

Explore! Marvel Moon Shopping List

The following is an abbreviated list of the materials required for the *Marvel Moon* module of activities. Refer to the materials section of each activity for links to supplemental pages to print or suggestions for books and websites.

<p>Activity 1: Moon Over My Town</p> <p>Facility needs:</p> <ul style="list-style-type: none">- An email address or location for submitting Moon images- Optional: template for printing submissions- Wall space or website for displaying images <p>For the community:</p> <ul style="list-style-type: none">- Books about the moon (refer to resources section of website for recommendations)- Calendar of Moon phases and rise and set times- Note cards- Comment box- Pencils or pens <p>For the facilitator:</p> <ul style="list-style-type: none">- Background information	<p>Activity 2: Time Travelers</p> <p>Facility needs:</p> <ul style="list-style-type: none">- A large room, hallway, or sidewalk- Optional: wall space for creating a library display with the timeline <p>For the group:</p> <ul style="list-style-type: none">- Optional: white board, or poster paper and markers, or chalkboard and chalk- One set of <i>Event Cards</i> (11 total events), preferably printed in color on card stock- Optional: 1 timeline of the universe's history, prepared as described under "Preparation" using:<ul style="list-style-type: none">- 1 (185') roll of butcher's twine- Measuring tape (preferably 50')- 3 signs, made from sheets of colorful paper marked with the following terms:<ul style="list-style-type: none">- Today- Solar System Forms- Big Bang- Books about the moon (refer to resources section of website for recommendations)- Art supplies, such as colored pencils, crayons, and markers <p>For each child:</p> <ul style="list-style-type: none">- <i>Moon Stories</i> comic panel- <i>Marvel Moon</i> comic book, printed double-sided- 1 (3/4") binder clip <p>For the facilitator:</p> <ul style="list-style-type: none">- Background information- <i>Master List of Events</i>, printed double-sided
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Activity 3: Wham! Moon!

For the group:

- Books about the moon (refer to resources section of website for recommendations)
- *Moon's Birth Story*, preferably printed in color and double-sided
- Optional: Computer, projector, and access to the Internet
- Art supplies, such as colored pencils, crayons, and markers

For each team of two to three children:

- 1 textured cardboard plate (Chinette® works well)
- 1/2 container each of two different colors of Play-Doh® or modeling clay

For each child:

- *Moon's Birth* comic strip, preferably printed double-sided
- His/her *Marvel Moon* comic book and binder clip
- 1 pencil or pen

For the facilitator:

- Background information

Activity 4: Recipe Moon

For the group:

- Optional: butcher paper, newspapers, or disposable table cloths for the activity area
- Wet wipes or damp paper towels
- Additional plates for eating the treats, if desired
- Global images of Earth and the Moon
- Books about the Moon (refer to resources section of website for recommendations)

For each team of two to four children or for each individual child:

- 5 Rice Krispies Treats®
- 1 donut hole
- 1 cinnamon candy (e.g. Red Hots)
- 1 tsp. hot cocoa mix
- 1 tsp. powdered sugar
- 2 tablespoons of red icing
- 2 teaspoons green sprinkles in a baggie
- 4 teaspoons blue sprinkles in a baggie
- 10-12 mini chocolate chips
- 6 regular-sized chocolate chips
- 3 Zip-loc® baggies
- 1 small cups
- 1 ruler
- 1 spoon
- 1 plastic knife
- 1 cardboard plate
- *Recipe for the Moon* and *Recipe for Earth*

For each child:

- *Recipe for a Moon* comic panel
- His/her *Marvel Moon* comic book and binder clip
- 1 pencil or pen
- Optional: 1 copy of instructions for making an edible Moon at home

For the facilitator:

- Background information

Activity 5: Growing Up Moon, Infant Moon: Moon Mix!

The following materials are for one *Splat!* activity set.

- Optional: butcher paper, newspapers, or disposable table cloths for the activity area
- 5 (8 oz.) unopened, clear plastic water bottles with the labels removed
- A selection of at least three of the following items that sink in water, each placed in a container:
 - ½ cup (nearly ½ pound) small aquarium gravel
 - ½ cup buttons
 - ½ cup dried navy beans
 - ½ cup marbles
 - ½ cup sequins
 - Optional: 1 cup pancake syrup in its bottle or a container with a pour spout
- A selection of at least three of the following items that float in water, each placed in a container:
 - ½ cup coffee stirrers (i.e. small straws), cut into ~1/4" sections
 - 1 dry sponge, cut into (~1/4" x 1/4") pieces
 - ½ cup pony beads (any color)
 - ½ cup small Lego® pieces (e.g. "1x1" bricks)
 - ½ cup wooden beads
 - Optional: ½ cup vegetable oil in its bottle or a container with a pour spout
- Optional (but recommended): 1 (32-oz.) bottle of light corn syrup

