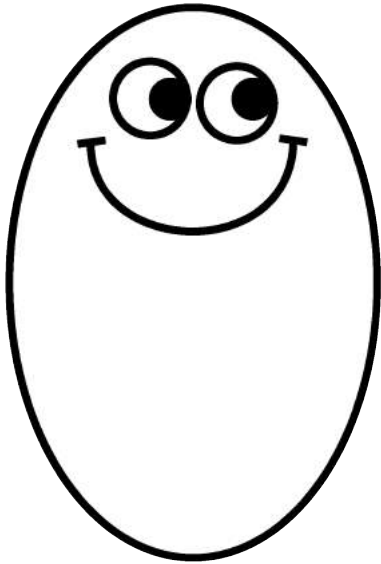
a good source of
food

nutritious



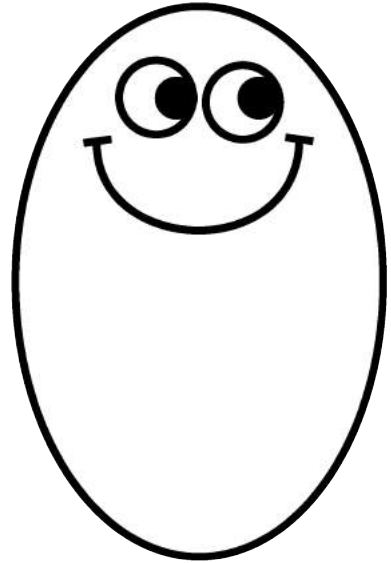
a good source of
food

oval



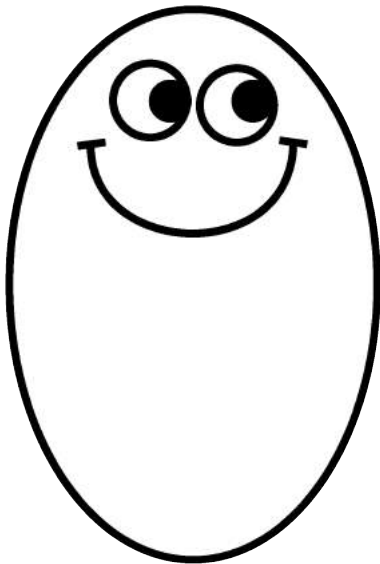
a rounded 2-d shape that
looks stretched out

oval



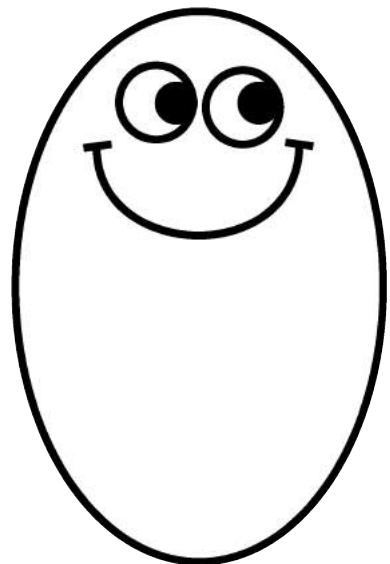
a rounded 2-d shape that
looks stretched out

oval



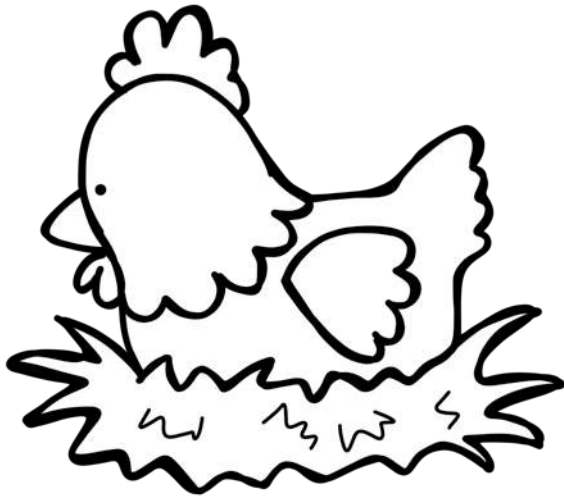
a rounded 2-d shape that
looks stretched out

oval



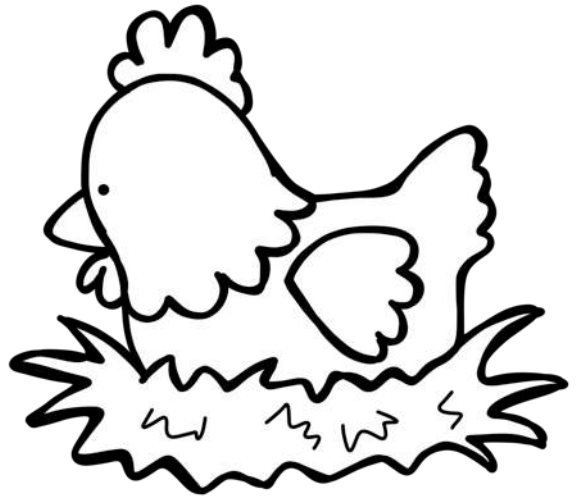
a rounded 2-d shape that
looks stretched out

