

Tennessee Tech University
Lesson Plan Template

Name: Ms. Baker, Ms. Tucker, & Ms. Picarella
Date: 10/21/13
Lesson Title: Holy Moly Roly Poly
Grade/Level: 1st and 2nd grade

Curriculum Standards

State/Common Core Curriculum Standards

Science 1st Grade:

GLE 0107.1.1 Recognize that living things have parts that work together.

GLE 0107.1.2 Use tools to examine major body parts and plant structures.

✓ **0107.1.2** Communicate the effect of using tools like magnifiers when examining different body parts.

✓ **0107.1.3** Make diagrams to record and communicate observations.

Science 2nd Grade:

GLE 0207.1.1 Recognize that plants and animals are made up of smaller parts and use food, water, and air to survive.

✓ **0207.1.1** Design a new living thing and explain how it would acquire food, water, and air.

Focus Questions/Big Idea/Goal (List all 3)

What question(s), big idea(s), and goals drive your instruction?

Question: What are the major parts of a pillbug and how do the parts work together to perform different tasks?

Big Idea: Since pillbugs are composed of many parts, students need to know the parts and understand how they allow pillbugs to perform different tasks. For example, the gills allow the pillbugs to live in moist environments, the seven pairs of legs allow them to walk and not fall off edges, and their exoskeleton allows them to roll up into a ball when threatened.

Goal: Students will observe the parts of a pillbug by using a magnifying glass, and perform a number of activities to understand how the parts of a pillbug work together to perform different tasks. Students will be able to identify the legs, antennae, exoskeleton, thorax, and gills of a pillbug. Students will identify the seven plates of pill bugs that compose the exoskeleton. Students will recognize that pillbugs also have seven pairs of legs (for a total of 14 legs) which allows the pillbug to move quickly and to not fall off a piece of paper once reaching the end.

Lesson Objective(s)

Objectives are measurable.

1. Students will be able to use a magnifying glass to observe and name the five parts of a pillbug.
2. Students will be able to record and discuss their observations of a pillbug.
3. Students will be able to explain how a pillbug is able to crawl to the other side of a piece of paper without falling off.
4. Students will be able to use the vocabulary words associated with pillbugs appropriately.
5. Students will be able to discuss and record their knowledge of pillbugs at the close of the lesson.

Vocabulary/ Academic Language

List and define your vocabulary. What opportunities will you provide for students to practice content language/vocabulary and develop fluency?

Crustacean- Relative of insects that has a tough shell. Pillbugs, shrimp, lobsters, and crabs are all crustaceans.

Exoskeleton- Hard shell on the outside of an animal's body.

Antennae- Thin tube that sticks out from the head of an insect. Antennae can be used to smell, feel, hear, or sense direction.

Nocturnal- Being active at night, and sleeping during the day.
Recycle- Take waste and make it into something useful.
Attributes- A quality or feature regarded as a characteristic or inherent part of someone or something.
Decomposer- An organism that feeds on and breaks down dead plant or animal matter, thus making organic nutrients available to the ecosystem.
Gills- The respiratory organ of most aquatic animals that breathe water to obtain oxygen.
Thorax- One of the three main regions of the anatomy of a pillbug (the other two being the head and the abdomen).
Insect- Small animal with six legs and a body with three parts.

Students will use the pillbug vocabulary on their vocabulary foldable. Students will also display understanding of terms by participating in “Human Scatterplot” FACT and through various entries in their science journals.

Material/Resources

What do you need for this lesson?

Each group will need:

Red cup

Yellow cup

Green cup

Traffic Light Cup table

Instructional Procedures

A&D Statements handout

Bug Books Pillbug Pages 4-7

Science journals

Magnifying glass

Bug Books Pillbug Pages 14-17, 20-22, 24-29

Vocabulary Foldable per student

Crayons

Scissors

Pillbugs

Piece of Paper

Prepared race track-- The racetrack is constructed by gluing five straws, approximately 1 inch apart, to a piece of construction paper to make four lanes.

