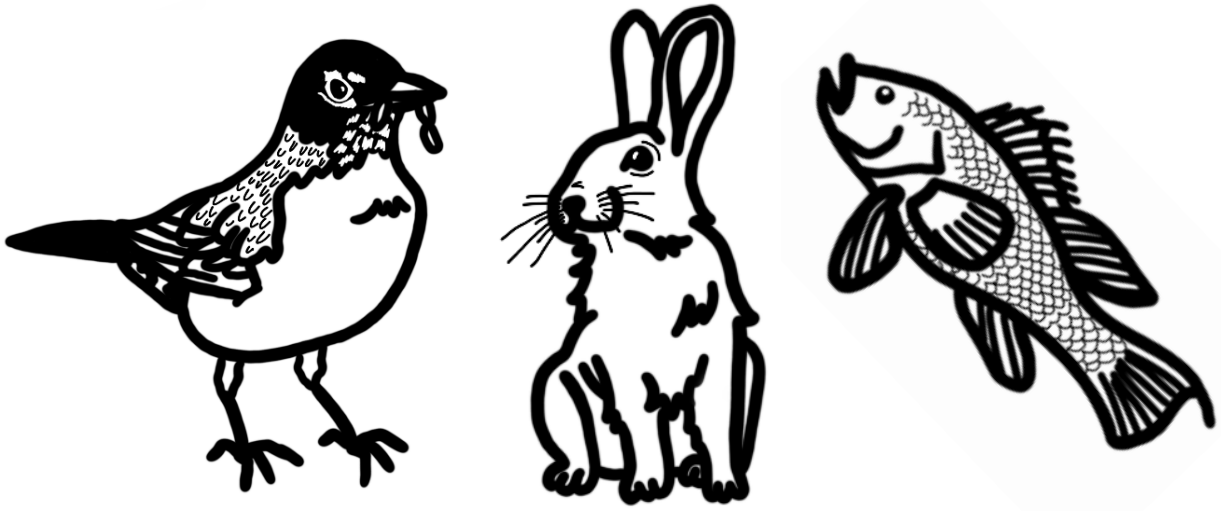
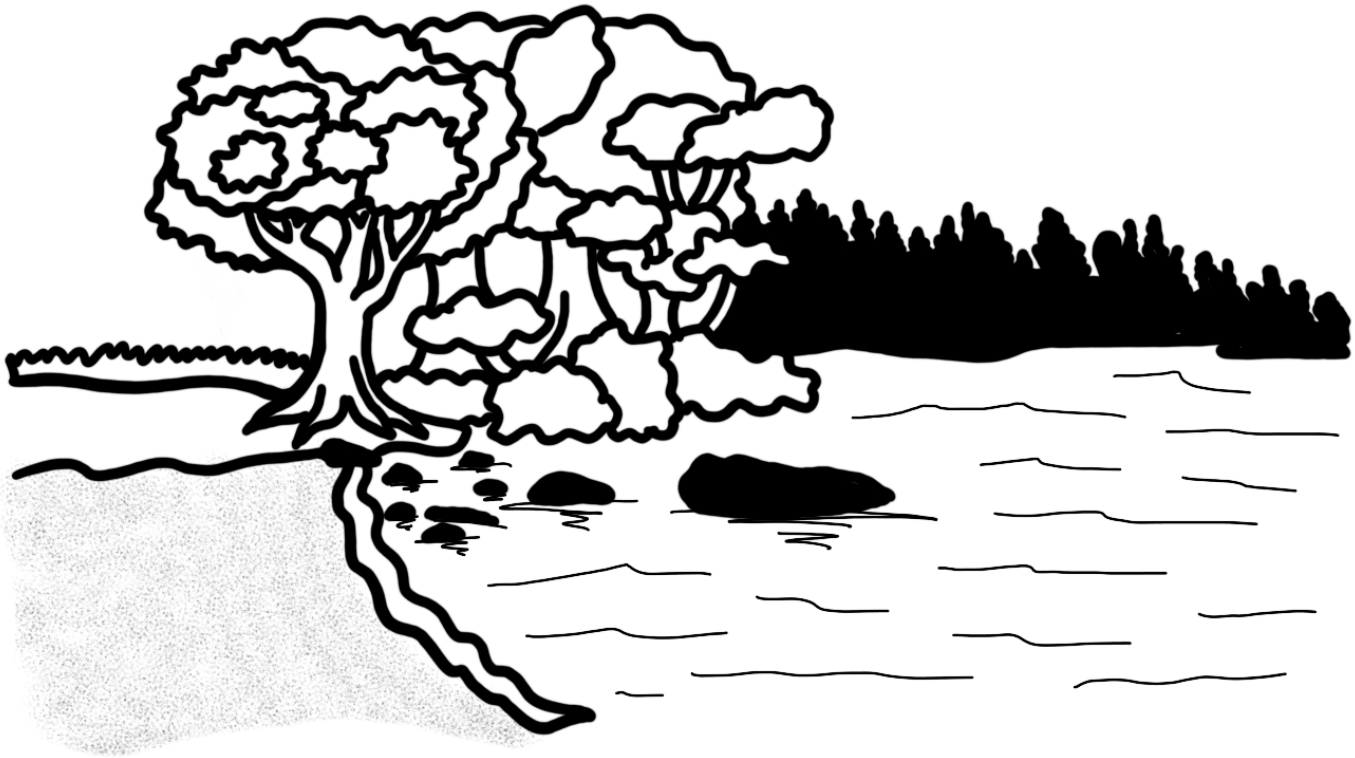


