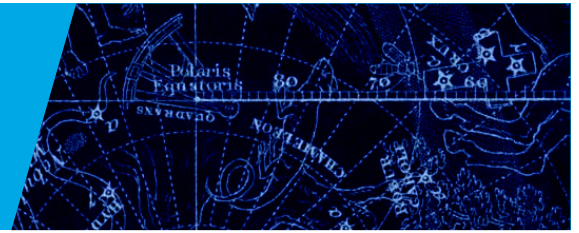


CURIOSITY AT HOME

MARSHMALLOW CONSTELLATIONS

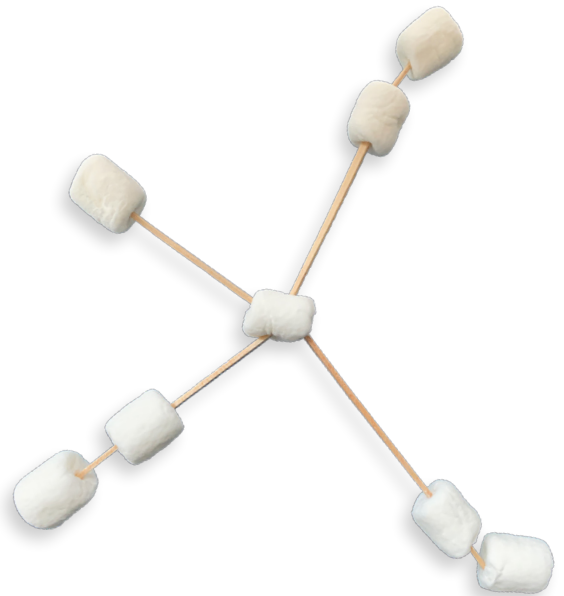
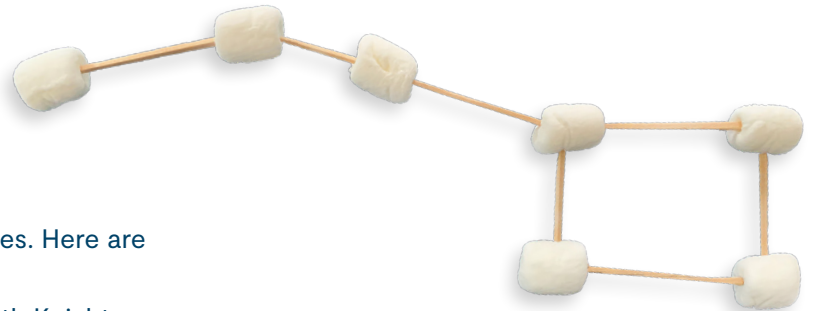


Have you ever noticed patterns in the night sky, such as how stars appear to move over the course of a night, or the way the sky changes from season to season? Constellations, or imaginary shapes made from connecting stars together, can help us better observe

these patterns in the sky. Different groups of people from all over the world have named and told stories about constellations since time immemorial and have used these shapes to navigate and tell time. Make a constellation model and story in this activity.

MATERIALS

- Miniature marshmallows (substitutes: clay, playdough, gumdrops)
- Toothpicks (substitutes: dry spaghetti)
- Black construction paper
- Glue
- Paper or science notebook
- Something to write with
- Books or online resources on constellation stories. Here are some recommendations:
 - *Usha and the Big Digger* by Amitha Jagannath Knight
 - *Sharing the Skies: Navajo Astronomy* By David Begay and Nancy C. Maryboy
 - *Bright Sky, Starry City* by Uma Krishnaswami
 - *The Forever Sky* by Thomas Peacock (*content warning: this story is about mourning a lost family member*)
- Online resources:
 - [Native Skywatchers](#)
 - [Sky Tellers](#)
 - [Revolving Sky](#)
 - [Windows to the Universe](#)
 - [Indigenous Knowledge Institute Astronomy Resources](#)



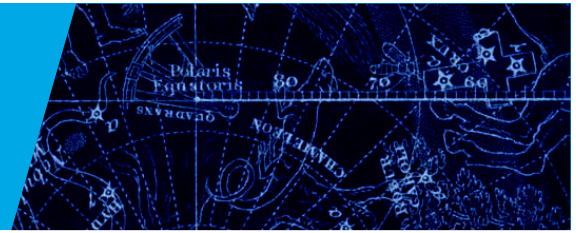
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PROCEDURE

- In books or online, read about some constellations.
- Select a favorite constellation that you want to make a model of.
- Marshmallows will represent the stars and toothpicks will represent the imaginary lines connecting the stars in your model.
- Count the number of stars in the constellation. This is the number of marshmallows you need.
- Use the toothpicks to connect the marshmallows together, making the shape of your constellation. You may have to break some toothpicks to connect stars that appear close together.
- Glue the marshmallows on the black paper to mount your constellation.
- Record some information about your constellation on paper or in a science notebook, such as the name and story of the constellation. What culture is the story from? In what part of the world is this constellation visible? What time of year can you see the constellation?
- Learn a different story about your constellation from another culture. In what ways are the stories similar? In what ways are they different?
- Share your constellation with someone else.

