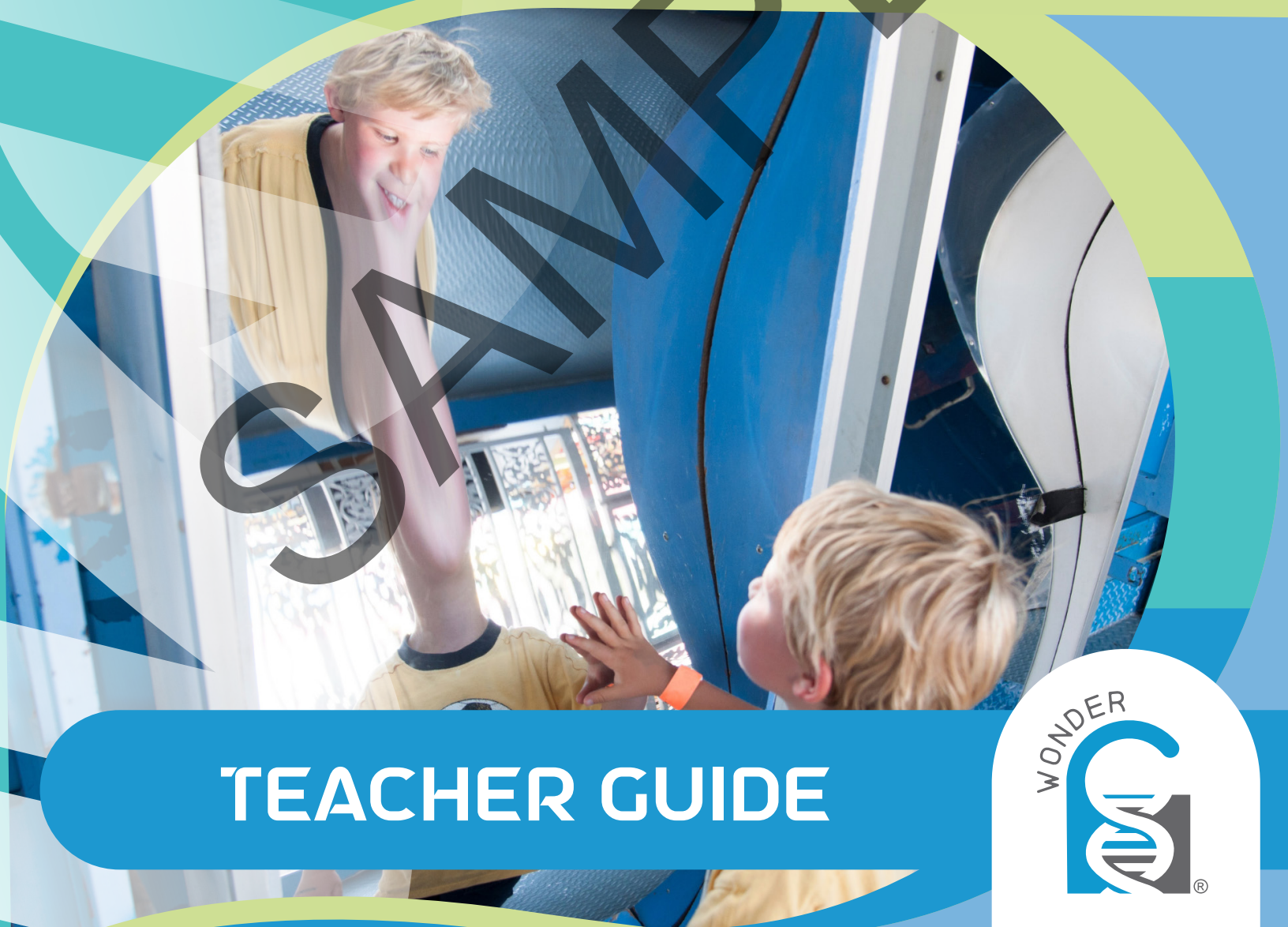
A-MAZE-ING MIRRORS



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. The time required for each lesson may vary.

