

THE HABITAT OF AN ALLIGATOR LIZARD

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

GRADE LEVEL: This lesson is designed for a 4th grade classroom. 4th graders should be cognitively able to understand that the environment an animal lives in directly relates to that animal's chance of survival. Additionally, 4th grade students should be able to draw logical conclusions of how an animal will survive in a particular environment based on observations of the animal.

SCIENCE CONCEPT: The purpose of this lesson is to help students better understand the idea that the environment an animal lives in directly relates to their chance of survival, using the example of the environment of an Alligator Lizard.

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 make observations and create a group poster presentation representing alternative environments Alligator Lizards could or could not survive in.

EVALUATION IDEAS:

1. Formative: While the students observe the Alligator Lizards and work in their groups, the teacher will check-in to ensure understanding of the topic and task at hand.
2. Summative: Students will work together as a group to create a poster presentation with 3 total pictures, one picture showing the best environment for an Alligator Lizard's survival, the second showing an OK environment for an Alligator Lizard's survival, and the third showing an environment that an Alligator Lizard could not survive in.

CONCEPTUAL BACKGROUND: This activity involves creating a poster presentation as a group that shows the best environment for an Alligator Lizard to survive in, an OK environment for an Alligator Lizard to survive in, and an area that an Alligator Lizard cannot survive in. The ideas a teacher needs to understand when facilitating this activity and instruction are how the environment relates to the survival of animals and what happens if an animal is removed from their natural environment. A way to demonstrate this idea and engage students is to bring in a

real animal and have students observe their environment. By 4th grade, students should be able to make the distinction between environments that the animal will survive in or not based on observations.

LESSON IMPLEMENTATION PLAN:

ENGAGE – “Okay scientists, yesterday we talked about animal habitats and how they encourage animal survival. Today, I have a task for you that builds on your previous knowledge of how animals survive in certain environments. I have brought in my Alligator Lizard friend from SERC which you will observe today. Unlike most lizards, Alligator Lizards live in moist, grassy and woodland area. What I want each of you to do is, with the worksheet I give you, observe the Alligator Lizard in this type of habitat and create 1 large drawing showing this type of environment. This can include large grassy areas or driftwood. Each group of students will get 4-5 minutes to visit the Alligator Lizard and I will put you into your groups now. When you are done, I would like you to pair share with your desk mates about what you drew.” Teacher should monitor the discussions and listen for observations of the environment of the Alligator Lizard in its natural habitat. Depending on class size, each lizard should be observed by 7-10 students at a time. Students will be given the What Do You See? worksheet and have 4-5 minutes to fill out 1 drawing of the Alligator Lizard’s natural habitat.

EXPLORE – “Alright, can I get some volunteers to tell me what the drawings their group shared?” Teacher should call on volunteers to share their group drawings. As students are reporting out, the teacher should look for drawings of a moist, grassy, and woodland area.

“Now I have another task for my scientists. I want you to determine another environment an Alligator Lizard might be able to live and an environment that an Alligator Lizard cannot live in at all. For this project, you will work with your desk mates and draw pictures that show these different environments. The first picture will be the best environment, using one of your original drawings decided on as a group. The second picture will show an environment the Alligator Lizard might also live in, or an OK environment. The third picture will show an environment the Alligator Lizard could not live in, or the worst possible environment. In the end, you will put each picture together onto a poster board. As a group, you will present what each picture is, why you chose to draw that picture, and why you think the Alligator Lizard could live or not live in that environment.”

EXPLAIN – The teacher will pass out the blank picture templates for an OK Environment and Worst Environment and a poster board. Students will be given about 20 minutes for groups to complete the project in its entirety. During this time, the teacher should check-in briefly with each group to ensure that they are on-task and understanding the assignment. Once the teacher observes that groups are finishing up, the teacher should bring the class together again. “Alright scientists, each group will present one-by-one and explain their poster, including their reasons for each drawing.”

The OK Environment drawing might include a drier environment but still with vegetation. The third picture should show an environment completely opposite from the first picture, or the Worst Environment, possibly a desert environment or an area with no vegetation.

