The sky seems to turn as Earth rotates.

You cannot see all of the constellations at once, because Earth blocks half of space from your view. However, you can see a parade of constellations each night as Earth rotates. As some constellations slowly come into view over the eastern horizon, others pass high in the sky above you, and still others set at the western horizon. Throughout the ages, many peoples have observed these changes and used them to help in navigation and measuring time.

If you extended the North Pole into space, it would point almost exactly to a star called Polaris, or the North Star. If you were standing at the North Pole, Polaris would be directly over your head. As Earth rotates through the night, the stars close to Polaris seem to move in circles around it. Although not the brightest star in the sky, Polaris is fairly bright and easy to find. You can use Polaris to figure out direction and location.

What causes constellations to change positions during the night?

INVESTIGATE Constellation Positions

How does time of day affect the positions of constellations?

PROCEDURE

1. Cut out both diagrams on the Constellation Wheel Sheet and assemble them as shown.

2. Rotate the wheel so that the current month is aligned with 9 P.M. Observe the positions of the constellations.

3. Align the current month with other times to determine how the positions of the constellations change during the night.

WHAT DO YOU THINK?

• How do the positions of the constellations change during the night?
• In which direction does the northern sky seem to turn?

CHALLENGE Earth’s rotation makes the sky seem to turn. What does the model tell you about the direction of Earth’s rotation?