**Teaching Science as Inquiry (TSI) Lesson Plan**

**Module 1: Physical Aquatic Science**

Name: Leigh Hicks

Activity: Moon Model Activity

Why did you choose to do this activity?

This activity was used to portray the lunar phases, the movement of the earth in relation the sun and moon, and how tides are affected by these movements and phases.

What are your classroom learning goals?

Students will be able to describe both verbally and visually the relationship between lunar phases and tides.

How does this activity tie into your classroom learning goals?

Modeling the movement of the moon’s orbit of Earth in relation to the sun will help students visualize the lunar phases.

What date do you plan to start this activity? November 1, 2012

*If applicable:* HIDOE standards this lesson will address

Marine Science SC.MS.3.4 - Describe the causes and characteristics of tides

**Ocean**

1. Describe how you will connect this activity to the ocean:

The lunar phases were connected to the tidal phases and the lunar/tidal calendar.

1. Select the Ocean Literacy Principle(s) that you anticipate this activity will address. (check all that apply)

□ 1. The Earth has one big ocean with many features.

□ 2. The ocean and life in the ocean shape the features of the Earth.

□ 3. The ocean is a major influence on weather and climate.

□ 4. The ocean makes earth habitable

□ 5. The ocean supports a great diversity of life and ecosystems.

**x** 6. The ocean and humans are inextricably interconnected

□ 7. The ocean is largely unexplored

**Preparation**

1. How will you prepare your students for this activity? (For example, review of prior knowledge.) Students will be asked what they already know about how the lunar phases affect the tides.
2. Explain any instructional struggles that you foresee and how you will address these issues. (For example, student misconceptions, classroom discussion, aspects most difficult for students to grasp, etc.)

I expect some of my students to struggle with what direction the Earth is rotating. I also expect that some students will believe that the moon always orbits in the same path. We will place emphasis on these misconceptions to try and enhance understanding.

1. Select the TSI Mode(s) of Inquiry that you will focus on for this activity. (check all that apply)

**x** Curiosity

**x** Description

**x** Authoritative knowledge

**x** Experimentation

□ Product evaluation

□ Technology

**x** Replication

**x** Induction

x Deduction

x Transitive Knowledge

**Questioning and Assessment Strategies**

1. What *questioning strategies* will you use to help your students meet your learning goals? Students will pair up in groups of 2 or 3 to discuss and share answers to activity questions. Students will share aloud findings to the group and any remaining misconceptions will be addressed.
2. What *assessment strategies* will you use to help your students meet your learning goals and monitor their progress? Student will be assessed based upon their activity question answers and a model diagram of the lunar phases as they relate to spring and neap tides.