The Brown Junior Research Program Presents

ECOLOGY EXPLORERS



Ecology is the science of how organisms interact with each other and the world around them. Draw us a picture of your favorite place in nature in Rhode Island.

Every environment is full of **biotic** and **abiotic** factors. Can you circle three biotic factors in your drawing and draw squares around three abiotic factors?

Animals can be grouped into six groups based on their **traits**. For each animal group, list some of the unique traits that make that group special.

FISH

AMPHIBIANS

REPTILES

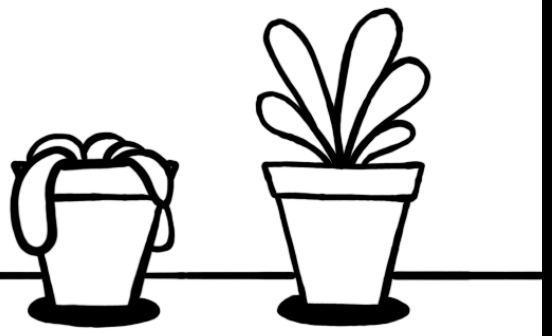
BIRDS

MAMMALS

INVERTEBRATES

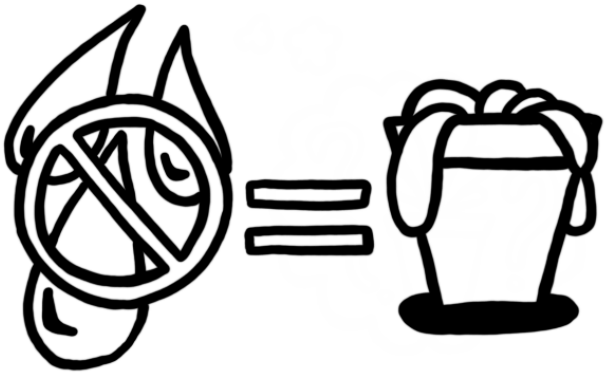
The Scientific Method is the way that scientists study the world around them and learn things.

