

STEM from Home

Constellations

The night sky is full of stars! If you live in the city, you might need to drive out a little to the outskirts or visit a planetarium to see them in all their resplendent glory.

When you observe the sky, look closely and you will be able to see many star patterns, which are known as constellations. The pattern they form may take the shape of an animal, a mythological creature, a woman, a man, or an inanimate object such as a microscope, a compass, or a crown. There are 88 constellations known to us currently. Within these constellations, you often notice smaller well-defined patterns or shapes formed by stars. These are called asterisms.

In this STEM Pack, you will use a tech tool to identify constellations and asterisms in the night sky. You will also build a star clock and in the challenge activity you will design your own asterism.

Main Activity: Constellation Hunt

Introduction

You will seek, identify and learn about various constellations using an app on your smart phone.

What you will learn

Name, position and composition of the different constellations and asterisms using an app.

[Click here for the activity details.](#)

What You Will Need

- A smartphone (Android or iPhone)
- A stargazing app
- For this activity, we will use the following app:

SkyView Lite –

For android phones: <https://play.google.com/store/apps/details?id=com.t11.skyviewfree>

For apple phones: <https://apps.apple.com/us/app/skyview-lite/id413936865>



Bonus Activities

Activity 1: Star Clocks & Star Gazing

Introduction

Our present concept of time is based on the position of the Sun during the daytime. But did you know that you can use the stars to tell time at night? Long before clocks and watches were invented, sky gazers knew that the motion of the stars indicated the change in time during the night. In this activity, you will make a Star Clock which can be used to tell time on a clear, starry night.

What You Will Need

- Scissors
- Paper fastener (with two prongs that spread apart)
- [Printout of the star clock patterns](#)
- Torch
- Red Cellophane paper
- Cello Tape

What you will learn

1. How to create a star clock.
2. How to identify the Big Dipper, Little Dipper and Cassiopeia.
3. How to read time based on the location of the Big Dipper.

[Let's get started](#)



Challenge Activity: Design an Asterism

Ancient observers did not have the benefit of our modern understanding of stars and space. They thought star patterns were important symbols. Cultures, across the world, have given different names and descriptions for the arrangements of stars. The constellations most of us are familiar with, were created by people living in the Mediterranean and the Middle East. Wonderful myths and legends have been told of these constellations for thousands of years!

An asterism is a little pattern of stars, much smaller than the official constellations. Asterisms can be made across different constellations, or within a single constellation, drawing bright stars together to make patterns. One of the most popular asterisms is the Big Dipper which is part of the larger constellation, Ursa Major or the Great Bear.

An asterism can be part of a constellation, such as the Big Dipper, which is in the constellation Ursa Major, and can even span across constellations, such as the Summer Triangle, which is formed by Deneb, Altair, and Vega, the three bright stars. Asterisms are not restricted to stars that can be seen with the naked eye; many are best observed with binoculars or even the SkyView Lite app.

There is no set rule for what constitutes an asterism. It is usually a group of prominent stars in a simple pattern that can be recognized, even when a novice looks at the sky.

Your Task: Design an original asterism using the SkyView app, which is symbolic of an object, animal or person reflecting a cultural aspect or myth of your region. Remember to name a few key stars in your asterism. You will be assessed on the design (pattern) of the asterism, the legend/myth you draw the pattern from and the supporting information you give in terms of its position with respect to visibility in the different seasons or hemispheres.

Your final submission can be presented digitally using [Docs](#) or [Presentation](#) software.