oviparous



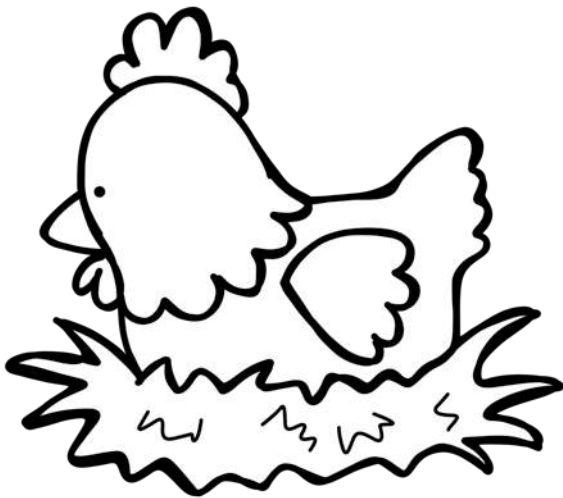
an animal that lays
eggs

oviparous



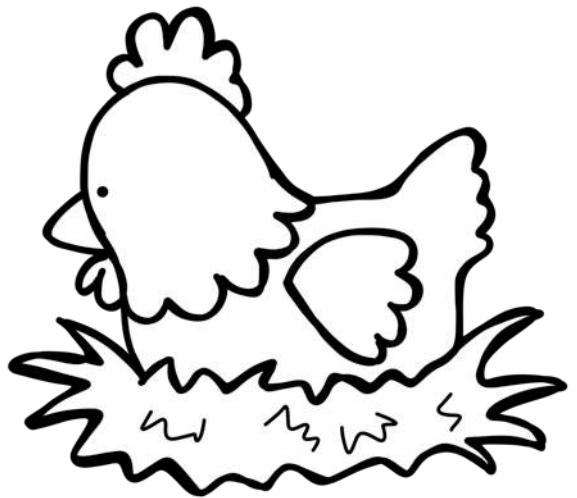
an animal that lays
eggs

oviparous



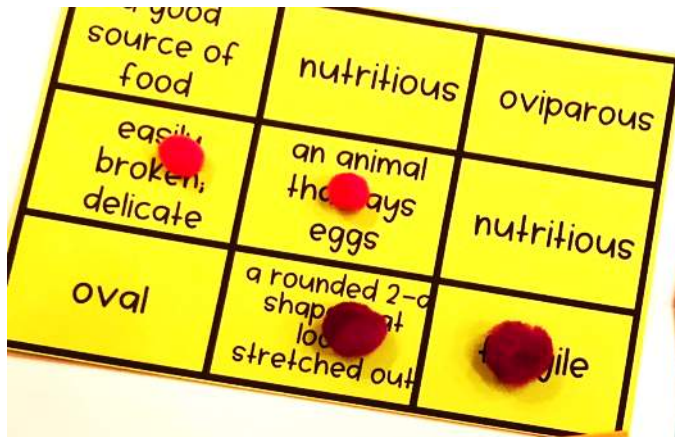
an animal that lays
eggs

oviparous



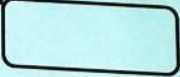
an animal that lays
eggs

VOCAB TIC-TAC-TOE

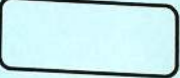


Name: _____

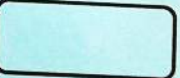
Vocabulary

WORD: _____ PICTURE: 

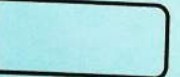
SENTENCE: _____

WORD: _____ PICTURE: 

SENTENCE: _____

WORD: _____ PICTURE: 

SENTENCE: _____

WORD: _____ PICTURE: 

SENTENCE: _____

DIRECTIONS FOR SET-UP: Print a board on colored paper. Use pom-poms or any other small pieces to act as the x's and o's.

DIRECTIONS TO PLAY: Students will play the game in pairs. In order to cover a spot, they must be able to define the word OR identify the word, based on what is already on the board. If students tie, they will play again based on time allowed. A printable is provided to use at another time to check for individual student understanding.

nutritious

oviparous

easily
broken;
delicate

an animal
that lays
eggs

oval

a good
source of
food

a rounded 2-d
shape that
looks
stretched out

fragile

nutritious

a good
source of
food

nutritious

oviparous

easily
broken;
delicate

an animal
that lays
eggs

nutritious

oval

a rounded 2-d
shape that
looks
stretched out

fragile

Name: _____



Vocabulary

WORD: _____

PICTURE:

A large, empty rectangular box with rounded corners, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

WORD: _____

PICTURE:

A large, empty rectangular box with rounded corners, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

WORD: _____

PICTURE:

A large, empty rectangular box with rounded corners, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

WORD: _____

PICTURE:

A large, empty rectangular box with rounded corners, intended for a student to draw a picture related to the word they have written.

