

## **Gradual Release of Responsibility Model of Instruction Science/Reading – Phases of the Moon – 6<sup>th</sup> Grade**

- 1 **Grade level:** 6<sup>th</sup> Grade
- 2 **Approximate length of time:** 45 minutes
- 3 **Curriculum areas:** Science, Reading
- 4 **Utah State Core:**

### **Science**

#### **Standard I:**

Students will understand that the appearance of the moon changes in a predictable cycle as it orbits Earth and as Earth rotates on its axis.

#### **Objective 1:**

Explain patterns of changes in the appearance of the moon as it orbits Earth.

- b. Identify the pattern of change in the moon's appearance.
- d. Design an investigation, construct a chart, and collect data depicting the phases of the moon.

### **Reading**

#### **Standard 1**

**Oral Language-Students develop language for the purpose of effectively communicating through listening, speaking, viewing, and presenting.**

#### **Objective 1:**

Develop language through listening and speaking

- a. Identify specific purpose(s) for listening (e.g., to gain information, to be entertained).

- 5 **Personal objectives:** In order to identify and correct misconceptions students may have about the earth and space, and because of the complicated nature of learning the cycle of the phases of the moon, students need many opportunities to be exposed to the content, such as group work, individual work, as well as the incorporation of technology, literature, and hands-on experiments
- 6 **Materials:** KWL Chart, phases of the moon information sheets, Oreo cookies, plastic knives, moon phases on cardstock, moon transparencies

### **Phase I: Exploration and Explanation:**

Introduction: Man in the Moon transparency. Begin working on KWL chart.

Show video of the phases of the moon. Great video that explains in very good detail can be found at: <http://www.newtonsapple.tv/video.php?id=1671>

Continue working on KWL of moon. Talk about what students already know about the moon and its phases and record. Then talk about what students want to find out regarding the phases of the moon.

Modified Jigsaw - in small groups using the handout, students will research & find information about the phases of the moon. Divide students into 8 groups of four (one for each phase).

Assign each group a phase of the moon. The students will break into groups and read about the phases of the moon. Each group will be the “expert” about their moon phase. They will report to the class what they learned and each group will illustrate their moon phase (on transparency given to them).

## **Phase II: Guided Practice:**

Groups rejoin and teach each other what they learned about their phase of the moon so everyone can complete their KWL. Discuss and fill in "Learned" column of the KWL chart about what students found out about the different phases of the moon. As the phases are being described, the teacher will post the transparencies to the white board.

## **Questions for Discussion:**

"What do you know about the phases of the moon?"

"Do you know what causes the moon to look differently at different times?"

"What do we want to find out about the phases of the moon?"

"What did you learn?"



## **Phase III: Independent Practice/Assessment:** (modified for group assessment)

Oreo cookie activity. (See attachment)

Students will work independently to create accurately the phases of the moon using Oreo cookies.

## **Assessment:**

Did the student participate in KWL chart?

Was the student able to reproduce the phases of the moon using an Oreo cookie to demonstrate his/her understanding?









# Oreo Moon Phases

## Materials for each child:

8 Oreo® cookies

A plastic spoon and/or a plastic knife

Halve and scrape Oreo® cookies to illustrate Moon phases. Then arrange cookies on the poster in linear fashion beginning with the New Moon and ending with the Waning Crescent Moon.

<p style="text-align: center;">1</p>  <p style="text-align: center;"><b>New Moon</b> Completely (or almost completely) dark.</p>	<p style="text-align: center;">2</p>  <p style="text-align: center;"><b>Waxing Crescent</b> A small sliver of light on the right.</p>	<p style="text-align: center;">3</p>  <p style="text-align: center;"><b>First Quarter (or Half) Moon</b> The right half of the Moon is light.</p>
<p style="text-align: center;">4</p>  <p style="text-align: center;"><b>Waxing Gibbous</b> Three quarters of the right side of the Moon is light. The light is in the shape of a humpback (which is what the word "gibbous" means!)</p>	<p style="text-align: center;">5</p>  <p style="text-align: center;"><b>Full Moon</b> The entire Moon is bright.</p>	<p style="text-align: center;">6</p>  <p style="text-align: center;"><b>Waning Gibbous</b> Three quarters of the <i>left</i> side of the Moon is light.</p>
<p style="text-align: center;">7</p>  <p style="text-align: center;"><b>Third Quarter (also Half) Moon</b> The <i>left</i> half of the Moon is now light.</p>	<p style="text-align: center;">8</p>  <p style="text-align: center;"><b>Waning Crescent</b> A small sliver of light now appears on the <i>left</i> side.</p>	