- 2 clear plastic cups
- 1 handheld, wire mesh sieve
- 1 cup water
- Optional: scissors
- Optional: 1 (1-quart) bag for creating coffee stirrer sections
- 1 funnel
- Towel for cleaning up spills
- Optional: wet wipes
- Optional: pitcher or bucket for collecting unwanted water
- Optional: 1 sample of Earth anorthosite, ordered from a natural science catalog; an anorthosite hand specimen (item # 47 V 0559) is available from WARD'S Natural Science
- *Moon Map: Lunar Highlands*
- *Infant Moon: Moon Mix!* station sign
- *Infant Moon: Moon Mix!* children's guide
- Art materials, such as colored pencils, crayons, and markers

For each child:

- Infant Moon: Moon Mix comic panel
- His/her Marvel Moon comic book and binder clip

For the facilitator:

- Access to water
- 1 permanent marker
- Background information
- Shopping list

Activity 5: Growing Up Moon, Kid Moon: Splat!

Facility needs:

- An outdoor area, such as a concrete patio or parking lot

The following materials are for one *Splat!* activity set.

- 5 water balloons
- Optional: 1 bucket
- 5 rulers or tape measurers
- 5 clipboards
- Towel for cleaning up spills
- Optional: 1 sample of Earth breccia, ordered from a natural science catalog
- Illustrations and images of basin-forming impacts, basins, and asteroids, printed in color or displayed on a computer (and projector, if desired)
- *Moon Map: Lunar Impact Basins*
- *Splat!* station sign
- *Splat!* children's guide
- Art materials, such as colored pencils, crayons, and markers

For each child:

- *Kid Moon: Splat!* comic panel
- His/her *Marvel Moon* comic book and binder clip
- 1 pencil or pen

For the facilitator:

- Access to water
- Background information

Activity 5: Growing Up Moon, Teen Moon: Moon Ooze

The following materials are for one *Moon Ooze* activity set. Two sets are recommended for a station:

- Optional: butcher paper, newspapers, or disposable table cloths for the activity area
- 2 (6") plastic plates (DO NOT SUBSTITUTE with larger sizes or paper plates)
- 1 (2 tsp.) medicine dropper (or an eye dropper or turkey baster)
- 1 (1 cup) container filled with water
- Red food coloring
- Towel for resetting the station between teams and cleaning up spills
- Optional: 1 sample of Earth basalt ordered from a natural science catalog
- *Moon Map: Lunar Maria*
- *Moon Ooze* station sign
- *Moon Ooze* children's guide
- Art materials, such as colored pencils, crayons, and markers

For each child:

- *Teen Moon: Moon Ooze* comic panel
- His/her *Marvel Moon* comic book and binder clip
- 1 pencil or pen

For the facilitator:

- Access to water
- 1 utility knife
- Background information

Activity 5: Growing Up Moon, Moon's Long History: Impact Paintings

The following materials are for one *Impact Paintings* activity set.

- Large trash bags or a cloth or plastic tarp to cover the area
- 3 (16-oz.) bottles of washable tempura paint, in different colors
- 5 art pallets or large plastic plate for holding small amounts of paint
- Towel for cleaning up spills
- 5 dividers, such as a folder propped up on the table
- 5 stopwatches
- 5 markers
- Images of lunar craters
- *Moon's Long History: Impact Paintings* station sign
- *Moon's Long History: Impact Paintings* children's guide
- Art materials, such as colored pencils, crayons, and markers

For each team of two children:

- 2 (-3' x 3') sheets of butcher paper
- 12 cotton balls

For each child:

- Optional: an old shirt or apron or a trash bag to wear
- *Moon's Long History: Impact Paintings* comic panel
- His/her *Marvel Moon* comic book and binder clip
- 1 pencil or pen

For the facilitator:

- Background information

Activity 5: Growing Up Moon, Grown-up Moon: What Do You See in Today's Moon?

The following materials are for one *What Do You See in the Moon?* activity set.

