



## DIY ACTIVITY

### MAKE A PLANISPHERE GRADES 3-5

#### OBJECTIVES

- Build a tool to determine which stars and constellations are visible on any given night.
- Connect the design and function of the planisphere to the orbit and rotation of the Earth.

#### PROCEDURE

1. Print the constellation charts.
2. The star wheel should be on 1 piece of paper, and the body of the planisphere on the other. Cut them out.
3. Fold the body of the planisphere along the dotted lines and tape the edges in place to form a pocket.
4. Slide the star wheel into the pocket so that the stars are visible through the opening in the front.
5. To use the planisphere, align the current date on the edge of the star wheel with the current time on the body.
6. The stars visible on this day and time are the same as those visible through the opening of the planisphere.

#### WHAT IS GOING ON HERE?

Planet Earth rotates on its axis every 24 hours, creating day and night. This is because the sun shines on only one side and the other side is dark. Earth also orbits the sun once every 365.25 days (once a year). Each night our view of the galaxy changes slightly because of our orbit around the sun. The star wheel shows all of the stars we can see in our galaxy over the course of a year. The stars also appear to move across the sky as the Earth rotates, so aligning the date and time allows you to see exactly what you will see when you go outside to stargaze.

#### FURTHER EXPLORATION

Use your planisphere to predict when certain stars and constellations will be visible. Then plan a party for a clear night and see if your planisphere worked. If you have access to a telescope, you can also try to locate some of the same stars the team saw in the video—Sirius, Rigel, Antares—just be sure not to look at our sun!

 Do not look directly at the sun with or without a telescope.

#### MATERIALS NEEDED

- Two sheets of regular paper
- Scissors
- Constellation charts PDF file (found below the video)
- Printer
- Tape