ACTIVITY 2

MAKE YOUR OWN STAR-FINDER

Level:	Preparation:	Number of students:	Length:	Place:	Type of activity:
Grades 3-6	**intermediate**	**individual**	**30 min. +**	**classroom**	**do-it-yourself, participatory activity**

BRIEF DESCRIPTION

Students cut out and assemble their own star-finder for use under the real sky. A star-finder is a map of the sky that allows us to identify the main stars and constellations visible at a given time.

MATERIALS

- Star-finders printed on cardstock (2 sheets for each student)
- Scissors

PREAMBLE

A star finder is very useful for identifying constellations. This cardboard version is a great initial introduction to star-finders. If you or your students are interested, laminated versions ($10-20) are available in most bookstores.

PREPARATION

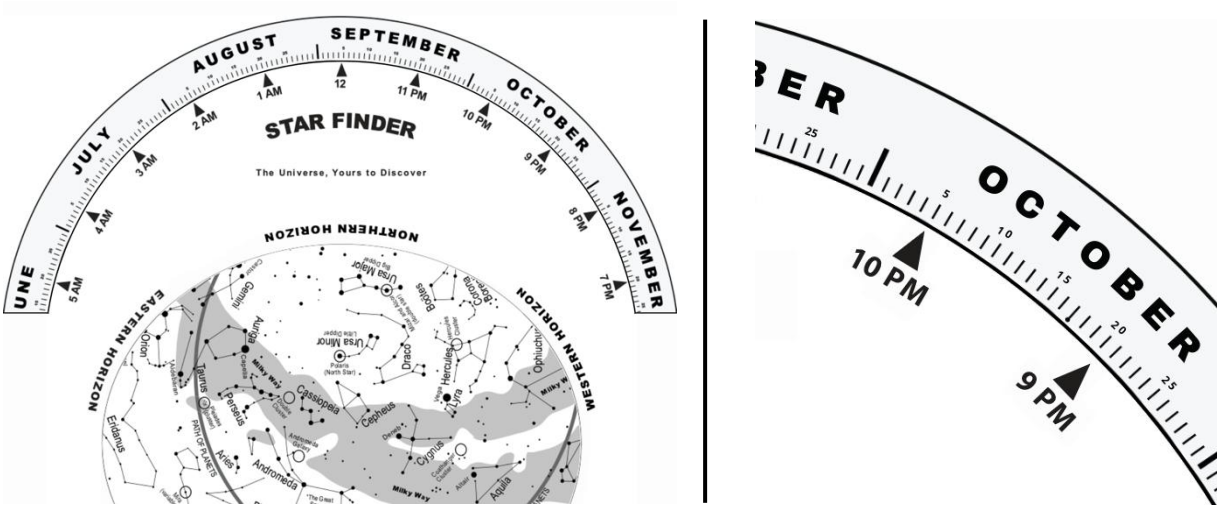
Before the activity, have the star-finders printed on 8 ½" x 11" cardboard sheets. Each student should have two sheets: the sky map and the time card. If you don't have cardboard sheets, you can print it on paper and have the children glue it onto soft cardboard, such as file folders. We encourage recycling old folders or boxes to reduce the need for new materials.

STEPS

Distribute the two sheets to each student and ask them to cut the pieces out by following the instructions on the star finder.

Show how to use the star-finder:

- Insert the sky chart into the holder to see the constellations in the oval hole.
- Line up the date and time you wish to observe the sky.
- The constellations visible in the hole represent the sky at that specific date and time.
  The circumference of the oval represents the horizon, while the centre of the oval represents the point directly above our heads, called the zenith.
- Turn the star finder so that the direction indicated at the bottom of the finder coincides with the direction in which you are looking.



Star-finder aligned to show the sky at 10 p.m. on October 5.

Here are some discussion ideas to have with your students:

- Which constellations will be visible in the North tonight? ...in the South?
- Name a bright star visible tonight in the East. In the West?
- Find a bright star in the Big Dipper constellation, or in Leo, or in Orion... The brighter the stars in the sky, the bigger the dot on the star finder.

In winter, the sun sets early, and so it is possible to stargaze earlier. Why not take this opportunity to take your group outside and practice using the star-finder under the full sky? The brightest constellations, such as the Big Dipper, Cassiopeia, and Orion, are visible even in the middle of a city.

DID YOU KNOW...?

Did you know that there are now applications for smartphones and tablet computers that simulate the real sky? *Stellarium*, *SkySafari*, and *StarWalk* are three interesting examples.

INFORMATION

The star-finder presented here is associated with the Royal Astronomical Society of Canada (RASC). You can find more information on how to use the star finder and its features on their website: rasc.ca/star-finder. Here are a few interesting facts found on the star-finder itself that are discussed in more detail on the website:

- The small circles represent interesting celestial objects observable with the naked eye or a small instrument (binoculars or telescope). These objects can be interesting stars, star clusters, galaxies, or nebulae. Find more information about these objects on the website rasc.ca/star-finder, as well as general definitions in the glossary at the end of this guide.
- The pale grey band across the sky represents the Milky Way, our galaxy. In this region of the sky, we find many more stars, which creates a whitish band. However, you need to be away from light pollution to observe it properly, i.e., away from major urban centres.
- The dark circle labelled Path of Planets represents the places where the planets might be visible. This is called the ecliptic. As planets are always in motion in the Solar System, they are not represented on the star-finder. If you see a bright star that's not on the star-finder but is close to this line, it's probably a planet!

Note that the star-finder does not take Daylight Saving Time into account. If Daylight Saving Time is in effect, subtract one hour from the time shown on your watch. For example, if you wish to observe the sky at 9 p.m. daylight saving time, set the star finder to 8 p.m.

SOURCE

This activity is based on the star-finder developed by the *Royal Astronomical Society of Canada* and the *Fédération des astronomes amateurs du Québec* (*Federation of amateur astronomers of Quebec*) for: rasc.ca/star-finder.

TO LEARN MORE

- *rasc.ca/star-finder*
- *How do star-finders work?* Canada under the Stars, from the Virtual Museum of Canada.
- *List of Constellations*, *Wikipedia* page.

STAR-FINDERS (PART 1)

Here is your star-finder to print!

To print from Adobe Acrobat, select "None" in the Page Scaling.

Carefully cut out the circle.

This cutout slides into the holder once the flaps have been folded.