- Books or other media that share stories about the Moon (refer to resources section of website for recommendations)
- Optional: Computer, speakers, and access to the Internet
- Optional: A live storyteller reading or performing Moon myths
- Optional: Images of features that different cultures see in the Moon
- Optional: 1 sample each of anorthosite, basalt, and breccia, ordered from a natural science catalog
- *Moon Map*
- *Grown-up Moon: What Do You See in Today's Moon?* station sign
- *Grown-up Moon: What Do You See in Today's Moon?* children's guide
- Art materials such as crayons, colored pencils, and markers

For each child:

- *Grown-up Moon: What do you see in today's Moon?* comic panel
- His/her *Marvel Moon* comic book and binder clip
- 1 pencil or pen

For the facilitator:

- Background information

Activity 5: Growing Up Moon, Future Moon: The Footsteps of Explorers

Materials

The following materials are for one *The Footsteps of Explorers* activity set. Two sets are recommended for a station:

- Optional: Butcher paper, newspapers, or disposable table cloths for the activity area
- Fist-sized rock or a (1-lb.) box of baking soda wrapped in aluminum foil
- 1 sheet of aluminum foil to cover the rock or baking soda box
- 1 large cardboard box (~2" per side) with high sides
- 10 -15 graham crackers (enough to cover the bottom of the box with two layers)
- 1 local soil sample in a small, open container
- Optional: lunar soil simulant contained in a clear plastic container or sealable clear plastic bag
- *Moon Map: Apollo Landing Sites*
- Images of lunar dust, preferably printed in color
- *The Footsteps of Explorers* station sign
- *The Footsteps of Explorers* children's guide
- Art materials, such as colored pencils, crayons, and markers
- Crayons with the wrappers removed, for making rubbings

For each child:

- *Future Moon: The Footsteps of Explorers* comic panel
- His/her *Marvel Moon* comic book and binder clip
- 1 pencil or pen

For the facilitator:

- Background information

Activity 5: Growing Up Moon, Rocks Tell Us the Moon's Story

For the group:

- Lunar Sample Disk
- 2 (or more) magnifying glasses
- Optional: stereo microscope and an electrical outlet
- Optional: 1 sample each of anorthosite, basalt, and breccia, ordered from a natural science catalog
- Optional: 1 local soil sample in a small, open container
- Images of the oldest rocks

For the facilitator:

- Background information
- *Snapshots of Distant Time*
- Optional: a partnership with the geology department at a local university, museum, or science center

Activity 6: Moon in Action

Facility needs:

- Flashlights for staff, preferably with red plastic wrap or red paper taped over the light
- Optional: access to electricity and a well-marked extension cord
- Glow sticks
- Access to drinking water
- Access to bathrooms

For each group of approximately 20 visitors:

- Optional: 1 telescope manned by an amateur astronomer
 - 1 or more small step-stools
- Optional: 1 pair of binoculars
 - Optional: 1 camera tripod and binocular adapter
- Tables set up indoors or outside, in a well-lit area and out of the path of traffic
- Art supplies such as colored pencils, crayons, and markers
- Books about observing the Moon (refer to resources section of website for recommendations)

For each child:

- 1 *An Earth-based Tour of the Moon*
- Optional: 1 *Earth's Moon Lithograph* (NASA educational product number LG-2005-12-568-HQ), printed double-sided and preferably in color
- Optional: 1 *Skywatcher's Guide to the Moon*
- 1 pencil or pen
- *Moon in Action* comic panel
- His/her *Marvel Moon* comic book and binder clip
- Optional: sky map of the current night

For the facilitator:

- Background information
- *Throw a Star Party*
- Optional: Night Sky Network's *Observing the Moon* "Moon Map Guide"

Activity 7: Mirror Moon

For the group:

- 2 tennis balls
- 1 piece of aluminum foil large enough to completely cover one ball
- 1 U.S. Geological Survey tennis ball globe template, *The Moon* (grey)
- 1 flashlight
- A dark location

For each child:

- Optional: for older children, have them construct a globe of the Moon using:
 - 1 tennis ball (perhaps second-hand and donated by a recreation center)
 - 1 U.S. Geological Survey tennis ball globe template, either *The Moon* (grey) or *The Moon: Topography from the Clementine mission to the moon* (color)
 - Scissors

For the facilitator:

- Background information

Activity 8: Earth's Bright Neighbor

For the group:

- Optional: white board, or poster paper and markers, or chalkboard and chalk
- One of each of the following fruits and other foods (listed from largest to smallest):
 - (55"-wide) giant pumpkin or Halloween orange pumpkin
 - garbage bag
 - (4 1/2"-wide) large orange or cantaloupe or coconut
 - (2"-wide) lime or kiwi
 - (1/2"-wide) small grape or large blueberry
 - (1/4"-wide) pea or navy bean
 - (1/8"-wide) peppercorn
 - (1/64"-wide) poppy seed
- Measuring tape
- Books about the Moon (refer to resources section of website for recommendations)
- Art supplies, such as colored pencils, crayons, and markers

For each team of two children:

- 1 (1/2"-wide) small grape or large blueberry
- 1 (1/8"-wide) peppercorn
- Ruler

For each child:

- *Earth's Bright Neighbor* comic panel
- His/her *Marvel Moon* comic book and binder clip
- 1 pencil or pen

