

Colors of Stars

Explore

Draw the candle flame

Explain

1. Which part of the flame do you think is the hottest? Why?

2. As you watch the candle flame, what things or events in everyday life come to mind?

Colors of Stars: Student Guide

Elaborate: Make and draw scale models of stars

1. Inflate a yellow balloon to represent the Sun.
2. Inflate a white balloon 2.7 times larger than the Sun balloon. The white balloon represents a nearby star called Vega. How do you know if the white balloon is 2.7 times bigger?
3. Make paper disks the same diameter and color as the Sun and Vega balloons.
4. Calculate how large the paper disk would be for the larger stars

| Star | Model diameter |
|-------------|-----------------------|
| Betelgeuse | |
| Antares | |
| Rigel | |
| Dubhe | |

5. Draw the largest circles outside to represent the four large stars. How do you think you could make the circles using string and chalk?

Scale Size and Colors of Stars

| Star | Diameter (Sun's diameter = 1) | Color |
|---|---|--------------|
| Sun | 1 | Yellow |
| Betelgeuse in Orion | 830 | Red |
| Antares in Scorpius | 775 | Red |
| Vega in Lyra | 2.7 | White |
| Rigel in Orion | 50 | Blue |
| Proxima Centauri C (closest star to the Sun) | 0.03 | Red |
| Dubhe (brightest star in the Big Dipper) | 14 | Orange |

Use the table to calculate the model star diameters. For example, if you begin with a one-centimeter Sun, then Betelgeuse will be 8.3 meters!