“Great job scientists! From my understanding of your results, an Alligator Lizard can survive in an environment that has some qualities of its natural habitat, such as grass or woodland. This is absolutely true. An animal can still survive in a similar environment as long as it maintains some similar qualities of the natural habitat. However, if you put an animal into an environment that is completely unfamiliar, it will not have the correct adaptations and will not be able to survive. Therefore, I know now that I should not take an Alligator Lizard into a dry and hot area because they will not survive.”

ELABORATE – “Now scientists, I would like to pose a question. Can you think of somewhere you have been or heard of that would match one of the pictures your group drew? Discuss your answers with your group.”

Teacher will call on volunteers to discuss their answers, looking for answers that describe one of the three environments that an Alligator Lizards live in, could live in, or could not live in.

EVALUATE –

Formative: While the students observe the Alligator Lizards and work in their groups, the teacher checked-in to ensure understanding of the topic and task at hand. The teacher also provided guided questions if necessary for students to move forward in their activity.

Summative: The teacher should check that each group created a poster presentation with 3 drawings, showing the Best, OK, and Worst environments for Alligator Lizards. This demonstrates an understanding that there are environments that animals can live in and others that they absolutely cannot live in.

DIFFERENTIATION PLANS:

Behavioral for Student A:

- Allow the child some monitored time to move around (i.e. go to the bathroom, get a drink of water, or step outside).
- Check-in with student’s presentation group frequently to ensure they are on task.

Cognitive for Student B:

- Arrange for the student’s presentation group to work in a quieter setting for better concentration.
- Allow the student’s presentation group more time at the end for finishing the poster board.

Cognitive for Student C:

- Arrange ahead of time for students to be put into a group with other higher performing students.
- Give the additional challenge of thinking of examples of real places to match the pictures drawn for their presentation.

Affective for Student D:

- Discuss privately with student ahead of time what will be done in class and what he will be required to do.
- Arrange ahead of time for student to be put into a group of students they have worked with well in the past.
- Create a quiet, productive community for student to work in (i.e. having that student's group work in another area of the classroom, play classical music at a low volume).
- Use positive comments to reinforce good behavior during their group presentation.

Language for Student Demands E, F, & G:

- Provide sentence frames in the What Do You See? worksheet to help students with their observations (i.e. I see _____ around the animal; The animal lives in an _____ environment).
- Allow the student's presentation group more time at the end for finishing the poster board
- Prepare sentence frames ahead of time for students to look at when talking about their presentation (i.e. The animal could live in this area because _____, We drew this picture because _____).
- Model an example of how the worksheets should be done that is different from the one the students will be doing (i.e. show a completed What Do You See? worksheet and Best, OK, and Worst Environments worksheet using the environment of a shark instead of an Alligator Lizard).

LIST OF MATERIALS:

- 1 What Do You See? worksheet per student
- Writing utensils
- Crayons and/or markers
- 1 OK and Worst Environment worksheet per group
- 1 Glue stick per group
- 1 Poster board per group

DIRECTIONS FOR ACTIVITY:

1. Create a poster presentation with your group mates that shows the best environment an Alligator Lizard can live in, an OK environment for an Alligator Lizard to live in, and an environment that an Alligator Lizard cannot live in.
2. Use the OK and Worst Environment worksheets to draw out a picture for each environment.

3. When finished, glue these papers to a poster board in order of the Best environment, an OK environment, and Worst environment.
4. With your group you will present your drawings, including your reasons for everything on your poster board.

SUGGESTED READING:

Stebbins, R. C. (2003). *A field guide to western reptiles and amphibians*. Boston, MA: Houghton Mifflin Company.

This book has detailed information regarding a wide variety of lizards with accompanying pictures. Stebbins also goes into great detail of many Alligator Lizards as far as identifying specific features that differ between a Sierra, San Francisco, San Diego, and Oregon Alligator Lizard. Students would benefit from this text as it discusses both the small differences between each type of Alligator Lizard and the larger changes between a Northern and Southern Alligator Lizard. Additionally, for a lesson specifically on a lizard's environment, this type of book works great as students can read about how each type of Alligator Lizard has unique features that match its environment.