



K-2 Life Science

Southern Nevada Regional Professional Development Program

Snail Mini-Unit

INTRODUCTION

Young children love to get up close and learn about the animals in the world around them. Snails are fascinating, low maintenance and safe to handle. All you need is an inexpensive plastic container, soil and a few snails to get this unit started.

Snails can be found in gardens, ponds, and oceans; although they are not native to some areas in Nevada. In the Las Vegas, area pond snails can be found in Red Rock and Calico Basin and are protected due to their endangered status.

WHERE'S THE SCIENCE?

A snail is an invertebrate, an animal without a backbone, and belongs to the mollusk family. A snail is also a gastropod, which means a "belly footed animal". Land snails have two pairs of tentacles, while water snails have only one pair. They also have a mouth with a radula for scraping food, a foot, eyes, and a shell. Their shells contain a pattern that is unique to each snail, called a whorl.

MATERIALS

Student materials

- Hand lens (for observing snails)
- Science notebook

Teacher materials:

- Chart paper
- Markers

- Plastic wrap
- Foil
- Paper towels
- 5-6 Large clear plastic cups
- 5-6 Small clear plastic cups with lids

For classroom

- A plastic container for the land snail habitat containing soil
- A plastic container for the water snails containing treated water
- A small spray bottle filled with water
- Antibacterial soap or wipes if you don't have a sink for washing hands

Note: You can not order land snails without a permit. The easiest way to obtain land snails if you don't have any in your yard is to ask staff members at your site; someone most likely has snails in their yard or garden even if they are not native to your environment. Water snails can be purchased at your local pet store.

PROCEDURES

Lesson One

1. Tell the students that today you have brought in an animal called a snail for them to observe. Show the students the class habitat and ask them if they have ever seen a snail before. Next ask them what they think they already know about snails and chart responses.
2. Tell the students that today they will be observing a snail closely to find out what it looks like. Does it have eyes? A head? (L2D1)
3. Establish ground rules for proper handling.
4. Send students back to their tables and pass out the snails. One snail per group is fine, but if you can get enough snails, two per group is much better as it allows students to compare differences among individuals. (L2A2)

- Note: Washing the snails off in water first before passing them out will make them more active while the students are observing.
5. As students observe, move from group to group asking the students what they're noticing. If someone correctly identifies an observable characteristic point it out to the entire group. For example: "Dusty said, this is the snail's shell, this is the shell." Also ask questions to further guide their observations. If you gave each group two snails ask them to compare the shells, are the shells the same or different? After visiting with each group begin to pick up the snails from groups and instruct the students to wash their hands and then return to the carpet or group area. (L2A2)
 6. Once everyone is at the carpet area, discuss what the students noticed and add to the group chart using a different color marker to illustrate what they learned by observing. You should also begin a question board charting any questions students generate.
 7. Next introduce the book Snail (see additional resources for ordering information) tell the students that today they were observing snails to find out what they looked like. Open the book to the table of contents and point out the question, "What do land snails look like?", tell the students that you are going to read that section and they should listen carefully to see if they can find the answers to any of our questions and also learn more about snails. This will establish a purpose for listening. (L2A2)
 8. When you are finished reading, discuss what they learned and add to the class chart and/or question board.
 9. Next tell the students that they each will be getting a science notebook to record the observations in and that today they will be recording a technical drawing of a snail. Demonstrate how to draw a snail with the students using a large chart paper or the whiteboard. Ask the students, "If I want to draw a snail, what should I draw first?" Usually they will begin

- with the shell. Remind students that the shell has a whorl and demonstrate how to draw the shell with a whorl. Repeat for the remaining structures. Once complete, demonstrate how to label certain structures, with kindergarteners I usually suggest labeling the eyes and shell. Second graders can label a lot more.
10. Pass out science notebooks and let the children begin recording. You may want to pass out the snails again for them to compare the animal to their drawing as they work. (N2A1)
 11. Once everyone has completed their entry, have them date the entry at the top and write a heading such as: “What do land snails look like? (K) What are the structures of a land snail? (2nd) Note: Kindergarten teachers can already have the questions in the science notebook to avoid writing, or another suggestion is to have the date and question printed on computer labels so that students can simply place the label in their book.
 12. To close the lesson, ask the students to return to the carpet or group area with their science notebooks and instruct them to share with a buddy something that they learned about snails today. Next share out whole group and add new learning to the class chart. Finally, collect science notebooks.