EXPLORE MORE

Gather new marshmallows and toothpicks and make a new constellation in any shape you can imagine.

- Put this new constellation on a piece of white paper, and draw more details about the constellation on the page. For example, if your constellation is an animal you could draw in details like feathers, fur, or teeth.
- Write a story about your constellation. Your story can explain what your constellation is, what it does, how it moves, how it got into the sky, and its name.
- Why do you think people tell stories about these shapes in the sky?

DID YOU KNOW?

Currently, the International Astronomical Union recognizes 88 official constellations. These constellations are mostly from Ancient Greek astronomical recordings, which were influenced by Islamic astronomy; in fact, many star names are Arabic.

The boundaries of the constellation are more than just the shape, but also designate a region of space. Every part of the sky you see is part of one of these 88 constellations. Astronomers use these constellations like a map, marking where particular stars and other celestial objects are located.

Some common shapes are just a part of a constellation and are called an asterism. The Big Dipper is an asterism; it's a familiar shape, but it's only a part of the constellation Ursa Major, or the Big Bear.



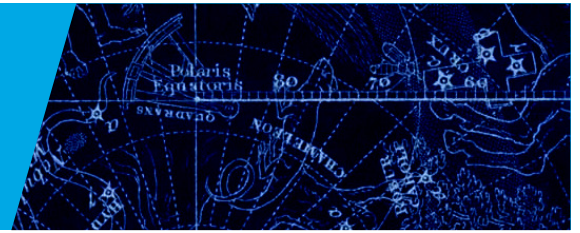
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K-2 GRADE EXPLORATION

Here are some questions you can explore together.

- Do you have a favorite constellation? Why is it your favorite?
- What other objects could you use to represent stars and imaginary lines in your constellation model? Use rocks and sidewalk chalk outside, pinecones and sticks, or other objects to create more models of constellations.
- Notice the sky throughout the day and evening. What patterns do you notice? Do some things change? Do some things stay the same?



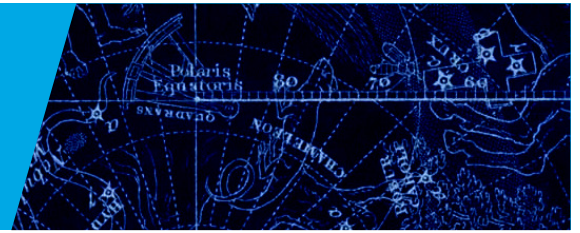
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3–5 GRADE EXPLORATION

Explore the following questions and write your observations in your science notebook.

- Draw your chosen constellation in your notebook, and label the names of each star and the distances of each star from earth. Are they all the same distance away? Are two stars that seem close together actually close together?
- Write a guide for someone to be able to find your chosen constellation. What location on Earth, time of year and time of night should someone look into the night sky to see your constellation?
- Research how different cultures have viewed and used your chosen constellation. Did it help people know when to plant or harvest crops? Was it used to explain a physical or cultural phenomenon? Why else might the shapes and stories of constellations be useful?



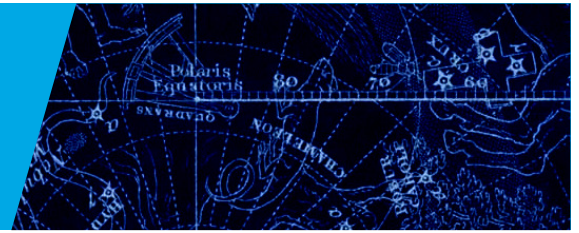
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6–8 GRADE EXPLORATION

Explore the following questions and write your observations in your science notebook

- Write a guide for someone to be able to find your chosen constellation. What location on Earth, time of year and time of night should someone look into the night sky to see your constellation? Why do you think some constellations are only visible at certain times?
- Draw your constellation in your notebook, and label the names of each star and the distances of each star from earth. Are they all the same distance away? Are two stars that seem close together actually close together?
- This constellation has the stars (marshmallows) arranged on a flat surface so that they are all the same distance from you. Can you make your constellation again so that it is a 3-D shape? It shouldn't lie flat on the paper, but still can look like the constellation when viewed from above. How does it look when viewed from other angles?



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