Classroom Human Scatter Plot labels

Closure

Pre cut triangles approximately 3 inches tall

Brass brads

Black construction paper

Wiggly eyes

Scissors

Glue

Black marker

Assessment/Evaluation

Formative: *How will students demonstrate understanding of lesson objective(s)? How will you monitor and/or give feedback?*

Throughout the lesson, the teacher will monitor students for understanding in a variety of ways. The teacher will ask probing questions at the beginning of the motivator to find out what students already know about pillbugs. The questions will provide feedback to the students on what they know and what they need to learn about pillbugs. The teacher will use the Traffic Light Cups FACT to monitor students during their observations and to measure their academic growth. The teacher can use this fact to provide students with feedback and to scaffold students during the observations if needed. Also, the teacher will use the vocabulary foldable activity to measure the student’s understanding on the vocabulary terms because the teacher will have the students write the definitions in their own words, and create a picture that helps them remember the definitions. The teacher will also use the Human Scatter Plot FACT to bring to the surface the students’ confidence level and misconceptions with the topic. If a student shows low confidence or an incorrect answer on the graph, the teacher will provide the student with feedback to help increase their confidence and/or correct a misconception. The teacher will use this FACT after the

instructional procedures part of the lesson. Also, while the students are performing their observations the teacher will walk around and visit each group to ask probing questions about the students' findings.

Summative: *What evidence will you collect and how will it document student learning/mastery of lesson objective(s)*

The teacher will check for mastery by collecting the vocabulary foldable completed by the students. If students can correctly identify all vocabulary words associated with pillbugs, then they have mastered the basic understanding of the pillbug. The teacher will also collect students' science journals. The teacher will use the journals to assess how much students have learned during their experimentation of the pillbug. Additionally, the teacher will collect students' completed roly poly crafts in order to further investigate what students have learned during the experiment, as well as what they would like to learn in the future.

<p>Instruction (Include a suggested time for each major activity) Total lesson time: 65 minutes</p>	<p>List Questions for higher order thinking <i>These cannot be answered by yes or no.</i> (Identify Bloom's Level of Thinking)</p>
<p>Set/Motivator: <i>How will you engage student interest in the content of the lesson? Use knowledge of students' academic, social, and cultural characteristics.</i></p> <p><u>Special Instructions</u> 5 mins At the beginning of class the teacher will pass out red, yellow, and green cups to each group. Each group will also receive a chart that describes what each cup represents. These will be used for the Traffic Light Cups FACT. The teacher will remind students that the cup that best represents their needs should be displayed on their table. Green cups indicate that students are on task and ready to move on. Yellow cups let the teacher know that the group may have questions, but those questions can be asked later. Red cups indicate that the group cannot go on with the activity without assistance from the teacher.</p> <p><u>Preassessment discussion</u> 10 mins Engage: Before the lesson begins, the teacher will distribute the A&D FACT to the students. The A&D FACT is an excellent pre-assessment tool. It allows students to analyze true and false statements. Students choose to agree or disagree with the statement or if they may need more information about the subject. If students are unsure of a particular statement, they are given opportunity to record thoughts about that statement. Likewise, there is a section for students to examine where they can find information about the statement. This FACT promotes student metacognition and promotes scientific discussion and argumentation. (A copy of the A&D FACT is included at the end of this lesson.)</p> <p>The teacher will discuss the various attributes of the roly poly with the students. This exchange of dialogue will serve as a pre-assessment. The teacher will introduce students to the concept of how various body parts work together to support a larger system.</p>	<p>Revised Bloom's Taxonomy Question Prompts</p> <p><i>Remember:</i> What are the characteristics of an insect? of a crustacean?</p> <p><i>Understand:</i> Why are pillbugs considered crustaceans?</p> <p><i>Apply:</i> What attributes of the pill bug allow it to function the way it does?</p> <p><i>Analyze:</i> Why do pillbugs roll up when threatened by predators?</p> <p><i>Evaluate:</i> What body parts do humans have that allow them to function in various ways?</p> <p><i>Create:</i> Can you think of other animals that have characteristics similar to the pillbug?</p>
<p>Instructional Procedures/Learning Tasks: <i>Provide specific resources/details of lesson content and delivery.</i></p> <p>Part I: Vocabulary & Foldable 15 mins Explain: To continue the lesson, the teacher will move on to read pages 4-7, 14-17, 20-22, and 24-29 of <i>Bug Books Pillbug</i>. After reading the book, the teacher will move on to talk about some of the vocabulary terms associated with the lesson: crustacean, insect, nocturnal, recycle, decomposer (The other vocabulary terms: antenna, gills, exoskeleton, and thorax will be discussed and used during the observation portion of the lesson) by reading the definitions of the terms from the book and asking the students some questions. Then the teacher will tell the students that they are going to create a foldable to help them understand and remember the vocabulary words. (A copy of the foldable is included at the end of the lesson.) First the students will be instructed to write their name, the date, and the title: Pillbugs, and to cut along the dotted lines. Then on the top triangle of each flap the students will write one of the</p>	<p>Understand: What is a crustacean in your own words? What other animals are crustaceans?</p> <p>Remember: What picture could you draw to help you remember the definition of a crustacean?</p> <p>Understand: If you are a nocturnal animal, what do you do during the day? What other animals, besides pillbugs, are nocturnal?</p> <p>Remember: What picture could you draw to help you remember the definition of a decomposer?</p>