Accommodations: For kindergarten, record observations students make in a class science notebook (Big Book) instead of individual science notebooks. For students who struggle with writing, carry a yellow highlighter and ask them to verbally identify the characteristics they are to label and then write the label for them with the highlighter. They can then trace over the highlighter.

Lesson Two

Note: do not feed the snails for one week prior to this lesson.

1. Call the students to the carpet area and open today’s lesson by reviewing what the students learned yesterday.

2. Explain to students that today they will find out what snails eat. Ask the students what they think snails eat.
3. Read the section, “What do snails eat?” from the book Snails (see additional resources for ordering information) and discuss what students learned.
4. Show the students the food you brought in today. I prefer to use carrots and lettuce. Note: many students don’t realize that both carrots and lettuce are plants so make sure to discuss this.
5. Explain that the land snail’s mouth is located at the front of the foot and that as the snail eats, it scrapes at the food with the radula. (If you place the snail in a plastic cup the students will be able to observe the mouth on the snail’s foot as it searches for food.) I usually have the students place their hand flat in front of them and then slowly bend their fingers under as if scraping at food to demonstrate what behavior they will be observing if the snails are eating. (L2B1)
6. Send the students back to their tables or groups and pass out one paper plate per table containing a piece of lettuce and a snail or two. (N2B2)
7. As students observe, move about the groups and ask if their snail is eating and how they can tell. Then remove the snail from the lettuce to check to see if it has been eating. The students are always amazed at how much the snails eat in such a short time.
8. Return the snail to the plate, this time placing it on a carrot and repeat step seven.
9. Pass out science notebooks to the students and instruct them to date and label their entry: “What snails eat?” They can then draw a sketch of a snail eating and record observations. (N2A1)
10. Ask the students to return to the carpet or group area with their science notebooks and instruct them to share with a buddy something that they learned about snails eating. Next share out whole group and add new learning to the class

chart. Add new questions to the board. Finally, collect science notebooks. Remember to have the students wash their hands if they have touched the snails.

Lesson Three

1. Begin by calling the students to the carpet area and discussing what they have learned about the snails. Make sure they bring their science notebooks to the discussion area.
2. Tell the students that today they will be observing the snails again to find out how they move. Ask the students how they think snails move from one place to another.
3. Read the section, “How snails move?” from the book Snails (see additional resources for ordering information) and discuss what students learned. Add new learning to class chart.(L2B1)
4. Hold up a piece of plastic and ask the students if they know what it is. Ask them if they think it will be easy for the snails to move on the plastic and to explain their reasoning. Repeat for the foil and paper towel.
5. Send students back to their tables and place one or two snails per table on a piece of plastic and allow the students time to observe. Move from group to group asking questions to guide their observations. Repeat for the foil and paper towel.
6. Visit each group as they finish their observations and collect the materials. Place the snails in a large clear plastic cup to allow the students to observe the snail’s foot muscles moving. The snails will move more if you wash the cups first and leave them slightly wet. Note: if you are comfortable with the students handling the snails, this is the perfect time to let them handle the snails to experience how the snail’s foot muscle feels as it moves across their hand. Make sure students wash their hands after the lesson.
7. Collect all the materials and pass out science notebooks and instruct the students to date and label their entry: “How do

snails move?” and then record observations and a sketch.
(N2A1)

8. Call the students back to the carpet area to discuss what they learned today about snails. Collect science notebooks.
9. Show students the class habitat and discuss what snails need in order to survive. Introduce the term **habitat** and explain that it includes food, water, shelter and space. Point out each of these in the class habitat. (L2C2) Add new learning and questions to the class charts.