SENTENCE: _____

THINK, TALK, SHARE:

- What are some types of animals that lay eggs? What are some types of animals that do not lay eggs?
- How are different animal eggs similar and different? (i.e. fish eggs, bird eggs, reptile eggs)
- What are some different types of nests that protect eggs? How do mother and father animals protect their eggs?
- What do you think might be inside an egg?
- Do you think eggs are strong? Why or why not?

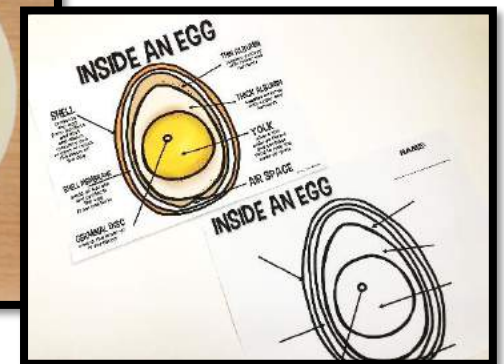
EXPLORE:

Use the QR Codes and links on the following page to help students explore more information and build background knowledge about eggs. **OPTIONAL:** Have students complete the foldable facts booklet. (This portion can also be completed as a science center.)

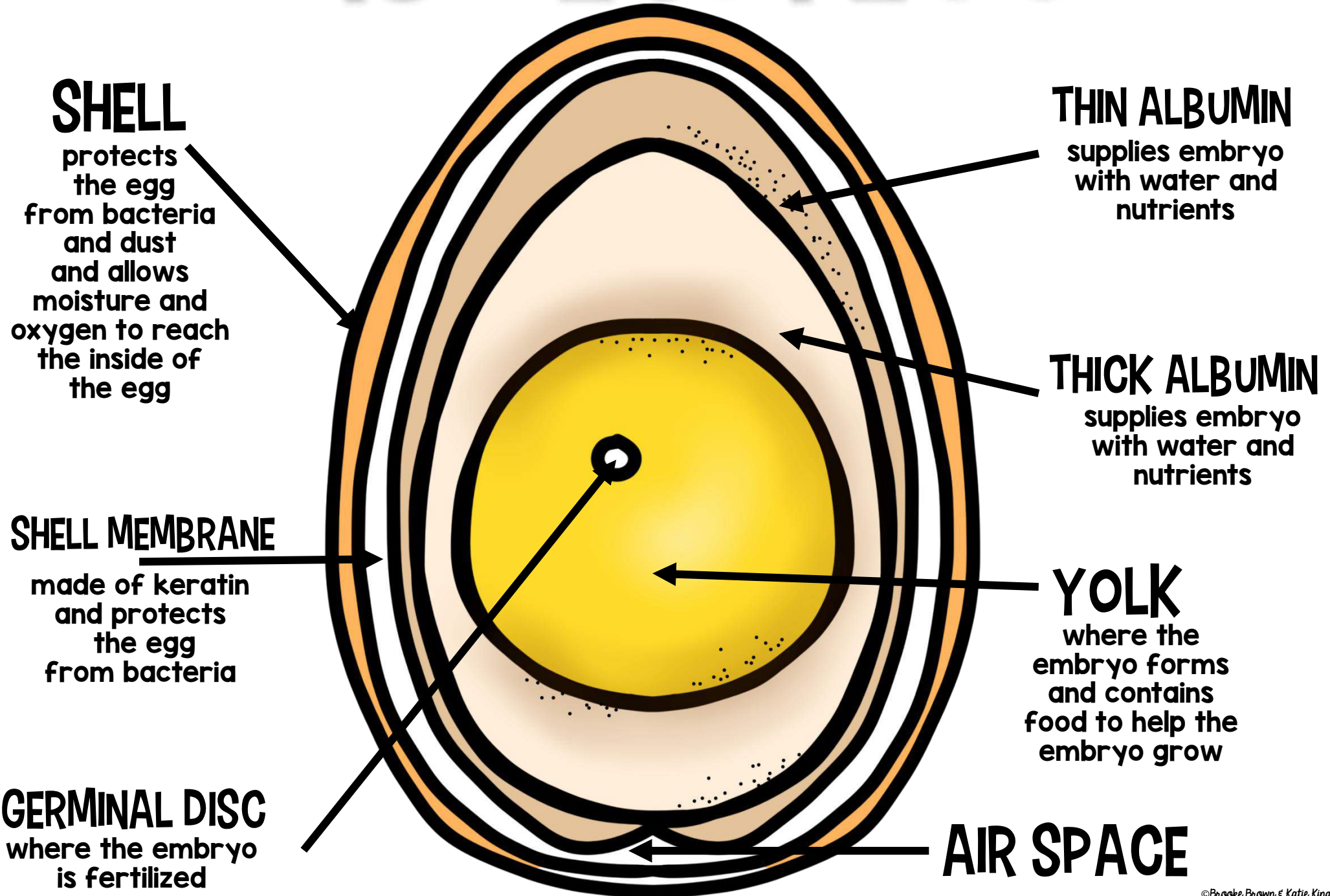
SPARK - INSIDE AN EGG:

