

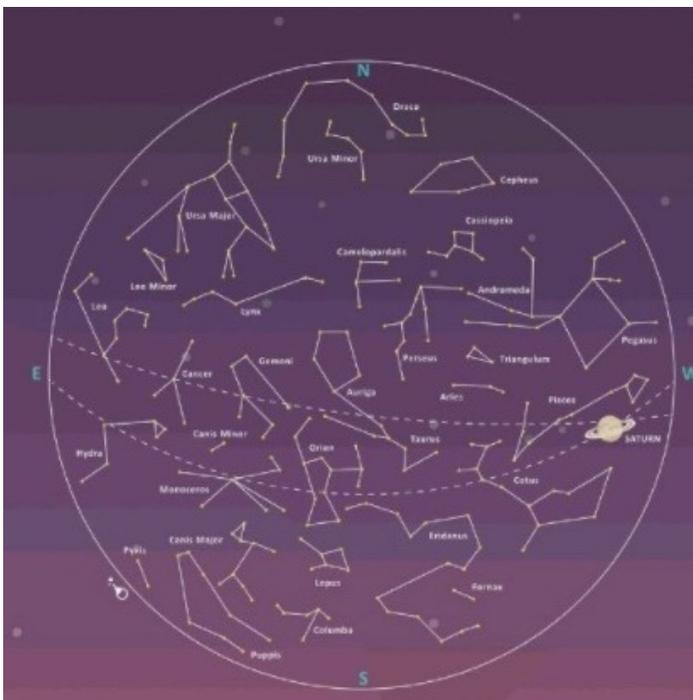
Constellation Lightbox

Why seek to explore Space when planet Earth's numerous problems are yet to be fixed? When we look at the night sky and see our universe, filled with an infinite number of stars, galaxies and planets, we can easily identify different stars and constellations. How did this come to be? How did constellations get their name?

Setup

It is important to have a designated area to create. Make sure it is easy to clean, maybe protect it with a drop cloth. Have an adult help or carefully supervise any cutting and piercing necessary for this project. You may want to place the constellation on top of a piece of Styrofoam or cardboard to protect your working surface as you pierce the drawing.

Content

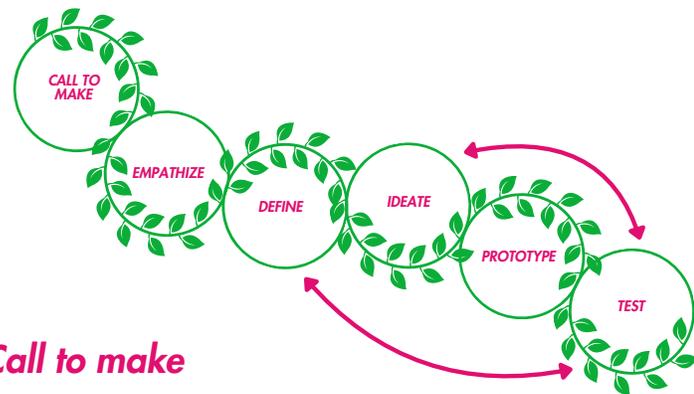


Skills

- Engineering

Materials

- paint
- cardboard
- tinfoil
- scissors
- flashlight



Call to make

What if there was a way to recreate the constellations in our room and learn more about our planet, and our planet's twinkly neighbours?

Constellations are made up from the position of stars in the sky. What could be a fun way to learn about these stars, their positions, and significance?

If you looked into the sky tonight, could you identify all the different constellations?



Empathize

How were the stars used in history? Do the constellations you see at night change throughout the year? If you were in another galaxy, would you still see the same patterns of stars in the sky?

What is a myth? Does anyone know any myths attached to constellations?

In modern days with all the technology at our disposal, do some people still rely on the stars?

Define

What are the variables we need to consider in our project?

What allows you to see stars at night versus the day time?



Ideate

Our objective is to focus light through cut out holes that represent constellations.

There are an infinite amount of stars in the, which ones will you use in your project?

If we want to create an accurate depiction of the northern hemisphere sky at night, what constellations are visible in the sky at this time of the year? Does the position of stars and planets move?

What is a star's light source?

What is your project's light source?

How can we contain our light and only see light shining from our constellations?

What's the best way to trace the star patterns?

