

# PEANUTS and SPACE FOUNDATION

## The View is Beautiful

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### OBJECTIVES

Students will:

- ◆ Read *Snoopy, First Beagle on the Moon!* and *Shoot for the Moon, Snoopy!* to give students some background knowledge.
- ◆ Learn how light travels through space.
- ◆ Explore the history and significance of constellations in the sky.
- ◆ Create a scale 3D constellation.

### SUGGESTED GRADE LEVELS

2 – 5

### SUBJECT AREAS

Science, Math, History

### TIMELINE

45-60 minutes

### NEXT GENERATION SCIENCE STANDARDS

- ◆ 1-ESS1-1: Use observations of the sun, moon, and stars to describe patterns that can be predicted.
- ◆ 5-ESS1-1: Support an argument that the apparent brightness of the sun and stars is due to their relative distances from Earth.

### 21st CENTURY ESSENTIAL SKILLS

Critical Thinking/Problem Solving, Communication, Information Literacy, Social Skills, Organizing Concepts, Predicting Patterns, Constructing Explanations

### BACKGROUND

- ◆ According to NASA.gov, NASA has proudly shared an association with Charles M. Schulz and his American icon Snoopy since Apollo missions began in the 1960s. Schulz created comic strips depicting Snoopy on the Moon, capturing public excitement about America's achievements in space. In May 1969, Apollo 10 astronauts traveled to the Moon for a final trial run before the lunar landings took place on later missions. Because that mission required the lunar module to skim within 50,000 feet of the Moon's surface and "snoop around" to determine the landing site for Apollo 11, the crew named the lunar module Snoopy. The command module was named Charlie Brown, Snoopy's loyal owner.



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- ◆ These books are a united effort between Peanuts Worldwide, NASA and Simon & Schuster to generate interest in space among today's younger children.
- ◆ Constellations are named patterns of stars. All societies created them. The classical—"ancient"—constellations that populate our sky were named by the people of the Middle East thousands of years ago. Later, the ancient Greeks overlaid them with their own legends. During Roman times, they were assigned Latin names.
- ◆ The 48 ancient constellations single out only the bright patterns. From around 1600 to 1800, post-Copernican astronomers invented hosts of "modern" constellations from the faint stars that lie between the classical figures, from pieces of ancient constellations, and from the stars that occupy the part of the southern sky that could not be seen from classical lands.
- ◆ In the early twentieth century, the International Astronomical Union (IAU) officially recognized 88 "modern" constellations and drew borders around them to aid in star identification. Many of these constellations contain unofficial but highly recognizable star patterns, or "asterisms." The Big Dipper, for example, is an asterism within the official constellation Ursa Major. The Winter Triangle asterism is made up of three stars from three different constellations. Some constellations look like what they are supposed to represent, but most do not. Constellations, both ancient and modern, are generally meant to honor and represent, not to portray a figure accurately.
- ◆ The constellations play an important role in modern astronomy. They bring order to the sky by dividing it into smaller segments, providing a base for naming celestial objects.

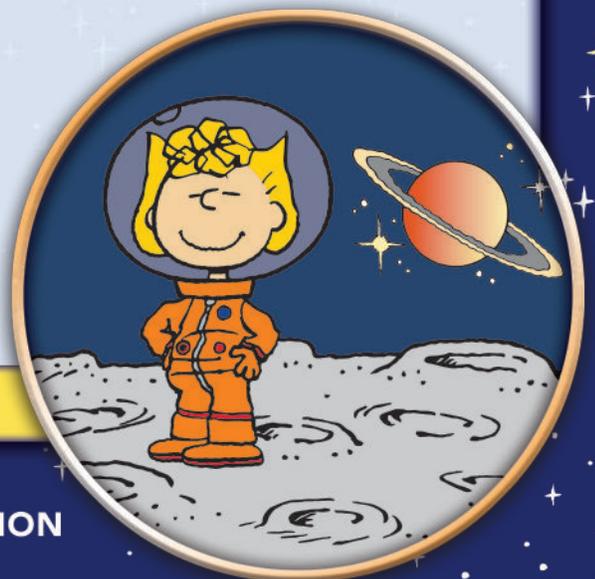
### VOCABULARY

Constellation, Lightyear, 3D, Light, Space, Stars

### MATERIALS

For each student:

- ◆ Worksheet
- ◆ Scissors
- ◆ Piece of cardboard, 4"x 6"
- ◆ Glue stick
- ◆ 7 toothpicks (pre-cut, if working with younger students)
- ◆ Ruler (to measure toothpicks for cutting, if working with older students)
- ◆ 7 marshmallows
- ◆ Push pin (adult use only)



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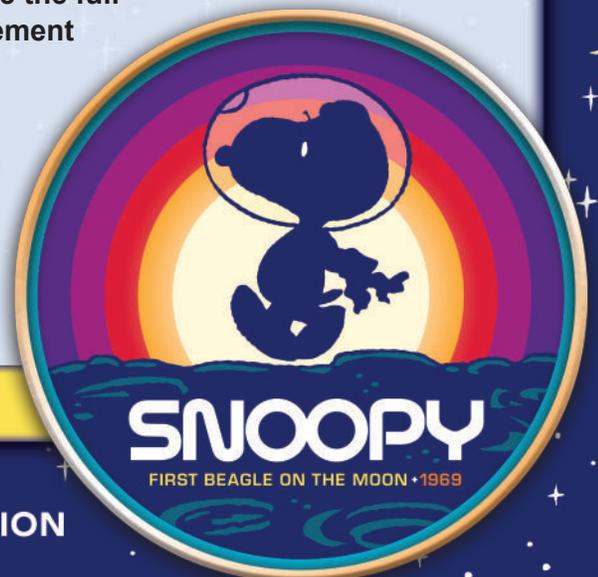
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### LESSON PROCEDURES