***Use an unpeeled boiled chicken egg for demonstration. Peel the egg and open it to show and explain the basic parts of the egg as shown on the chart and how each serves a specific purpose.**

***Students may use the poster and blackline page to label the parts of the egg.**

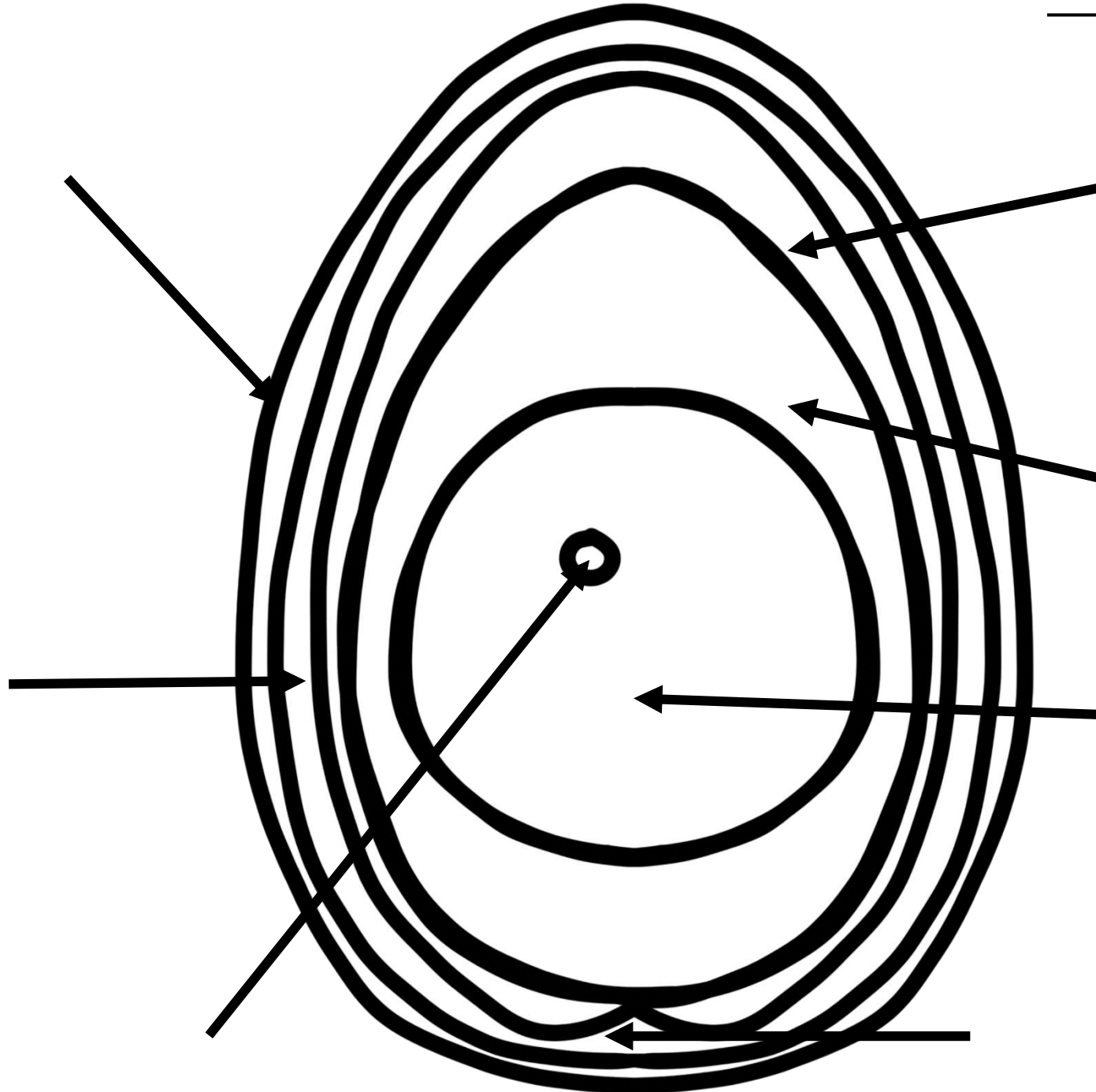


INSIDE AN EGG



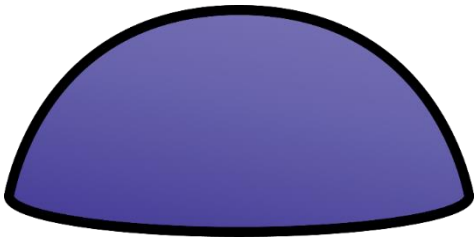
INSIDE AN EGG

NAME: _____

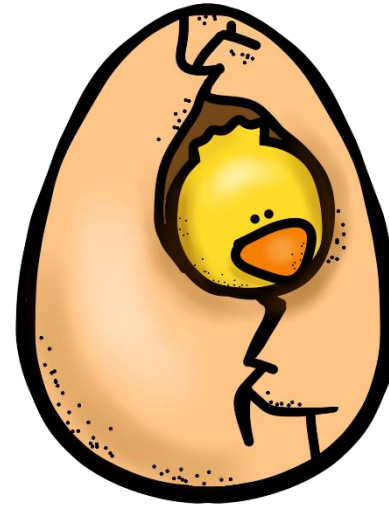


LET'S EXPLORE EGGS!

