

## THE ANATOMY OF A LIZARD

### An Elementary Science Lesson Plan Designed For Group Inquiry Based On The 5E Inquiry Model

**GRADE LEVEL:** This lesson is designed for a 4<sup>th</sup> grade classroom. 4<sup>th</sup> graders should be cognitively able to understand that the anatomical features of an animal are tailored to help them survive in their environment. Additionally, 4<sup>th</sup> grade students should be able to draw logical conclusions of how an animal will survive in a particular environment based on observations of certain anatomical features of the animal.

**SCIENCE CONCEPT (the Main Idea):** The purpose of this lesson is to help students better understand the idea that the anatomical features of an animal are directly related to the environment that animal lives in, using the example of the environment of a Schneider's Skink.

### RELATIONSHIP TO CALIFORNIA CONTENT STANDARDS:

3. Living organisms depend on one another and on their environment for survival. As a basis for understanding this concept:

b. *Students know* that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.

**LEARNING OBJECTIVE:** Students will create an oral presentation discussing three purposes of their teacher-assigned Schneider's Skink feature.

### EVALUATION IDEAS:

1. Formative: While the students observe the Schneider's Skink and work in their groups, the teacher will check-in to ensure understanding of the topic and task at hand.
2. Summative: Students will organize their descriptions of their particular feature and its purposes using the Observing A Schneider's Skink and Why Is That There? worksheets and use this knowledge to create an oral presentation as a group.

### CONCEPTUAL BACKGROUND:

There are certain aspects of lizards that are mostly universal. Students will focus on the legs, tongue, tail, and body as each of these features serves an anatomical purpose common to practically all lizards. A lizard's legs are positioned in such a way that it helps them scurry around desert or tough environments quickly. According to Biology4Kids (2012), "Reptiles' legs are directed down towards the ground. That change in direction allows reptiles to pick their bellies off the ground and helps them move more efficiently" (p.1). In terms of their tongues, lizards use them to send messages about the world around them to their brain, acting as a type of

nose. Another fun anatomical trait of lizards that students will learn is that the tail of a lizard not only helps it balance while moving, but can also detach and regrow if needed. This is helpful when being chased by a predator. Finally, the body and scales of a lizard are important as they are unique to each lizard in terms of color and texture. Additionally, they act as armor for lizards and shed multiple times throughout the year.

### **LESSON IMPLEMENTATION PLAN:**

**ENGAGE** – “Scientists, today we have a special visitor to help us learn more about the anatomy of lizards.” Teacher should bring out the SERC provided Schneider’s Skink. “Does anyone know what kind of lizard this is?” Teacher should call out for volunteers. “It’s a Schneider’s Skink! You might have seen these lizards at pet stores, but they are not from around here originally. Today, they are going to help you learn more about the anatomy of lizards.”

**EXPLORE** – Students observe a Schneider’s Skink provided by SERC in their teacher-designated groups. Each of the four groups will focus on one specific aspect of the lizard which will be given by the teacher, including their legs and feet, tail, mouth and tongue, and body and scales. Students will make at least 3 descriptions and 1 drawing of the specific portion of the lizard as given by the teacher using the Observing A Schneider’s Skink worksheet. The teacher will call out for each student group one at a time to observe the Schneider’s Skink for 5-10 minutes.

**EXPLAIN** - “Now that we have all had a chance to observe different parts of the Schneider’s Skink, I want you to think about what your group observed and why you think they have this feature. As a group, think of a few reasons why these features might be and be able to describe in an oral presentation. I will pass out the Why Is That There? worksheet for your group to help sort your thoughts. Please think of at least 3 ideas for why the Schneider’s Skink has this feature.” Teacher should model how to use the Why Is That There? worksheet by placing the main topic in the circle (legs and feet, tail, etc.) and their ideas in the circles above.

The teacher should give students about 10-15 minutes to think over their specific feature and its purpose. During this time, the teacher should briefly check-in with groups and guide if necessary. When student groups are wrapping up, the teacher should begin to call on groups to report out on their findings. Teacher should look for answers that show student understanding that their part of the Schneider’s Skink is used for survival in its habitat and helps it function.

