Science Lesson Plan

Lesson:	Comparing Crayfish and Snails
Science Strand:	Life Science
Content Grade Level:	3rd grade science
Class/Students	2nd/3rd Grade combo class
Teacher:	Kim Nickerson
Lesson duration:	90 minutes

Overview
Students begin activity by activating prior knowledge about the behaviors they observed when they investigated crayfish. In this lesson, students record observations about snail behaviors. Finally, they will discuss the functions of various structures they observed. The day before, students will make and record observations about snail structures. This lesson builds upon what students have previously learned about crayfish and snails. The following day, students will compare and contrast crayfish and snail structures using a Venn diagram.

Learning Goals and Standards
California Science Standards addressed: Life Science 3a – Students know animals have structures that serve different functions in growth, survival, and reproduction.
Science Learning Goals:
1. Students will come to know and understand how structures and behaviors of crayfish and the land snail help them to survive.
2. Students will be able to to compare and contrast the structures, behaviors and functions of the crayfish and land snails.

ELD Standards addressed:
Listening and Speaking: Early Intermediate students will ask and answer questions by using phrases or simple sentences and execute multi-step oral directions. Intermediate students will and participate in social conversations with peers and adults on familiar topics by asking and answering questions and soliciting information and execute mutli-step oral directions. Early Advanced students will participate in and initiate more extended social conversations with peers and adults on unfamiliar topics by asking and answering questions and restating and soliciting information and execute mutli-step oral directions.
Writing: Beginning students will write phrases and simple sentences that follow English syntactical order. Intermediate students will write legible, simple sentences that respond to topics in language arts and other content areas. Early Advanced students will use complex vocabulary and sentences appropriate for language arts and other content areas.

Language learning goals for this lesson:
1. Students will be able to communicate effectively with classmates and the teacher about the structures, behaviors and functions of crayfish and the land snail.
2. Students will be able to use concepts and academic vocabulary to complete writing activities that involve comparing and contrasting two types of animals.
3. Students will be able to follow multi-step directions given verbally and in written form.
4. Students will be able to write legible, simple sentences that respond to a prompt.

Assessments
Formative assessments: Science notebook (*Land Snail Observations*) and anecdotal notes. Summative assessment will be *Comparing Structure* notebook sheet.

© 2013 Regents of the University of California

Instructional Plan

Segment/Activity	Vocabulary

Lesson Launch – 20 min.
Gather students in the carpeted area near the large whiteboard.
 	
Focus question for the day:
How do the structures of a crayfish and snail compare?
 	
Review what students know about crayfish and land snails
Ask students:
• What are some of the interesting structure or behaviors that we have learned about the crayfish?
  • What is the function or purpose of that structure?
  • Why do you think the crayfish behaves that way?
• What are some of the interesting structure or behaviors that we have learned about the land snail?
  They may share about estivation, slime, leaving their shells, or tentacle retraction. (Spanish cognate: estio in Spanish means summer; estivate is to sleep during the summertime.)
• *Where you have observed snails before?* (Possible student responses: garden, backyard, hiking in the forest, after it rains, restaurant)
 	
Lesson Preview:
Tell students that after they return from recess that we will use what we've learned about crayfish and land snails to compare and contrast the two organisms.
	Organism
	Crayfish
	Behaviors
	Adaptations
	Estivate
	Scat
	Tentacle
	(all previously taught)
	
	Observe Discuss
	Compare
	
	Behaviors
	Snail
	Crayfish
	Structure
	Functions
	
	Recording

Venn Diagram Activity (30 minutes) Call students back to the rug. Quick review of the vocabulary words: organism, structure, function, behaviors and estivate. Share the Spanish/Latin cognates: organismo, estructura, funcion, and estio and what they mean Introduce the Venn diagram chart. Quickly review the structure. *Remember that these overlapping circles are used to compare two things. We write the differences on the outside and the similarities, or what they have in common, in the middle.* (Different and Same can be written above the circles, as a visual reminder.) Show the science notebook sheet Comparing Structures. • *You will use this Venn diagram to record your comparisons of land snail and crayfish structures. In the snail circle you will record structures that are* ***unique*** *to the snail, like a coiled shell. In the crayfish circle you will record structures that are unique to the crayfish, like pincers. If a structure is common to both animals, like eyes, you write it in the intersecting area.* • *You can use both the Crayfish Structures and Land Snail Observations notebook sheets while comparing the two organisms.* Have Team Captains get the science notebook page Comparing Structures for their groups. Allow 15 minutes for students to discuss and fill in their Venn diagrams. Confer with students to check their ability to identify structures that are unique to crayfish and snails, as well as structures that are common to both.	organism, structure, function, behaviors, estivate Differences Similarities Common
Writing Activity (25 minutes)	Differences

© 2013 Regents of the University of California

Writing prompt: Write 3 sentences explaining how the crayfish and snails are similar or different. [write this on flip chart paper and hang it on a whiteboard] *Example:* Crayfish and snails are similar because they both have shells that protect them from predators. Tell students that I expect them to write at least three sentences. But they should write more than three if they can. Also tell students that at least one sentence should be about how the two organisms are similar. One or more sentences should be about how they are different. I don't want them to just write three similarities or just three differences.	Similarities Common
Lesson Closure (15 minutes) Review focus questions. Refer to the Content Chart. • *We have now observed and compared the structures of two different organisms. Let's consider our focus questions. How do the structures of the snail and crayfish compare?* (Some structures of the crayfish and snails are similar such as eyes, a mouth, and a hard shell. Other structures are very different. For example, the snail has a foot and a crayfish has walking legs to move.) *What functions does an organism's structure serve?* (An organism's structures have functions that help it survive in its habitat.) • One-by-one, have students discuss the questions with their partner. Discuss as a class and add ideas to Content Chart. Closing thoughts / wrap up • *Ultimately, every organism has structures. Those structures have functions to help it survive, Although one might live in water, the crayfish, and one live on land, the snail, we observed some similarities.* • *Hopefully, today and for the rest of your life, you will be on the lookout for different organisms structures and think about what the functions of those structures are.* • *Also, remember that every organism has a purpose in its environment. For example, some snails eat plant leaves; which can make some humans mad when they eat things in our gardens. But, snails often help the environment and ecosystems by eating dead plants and animals, and returning nutrients back to the soil (scat). Maybe if you think of an organism's usefulness, we won't be so quick to destroy them.*	Structures

© 2013 Regents of the University of California