<p>vocabulary words, underneath each flap they will write the definition of the vocabulary word in their own words, and on the bottom triangle they will draw a picture to help them remember the definition. While the students are working on their foldable, the teacher will walk around the room to observe the definitions and the pictures the students are creating. Also the teacher will redirect as needed if a student is having trouble coming up with a definition or a picture. After the foldables are complete, the teacher will instruct the students to compare their definitions and pictures with the students in their group, and the teacher will observe these discussions as well.</p> <p>Part II: 20 mins <u>Observations</u> 7 mins Explore: After the students have completed and discussed their foldables they will begin their observations. The teacher will give each group a few pillbugs and a magnifying glass, and instruct students to observe the pillbugs: what they are doing, how they look and feel, how they move and act, and record their observations in their science journals. Then the teacher will discuss the other vocabulary terms (antenna, gills, exoskeleton, and thorax), and instruct the students to locate and explore those and other parts of a pillbug: legs, plates, and eyes. Once the students have located and explored the parts, they will draw and label them in their science journals. Then the teacher will call on different students to share their observations, drawings, and to name the parts.</p> <p><u>Pillbugs on paper</u> 7 mins Explore: Next, the teacher will have the students write down their prediction of what will happen when a pillbug reaches the end of a piece of paper in their science journal, and then observe what will happen. Then students will record their observations and an explanation for their observations in their science journal. Explain: The teacher will ask students' to share their predictions, what they observed, and explain why they think their pillbug did what they did once it reached the end of the paper.</p> <p><u>Pillbug Race</u> 6 mins Explore: Finally, the teachers will tell the students to select one pillbug to enter in a pillbug race against the other groups. Each group will place their selected pillbug on the racetrack and let the pillbugs race. Explain: At the end of the race the teacher will ask the students to write what parts the pillbugs used in the race and how the pillbugs were able to move on the race track in their science journals. After the students have recorded their answers, the teacher will ask for some students to share their answers.</p> <p>Part III: 5 mins Explain: After the students have completed all their observations with the pillbugs, the teacher will then use the Human Scatter Plot FACT to find out what students have learned about pillbugs, their confidence level with information, and any misconceptions they still have. After the Human Scatter Plot is completed the teacher will correct any misconceptions and help those students with a low level of confidence. <i>*See human scatter plot page at the end of the lesson for a complete list of questions and directions.</i></p>	<p>Analysis: Why do you think the legs of a pillbug allow it to attach to the other side of a piece of paper?</p> <p>Synthesis: Can you think of another body part that is used to allow a pillbug to attach to the other side of a piece of paper?</p> <p>Analysis: How was the winning pillbug able to beat the other pillbugs in the race?</p> <p>Evaluation: What do you think would happen if the straws were removed from the pillbug race track? Why?</p>
<p>Closure: <i>Verbalize or demonstrate learning or skill one more time. May state future learning</i> Pill Bug Craft 15 min Explain/Extend: At the close of the lesson, the teacher will lead the students in the construction of a roly poly craft. Packets containing all of the materials needed to complete the craft will be distributed to each student. A list of required materials is included in the 'materials' section of this lesson. A link to the instructions is also included in the 'references' section of this lesson. Seven pre-cut triangles with pre-punched holes should be connected using a brass brad. The first triangle is to be the face/head of the pillbug. One wiggly eye should be pasted near the front of this</p>	<p>Knowledge: Can you list five attributes of pillbugs?</p> <p>Knowledge: What characteristics of the pillbug indicate that it is similar to other crustaceans?</p> <p>Evaluation: What did you learn about how the parts of a pillbug work together to support its</p>