1. Read *Snoopy, First Beagle on the Moon!* and *Shoot for the Moon, Snoopy!* to the entire class to give students some background knowledge.
2. Introduce what constellations are and how humans have used them over time for a variety of purposes.
3. Define lightyear (the distance light travels in one year). Many stars can be hundreds of lightyears away from each other but appear close to each other in the night sky. The distance of ONE light year is 5.88 trillion miles.
4. Explain to students that they are going to construct a scale model of the Big Dipper, the familiar shape within the constellation Ursa Major. In this scale model they will see that constellations are not “flat” in the sky. Each star has a name and differs in its distance from the Earth.
5. Pass out materials to the students.
  - a. Remind students that the marshmallows are for the project, not for consumption!
6. Cut out the image of the Big Dipper on the dotted line.
7. Spread glue on back of the Big Dipper cut-out and press cut-out onto cardboard.
8. Poke one small hole in each of the stars using the thumbtack.
9. Measure and cut toothpicks to match the lengths needed for each star (or use pre-cut toothpicks if working with younger students).
  - a. NOTE: A full length toothpick will be used for Megrez
10. Stick the sharp end of the toothpick to its matching star. Then stick a marshmallow on the other end of the toothpick.
11. Instruct students to observe the constellation from different angles.
12. Explain to students that the constellations we see from Earth are unique to us and our perspective. Note: The Big Dipper would not look the same if you were standing on Mars.

### EXTENSIONS

- ◆ Instruct students to create their own constellation. Students will draw an outline of the constellation using dots, then connect the dots to create the full constellation outline. The dots would serve as the placement for their stars.
- ◆ Print out other constellations and research the distances of those stars.



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**RESOURCES**

Garcia, M. (2018, July 9). NASA and Peanuts Celebrate Apollo 10's 50th Anniversary.

Retrieved from <https://www.nasa.gov/feature/nasa-and-peanuts-celebrate-apollo-10-s-50th-anniversary>

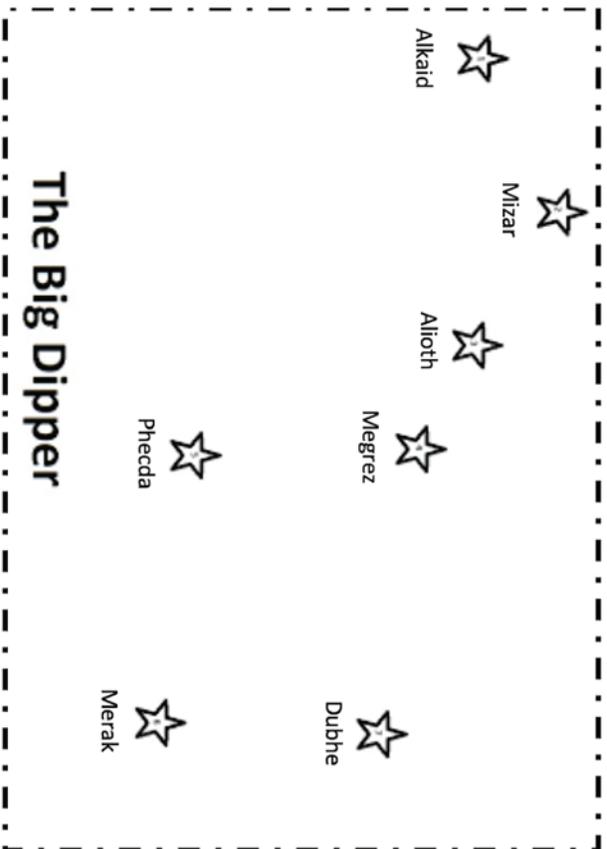
Kaler, J. (2014, February 14). THE CONSTELLATIONS. Retrieved from <http://stars.astro.illinois.edu/sow/const.html>

Schulz, Charles M. (2019). *Snoopy, First Beagle on the Moon!* New York, NY: Simon & Schuster.

Schulz, Charles M. (2019). *Shoot for the Moon, Snoopy!* New York, NY: Simon & Schuster.

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## The View is Beautiful

Did you know that the stars you see in a constellation are not the same distance away? Many can be hundreds of light years away from each other. We group stars into 88 constellations to help astronomers map objects in the sky.

**What is a light year?** The distance light travels in one year

**How far is a light year?** 5.88 trillion miles

### Directions

1. Cut out the image of the Big Dipper on the dotted lines.
2. Glue the back of the Big Dipper image to your cardboard.
3. Poke one small hole in each of the stars using the thumbtack.
4. Cut toothpicks to match the lengths below and stick them in their matching star. (One toothpick will be full length)
5. Stick a marshmallow on the end of each toothpick.
6. Hang your constellation on your wall and enjoy!

\_\_\_\_\_ Megrez = 58.4 Light Years

\_\_\_\_\_ Merak = 79.7 Light Years

\_\_\_\_\_ Alioth = 81 Light Years

\_\_\_\_\_ Mizar = 82 Light Years

\_\_\_\_\_ Phecda = 83.2 Light Years

\_\_\_\_\_ Dubhe = 123 Light Years

\_\_\_\_\_ Alkaid = 101 Light Years