Note: Snails are very easy to keep in a classroom. Place the habitat in an area where students can observe daily. Snails will reproduce by laying eggs for the children to discover; allowing them to observe the life cycle from the very beginning. (L2A1) Clean the habitat weekly by wiping out with a wet towel and feed fresh food once a week. Don't leave the food in the habitat for longer than two days. Snails prefer a moist environment. You can mist the habitat daily, if needed, using the plastic spray bottle.

Lesson Four:

1. Call the students to the carpet area and review what they learned about land snails. Ask them if they think snails can live anywhere else. Introduce the habitat with the water snails. Compare the habitat to the land snails, how are they the same? Different?
2. Tell the students that today they will be observing both the land snails and water snails. Their job is to look closely at the structures or body parts and compare/contrast the two animals.
3. Send the students back to their tables and pass out a land snail in a small clear plastic cup with a lid and a water snail in small clear plastic cup with a lid filled half way with treated water from the habitat. Note: when you return the water snails to the habitat also return the treated water.
4. As the children observe, move about from group to group asking questions to help guide their discoveries. For example:

Where are the eyes? How many tentacles does the water snail have? Do their feet and shells look the same? Note: Water snails don't like to be moved and will quickly retract into their shells if the cup is bumped. You may not want to find them for one week before the students observe. Then put a small amount of fish food in the cup to encourage them to come out.

5. Call students back to the carpet area and repeat step nine from lesson one using the water snail.
6. Pass out science notebooks to the students and ask them to date and label their entry, "What are the structures (parts) of a water snail?" When finished instruct them to complete a second entry, "How are land and water snails the same and different?" Note: leave the snails out on the tables until students have finished recording in their science notebooks. This will allow them to continue to compare and check their observations while recording.
7. Close the lesson by collecting the snails from each group and sending the students back to the carpet area with their science notebooks. Discuss what students learned today. Add new learning and questions to the class charts.
8. Show the students both habitats. Compare how they are the same and how are they different. Add aquatic plants to the water snail's habitat **or** you can wait and repeat lesson two using the water snails this time.

Note: Water snails are also very easy to keep. Clean the habitat weekly by changing out the water with clean treated water. You can treat tap water using Aquasafe, which can be found at your local pet store. You also need to let the water set for at least twenty-four hours before using it.

Extensions:

Sort questions from the class question board into three groups: question they can investigate, questions they have to research and questions that can be answered either way. Let groups of students

select a question from the class question board and set up an investigation or do research to find the answer. They can then report back to the entire class. (N2B2)

Read and discuss Talking with a Habitat Scientist. (N2B1)

Additional Resources

<http://www.heinemannlibrary.com>

Snail ISBN 1403483019

Snails up Close ISBN 1410915328

Snails ISBN 1410906256

<http://www.seedsofscience.org>

Talking with A Habitat Scientist ISBN-10: 1-59821-486-1

Snail Investigations ISBN-10: 1-59821-490-X

<http://www.kiddyhouse.com/snails/> This website contains useful background information on snails.

<http://www.geocities.com/sseagraves/snailfacts.htm> This website contains an excellent diagram in the “Snail Anatomy” section.

<http://www.applesnail.net> This website contains background information and an excellent photo of an apple snail (water snail).

Nevada State Standards

L2A1 Students know animals and plants have offspring that are similar to their parents. E/S

L2A2 Students know differences exist among individuals of the same kind of plant or animal. E/S

L2B1 Students know humans and other animals use their senses to know their world. E/S

L2C1 Students know plants and animals need certain resources for energy and growth. E/S

L2C2 Students know a habitat includes food, water, shelter and space. E/S

L2C3 Students know living things are found almost everywhere in the world. E/S

L2D1 Students know plants and animals can be sorted by observable characteristics and behaviors. E/S

N2A1 Students know how to make observations and give descriptions using words, numbers and drawings. E/S

N2A2 Students know tools can be used safely to gather data and extend the senses. I/L

N2B1 Students know science engages men and women of all ages and backgrounds. E/S

N2B2 Students know that, in science it is helpful to work in a team and share findings with others. E/L

Safety Reminder:

Students must wash their hands after handling any live organism.