<p>triangle. Black construction paper will be used for the antennae and the legs. Fourteen small pieces, (about 2 inches in length) will be attached to the bottom of the first and last triangles as legs; and 2 small pieces attached to the front of the first triangle as antennae. Once the craft is complete, the students will be instructed to write five different things they learned about the roly poly on the first five sections of the craft, indicate an animal with similarities to the roly poly on the sixth section, and tell one additional thing they wish to learn about the roly poly on the seventh section. The teacher will use the roly poly craft to determine how well the students understand the concepts related to the lesson and decide on future learning experiences.</p>	<p>functions?</p> <p>Extend: What else would you like to learn about the pillbug?</p>
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<p>Adaptations to Meet Individual Needs: <i>How will you adapt the instruction to meet the needs of individual students? Include - ELL?; SPED?; Gardner's Learning Styles - Name and specify what happens in the lesson that uses each learning style listed; Other individual needs of the students/class you are teaching?</i></p> <p>Gardner's Learning Styles:</p> <p>Visual-spatial: Students will be able to look at and create diagrams of a pill bug. This will be reinforced as the teacher uses verbal and physical imagery to describe pill bugs. Visual-spatial learners will also benefit from being able to see the actual pill bugs during the experiments.</p> <p>Bodily-kinesthetic: Students will conduct hands-on experiments with pill bugs such as looking at them through a magnifying glass, observing how they move on a piece of paper, racing them against one another through straw mazes, and constructing a roly poly craft.</p> <p>Interpersonal: Students will work in groups and communicate their predictions and observations with each other. Students will receive time and attention from the instructor.</p> <p>Intrapersonal: Students will log their thoughts, predictions, and observations in a learning log. Students will also create a roly poly craft that allows them to communicate what they have learned and what they would like to learn personally.</p> <p>Linguistic: Students will be encouraged to say the parts of a pill bug as they see them in diagrams as well as while looking at live bugs.</p> <p>Logical-mathematical: Students will make predictions based on what they know and what they have learned.</p> <p>Management/Safety Issues: <i>Are there any management and/or safety issues that need to be considered when teaching this lesson?</i></p> <p>Students should be made aware that pill bugs are living creatures and that they should be handled with care. The teacher should visit each group periodically to be sure that students are following directions, are on task, and are being respectful to the pill bugs.</p>
<p>Rationale/Theoretical Reasoning:</p> <p>Rationale/Common Misconceptions:</p> <p>Many students believe pill bugs are insects, when they are in fact considered crustaceans. Another common idea is that sow bugs and pill bugs are just different names for the same creature. Actually, pill bugs are capable of rolling into a ball to protect themselves while sow bugs cannot.</p> <p>Multiple Intelligences:</p> <p>The lesson specifically addresses visual, kinesthetic, interpersonal, intrapersonal, linguistic, and logical learning styles in order to help students with varied learning styles learn concepts about pillbugs and their parts. How this lesson incorporates these theories is discussed in the "Adaptations to Meet Individual Needs" section.</p> <p>Gardner, H. (2000), <i>Intelligence reframed: Multiple intelligence for the 21st century</i>. New York: Basic Books</p>

Vygotsky:

This lesson also incorporates Lev Vygotsky's Sociocultural Theory by having the students to discuss their ideas and findings in groups and then sharing some of them with the whole class, which helps students to construct understanding from listening to each other's ideas.

Vygotsky, L.S. (1978). *Mind in society. The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Bloom's Taxonomy:

The teacher is emphasizing Benjamin Bloom's Taxonomy by asking more understand, remember, analyze, and synthesis questions. These questions can't be answered by a no or yes answer, but instead an answer that involves a higher order of thinking. From these questions, students will gain a greater understanding of pillbugs and their parts when they closely analyze what the parts are and can apply their understanding of the parts to various situations.

