

# Constellations

Can you successfully create different constellations?

## MATERIALS



- ❖ White Card Stock
- ❖ Colored Beads
- ❖ UV Beads (found on Amazon)
- ❖ Glue
- ❖ Protractor
- ❖ Constellation Cards
- ❖ Constellation Sky Template

## GET SET UP

1. Select a constellation card.
2. Study the card to understand what shape people saw when looking at that constellation.
3. Count the number of stars your constellation needs. You need this many UV beads to make this constellation.
4. You will select 15 beads from the color beads to serve as stars surrounding your constellation. Get many colors. Place these beads in a way that disguises your constellation a bit.
5. Glue your beads onto a piece of card stock.
6. Share glue with a partner.
7. To get the angle of the stars to one another correct use a protractor.
8. Once done creating your constellation and surrounding star field, take your card stock outside and see what happens.
9. After creating a few constellations, use the sky template to place the constellations relative to each other.

## DID YOU KNOW...

**Constellations** are patterns in the sky created by the relative position of stars and imagination. **Relative position** means that if we move away from the Earth the star patterns would look completely different. The night sky on Mars wouldn't look like the night sky on Earth. The constellation Pegasus is a flying horse that Perseus rode to save the Princess Andromeda from the sea creature Cetus but it might look like a square with legs to you. That's why you have to use your imagination! If you look at the pattern carefully you can make out what looks like a horse. Even during ancient times, children hearing the story of Pegasus probably didn't see a horse in the pattern but because they didn't have books, TV, radios or iPads these stories were a source of entertainment. We still discuss them today when we study mythology or see movies like *Clash of the Titans*. Throughout the world different cultural groups told different stories through the stars. Many know the Big Dipper but the Big Dipper is not a constellation but an **asterism**. An asterism is a significant pattern of stars within the greater constellation. You might wonder why the UV beads light up. It's because they're coated with a special chemical that changes color when exposed to the sun's UV (Ultraviolet) energy. So your bead patterns glow because of a star!



## CHALLENGE

1. Depending on your cultural background, are there stories you have heard about the different constellations? Is there a story you can create looking at the different constellations?
2. What is the difference between a constellation and an asterism?
3. What energy from a star causes the UV beads to change color?

**STEAM Challenge:** Although the stars of a constellation appear to be close together they are actually very far away from each other. Stars are so far apart scientists came up with a measurement called a light year to make it easy for us to understand. A light year is how far light travels in one year. In one second light travels just over 186, 000 miles! How many miles does light travel in one minute? In one hour? In one day?