ACTIVITY INFORMATION	SECTION (S)	TIME REQUIRED	DAY/ LESSON
ACTIVITY 1: SEE YOU AROUND (THE CORNER) Together, build a DIY periscope from the box the kit came in to see how light travels. **Time required: 30 min**	· Build Your Own Periscope	30 minutes	Day 1
ACTIVITY 2: WHAT IS LIGHT LIKE? Your student can read about the basics about light, separate light into a rainbow with a prism, and experiment with color filters. **Time required: 1 h 30 min**	· Light Helps Us See · Straight Stack · Light is Energy	60 minutes	Day 2
	· The Colors of Light · Show What You Know	30 minutes	Day 3
ACTIVITY 3: WHAT DOES LIGHT DO WHEN IT HITS SOMETHING? It's time to explore how light can go through, bounce off, or get taken in by different materials. **Time required: 1 h**	· Letting Light Through	30 minutes	Day 4
	· Light and Types of Objects	30 minutes	Day 5
ACTIVITY 4: SOLVING A PROBLEM WITH LIGHT Your student will use mirrors to make light travel around corners and obstacles. **Time required: 1 h**	· Using Light to Communicate · Mirrors Will Light the Way	60 minutes	Day 6
ACTIVITY 5: WHAT DO YOU KNOW ABOUT LIGHT? These assessment activities will help show how much your student has learned about light. **Time required: 30 min**	· Quiz	30 minutes	Day 7
ACTIVITY 6: LEARN MORE ABOUT LIGHT This variety of optional extensions will keep you busy with light for days! **Time required: 2+ h**	· Periscope Adventures	30 minutes	Day 9
	· Perplexing Prism	30 minutes	Day 10
	· Exploring Energy	30 minutes	Day 11
	· See What Else Light Can Do	30 minutes	Day 13

Total time: 7+ hours

activity 1

SEE YOU AROUND (THE CORNER)

Has your student ever wanted to spy around obstacles like fences and walls? In this first activity, they will build their own periscope. A periscope is a tool that uses mirrors to help you see over or around things.

BUILD YOUR OWN PERISCOPE

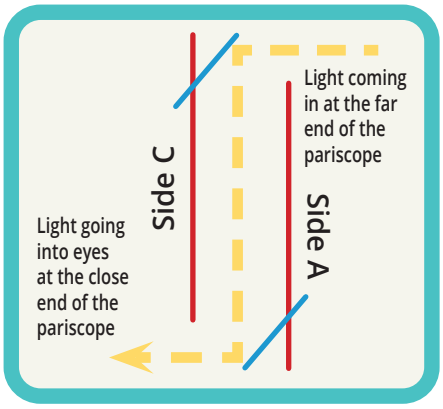
WARNING:

An adult should do the steps requiring scissors. Be careful when cutting cardboard with scissors.

Mirrors have sharp corners. Do not look directly at the Sun or use mirrors to look at the Sun.

☑ PREPARATION AND SUPERVISION

- Then, help the student make the periscope, providing assistance with cutting/taping/placing mirrors as needed.
- After Step 1, be sure to save the rest of the box because you will need it for a later activity (except for the two short flaps – you can discard them).
- Before your student can do Step 13, you will need to prepare the mirrors by carefully removing the clear plastic film from one side of each of two mirrors, taking care not to also strip the reflective coating.
- The key to a working periscope is mirrors that are placed at 45-degree angles. When the mirrors line up correctly, light bouncing off objects can travel from outside the periscope at the far end, to the bottom side of the mirror inserted in Side C, downward to the top of the mirror inserted in Side A, and to the user's eyes (see the labeled diagram).
- You may store or recycle the periscope, but be sure to keep the four mirrors AND the rest of the box because you'll need them in Part 4. It should be easy to take them out and put them back later if needed.
- Notice how light travels in a straight line from the opening in the top to the underside of the top mirror, bounces off in a straight line to hit the bottom mirror, and bounces off in a straight line to the viewer's eyes. You may or may not explain this to your student quite yet; they will learn more about it in Part 2.



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Kit	SU-AMZMIR
Instructions	IN-AMZMIRTG
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