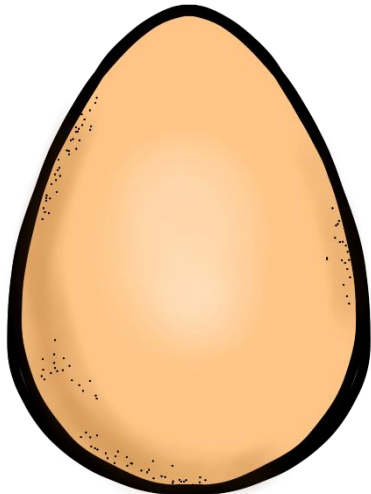
THE SHAPE OF EGGS



IT STARTS WITH AN EGG

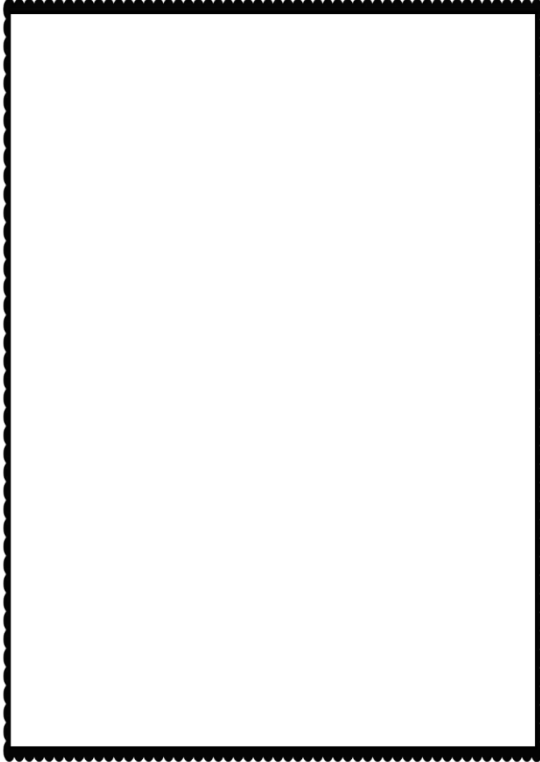


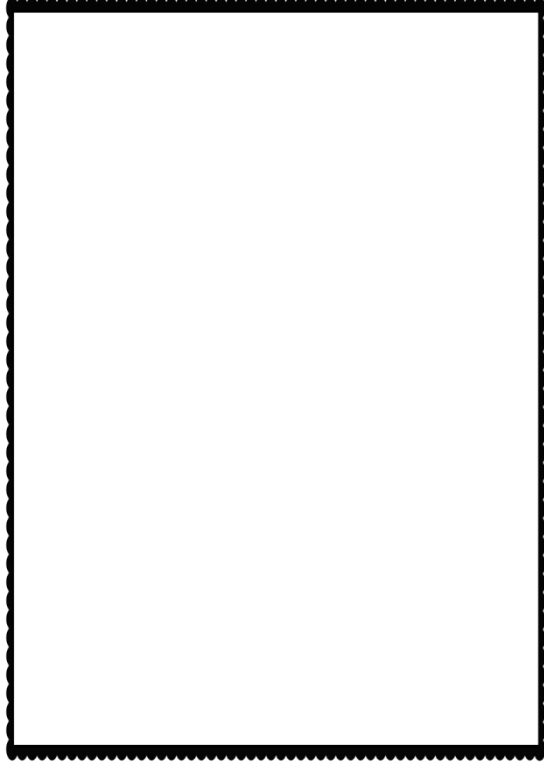
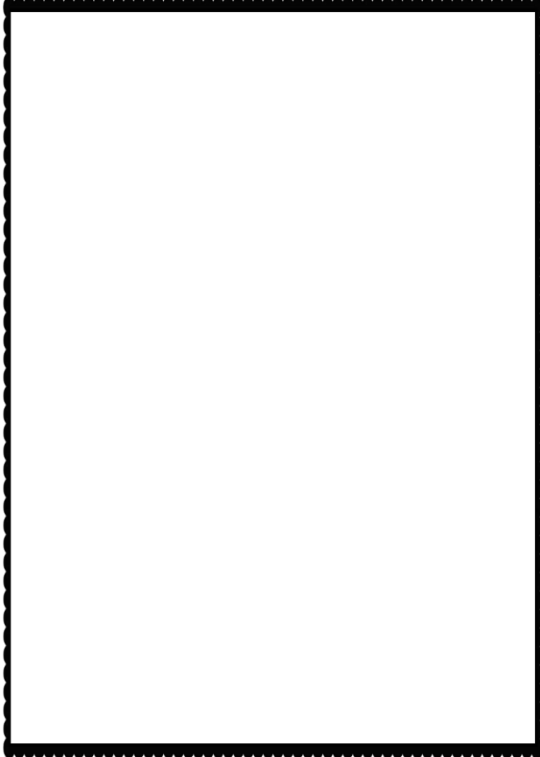
AMAZING EGG EXPERIMENTS



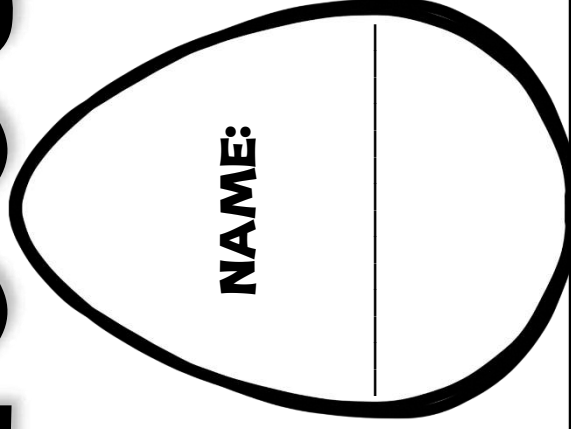
CHICKENS





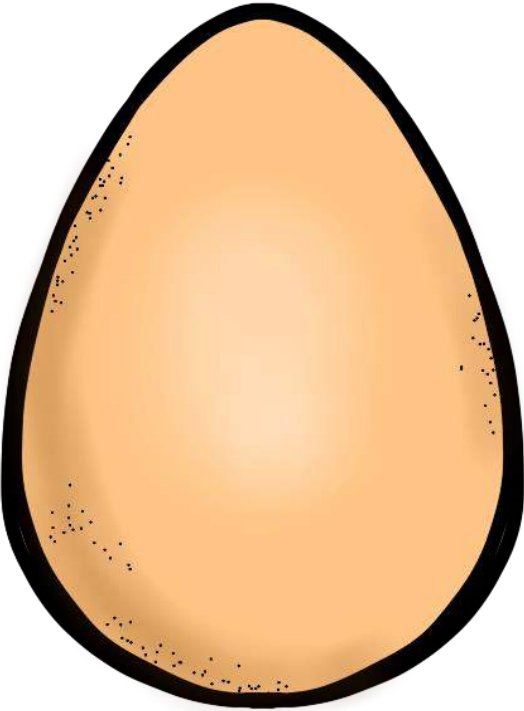


FACTS ABOUT EGGS



NAME:

STEM CHALLENGE: THE INCREDIBLE EGG



NGSS Standard Alignment: K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive, 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. 1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive, 2-PS1-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.* K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs., 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. 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Challenge Description: Students will explore the incredible natural strengths of eggs as a result of their dome shape. They will use foundations of 4, 3, 2, and 1 egg and place books atop the foundation to explore the strength.

