Fun, interactive, and meaningful science lessons with Gardner's Theory of Multiple Intelligences

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Classrooms are never one size fits all, so what is the most effective way to engage every student in a single class during a single lesson? Build your lesson around the students' intellectual abilities! Fun, Interactive, and Meaningful Lessons with Gardner's Theory of Multiple Intelligences shows the reader how to pack as much punch as possible into a single experience using all eight (or as many as possible) intelligences to captivate every student in the classroom and make sure no one gets left behind. This particular experience applies seven of the eight intelligences into a 30-minute science lesson on the Food Chain: Producers, Consumers, and Decomposers using a lesson checklist as a guide. Activities, handouts, and other materials for this lesson were then picked based on the list, keeping all intelligences in mind. Students will have multiple opportunities to move around the room, discuss, investigate, and collaborate while learning new material, which they will enjoy. This concept is useful for any age, ability, or subject material and teachers can easily modify for the needs of the classroom. A link to all teacher created materials can be found in the article. Creating fun, interactive, and meaningful lessons that reach every student can often be a daunting task, especially in a science classroom. The most effective way to reach all students is to use Howard Gardner's Theory of Multiple Intelligences. The thought of incorporating all eight intelligences into a single lesson may be overwhelming, so it's important to start with a checklist; if your lesson covers each learning style, you are sure to come out with a winning lesson to use for years to come.

Keywords: Gardner's Theory of Multiple Intelligences, interactive lesson, middle school, science, vocabulary flip book

This lesson was created for fifth grade science, the topic was Food Chain: Producers, Consumers, and Decomposers. The main goal of this lesson was to provide students the opportunity to develop a deeper understanding of the vocabulary; therefore, the lesson was shortened to three vocabulary words. It will be simple to add additional vocabulary words as the students learn them.

Multiple Intelligence LESSON CHECKLIST

Content/Grade: 5th grade, Science   TEKS: 5.9 (B)   Lesson: Food Chain: Producers, Consumers, & Decomposers

Intelligence	Example/Explanation	Aspects of Lesson Covered
Linguistic	Learns best by reading, writing, listening, and/or speaking.	Reading: vocab flip book Writing: "Can you pick them out" Listening: group collaboration Speaking:
Logical-Mathematical	Learns best by classifying and categorizing things. This student needs to understand relationships, patterns, and numbers.	Classifying: Discover & Learn Categorizing: Sticky note organizer Relationships: "Can you pick them out" Patterns:
Musical	Learns best by using music, rhyme, song, melody.	Music: Rhyme/Poem:
Bodily-Kinesthetic	Learns best by moving or doing.	Hands-on activity: Discover & Learn sticky note organizer
Spatial	Learns best by using visual aids such as diagrams, graphic organizers, pictures, and graphs.	Visual aid: Pictures of animals graphic organizer vocab flip book
Naturalist	Learns best while working with or experiencing nature.	Elements of nature: Food chain, animals
Interpersonal	Learns best by working in a group. This student likes to collaborate.	Collaboration/group work: Discover & Learn Sticky note organizer
Intrapersonal	Learns best when working independently. This student would prefer to not have to join a group and would like to work without supervision.	Independent study/work: Discover & Learn "Can you pick them out"

For this lesson, the musical intelligence was not covered. This could easily be fixed by adding in a quick musical video found online; however, all other intelligences were utilized and many of the activities crossed over several different intelligences.

For the warm-up, students received a baggie with several pictures of organisms and labels (producer, consumer, decomposer). Students could categorize the animals into the three categories anyway they choose, with no right or wrong answer. This activity is called "discover and learn", here, students can work together and learn while discovering new content. While they were classifying their organisms, each student received a vocabulary flip book. After classifying their organisms, the class discussed why they choose to put the organisms in each category but were not told whether their organisms were actually in the correct categories. Once all students were satisfied with their classifications the class moved onto the vocabulary flip books.