Bloom's Taxonomy. (n.d.). Retrieved from http://www.odu.edu/educ/roverbau/Bloom/blooms_taxonomy.htm

Bruner:

The teacher is using Jerome Bruner's Constructivist Theory to help students to construct their own knowledge. For example, the teacher instructs the students to construct their own knowledge of the vocabulary terms by coming up with the definition in their own words and a picture that helps them remember the definition. Also the teacher provides time for reflection within the closure with the pillbug craft by having the students to list five things they have learned about pillbugs. Constructivist Theory. (n.d.). Retrieved from <http://www.instructionaldesign.org/theories/constructivist.html>

Marzano's Nine Essential Instructional Strategies:

Identifying Similarities and Differences: Students use their science journals before and after experiments to help them understand more complex problems by analyzing them in a simpler way.

Summarizing and Note-taking: Students use the vocabulary foldable to promote comprehension by analyzing parts of definitions that are important and putting them in their own words.

Reinforcing Effort and Providing Recognition: The teacher can use the "Pause, Prompt, Praise" portion of this instructional strategy during the Traffic Light Cups FACT. If a student is struggling, the teacher should pause to discuss the problem, then prompt suggestions to help the student improve. If performance improves, offer praise.

Nonlinguistic Representations: Using physical models and physical movement to represent information such as observing live pillbugs have been proven to stimulate and increase brain activity. Also includes using mental pictures and graphic representations such as graphic organizer, which is used in the lesson with the vocabulary foldable.

Cooperative Learning: Working in groups has been proven to have a positive impact on overall learning. Groups should be small enough to be effective and the strategy should be used in a systematic and consistent manner.

Setting Objectives and Providing Feedback: Using the roly poly craft and science journals to ask students "What do you want to know" and "What do you want to learn more about" gets students interested and actively involved in the goal-setting process.

Generating and Testing Hypotheses: Using reasoning to make predictions can help students understand and relate to the material.

Cues, Questions, and Advanced Organizers: Using pre-assessments such as A&D Facts help students use what they already know to enhance what they are about to learn.

Information taken from <http://www.middleweb.com/MWLresources/marzchat1.html>

References: *List the references used in this lesson*

Pillbug Craft: <http://www.daniellesplace.com/html/bugs.html>

St. Pierre, Stephanie. *Bug Books: Pillbug*. Chicago: Heinemann Library, 2003, 2008. Print

Burnett, Robin. *The Pillbug Project: A Guide to Investigation*. Arlington: National Science Teachers

Association, 1992. Print.

Vocabulary Foldable: <http://www.lauracandler.com/filecabinet/literacy/PDFRead/vocabfold.pdf>

Reflections/Future Modifications: To what extent did the class learn what you intended them to learn? What will be your next steps instructionally? What did you learn about your students as learners? What have you learned about yourself as a teacher?

Wendy

I feel that the class developed their knowledge of pillbugs to the extent that we intended. The A&D statements was quite useful for determining pre-existing knowledge. The book that Haleigh shared was very informative and aligned perfectly with our lesson.

I believe that my next steps in instruction would involve allowing the class to develop their own experiments based upon their reflections during the closure section of the lesson. I also think that using the A&D statements at the end of the lesson would help the class correct any misconceptions they may have had in the beginning.

I learned that the students were very receptive to the hands-on portions of this lesson and that this helped them in developing their knowledge. I feel that the class could have used some additional prompting for the sharing at the end of the lesson.

For me, it was difficult to simultaneously oversee the completion of a project and manage my time. In the future, I feel that it would help if I write down the beginning time and the ending time so that I might better manage this.