Suggested Materials PER GROUP OF STUDENTS: 4 unpeeled raw eggs, 4 Styrofoam egg sections (cut apart from an egg carton), variety of sizes and weights of books

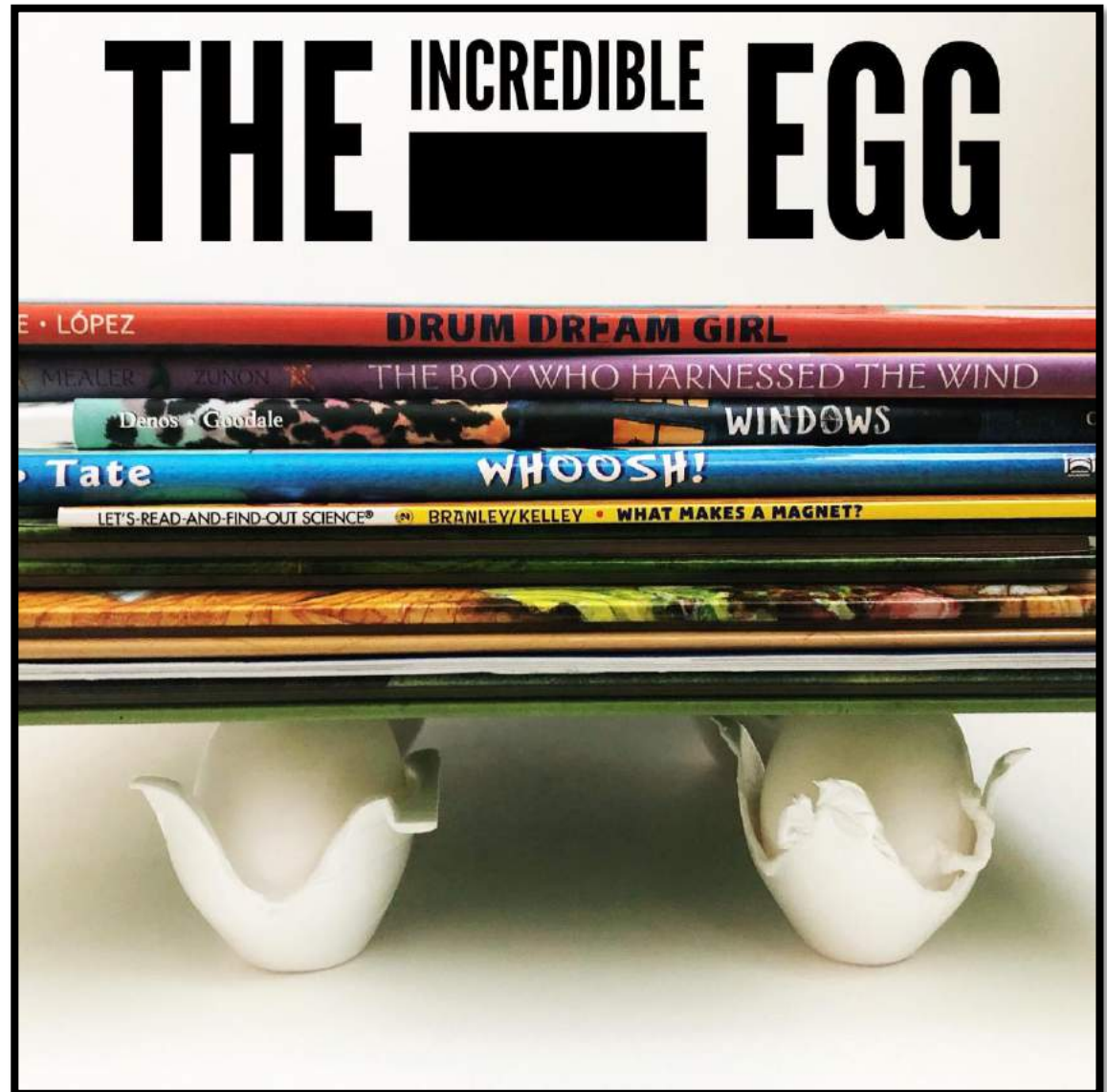
LESSON PLAN

1. **SCIENCE SPARK: INSIDE AN EGG**
2. Ask students to share what they already know about eggs and life cycles. Share the video clips and links on the **"LET'S EXPLORE EGGS!"** page to prime their background knowledge.
3. Introduce permitted materials and share the STEM challenge and key vocabulary cards. Allow students 20-30 minutes with small groups to build towers using eggs as their foundations. They will make predictions and will test the strength using foundations of 4, 3, 2, and 1 egg.
4. Hold a whole class discussion about how much weight their egg towers held and why they think that might be. Discuss the dome shape and why it makes an egg so special on the last page of students' recording booklets.