**ELABORATE** – “Wow you all are great scientists! Those were all excellent answers. Did you know that all lizards have a specialized purpose for the features you observed? Most lizards have short legs spread apart from their body to help keep them above ground and clawed feet to help them move faster in their habitat. Lizards have long tail to help them keep their balance when they move but did you know that they can lose their tail and it can regrow? It’s true! If a predator is following them and catches their tail, it can detach and regrow later. Did you also find it weird that lizards do not have a nose? This is because their tongue works as their nose! They are able to

move air into their throat and that helps them to send messages to their brain (Bio Expedition, 2012, p.1). Finally, a lizard's body is covered with scales that are waterproof! Lizards have different colored scales depending on their environment. Another cool thing about these scales is that they shed them a few times a year called molting! Aren't lizards cool?"

#### EVALUATE –

1. Formative: The teacher should check-in with each group during the course of their group activities to help guide students' understanding of the topic and ensure students are on task.
2. Summative: Students will organize their descriptions of their particular feature and its purposes using the Observing a Schneider's Skink and Why Is That There? worksheets and use this knowledge to create an oral presentation as a group. During these presentations, the teacher should look for an understanding that a lizard's anatomical feature is related to its environment.

#### **DIFFERENTIATION PLANS:**

##### Behavioral for Student A:

- Allow the child multiple monitored times to move around throughout these activities. For example, after they have done their observations, allow this student to walk around outside or go to the bathroom while other groups are doing their observations.
- Check-in with this student's activity group frequently to ensure they are on task.

##### Cognitive for Student B:

- Allow this student's activity group to be the first to observe the Schneider's Skink so they will have more time to process the information and assignment at hand.
- Give student the worksheets ahead of time so they can have a better idea of the activity as a whole versus thinking about each activity separately.

##### Cognitive for Student C:

- Arrange ahead of time for students to put into a group with other higher performing students.
- Give the additional challenge of having 5 descriptions and 3 drawings for their particular feature in the Observing A Schneider's Skink worksheet and 5 possible ideas in the Why Is That There? worksheet.

##### Affective for Student D:

- Arrange ahead of time for students to be put into a group of students they have worked with well in the past.
- Use positive comments to reinforce good behavior during group activities.
- Allow student to add onto their group's oral presentation with a choice between a drawing or skit.

### Language for Student Demands E, F, & G:

- Provide sentence frames for students ahead of time to look at when talking about the activities and group presentation (i.e. I observed \_\_\_\_\_, I think the purpose of the tail is \_\_\_\_\_).
- Modify worksheets as necessary to include some of the student's native language (For example: Drawings / Dibujos)
- Allow student's activity to group to go first in the observation activity and last in the oral presentation to give them the most time as possible to work on the activities.

### LIST OF MATERIALS:

- 1 Schneider's Skink for observation
- 1 writing utensil per student
- 1 Observing A Schneider's Skink worksheet per student
- 1 Why Is That There? worksheet per student

### DIRECTIONS FOR ACTIVITY:

1. You will be given an Observing A Schneider's Skink worksheet to observe a teacher-assigned feature of a Schneider's Skink.
2. You will have at least 3 descriptions and 1 drawing for the Observing A Schneider's Skink worksheet.
3. You will work in groups to decide the purpose of your feature using Why Is That There? worksheet.
4. Using the Why Is That There? worksheet, write your feature and 3 possible ideas for your feature's purpose.
5. Your group will work together to create an oral presentation on your feature and its purpose based on your answers to the Observing A Schneider's Skink and Why Is That There? worksheets.

### SUGGESTED READING:

Bishop, N. (2010). *Lizards*. New York, NY: Scholastic Inc.

This text would be a great resource in any classroom as it provides relevant lizards facts in a narrative tone with bright, bold pictures on each page. It covers a wide variety of lizard topics but still goes into great detail on certain subjects, such as anatomical features that students would find interesting. Additionally, visual learners and students with visual impairments or low vision would greatly benefit from this book as there are big pictures on each page that directly relate to the topic being discussed. Also, Bishop highlights the key topics of a page by enlarging the print and changing the color of a specific sentence or phrase, which can help students with reading comprehension.