

Carol Fike
Student Teaching
Imagine on Broadway
March 18, 2010

Science Lesson

Lesson: _____ Solar System Differentiation _____

Length: _____ 1 hour – 1 ½ hours _____

Age or Grade Level Intended: _____ 2nd Grade Science _____

Academic Standard(s):

- 2.1.5 Demonstrate the ability to work with a team but still reach and communicate one's own conclusions about findings.
- 2.6.2 Observe and explain that models may not be the same size, may be missing some details, or may not be able to do all of the same things as the real things.

Performance Objective(s):

While working in pairs, the students together will select three activities that they want to do to learn about the solar system, these activities are based on Howard Gardner's Multiple Intelligences, they will be graded based on what they learn about the planets when the pre-test and the post-test are compared to one another with at least 75% knowledge gained.

Assessment:

The students will turn in whatever they complete that will be checked over. The students will also complete a Pre-Test and Post-Test to see how much they actually learned from this exercise.

Advance Preparation by Teacher:

- Copies of the differentiation chart
- Copies of the Pre-test and post-test
- Center 1 – file folder, laminated directions, space flash cards (planets), space trivia cards.
- Center 2 - file folder, laminated directions, 4 coloring pages copied, crayons, and markers.
- Center 3 - file folder, laminated directions, copies of the mystery, laminated answer key, pen or pencil.
- Center 4 - file folder, laminated directions, copies of the worksheet, copies of the planets picture, pen or pencil, variety of balls in different sizes (one ball per planet plus sun).
- Center 5 - file folder, laminated directions, Book of manned space flights (I made my own), copies of the worksheet, pen or pencil.

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- Center 6 - file folder, laminated directions, Several Kids Discovery Magazines about Space, copies of the worksheet, and pens or pencil.
- Center 7 - file folder, laminated directions, copies of the planets picture, crayons, markers, scissors, and yarn.
- Center 8 - file folder, laminated directions, copies of the acronym worksheet, copies of the word search puzzle, pen or a pencil.
- Center 9 - file folder, laminated directions, laminated copy of the colored weekly reader, copies of the packet, and a pen or pencil.
- Center 10 - file folder, laminated directions, blank paper, pen or pencil, copies of the ABC worksheet.
- Center 11 - file folder, laminated directions, copies of a blank space book, crayons, markers, pen or pencil.

Procedure:

Introduction/Motivation:

As the students come into the room, the centers will be set-up. Each student will also have two papers on their desk and a pencil. A list of the planets names will be on the board.

What do you remember about these planets from our conversation last time?

Today we are going to learn more about the planets. I have set-up twelve learning centers that will teach you about the solar system. So start thinking about which ones sound fun, because you will be picking three to work on.

Step-by-Step Plan:

Explanation of each center:

- 1.) You have two sets of flashcards (that are separated into two different baggies).
~The ones that are colored, these are the different planets. You need to put these in order from closest to the sun, to furthest away.
~With the other cards try and answer on the back of the card.
(Gardner – Visual-Spatial and Logical-Mathematical)
- 2.) Pick three of the four coloring sheets to color. Make sure to take your time. Also figure out how each picture is related to the solar system.
(Gardner – Intrapersonal and Visual-Spatial)
- 3.) Here is a mystery for you to solve. Each planet belongs in one of the blanks, figure out which one each belongs in and write that planet on the corresponding line. Then check the answers with the answer key in the back of the folder. ***(Gardner – Logical-Mathematical)***
- 4.) I have brought in a variety of balls. Your job is to figure out which ball should represent each planet. Write down each on the worksheet. Then

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- assemble your solar system. Now practice having them rotate around the sun. (*Gardner – Bodily-Kinesthetic*)
- 5.) This is a book that I made when I was in middle school. It has over fifty years of manned space flights, missions that an actual person went on. You will need to pick one of the space flights and answer the questions that are in the folder. Be careful with the book.
(*Gardner – Verbal-Linguistic*)
 - 6.) Select a Kids Discovery Magazine on Space (Solar System, Space, Moon). Answer the questions on the worksheet in the folder.
(*Gardner – Verbal-Linguistic*)
 - 7.) This activity is going to help us visualize the planets. You will take the coloring sheet and color the planets, then cut the planets out. When these are done you need to put them in order and tape them to the string.
(*Gardner – Visual-Spatial*)
 - 8.) An acronym is an easy way to remember something important. To help you remember the planets come up with your own acronym. The worksheet in the folder will help you to do this activity. When you are done, and then complete the word search.
(*Gardner – Logical-Mathematical and Verbal-Linguistic*)
 - 9.) We have done several weekly readers, you will need to read the article and then answer the questions. (*Gardner – Logical-Mathematical*)
 - 10.) Sometimes it is fun to write a song. Start by making a list of solar system words. Then take these words and write a song. If it helps you can look at the ABC order worksheet. (*Gardner – Musical*)
 - 11.) Create a page per planet, to create a book about the solar system. Be sure to include, words, pictures, and color. (*Gardner – Visual-Spatial*)

Have the students then discuss with their partner which activities they would like to try out (maybe each pick one). (*Gardner – Interpersonal*)
When you are finished with one center, then you may try another one out. We can only have one group per center.

Then have the students take the post-test.

Closure:

What did you learn about the planets? (*Bloom – Knowledge*)

What are the differences between Mercury and Pluto? (*Bloom – Comprehension*)

Why is it important to learn about the planets? (*Bloom – Application*)

How do we categorize the eight planets? (*Bloom – Analysis*)

Which planet do you think is the most important? Why? (*Bloom – Evaluation*)

Adaptations/Enrichment:

Students with Autism – Rather than having these students select their centers, the teacher will select which centers they will complete. One that I think will work exceptionally

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well is the balls activity. Then when a lot of the students are transitioning have this student stay put, to explain the center to the next group of students.

Gifted / Talented Students – Some of the students will fly through the activities, if this happens tell the student to pick another center to complete.

Self-Reflection:

How did the lesson plan go?

What selections were a hit?

Which passages did they not enjoy?

Was there anything that was missing?

Did anything that happened that I was not prepared for?

What went well?

What needs to be changed?

For many of the students this was exactly the lesson that they needed. It was great ways to have the students all learn the same content, but in ways that they were most comfortable in. Some of the students struggled, picking the centers that they wanted to participate in. So maybe next time have the centers selected previously for the centers, at least making selections for the starting point. The other thing was the fact that many of the students wanted to do the coloring pages. The most successful center was the ball activity, maybe make this a full class lesson?