For the facilitator:

- Background information

Activity 9: Looney Lunar Phases

For the group:

- One or more videos, books, songs, or poems about the Moon (refer to resources section of website for recommendations)

For each child:

- 6 Oreo® cookies or round cream cheese sandwich crackers
- Paper towels
- A plastic spoon and/or a plastic knife
- *Food Phases Guide*
- Optional: *Phrases for Phases*
- *Moon Words* crossword puzzle or *Moon in My Own Words* poetry template
- His/her *Marvel Moon* comic book and binder clip
- 1 pencil or pen

For the facilitator:

- Background information

Activity 10: Lunar Phases: A Dance under the Sun

For the group:

- Books about lunar phases (refer to resources section of website for recommendations)
- Art supplies, such as colored pencils, and markers

For each child:

- 1 (2") Styrofoam™ ball
- 1 pencil, popsicle stick, or other handle
- *Without the Moon... 1* comic panel
- His/her *Marvel Moon* comic book and binder clip

For the facilitator:

- Calendar or chart showing the phases of the Moon for the current month
- Background information

Activity 11: Spin! Day and Night

For the group:

- 1 (55"-wide) giant pumpkin or Halloween orange pumpkin garbage bag
- 1 (1/2"-wide) small grape or large blueberry
- 1 Earth globe
- 1 wearable sign depicting the Earth's continents, constructed using:
 - *Earth's Continents*, printed preferably in color
 - 2 (1'-long) strings or yarn
 - Hole-punch
- Optional: *Constellations of the Zodiac*, printed preferably in color
- Optional: Computer and projector
- Art supplies such as colored pencils, crayons, and markers

For each child:

- A large indoor or outdoor space
- 2 directional signs, constructed using
 - "East" and "West" sign template
 - 2 popsicle sticks or pencils for handles
- 1 circle- or star-shaped sticker
- *Without the Moon... 2* comic panel
- His/her *Marvel Moon* comic book and binder clip

For the facilitator:

- Background information
- Tape

Activity 12: Steady Partner, Steady Seasons

For the group:

- A large indoor or outdoor space
- 1 (55"-wide) giant pumpkin or Halloween orange pumpkin garbage bag
- 1 (1/2"-wide) small grape or large blueberry
- 1 Earth globe
- Optional: Computer and projector
- Optional: *Constellations of the Zodiac*, printed preferably in color
- *Season Signs*, which include "Solstice: June 21," "Solstice: December 21," "Equinox: March 21," and "Equinox: September 21"
- Art supplies, such as colored pencils, crayons, and markers

For each child:

- 1 wearable sign depicting the Earth's continents, constructed using:
 - *Earth's Continents*, printed preferably in color
 - 2 (1'-long) strings or yarn
 - Hole-punch
- 1 circle- or star-shaped sticker
- *Without the Moon... 3* comic panel
- His/her *Marvel Moon* comic book and binder clip

For the facilitator:

- Background information
- Tape

Activity 13: Dance of the Moon and Oceans

For the group:

- Images of high and low tide
- Optional: Images of high and low tide at a local ocean beach
- 1 large, brown T-shirt
- 4 large, blue T-shirts
- 1 large, grey T-shirt
- 1 large, yellow T-shirt
- 4 blue scarves or strips of fabric
- Art supplies, such as colored pencils, crayons, and markers
- Books and videos about oceans, seashore animals, and tides
- Books about the Moon and tides (refer to resources section of website for recommendations)

For the children:

- His/her *Without the Moon... 3* comic panel
- His/her *Marvel Moon* comic book and binder clip

For the facilitator:

- Background information

Activity 14: Moon Mythbusters

For the group:

- Optional: materials to conduct the activity, *Penny Moon*

For each child:

- *Puzzle Pieces*, preferably printed in color
- Puzzle templates for taping down the puzzle pieces:
 - *Far-fetched Farside*
 - *True-blue Blue Moon*
- Optional: puzzle guides
- *Lunar Farside*
- *Lunar Nearside*
- Tape or glue sticks
- 1 red marker
- His/her *Marvel Moon* comic book and binder clip

For the facilitator:

- Background information
- Puzzle answers for the two puzzles:
 - *True Answers*
 - *False Answers*

Activity 15: Penny Moon

For each pair of children:

- 1 penny
- 1 quarter
- *Dark Side of the Moon...Busted!* comic panel
- Optional: Computer and access to the Internet

For the facilitator:

- Background information

Activity 16: My Take on the Moon

For the group:

- Stapler

For each child:

- Zine materials, such as the template and folding instructions
- Art supplies, such as colored pencils, crayons, and markers
- His/her *Marvel Moon* comic book
- 1 pencil or pen

For the facilitator:

- Background information