1.OBSERVE



2.QUESTION

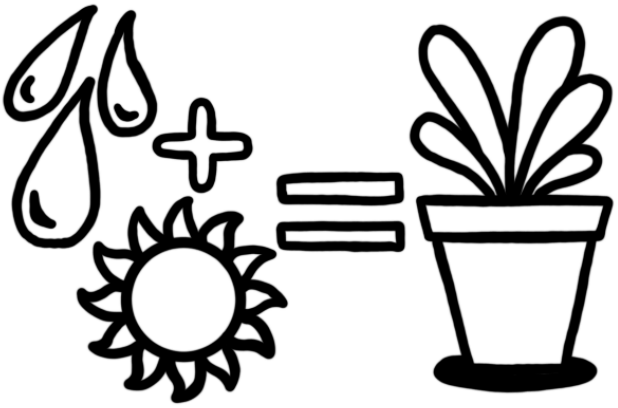
3.HYPOTHESIZE



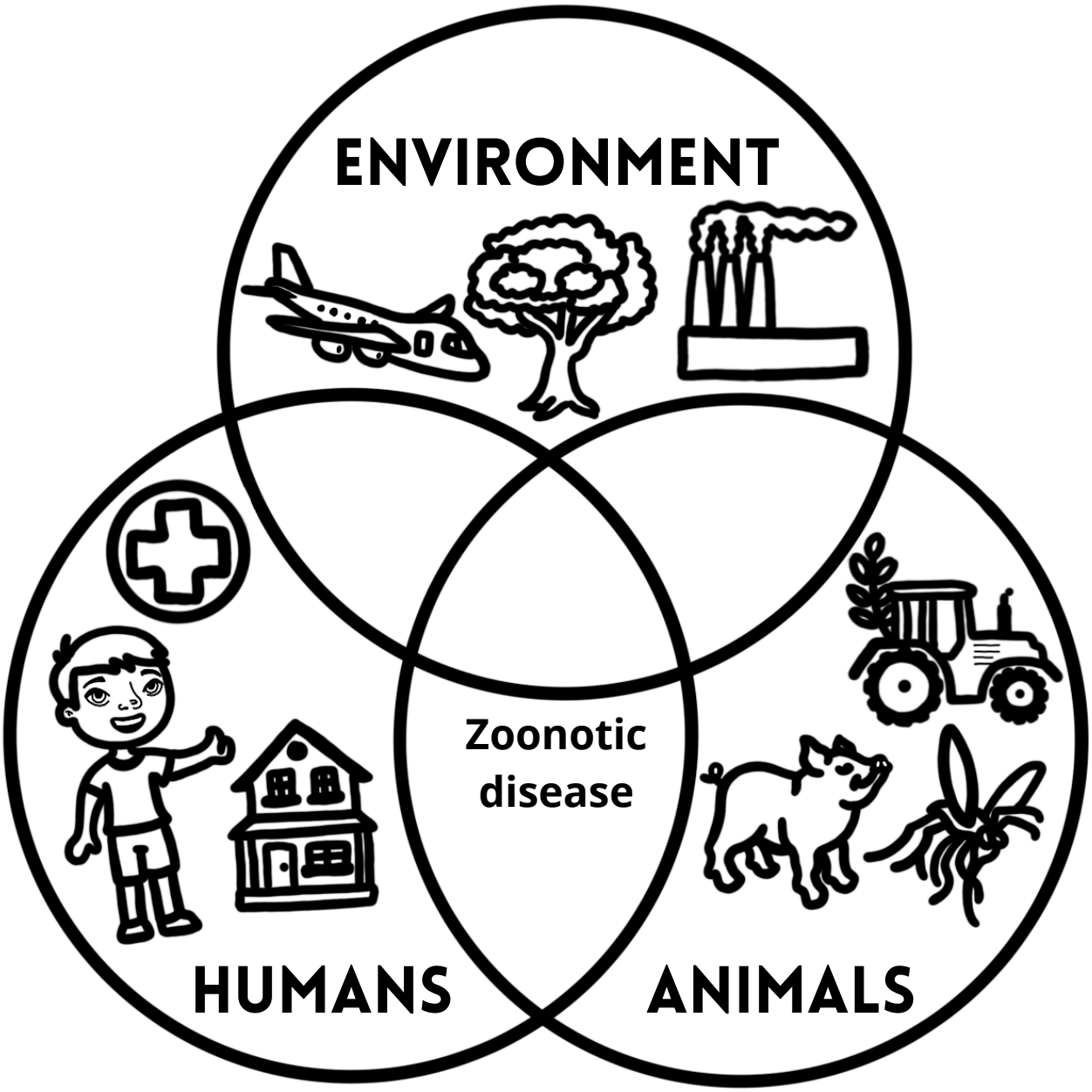
4.EXPERIMENT

5.ANALYZE

6.CONCLUDE



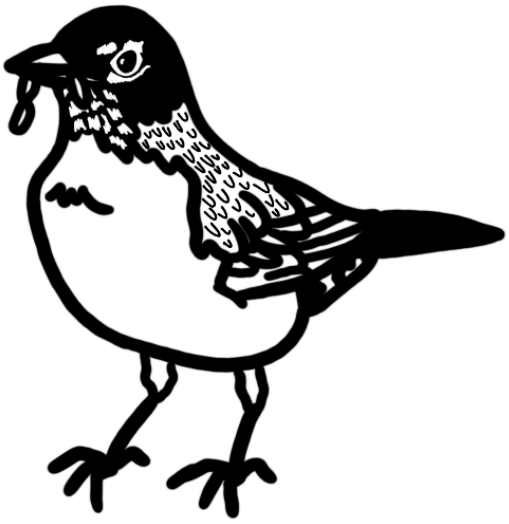
Humans, animals, and the environment all interact with each other. **Zoonotic diseases** are diseases that jump from one species to another. For example, lyme disease is spread from the deer tick to human.



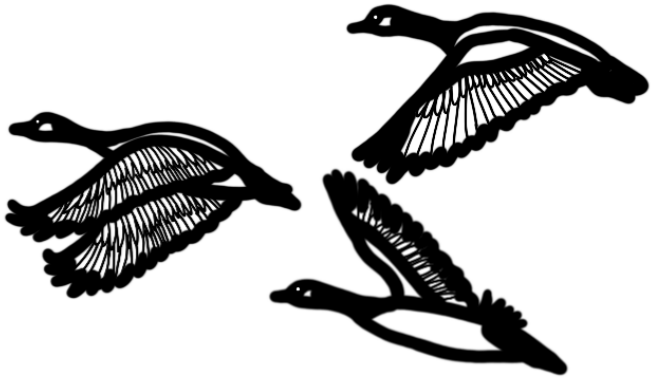
Fill out the Interaction Venn Diagram above with ways each group can interact with its neighbors.

Birds show many different types of **behaviors**, which are the ways that organisms interact with each other and their environment. Can you identify which species is doing each behavior?

.....
is drumming.



.....
is foraging.



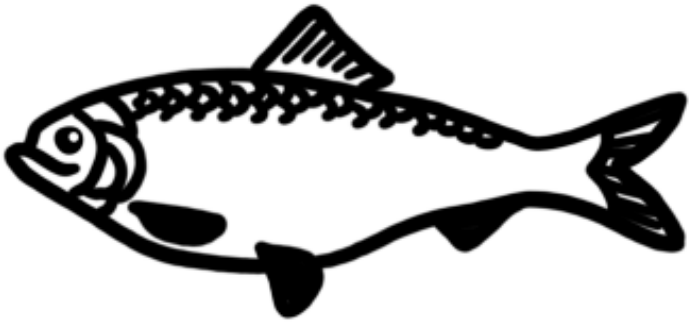
.....
are flying.

An **ethogram** is a way that scientists can track animal **behavior**. Find an animal and observe them over time, keeping notes in your ethogram about what you see.

Species:	**Date:**

Behavior	**Type**	**Count**	**Description**
Flash Tail	Territory Defense		Bird raises and shakes tail feathers, usually directed at another bird, sometimes includes a call

An organism's **habitat** is the environment where they live. Fish can either live in **freshwater** or **saltwater** habitats.