Can we find a source of light at home that we can reuse and repurpose? Christmas lights? electronic candles? Flashlight?

Prototype

As you begin to test your creation, what are some ways we can improve our design? Is light escaping through cracks and crevices? Are the holes you punched too large?

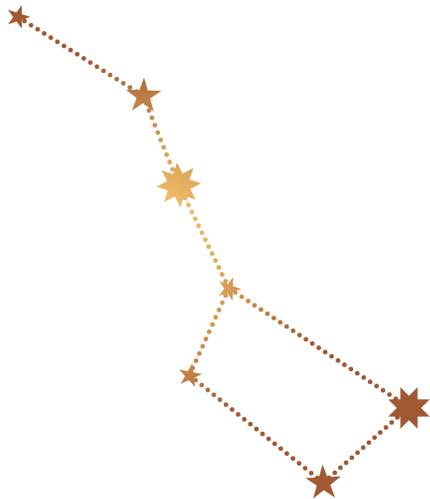
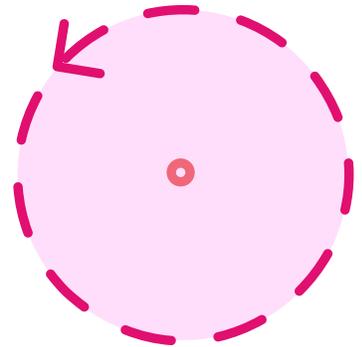
Test

How did your project turn out? In a dark lit room, can you see projected circles of light on the ceiling or wall that take the shape of a constellation?

Teachable Moments

Math

How can you figure out the diameter and circumference of your flashlight head? Use a ruler to measure the diameter of your flashlight to determine how wide your constellation disc needs to be. How can you use a piece of string to find the circumference of the flashlight?



Science

What are the scientific names for the constellations? What is the relative distance to a constellation to Earth? What constellations do you see in the night sky from your location? Did you know that different constellations are viewable depending on where you are located in the world? Which constellations are visible and disappear as the seasons shift year-round? Which constellations can be seen year-round in both hemispheres? What are the major northern hemisphere constellations? Southern hemisphere? Can you locate the following constellations in the night sky? Ursa Major, Ursa Minor, Perseus, Lynx, Draco, Cepheus, Cassiopeia, Camelopardalis and Auriga?

Visual Arts

Create an artwork of stars using either black acrylic paint over wax crayons or water paints over white crayons.

Language Arts

What stories or legends do you know about the following constellations? Big Dipper, Orion, Ursa Major, Scorpius, Leo? How did the constellations get their names?

Social Studies

What significance do constellations have for different cultures? How do the signs of the zodiac relate to constellations?



Glossary

Constellation

Visible group of stars with a recognizable appearance.

Resources

Space/Maker Fun TV

Join the Brilliant Labs team and their special guests as they explore all things space, right here on earth! We will make a beautiful nebula picture, study the moon phases and get artistic...

[youtube.com/watch?v=oRii4AkC-hs](https://www.youtube.com/watch?v=oRii4AkC-hs)

UN sdg

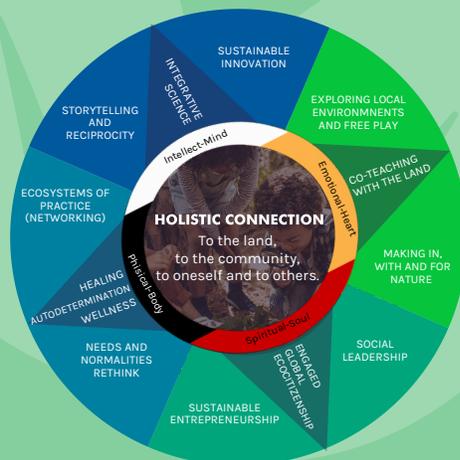
[Achieving Sustainable Development Goals through Space Science and Technologies](#)



Learning continuum: Sustainable Innovation Through Holistic Connection

Based on three emerging pedagogies* and in recognition of indigenous knowledge, the natural maker educational continuum aims to support the learner through a holistic journey of connection to the earth, the community, oneself and others, in order to evolve globally towards a more open, humble, democratic and decolonized way of thinking, learning and living.

* wild pedagogies, conscious pedagogies and decolonization of education



#EarthDayWithNature

#ActForEarth #ClimateAction



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