

CURIOSITY AT HOME

STAR FINDER



A star map of the night sky helps locate different constellations in the same way a road map helps you locate different cities on Earth. Make a rotating Star Finder to find the constellations visible in the night sky throughout the year. Your latitude (how far north or south you are on Earth) affects the stars visible in your night sky. This Star Finder works well for most locations in the continental U.S.

MATERIALS

- Paper or science notebook
- Pencil
- Scissors
- Glue
- Stapler
- Star Finder Holder and Star Wheels (following pages)
- Regular paper + file folders **OR** cardstock paper

PROCEDURE

MAKE STAR FINDER HOLDER

If printed on regular paper:

- Align the edge of the holder with the folding edge of the folder and glue together.
- Make sure to cut through **both** folder flaps along the **outside edge**, but only cut through **one layer** for the **oval window**.

If printed on cardstock:

- Cut out the holder outline and the center white oval.
- Cut out a second frame the same size and shape as the printed frame. This will be the back.

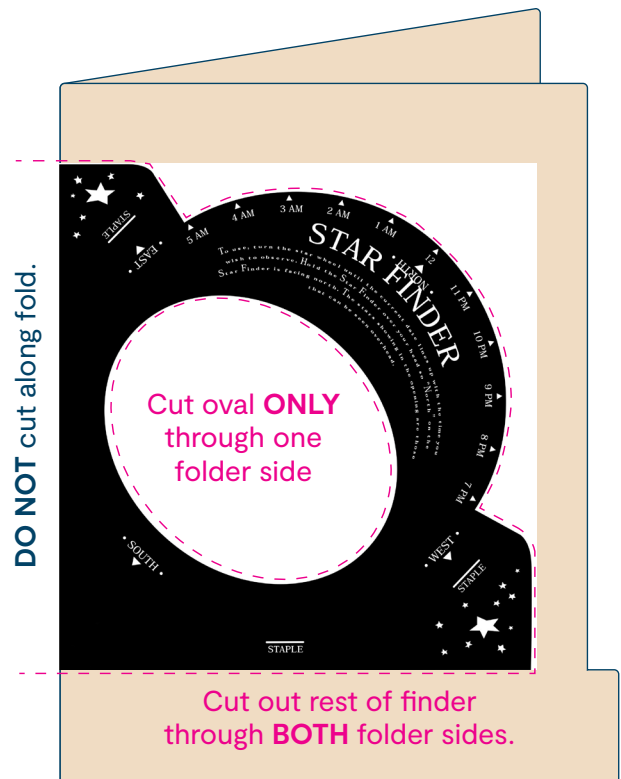
- Staple the top and bottom of the frames together where noted.

MAKE STAR WHEELS

- Print then glue one star wheel onto stiff paper and cut out.
- Cut out the second wheel, and glue to the back of the first wheel. Your star wheel should now be double sided.

NOTE: Not important to line up the wheel dates with each other.

- Insert the wheel into the frame.
- Turn the wheel so today's date on the wheel matches to 9 p.m. on the Finder frame. The stars visible in the sky tonight are now visible in the oval window.



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DID YOU KNOW

Constellations are imagined groups of stars in the sky that make shapes. Different groups of people all over the world have created these constellations. Currently, the International Astronomical Union recognizes 88 constellations. The official boundaries of the constellation are more than just the shape, but also includes a region of space. Every part of the sky you see is part of one of these 88 constellations. Astronomers use these constellations like a map, marking where objects or particular stars are located.

While it seems the stars and the Sun move through our sky, it's really the Earth rotation that causes this apparent motion. From our point of view it seems like the sky is moving, so we refer to this as the apparent movement of the sky.

Many constellations can be used to find other ones. For example, the three stars in a row in Orion point to the left to Canis Major. Look at your Star Finder: can you find constellations or groups of stars that help "point the way" what other constellations, making them easier to find?

Star Finder Holder and Star Wheels on next 3 pages...



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Place this edge along the **FOLDING EDGE** of the folder.



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A detailed star chart of the Orion constellation. The chart shows the Orion belt (Mintaka, Saiph, Rigel) and the Orion sword (Alnilam, Alnilat, Alnilat). The Pleiades (M45) are shown to the left. The Orion Nebula (M42) is shown to the right. The chart is labeled with Greek letters and names of stars in various languages.