ALEWIFE

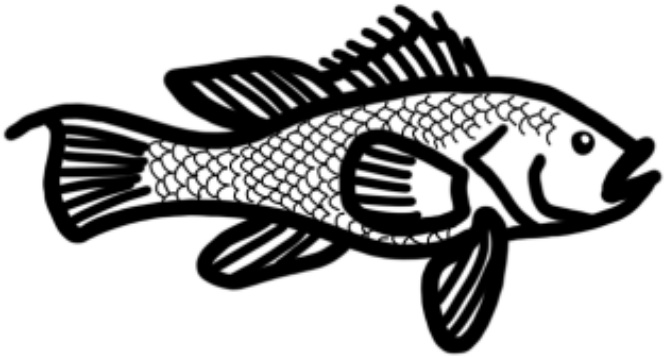
AMERICAN EEL

TAUTOG (BLACKFISH)

WINTER FLOUNDER

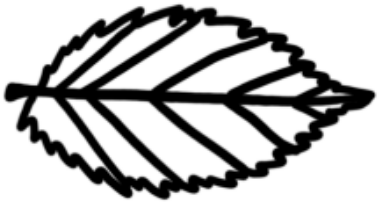
ATLANTIC COD

BLACK SEA BASS



Here are some fish that live in Rhode Island. Circle the freshwater fish with blue and star the saltwater fish with orange!

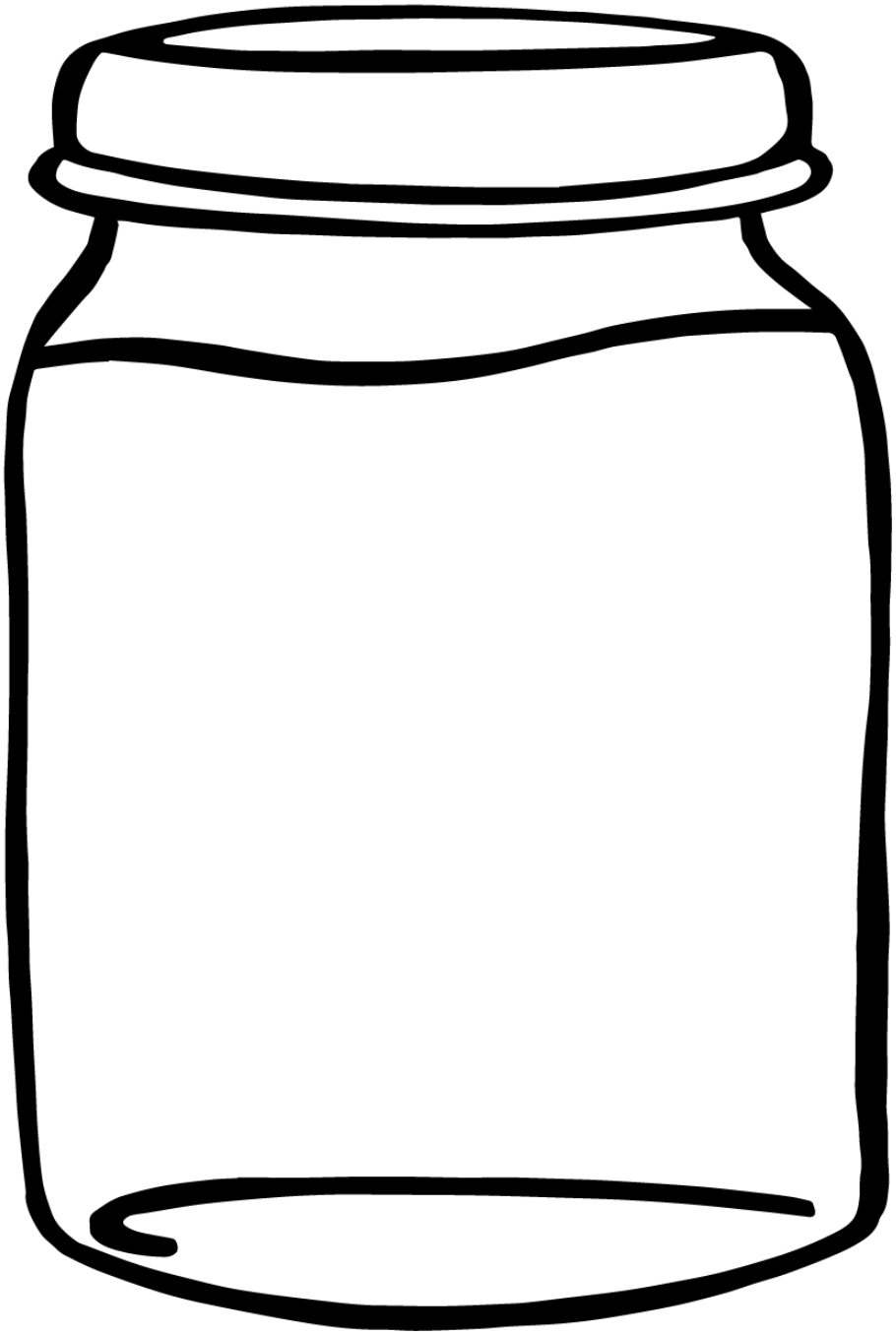
Plant leaves come in many different shapes and sizes. Compare each pair of leaves in order to label each type. Unscramble the words below for extra clues!



