

**Lesson 5: Snake Observations**  
**An Elementary Science Lesson Plan**  
**Designed For Group Inquiry**  
**Based On The 5E Inquiry Model**

**GRADE LEVEL:** This lesson was designed for a 5<sup>th</sup> grade class.

**SCIENCE CONCEPT:** This lesson is intended to have students use their observation skills to study the snakes and research abilities to gather information.

**RELATIONSHIP TO CALIFORNIA SCIENCE CONTENT STANDARDS:**

6. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations.

**LEARNING OBJECTIVES:**

1. Students will write their conclusions from their observations and research on the differences and similarities between two snakes.

**EVALUATION IDEAS:**

1. formative: Students write and draw their observations on the provided worksheets.
2. summative: Students create a poster on their conclusions from their observations and research.

**CONCEPTUAL BACKGROUND:** In the American West there are approximately 147 species and subspecies of snakes. On a world-wide basis, there are 2,400 different species of snakes. While there are some obvious similarities between the different species there are distinguishing differences as well.

All snakes are predators but their prey varies considerably depending on the snake specie. As a result, different ecological niches are filled by different snakes. The way snakes hunt also varies from specie to specie. One thing that is the same for all snakes is their ability to swallow food whole.

Snakes can also differ or be the same in size, appearance, scales, movement, and reproduction.

**LESSON IMPLEMENTATION PLAN:** This lesson is intended to be a group, inquiry level 3 activity. Students will use their observation and further research notes to present a project on the similarities and differences between two snake species.

**ENGAGE-** First, read aloud from *The Snake Scientist* and then tell students they get to be snake scientists as well. Read from the section titled “Thousands of Snakes” page 3 -12 and from “Mad Scientist at Work” page 18-25. Next, conduct a class discussion on what might be

observed and what they already know about snakes. The following questions are some that could be asked:

- “What do you think will be observed?”
- “What do you know about snakes?”
- “Are all snakes the same? Why or why not?”

**EXPLORE-** For the next part of the lesson, students will go to 5 different stations and be given worksheets to fill out. Students will form groups of 4-5 students. Before starting the stations, it will be explained they are under no circumstance are they to touch the live snake or to tap on the glass of the tank.

Station 1 will have one of the live snakes from SERC while stations 2-4 will contain fact cards on the other snakes that SERC has. Station 5 will contain fact cards on 3 other snakes native to California. At each station students will observe each tank for 10-15 minutes before rotating to another tank to observe. Students will write down their observations of what they saw and illustrate the snake to the best of their ability. For the stations without a live snake, students will fill out the fact sheet for the snakes.

**EXPLAIN-** After students have been at their stations for 5 minutes, I will walk around to the different groups to clarify any procedure questions and to check on their progress. Once all the groups have been to every station, students will form new groups of 2-3 students. I will explain that now that they have seen and read about 7 different snakes, students will pick two of the 7 snakes to do a comparison of 'similarities and differences' project. The final product can be done in any method; PowerPoint, poster, skit, and so forth.

**ELABORATE-** To elaborate on the learning of the same concepts in different concepts, I will give examples of other organisms that behave in a similar manner.

**EVALUTE-**

1. formative: Students write and draw their observations on the provided worksheets.
2. summative: Students create a poster on their conclusions from their observations and research.

### **DIFFERENTIATION PLANS:**

Behaviors for Student A

If a student finishes their station early, I would have them look over their notes and brainstorm the reason for the behavior they saw or any similarities and differences they noticed.

Cognitive for Student B

If a student needs extra-time, I will have them draw the live snake and for the other stations write at least 3 facts about the snake.

Cognitive for Student C

If a student had trouble sitting still, I will have them become my helper by passing out the worksheets, and clipboards.

#### Affective for Student D

If a student does not show a real interest in the activity, I will have them look through the different snakes and then let them decide which ones they would be interested in focusing on for their project.

#### Language Demands for Students E, F, G

If a student has no English skills, I would have their observation worksheet contain a list of key words and the directions in their native language.

If a student has some English skills but was not advanced, I would make sure their observation worksheet had key terms in their native language and English.

Sentence stems would also be provided.

- “I saw the snake \_\_\_\_\_”
- “The California king snake and Pacific gopher snake are different because \_\_\_\_\_”

If a student has advanced English skills, I would have their worksheet contain a few key content concepts in their native language and in English. Sentence frames will be given to the students:

- “The Pacific gopher snake is different from the Corn snake because of \_\_\_\_\_” and \_\_\_\_\_”
- “The Rubber Boa and California king snake both have \_\_\_\_\_ and \_\_\_\_\_”

#### **LIST OF MATERIALS (PER GROUP):**

1. *The Snake Scientist* by Sy Montgomery
2. One of the live snakes from SERC
3. Observation worksheets
4. Clip boards
5. Poster board
6. Pens

#### **References**

Bartlett, R.D., & Bartlett, P.P. (2009). *Guide and Reference to the SNAKES of Western North America (North of Mexico) and Hawaii*. Florida: University Press of Florida.

Montgomery, S. (1999). *The Snake Scientist*. Boston: Houghton Mifflin Company.