THE INCREDIBLE EGG

First the Egg

Possible Product



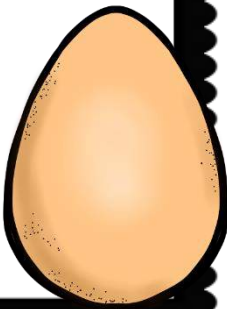
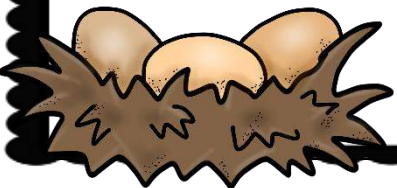
THE INCREDIBLE EGG

Animals That Lay Eggs

**Animals that Don't
Lay Eggs**

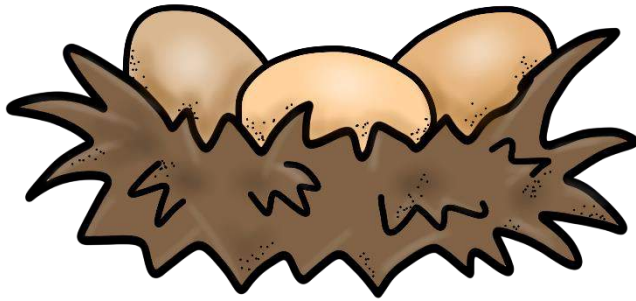
**How Animals protect
Their Eggs**

Why Eggs Are so strong



THE INCREDIBLE EGG

PROTECT



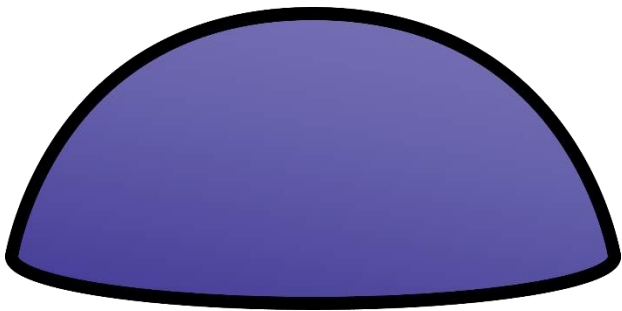
to keep
safe from
harm or
injury

INSTINCT



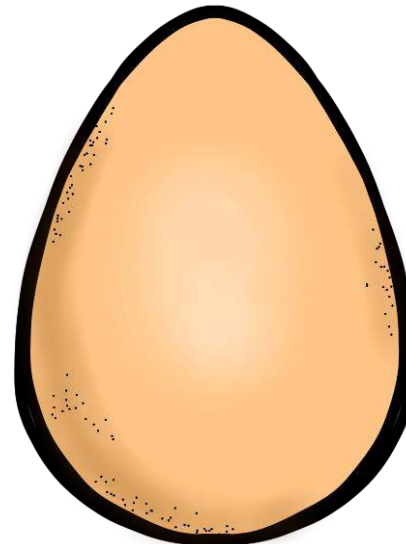
a fixed
pattern of
behavior
in animals

DOMES



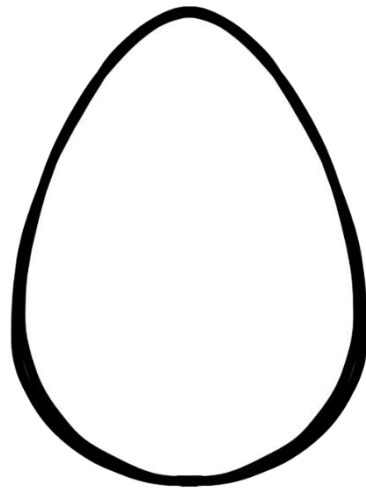
a curved
structure
with no
angles or
corners

WEIGHT DISTRIBUTION



the amount
of weight and
pressure that
is applied to an
entire
structure

THE INCREDIBLE DOME



Chickens use their instinct to incubate their eggs with the narrow end pointing upwards to make a dome shape.

This **dome** is a curved structure with no angles and no corners. A dome can enclose a large amount of space without any columns to hold it up.

A dome distributes the weight and the pressure applied on the top evenly to the entire structure.

The dome shape of each end of an egg distributes all weight evenly and with only a small amount of stress and strain. This allows it to hold a significant amount of weight without breaking.

THE INCREDIBLE EGG

First the Egg

Name: _____

STEM CHALLENGE

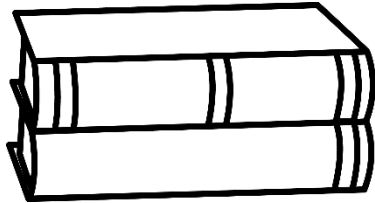
Can you build the heaviest tower possible using eggs for the foundation?

Why do eggs need to be strong?

How do animals protect their eggs?

4-EGG TOWER

How many books do you predict it will hold?	How many books did it hold?

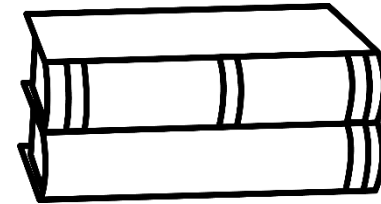


3-EGG TOWER

How many books do you predict it will hold?	How many books did it hold?

2-EGG TOWER

How many books do you predict it will hold?	How many books did it hold?



1-EGG TOWER

How many books do you predict it will hold?	How many books did it hold?



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