Since the lesson focused on word study, the vocabulary flip books broke down each vocabulary word into parts. Each page focused on one word and deconstructed the word into prefix, root, and suffix. For the word producer, there is no prefix, however, the root word is "produce", and the suffix is "er". It was explained that not all words will break down into each part. Next, the class discussed what they thought the meaning of the word was and then given the definition. The students completed the page by writing the definition in their own words, drawing a picture of an organism fitting that description, and writing a sentence using the word for the example.
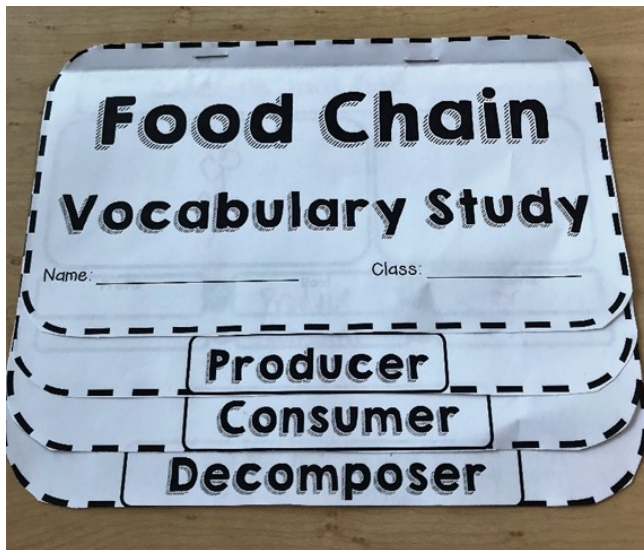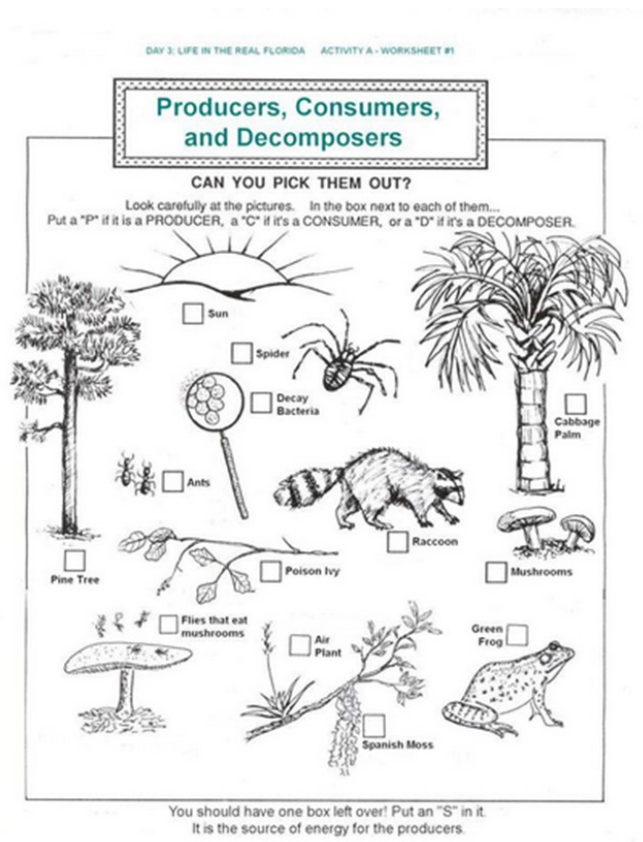

This continued for the next two vocabulary words as well. While the students were working on their vocabulary flip book, a second instructor was writing the definition of each word on the board into three boxes and continually asking students to give "thumbs up/thumbs down" to make sure everyone was understood what to do and was on the same page.