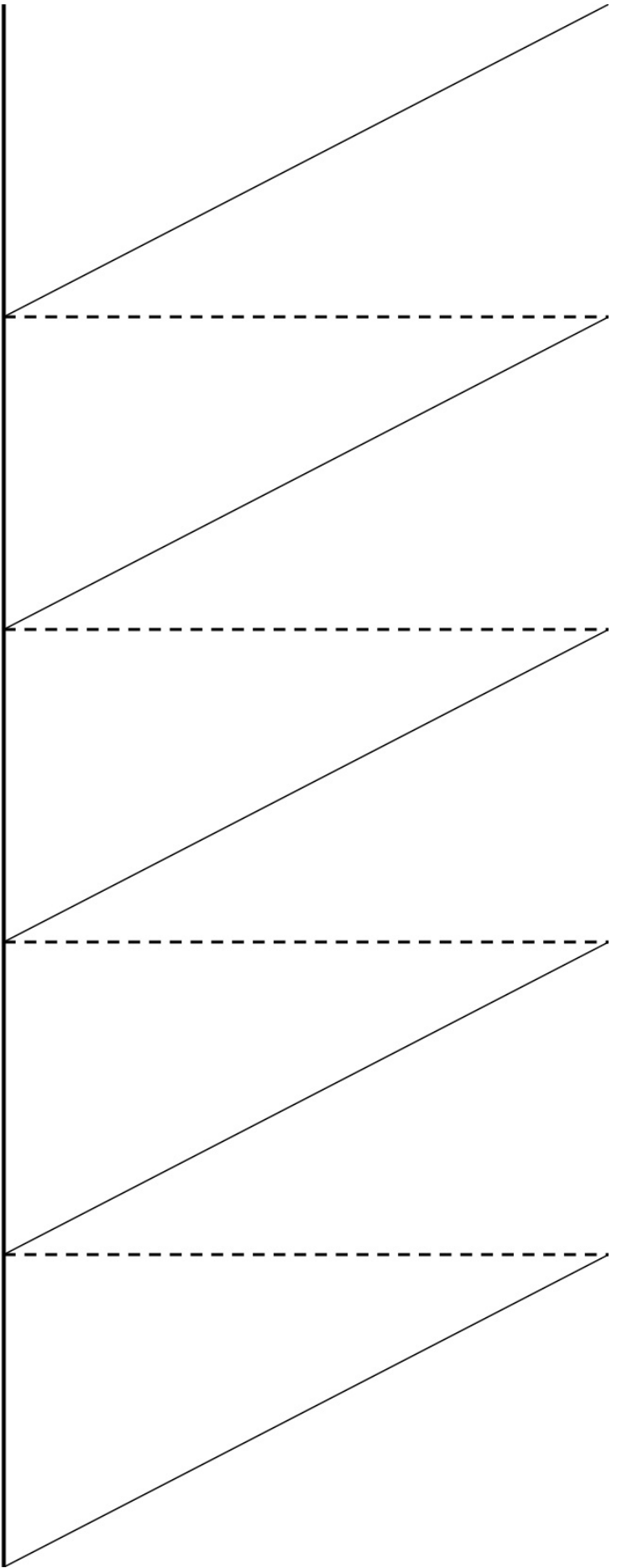
Haleigh

I feel that the class learned a lot of information that they did not already know about pillbugs, so I feel they learned a lot and to the extent that we intended. Also, the class learned what they already know and what they need to learn about pillbugs with the A&D statements FACT. With reading the book I feel like the students learned a great amount of vocabulary words associated with pillbugs and the definitions that how along with them. I believe that the next steps would be to ask the class what other experiments they would like to do with pillbugs. I would make a list to display of all the ideas and then have the class vote on three or four more experiments to do as a class. Also I would ask them what other information that would like to know about pillbugs and have them choose a question to research and report back to the class the answer and information they found. In doing this lesson, I learned that my students are a very hands-on group of learners. They really enjoyed playing with actual pillbugs, and I think they were able to develop their own knowledge better with seeing it in real-life. Also, that they enjoyed me giving them an opportunity to make their own observations on pillbugs, which allowed them to become comfortable with them. As a teacher, I have learned that it is hard for me to co-teach with other teachers because I have a hard time deciding when it is ok for me to add something to their part of the instruction. I don't want to step on their toes. Also, I have learned that I can come up with questions to ask the students when they are working pretty quickly. When I ask them questions, I am able to keep them on task and am able to keep their construction of understanding and knowledge going.

Jessica

I believe our class gained a lot of knowledge about pillbugs from the activities that we focused on. The book that we read contained useful information that students were able to use as a starting point during their observations. They seemed to really enjoy working with the pillbugs and did well as far as being careful and respectful with them. If I were to do the observation activity again, I would separate pillbugs into a petri dish for each individual student instead of using only one for the group.

