

# Out of This World! - Week 7

## Grades K-2

Day	Topics	Related Standards
1	Lunar Touchdown: Exploring the Moon	<b>Observe and ask questions</b> about patterns of the motion of the sun, moon and stars in the sky.
2	Lunar Touchdown: Making an Impact	
3	Lunar Touchdown: Ask, Imagine & Plan	<b>Plan and carry out investigations</b> which demonstrate how equal forces can balance objects and how unequal forces can push, pull or twist objects, making them change their speed, direction or shape.
4	Lunar Touchdown: Create	
5	Lunar Touchdown Improve	

# Out of This World! - Week 7

## Day 1: Lunar Touchdown: Exploring the Moon

### Teacher/Parent Background:

One of the most visible objects in space is Earth's moon. A moon is a natural satellite of a planet. A satellite is an object that stays in an orbit around a planet. The moon's surface is thick with dust and dotted with rocks of various sizes. Astronauts brought samples of moon rocks back to Earth for study. The side of the moon that faces Earth is covered by vast, dark plains. Other surface features include lunar mountains and craters, which are dish-shaped pits formed when objects from space struck the surface.

## Overview:

In this activity, learners will explore and document features of the Moon in order to gather background information needed to complete an engineering design challenge in which they need to design and build a spacecraft that can land in one of the Moon's craters without injuring astronauts or damaging the spacecraft.

## Related Standards:

- **Observe and ask questions** about patterns of the motion of the sun, moon and stars in the sky.

## Key Terms:

- moon - a natural satellite of a planet
- satellite - an object that stays in an orbit around a planet
- crater - dish-shaped pits formed when objects from space struck the moon's surface

## Materials List:

- *Exploring the Moon* handout
- Books and videos about the Moon:
  - [Moon! Earth's Best Friend](#) by Stacy McAnulty
  - [There's No Place Like Space](#) by Tish Rabe
  - [Go for the Moon](#) by Chris Gall
  - [The Moon for Kids](#)
  - [Next Time You See the Moon](#)
  - [Moon](#)
  - [NASA images](#)
  - [Dial-a-Moon](#)
- Crayons, colored pencils or markers

## Activity Description:

1. Using a book, video or other resource, show the student various images of the Moon and encourage him/her to verbally respond to the following:
  - What do you see in the picture(s)?
  - Where do we see this object in real life?
  - Does the Moon always look the same?
  - What is on the surface of the Moon?
  - What shape is the Moon?
2. Prompt the student to record his/her observations of the Moon on the *Exploring the Moon* handout.

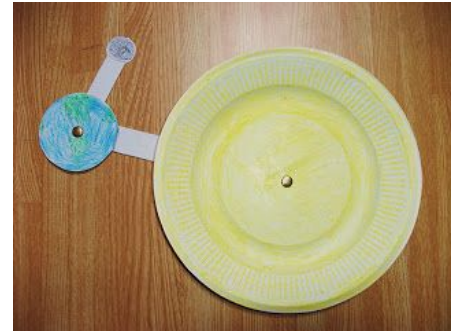
## Closure:

Once the student has recorded his/her observations on the *Exploring the Moon* handout, explain that he/she will be looking at the Moon each night for the next couple of weeks to see if the Moon looks the same every night. The student will record his/her observations on the provided calendar.

## Extension:

### Sun, Earth, Moon Model

- 1 paper plate
- white construction paper or card stock
- Earth and Moon cutouts
- hole puncher
- crayons
- 2 brass fasteners
- Scissors



Cut the Earth and Moon pieces from construction paper or card stock.

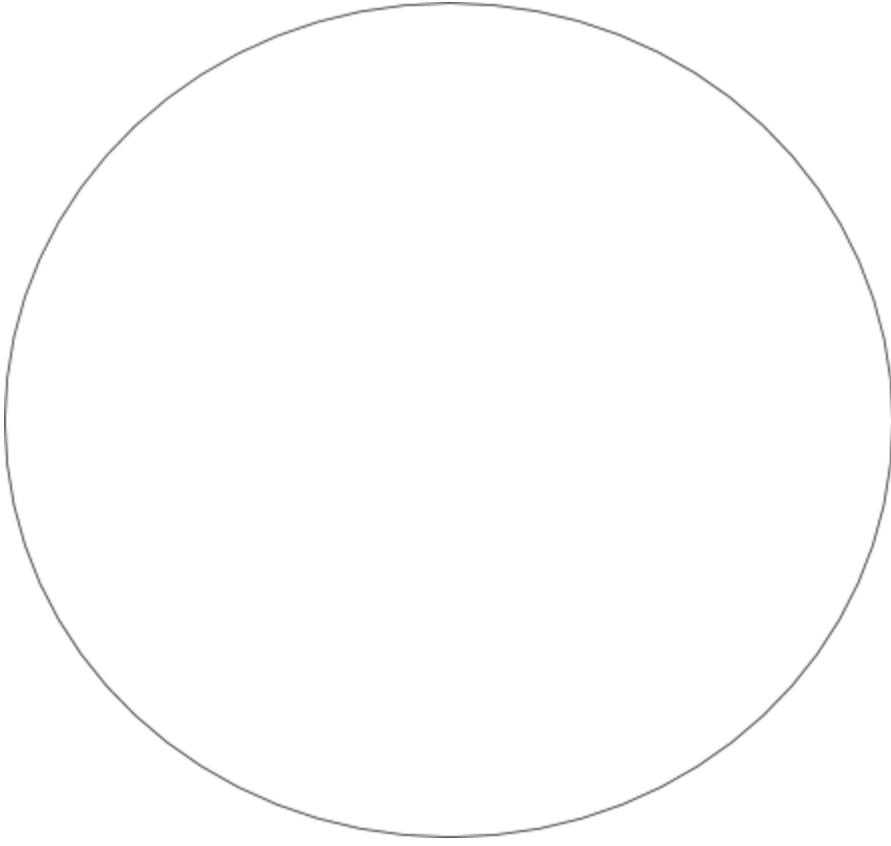
Color the paper plate (yellow), Earth (green & blue) and Moon (gray).

Punch a hole at the end of each strip as shown and in the middle of the paper plate.

Fasten the pieces together using brass fasteners.

Guide the student to explore how the Earth revolves around the Sun and the Moon revolves around the Earth.

## Exploring the Moon

Moon Observations	
	

Moon Calendar						
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14