

Building a Star Wheel and Observing Constellations

Name: _____ Date: _____

LEARNING OBJECTIVE

Students will construct a working star wheel (planisphere) and use it to identify and record visible constellations.

MATERIALS NEEDED

- printed or hand-drawn star map (student draws simple version using reference)
- cardstock or paper plate (2 layers)
- brass fastener
- scissors
- ruler
- pencil
- flashlight with red cellophane or red marker (optional, for night viewing)

HANDS-ON ACTIVITY

1. On one circle of cardstock, draw a star map for your latitude/season: mark and label at least 8 major visible stars/constellations for this quarter (e.g., Orion, Ursa Major/Big Dipper, Cassiopeia, Taurus, Gemini) in their approximate relative positions, using a reference image or app if needed.
2. On a second, slightly larger circle of cardstock, cut an oval-shaped window in the center sized to reveal part of the star map circle, and mark the outer edge with the months of the year and rough hours of the night.
3. Attach the two circles at their centers with a brass fastener so the top circle can rotate over the bottom star map.
4. On a clear night, go outside (with an adult) and rotate your star wheel to match tonight's date/time, hold it up to the sky, and try to locate at least 3 constellations from your wheel in the actual sky (or, if not possible, complete this step during the day describing where you would look based on your wheel).
5. Record in a short log: date, time, weather/visibility, and which constellations you were able to identify or would expect to see.

QUESTIONS

1. What is a star wheel (planisphere) used for?
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- 2. Name two constellations you included on your star wheel and one identifying feature of each.**

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- 3. Why do the visible constellations change depending on the season?**

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- 4. What conditions make it easier or harder to see stars and constellations in the night sky?**
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