# SEE YOU AROUND

## TEACHER GUIDE

# PLANNING

Here's a suggested schedule for this kit! The activities should be completed in order, but you can choose when the lessons take place over time.

| ACTIVITY INFORMATION | SECTION (S) | TIME REQUIRED | DAY/ LESSON |
|---|---|---|---|
| **ACTIVITY 1: LIGHT AND DARK**<br>What's in the sky and how does it affect you?<br><br>**Time required: 3 h** | ☐ Midnight Sun, Polar Night<br>☐ Using Daylight | 60 minutes | Day 1 |
| | ☐ My Sky | | Day 2–9 |
| **ACTIVITY 2: EARTH AND SUN**<br>Model the movement of Earth, Sun to learn about | | | |

## THINK ABOUT IT!

**Question 1: If it is daytime for you, is it daytime for someone that lives on the opposite side of the Earth? Why or why not?**
**Answer:** No. When it is daytime on one side of Earth, it is nighttime on the other.
**How to Help:** *Half of the Earth has day while the other half has night because the Sun can only light up one half of a sphere at one time.*

**Question 2: In everyday life, we say things like, "The Sun is coming up," and "The Sun is going down." Is the Sun really moving? Why or why not?**
**Answer:** No. The Sun stays in place and the Earth rotates, allowing each part of Earth to have both day and night in a 24-hour period.
**How to Help:** *The Sun may appear to "rise" and "set" but that just means our part of Earth is turning towards or away from the Sun at that time.*

**Question 3: If it is winter for the northern hemisphere, what season is it for the southern hemisphere? How do you know? Hint: Look at the pictures of how Earth is tilted as it orbits the Sun.**
**Answer:** It would be summer in the southern hemisphere because the hemispheres are tilted differently for different times of the year.
**How to Help:** *Have the student look back at the pictures showing the direct and indirect rays of sunlight throughout the year for both hemispheres.*

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# MODEL IT YOURSELF

## PREPARATION AND SUPERVISION

- Your student will use the foam globe ball to model the way Earth moves around the Sun.

### MULTIPLE AGES AND ABILITIES:

**To engage multiple students, you could have one student hold the yellow construction paper in the center of the imaginary circle or hold the penlight (or both) while another student controls the motion of the foam ball Earth.**
**If your student is still developing their fine motor skills, you can help with rotating and revolving the globe and have them observe what it is like.**

- Each time they add something to the model, they will think about what it represents. This will help them understand what models are, how they are used, and what their advantages and disadvantages are.
- Help your student arrange the pieces of the model so that the light reaches the globe. It may be helpful to do this in a dimly lit room.
- The questions that follow are embedded within the modeling exercise. Check the labels of the questions to follow along.

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## WHERE ARE THE STARS?

- Your student will need your help to go star-gazing for this one!
- You will need to find a safe location to view the stars, preferably the southern sky.
    - If light pollution is an issue, try to travel about one hour away from any major city.
    - If this is not possible, find an accessible area that is high up, such as the roof of a tall building or the crest of a hill.
    - If going outside is a problem, you can still have your student study the star locator as its position changes.
    - However, the experience is valuable.
    - If you are unable to go star-gazing because of seasonal weather or location within a city, consider going back to this at a later date after completing the rest of the kit.
- As you use the star locator, keep in mind that the viewing window on the slider shows you the entire sky, including what is in front of you, what is overhead, and what is behind you.

**? Question: Draw and label 2–3 of the constellations you see.**
**Answer:** Answers will vary.
**How to Help:**
- *Including 15-20 stars should be sufficient.*
- *The purpose of this question is to have your student recognize and remember that there are constellations and know they are associated with specific times, not to memorize specific constellations or charts.*

## THINK ABOUT IT!

**? Question 1: How are patterns of the stars similar to the patterns of the Sun (as seen from Earth)? How are they different?**
**Answer:**
- Both patterns repeat.
- Both patterns are different depending on where on Earth you are located.
- The pattern of the Sun looks the same every day, but the stars change throughout a year.

**How to Help:**
- *While there are daily changes in the stars, one key difference is that each side of Earth is always facing some of the stars, but which stars they are changes.*
    - *We just cannot see the stars we are facing when it is day because it is too bright.*

**? Question 2: How are patterns of the stars similar to the patterns of the Moon (as seen from Earth)? How are they different?**
**Answer:**
- Both patterns repeat after a specific amount of time.
- The Moon pattern repeats more quickly than the star pattern (every 27 days compared to every 365 days).

The Moon looks mostly the same no matter where on Earth it is seen from (as long as the viewer is facing toward it) but the stars depend on location.

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## BIRTHDAY STAR

- Now that your student has some experience with the star chart, they will use it to make a star chart for their birthday.
- They may need some help cutting the box. If you prefer to keep the box, you can just use the paper free standing or you can use a different box or some other sturdy frame.

WONDER

SCIENCE UNLOCKED



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| Kit | SU-SEEYOU |
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