November 6th

* Materials needed:
  + Styrofoam balls
  + Lamp
  + Paper plates
  + Tacks
  + Black Sharpies
  + Book – How the Moon regained her shape
  + Light up moon
  + Moon phase cards (Large)
  + Small moon phase cards for memory
  + Cards with students names
* BEFORE CLASS – LOAD WEBSITES ON COMPUTER AND TEST SOUND
* Have students write a statement/draw a picture of why the moon phases occur – first page of moon book.

**Engage: (15-20) (9:30 – 10:00)**

* Discuss the moon phase calendar and what moon phases have occurred.
* Practice with this website: (Use cards to pull names)
* http://www.sciencenetlinks.com/interactives/moon/moon\_challenge/moon\_challenge.html
* Read the folktale called: How the Moon regained her shape
* Ask: Does the moon really change its shape like the story says? How do you know?
* Why do you think people told this story? What kind of story is this? Folktale.
* People in the past told a lot of folktales about the natural world. There are many you probably heard about with the stars and how the different constellations got their names.
* Today, we are going to explore why we have moon phases.
* But first I need your help… Today when I came into the classroom my hands were full and I dropped the moon phase pictures after I had them all in order. Now I am not sure if I have them in the correct order? Do I? No… well can you help me? (Use cards to pull names)
* Record moon phases on the second page of the booklet.

**Explore: (10:00 – 10:10)**

* I have a challenge for you. Do you think you can create all the moon phases with a Styrofoam ball on a stick and a lamp? Who thinks they can? Alright let’s see ☺
* Students will spend about 10 minutes or so trying to make all the different moon phases.
* Students will return to their seats and I will ask students who figured out and have them model how they did it.
* Did anyone do it the same or different?

**Elaborate: (15 min) (10:10 – 10:30)**

* Reconvene at the lamp and discuss the activity with the students – talk about the moon’s 5 degree tilt and why solar and lunar eclipses do not happen often. Also, why the moon phases do not have anything to do with earth’s shadow. Only during lunar eclipse.
* Watch video I created to make sure all students saw what they were supposed to see. (Use cards to pull names)
  + https://www.slashtmp.iu.edu/public/download.php?FILE=hwiebke/31747VhCPjG

**Snack and Break 10:30 – 11:00ish**

**Extend: (11:00 – 11:45)**

* Practice the location of the Earth, Moon, and Sun with this website:
* <http://www.spaceday.org/index.php/The-Phaser.html>
* Make the moon phases with plastic golf ball and paper plate (students can take this home).
* Answer the conclusion question: The moon changes shape because…
* Go over names of moon phases with light up moon or play around the world with pictures of moon phases and students have to say the name or have the students see how fast they can put the moon phases in order.
* We could also play moon phase memory.