

Animal Detectives

An Elementary Science Lesson Plan Designed for Group Inquiry Based on the 5E Inquiry Model

Grade Level: This lesson plan is a level four inquiry and is intended for a first grade science classroom. Students will use open observations to create and answer their own questions about the Coastal Range Newt.

Science Concept: This lesson plan aims to help students learn how to pose their own questions. Students will also learn about how to answer these questions through their own observations, pictures, and writing.

Relationship to California Science Content Standards: (1.4.b) Record observations and data with pictures, numbers, or written statements.

Learning Objective: Students will demonstrate, through their method of choice, three things that they learned about the Coastal Range Newt.

Lesson Plan Implementation: Students will begin by working individually to pose their own questions about the Coastal Range Newt. Then, students will need to be put into small groups that are created based on each student's question similarity. Students will then work in their groups to answer their questions. The classroom will need to be set up with several stations that include books, pictures, etc.. These stations should be categorized by topic (habitat, appearance, diet, etc.). Additionally, this lesson plan is intended for use when the Coastal Range Newt is in the classroom.

Note: Coastal Range Newt 2.2 and Coastal Range Newt 2.3 are possible assessment pieces. Make these worksheets available to students during the Evaluate phase, but do not require them to complete these two worksheets.

Materials:

- Copies of Coastal Range Newt 2.1 (one per student) (attached)
- Copies of Coastal Range Newt 2.2 (as needed) (attached)
- Copies of Coastal Range Newt 2.3 (as needed) (attached)
- SERC Animal: Ernie
- A variety of non-fiction books about newts, preferably Coastal Range Newts if possible
- A variety of photos of the Coastal Range Newt and its habitat

Engage: Begin the lesson by asking students: "What do detectives do?" Take suggestions from students and write them down on the board. Among others, responses should be along the lines of: "They find things," "They help people," "They look for things," etc..

After you have heard different ideas, tell students that today, they are going to be animal detectives. Explain to students that animal detectives use their eyes and ears to learn all about animals and find out more about them. Introduce the class to Ernie, the Coastal Range Newt. Tell students that they will be using their detective skills to learn more about Ernie.

Explore: Before allowing students to observe Ernie, set some ground rules for observing him. First, tell students that it is very important that they do not try to open the aquarium. Also tell students that they should *never* tap the glass of the aquarium. Enforce these rules strictly throughout the observation time. Then, allow students to sit around the aquarium. Hand out the Observations worksheet (Coastal Range Newt 2.1). Explain to students that they should write down some questions about things they would like to learn about the Coastal Range Newt. Then, allow students to observe Ernie for five undisturbed minutes.

When these five minutes have passed, ask students to share the questions that they wrote down about Ernie. Write these questions onto the board during the class discussion. Try to group their questions into different categories such as habitat, food, appearance, etc..

Once all of the students have shared their questions, ask students how we are to answer these questions. Students should have some ideas. If necessary, guide students towards reaching the concept of answering their questions through the use of books or observations. Then, tell students that they will be given thirty minutes to answer their questions using books, pictures, and their own observations. Tell students to write the answers to their questions on the same worksheet (Coastal Range Newt 2.1) that was previously passed out. Encourage students to find answers to their questions at *any* of the stations in the classroom.

Explain: After ample time has been given to students to explore their questions, call attention to the classroom and have students take their seats. Then, prompt a discussion about their findings. Ask students *how* they should share what they have learned with their classmates. Should they share their findings with someone else who had the same questions? Or should they share their findings with someone who explored a different topic? Have students vote on which groups they should share information with. Then, have students get into these groups and share what they have learned.

Elaborate: Then, explain to students that they will make conclusions about the Coastal Range Newt based on their findings during the Explore phase. These conclusions should pertain to where the newt lives, what the newt eats, what the newt looks like, etc.. Based on their group discussions, students should be able to draw their own conclusions about the newt; however, walk around and offer guidance if necessary.

Evaluate: After conclusions have been made, students will demonstrate their understanding. Ask students: “What can you do or make to show me what you have learned?” Write student responses on the board. Some possible answers could be to create a song, draw a picture, or write a story. If students are unwilling to show their ideas, give

them some examples. Once a list of possibilities is generated, allow students to pick one method and execute it. During this phase, make Coastal Range Newt 2.2 and 2.3 available to students, but do not require them to complete these two worksheets.

- a) Informal: Observe students while they are making their own observations. Gauge student understanding based on participation in class discussions.
- b) Formal: Collect Coastal Range Newt 2.1 and the finished project to make sure that students have used their observations to answer most of their questions.

Differentiation Plans

- Special Needs: For students with special needs, narrow down the list of possible assessment pieces so that the list does not seem too daunting. A larger list could be more confusing and difficult for some students.
- English Language Learners: For English Language Learners, encourage students to draw pictures of their observations if writing words or phrases is too difficult.