ebldo sohmto eedlne roabedfal

lpmsei udlbonue teoothd omncuodp

Terraria are indoor gardens that allow us to cultivate our own mini ecosystem. Terraria use layers to ensure that the plants get proper drainage. Draw what your terrarium will look like!



Decorations

Plants

Potting soil

Charcoal

Rocks

FIELD NOTEBOOK

This Field Book is the Property Of:

Pertinent Locations:

If Found, Please Contact:

Start Date:
____ / ____ / _____

End Date:
____ / ____ / _____

FIELD NOTES

Write down what **question** you would like to explore by observing nature over time.

What is your **hypothesis**?

How will you **experiment** and test your hypothesis? What will you look for and when?

Date:	Time:	Location:

Weather:

Date:	Time:	Location:

Weather:

Date:	Time:	Location:

Weather:

Date:	Time:	Location:

Weather:

Date:	Time:	Location:

Weather:

Date:	Time:	Location:

Weather:

Date:	Time:	Location:

Weather:

Date:	Time:	Location:

Weather:

Date:	Time:	Location:

Weather:

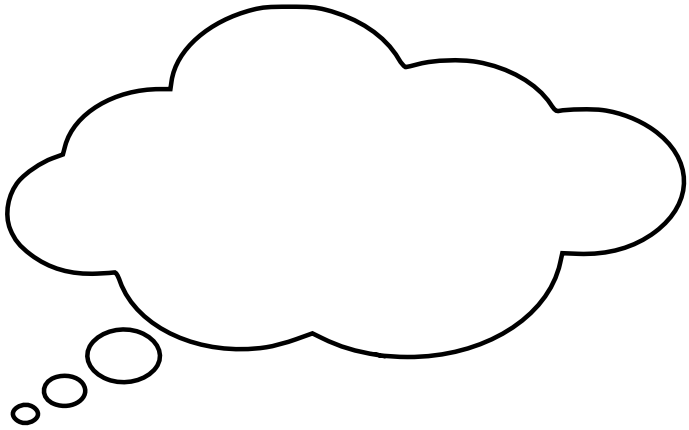
FIELD NOTES

What patterns did you notice over the course of your fieldwork? What are your **results**?

What can you **conclude** based on your results?

What can you do next to explore ecology in your own backyard or neighborhood? Write a new **question**!

Congratulations, you're now an ecology explorer!
Draw yourself as a ecologist.



What kind of organisms will you study as an ecologist? Draw them in your thought bubble!

THANK YOU FOR LEARNING WITH THE BROWN JUNIOR RESEARCHERS!

This coloring book was developed for use in the classroom with national science and reading standards in mind. This book meets the following standards:

Next Generation Science Standards:
3LS1.1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
3LS4.3: 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.
3ESS2.2: Obtain and combine information to describe climates in different regions of the world.
4ESS3.1: Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.
5LS1.1: Support an argument that plants get the materials they need for growth chiefly from air and water.
MSLS1.4: Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.
MSLS1.5: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.
MSLS1.6: Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.
MSLS2.1: Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
MSLS2.2: Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

English Language Arts Common Core Standards:
5.2: Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
5.3: Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
5.4: Determine the meaning of general academic and domain-specific words and phrases in a relevant text.
5.7: Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
3.10: By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts.
3.7: Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).