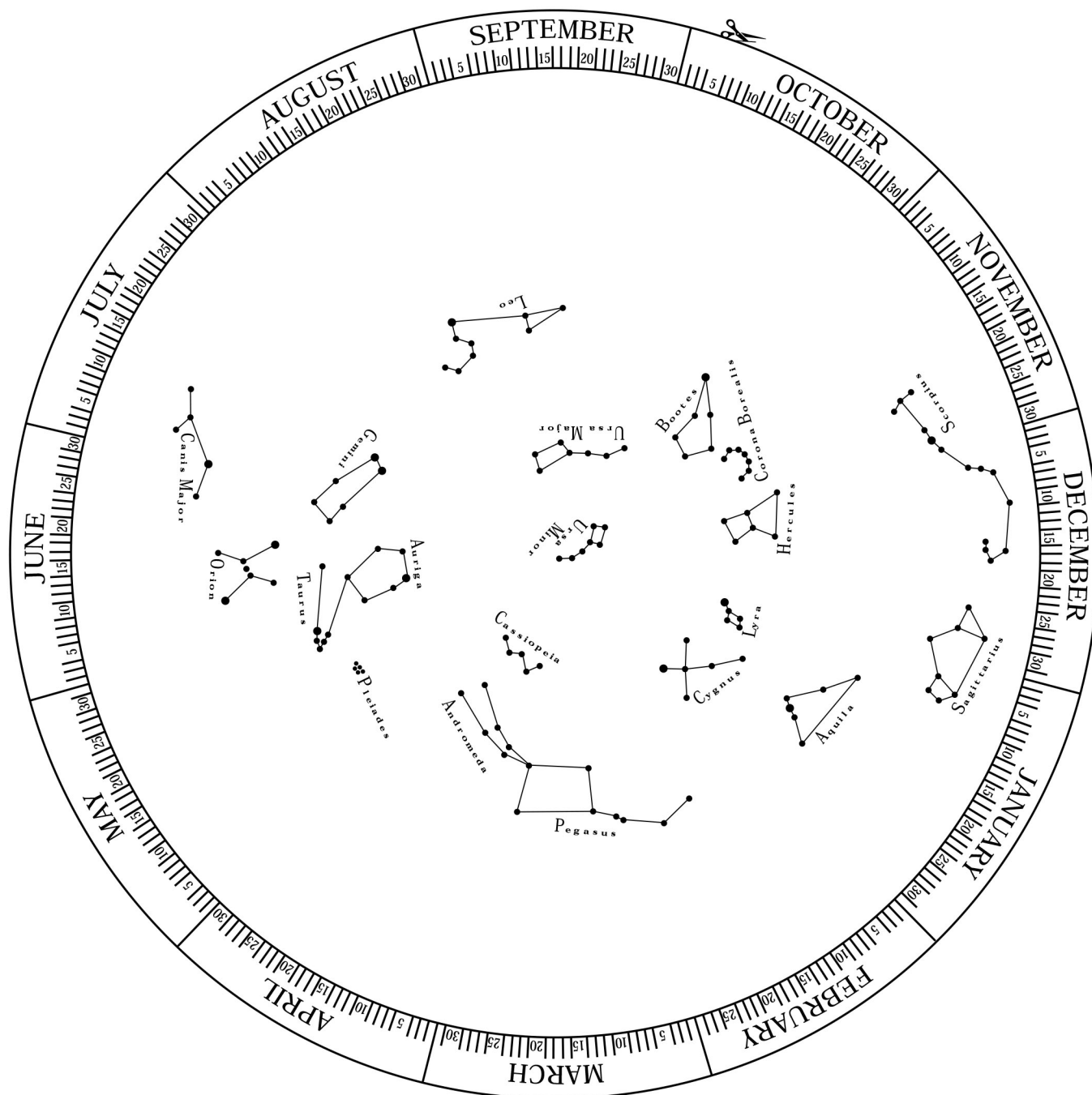


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6–8 GRADE EXPLORATION

Explore the following questions and write your observations in your science notebook

- Set the Finder to 9 p.m. What constellations are visible?
- Change the time to 11 p.m. Are the same constellations still visible? Are any new constellations visible now?
- Change the wheel until it shows 5 a.m. for today's date. Which constellations are still visible that were up at 9pm?
- When you turned the wheel, what was the apparent motion of the stars?
- Did all constellations seem to move in the same way, or the same amount? Did any constellation not move very much?
- Some stars represented by dots on the wheels are a little smaller or larger than others. Why do you think this is?
- The moon's location is not on this star wheel. Why not?
- Challenge question: Imagine you are talking with a friend on the phone at about 10 p.m. in the middle of October. She says she can see the Big Dipper while standing on her back porch. You tell her she should also be able to see Cygnus, the swan constellation. Describe for your friend what Cygnus looks like and where it is in the sky by using the Big Dipper to locate the constellation.