This flip book was created so that more vocabulary pages could be added as students progress through the unit and learn more food chain vocabulary. Once everyone completed the flip books, students were put into groups of five and given several sticky notes with pictures of the same organisms from the "discover and learn" activity during the warm-up. The groups once again categorized each organism into the producer, consumer, or decomposer categories. Once the groups had finished categorizing, they each nominated a group leader to bring their sticky notes to the board and put them into the boxes labeled producer, consumer, and decomposer. Once the groups had finished, the class discussed whether each organism was in the correct category. If an animal was misplaced, the class discussed which category it belonged in and why.
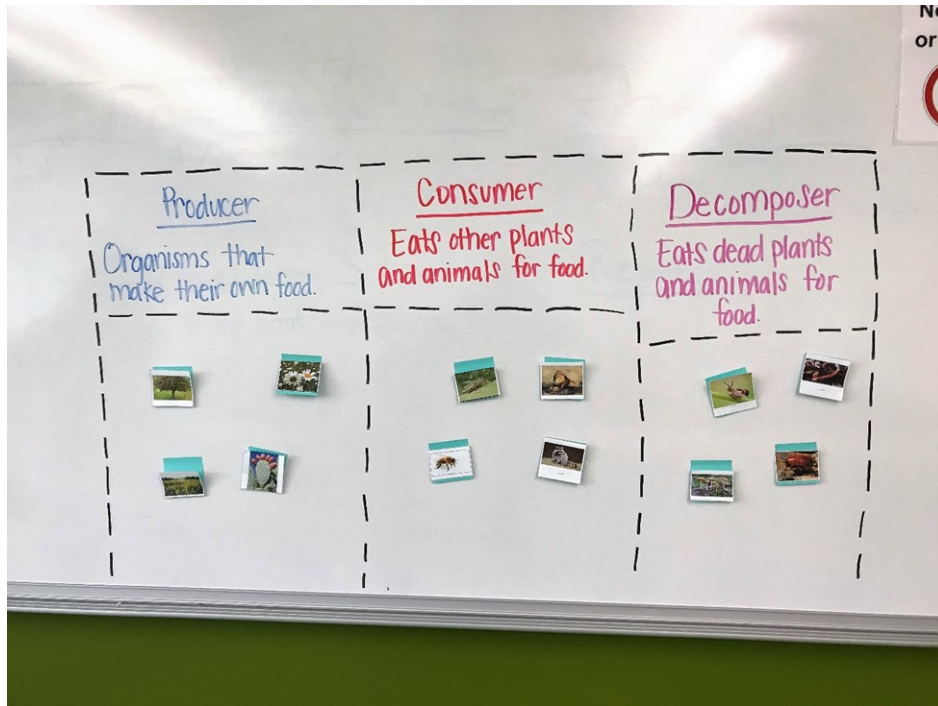
Finally, students completed the "Can you pick them out" worksheet independently as their summative assessment. This worksheet can be found here (https://www.pinterest.com/pin/86448009094598328/); the worksheet asks students to identify and classify the organisms with a "P" for producer, "C" for consumer, and "D" for decomposer. Students will probably ask what to put for the sun since they didn't read over all the directions before starting the worksheet!

Producers, Consumers, and Decomposers

CAN YOU PICK THEM OUT?

Look carefully at the pictures.   In the box next to each of them...
Put a "P" if it is a PRODUCER, a "C" if it's a CONSUMER, or a "D" if it's a DECOMPOSER.

Sun

Spider

Decay Bacteria

Cabbage Palm

Ants

Raccoon

Pine Tree

Poison Ivy

Mushrooms

Flies that eat mushrooms

Air Plant

Green Frog

Spanish Moss

You should have one box left over! Put an "S" in it.
It is the source of energy for the producers.

Overall, the response from this lesson was positive as the students enjoyed the different activities and the opportunities to work together and move around the room. The lesson was taught in 25 minutes and if there was extra time, a video could be a valuable addition. Here is a fantastic song that will be added to this lesson in the future (https://www.youtube.com/watch?v=nHgRc1mwhlk).

While grading the assessment from the lesson, it was clear the use of multiple intelligences made an impact in the students' understanding of the vocabulary as the class completed the assessment with nearly 100% accuracy. The multiple intelligence lesson checklist can be used in any content area and grade level and is a valuable tool in any teacher's tool box.

Multiple Intelligence Lesson Checklist and Vocabulary Flip Book can both be found at
www.adventuresofafutureteacher.com

Bio: Sara Caballero is a senior in the School of Teaching and Learning at Sam Houston State University. Her work focuses specifically on middle school mathematics and science with an emphasis on special education. Her current project is a blog where she can share her ideas and inspiration with others. In her free time, Sara enjoys camping and trips to Disney. She can be reached at sxc091@shsu.edu.