I thought the paper activity went well. Students seemed very interested in finding out what their pillbugs would do and were able to draw conclusions based on their findings. The pillbug craft really seemed to help students sum up what they learned during their experiments. I wish that I had prepared myself more for actually carrying out the activities instead of preparing for what the activities consisted of. I feel that I also need to work on verbalizing ideas and finding an appropriate time to share them. I feel awkward and intrusive when I try to add to someone else's part of the lesson, but sometimes it is important to do so. Overall, I believe our lesson was successful. I wish that we could have done some additional experiments with the pillbugs, but we got the point across within our time frame.



Vocabulary Foldable

Name _____

Date _____

Human Scatter Plot

FACT Explanation:

This FACT is a quick, visual way for teachers and students to get an immediate picture of students' thinking and the level of confidence students have in their ideas about pillbugs. The advantages of this FACT are that it engages students in examining their own ideas about pillbugs, and with the class varying in their answers and confidence levels, it can be a relief to students who learn that they are not alone in their thinking or their confidence levels on their ideas. Teachers can use this FACT either as a pre-assessment to find out what students already know about pillbugs and how comfortable they are with them, or a teacher can use this FACT throughout the lesson to get a feel for if he or she can move on or not.

FACT Preparation:

Questions

1. Pillbugs are what type of animal?

- a. Crustacean b. Insect c. Spider

Answer: a

2. What part of a pillbugs allow them to live in a moist environment?

- a. Antennae b. Exoskeleton c. Gills

Answer: c

3. Since pillbugs are nocturnal, they are most active during what time of day?

- a. Day b. Night c. Both a and b

Answer: b

4. Pillbugs do what with their exoskeleton when threatened?

- a. Roll Up b. Turn Blue c. Run Away

Answer: a

5. How do magnifying glasses make objects look?

- a. Smaller b. Bigger c. Slower

Answer: b

Label one wall on one side of the room with the choices (a, b, c) and label the adjacent wall with a range of low confidence to high confidence. Finally ask the questions and have the students position themselves according to where they fall on the graph.

Example of Graph:

Front of Room

a.	
b.	
c.	

Low _____ High

Confidence in my response

Back of Room

Traffic Light Cups

Explanation: Traffic light cups are a FACT used to promote students' self-assessment by increasing awareness of when they can proceed with a task without assistance or feedback from the teacher. Traffic light cups are used during group work and student investigations. A stack of cups containing one green, one yellow, and one red cup is placed in the center of each group's table. Each color of cup represents a group's need for help or feedback from the teacher. Green cups represent no need for assistance. Yellow cups are displayed when a group would like feedback or assistance, but are still able to proceed in the meantime. Red cups are displayed with a group is stuck and cannot go any further without assistance from the teacher. The cup that represents a group's needs should be placed in the center of the work area where the teacher can see it. Students with red cups displayed should receive assistance first, followed by yellow cups, then green. Though the FACT is designed to represent understanding, it can also be used to show how much time a group may need to finish a task. Traffic light cups would be an excellent FACT to use when conducting experiments with pill bugs so that the teacher would know if all students are on the same step or if additional time or instruction is required.

GREEN LIGHT	We are on track and have no questions!
YELLOW LIGHT	We may have some questions but they can wait until later.
RED LIGHT	We need help before we can move on!

A & D Statements

FACT Explanation: This FACT is an excellent pre-assessment tool. It allows students to analyze true and false statements. Students choose to agree or disagree with the statement or if they may need more information about the subject. If students are unsure of a particular statement, they are given opportunity to record thoughts about that statement. Likewise, there is a section for students to examine where they can find information about the statement. This FACT promotes student metacognition and promotes scientific discussion and argumentation.

FACT Preparation: Prepare A&D statements that focus on specific concepts and skills that students will encounter in the curriculum. Develop statements that can lead into inquiry and give the students opportunity to respond individually.

A&D Statements

Pillbug Inquiry

Statement	How Can You Find Out?
1. Pillbugs are insects ____ agree ____ disagree ____ it depends on ____ not sure My thoughts:	
2. Pillbugs always live in dark/moist places. ____ agree ____ disagree ____ it depends on ____ not sure My thoughts:	
3. Pillbugs are nocturnal. ____ agree ____ disagree ____ it depends on ____ not sure My thoughts:	
4. Pillbugs will run away when threatened by predators. ____ agree ____ disagree ____ it depends on ____ not sure My thoughts:	
5. Pillbugs have 14 legs. ____ agree ____ disagree ____ it depends on ____ not sure My thoughts:	

