

SNAKE BEHAVIORS

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 science classroom in an open level (4) of inquiry. Fourth graders will learn about the California Kingsnake's genus species, geographic range, diet, physical characteristics, adaptations, social behavior, life span and reproduction.

SCIENCE CONCEPT (The Main Idea): This lesson is aimed at helping students learn about the behaviors of snakes and ways in which they survive.

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 be able to identify the characteristics of the California Kingsnake.

EVALUATION IDEAS:

- **Formative-** Ask the students how the California Kingsnake is different from other snakes.
- **Summative-** Have students present findings to class in a group presentation.

CONCEPTUAL BACKGROUND:

When disturbed, California Kingsnakes hiss, coil their bodies, rattle their tails and hide their heads. They are not harmful to humans. They are nocturnal (sleep during the day, awake at night) when it is too hot outside. They are usually solitary (loner) creatures. They search for rodents, lizards, frogs, etc. by themselves. The only time Kingsnakes are not solitary is when they hibernate during cold weather. During hibernation you can find many Kingsnakes in the same area. During the spring they separate and continue their loner lifestyle. This snake can be aggressive if provoked. A prey has a better chance of survival if it stays still.

Vocabulary:

Morphology/adaptation: any change in the structure of an organism to allow the organism to become a better fit to survive in an environment.

Nonvenomous: do not contain venom.

Mid dorsal: The straight line down the middle of the snake.

Nocturnal: Sleep during the day and awake at night.

Solitary: Like to be alone. (loners)

Oviparous: Part of reproduction, eggs that hatch outside of the body.

LESSON IMPLEMENTATION PLAN:

This lesson is designed as a group inquiry with groups of three students. Students will work together to identify the characteristics of the California Kingsnake. I will designate roles in each group. One student will facilitate the activity by being the team member who is in charge of making an educated decision during the game and calling out the answer, another student will record the information the group will present after the game, and a different student in the group will be the one to present findings to the class after the activity is over.

ENGAGE- Prior to the Jeopardy game, I will give all groups 20 minutes to all groups to quickly come up with as many facts about California Kingsnakes as possible. Students will come up with their own questions and use resources provided such as computers, books and magazines on reptiles to answer them.

EXPLORE- After the 20 minutes are over, students will return back to their desks sitting next to their group. We will then play Jeopardy using the information they quickly gathered. I will break the questions into 4 categories: physical characteristics, reproduction, habitat/geographic range and diet/behavior. Questions will be either true or false, fill in the blank, or open response. Different questions in each category will be worth a certain amount of points ranging from

easy for 100 points and hard for 400 points. Each group will get the opportunity to choose which category and level of question they would like to play. If the group gets the answer wrong, another team has the opportunity to steal. With the other group answers it correctly, it is their turn to choose a questions. After students have answered each question, I will reveal the full correct answer in a power point presentation. Students will write down the correct answers in their notebook. The group with the most points gets a popcorn party.

EXPLAIN- After the game is over, I will ask each student to look over the information they recorded individually. Students will discuss with their group members which aspect of the California Kingsnake they found most interesting and why. Students will also come up with any question they would like to know about the California Kingsnake that was not clarified during the power point presentation. The groups will then go research their question and then present their findings to the class. The recorder will summarize student findings onto sheet of paper and then the reporter will present their findings as a group.

ELABORATE- I will extend the lesson by bringing in a real live California Kingsnake for the students to observe. I will describe its colorings and scales so they can see the snake's skin up close. There will also be a live mouse in the tank so that students can observe how a California Kingsnake attacks their prey.

EVALUATE-

- **Formative-** Ask the students how the California Kingsnake is different from other snakes.
- **Summative-** Have students present findings to class in a group presentation.

DIFFERENTIATION PLANS:

- **Behavioral for Student A:** Put students in groups according to their personalities. Keep groups of friends separate. Student will most likely be the facilitator. Giving them such a big responsibility will most likely keep them engaged and attentive.
- **Cognitive for Student B:** Lower level students should most likely be the reporter in the presentation. The more engaged the student is in discussion with their peers and is able to vocalize their findings, the better understanding the student will have.
- **Cognitive for Student C:** Higher level students could be the main recorder organizing the presentation. It will provide more of a challenge for them to be able to reach outside the box to impose a precise, explicit presentation for

their group. Group members can also benefit from this student through modeling.

- **Affective for Student D:** Emotional students more hands-on such as the facilitator. Such responsibility will keep the student engaged and their mind off other things.
- **Language Demands for Students E, F, G:** I will place low and medium language proficiency students together. High language proficiency students will be integrated with native speakers. ESL students can benefit from each other while working in a more comfortable setting.
 - Beginning: Students with low language proficiency will be given a worksheet with pictures of different colored California Kingsnakes, what they eat, and where they live. Students will label each picture to show their understanding. For example, students will label this picture as geographic range, the area where the California Kingsnake lives.



**Distribution of
California Kingsnake -
*Lampropeltis getula
californiae* in California**

- Intermediate: Students with medium language proficiency will be able to fill out a structured sentence worksheet. For example: Adult California King Snakes can grow up to _____ feet long.
- Advanced: Students with high language proficiency will be able to describe the California Kingsnake's characteristics.

LIST OF MATERIALS (PER GROUP)

- Notebook
- Pencil
- Blank paper to write down group findings
- Computer
- Books on reptiles
- Magazines

DIRECTIONS:

- Pick a category and difficulty level
- Answer question
- Record correct answer

SUGGESTED READING:

Verdi by Janell Cannon

- <http://www.californiaherps.com/snakes/maps/lgcaliforniaemap.jpg>