

**Weekly Lessons/Overview and Goals:** Students will understand how structures help organisms survive in the environment.

**TEKS:**

4.10 Organisms and environments. The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environment.

The student is expected to:

4.10A explore how structures and functions enable organisms to survive in their environment

4.10B explore and describe examples of traits that are inherited from parents to offspring such as eye color and shapes of leaves and behaviors that are learned such as reading a book and a wolf pack teaching their pups to hunt effectively.

**Key Vocabulary**

<b>4.10A</b>		<b>4.10B</b>	
structure	organism	inherited traits	learned behaviors
<b>adaptation</b>	environment	<b>likeness</b>	offspring
function	<b>beak</b>	resemble	<b>generation</b>

**Monday:** [RRISD 5E Lesson, bird beaks](#)

Bird beak lesson, day 1

**Engage:** [Share photos with students](#), encourage “I notice, I wonder..”

Stemscopedia Vocabulary: <https://app.acceleratelearning.com/scopes/84/elements/379580>

Students copy vocabulary and draw a picture in their notebooks.

**Explore:**

**Beak tools (1-2 of each)** - Teacher Key for matching tool to birds in photographs provided

- metal or plastic spoons (*Brown Creeper, Spoonbill*)
- chopsticks (*Curlew*)
- tweezers (*Eagle, Heron*)
- plastic cups or toy shovel (*Spoonbill, Skimmer, Pelican*)
- pliers or clothespin (*Cardinal/Grosbeak*)
- eyedropper or plastic straw (*Hummingbird*)
- small strainer or plastic fork (*Flamingo, Skimmer, Duck/Merganser*)
- tongs with serrated edges (*Heron*)

**Sample “foods”** - Teacher Key

- bread (meat for raptors to tear)
- raisins or mini marshmallows (*berries / insects*)
- pretzel sticks or toothpicks (*insects*)
- sunflower seeds in the shell (*nuts*)
- floating grapes (*fish*)
- floating snap cubes or foam pattern blocks (*fish*)
- water or juice (*nectar*)
- plastic or paper cups (to hold water or juice)
- cooked spaghetti or gummy worms (*worms*)

**Hands On Inquiry Investigation:**

(open exploration prior to recording information in notebooks - Columns 1 and 2)

1. Place the snap cubes and/or foam pattern blocks in a small bowl of water. Place all other food samples on paper plates or in plastic cups.
2. Show students the beak tools they will use to simulate real bird beaks, and the sample foods they will attempt to pick up using their “beak.”
3. Divide students into groups of 3. Each group will be assigned one beak tool and attempt to pick up each of the sample “food” items within a given time frame (30 seconds, for example).
4. Students will record the beak tool used in Column 1 of their data table and the “food” item(s) it picked up in Column 2.

5. Groups will repeat this process for all beak tools, rotating among the 8 beak tools provided.
6. Students may want to explore the ability of their beak tool to pick up multiple food items at once.

**Tuesday: STAAR Writing**

**Wednesday:** [RRISD 5E Lesson, bird beaks](#)

Bird beak lesson, day 2

**Discussion Questions:**

- What did the \_\_\_ (tool) pick up?
- Was a particular beak shape better for picking up different food types?
- What is the function of a bird's beak?
- Why do you think birds have different beaks?

**Science Terms:**

(introduce during discussion related to Explore investigation)

*Supporting*

- *structure*
- *relationship*
- *consume*
- *function*
- *survive*
- *size*
- *shape*

**Sentence Stems:**

(use as discussion starters - Turn and Talk)

- A beak shaped like a \_\_\_ is useful for \_\_\_\_\_.
- A beak shaped like \_\_\_ allowed me to pick up \_\_\_.
- Also, \_\_\_\_\_.

- In addition, \_\_\_\_.
- Furthermore, \_\_\_\_.

**Elaborate:**

**Application of Understanding of Concept**

- Visit [San Diego Zoo - Kids](#) to look at slideshows of a variety of birds. (Click on an image to see a slideshow of photographs for that type of bird.) Discuss the shape / structure of each bird's beak and infer what the bird might eat as a result of its beak shape.
- Pass out *Wildlife Gardener* p. 47 - pictures of 8 birds with descriptions of each beak's structure and function (what it eats).

**Discussion Questions:**

- Do any of the birds in the pictures have beaks with similar shapes? What might this tell us about these birds?
- How are the tools we used to pick up food related to the real birds in these pictures?
- Looking at the pictures, which type of beak do you think the \_\_\_\_ (tool) represents? Why do you think this?
- What do you think would happen to a bird that eats nectar if it had the beak of an eagle? Would it be able to survive?
- Given what you know about beak adaptations, what type of food do you think these birds consume?
- In what ways does a specialized beak help a bird survive in its environment?

**Materials Needed:**

- [San Diego Zoo - Kids](#): slide shows of real birds
- *Wildlife Gardener*: Beak Tools, p. 47 (1 copy/student)

**Evaluate:**

- [Bird Beak Adaptations Evaluation](#) (1 copy/student)

**Thursday: Animal Traits**

**Engage:** Read story on animal traits

**Explore & Explain:**

Place students in small groups of 2-3. Distribute a Parrot Card, a T-chart, scissors, and glue or tape to each group. Ask each group to take 2 minutes and examine the picture and think about what it means to "learn something" or "inherit something." Challenge each

group to cut apart the gray boxes that appear beneath the T-Chart and decide where they think each card belongs. Students should divide the cards equally and take turns sharing their card, where they think it belongs, and why. Then, the next student will continue, and so on (give one, get one strategy) Encourage groups to think critically about why they are placing the cards in a particular location. Do not glue or tape the cards down yet; this will happen after the class discussion.

Lead students to understanding with the following questions:

What are some ways that animals can learn?

How can learning a particular behavior help an animal to survive?

What are some traits you inherited from your parents? What are some examples of inherited traits in plants?

How can inherited traits help an organism (plant or animal) to survive?

\*After discussion, identify the correct placement of the cut-out cards on the T-Chart and allow students to glue or tape their cards in place.

[Student Handout](#) - you will need to print or have s's work in their notebooks

**Friday:** STEMSCOPES Lesson - Explore: How can we classify traits?

Handouts:

Student [guide](#)

Student [Journal](#)

[Traits cards](#) - these can be shared via Google classroom as well. Either way works!

**Differentiation:** A variety of activities (application, concrete, and kinesthetic) will be incorporated into both days to engage all learners. Kagan structures will be introduced the first week of school.