# SUN BLOCKER

# STUDENT WORKBOOK





## USE THE SUN TO "DRAW"

#### WHAT YOU NEED: FROM THE KIT:

- Modeling clay
- Sunprint kit (with sunprint paper, thick cardboard, and plastic sheet)

#### **OTHER ITEMS:**

- Sunlight
- Tray or pan to put water in
- Water





**STEP I** Make a flat shape with the modeling clay. You can make any shape you want as long as it lays flat.



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What do you think is the worst thing about the sun?

What are some things you want to know about the sun? Write 3 or more questions.

#### The Sun is a Star

You can see stars in the night sky. A **star** is a giant ball of very hot gas. Stars look tiny to us on Earth because they are far away. Many of the stars we see are much, much bigger than the sun. The **sun** is the closest star to Earth, so it looks bigger to us than all the other stars.

When radiation from the sun hits Earth's surface,

 $\checkmark$  Some radiation changes to thermal energy.

✓ Some radiation bounces back up to Earth's atmosphere. The atmosphere is the layer of gases surrounding our planet.

 $\checkmark$  In the atmosphere, most of the

radiation changes to thermal energy. This gets trapped by gases.

 $\checkmark$  Some radiation goes right through the atmosphere and out into space.

The thermal energy warms up the Earth so living things can survive. Earth has a temperature that is just right for life. Temperature is how hot or cold something is.

The closer a planet is to the sun, the more solar radiation it gets. If Earth was closer to the sun, it would be too hot for life. If Earth was farther away from the sun, it would be too cold.

Planet	Distance From the Sun	Average Temperature
Morcury	57 900 000	(°C) 167
wiercury	57,900,000	107
Venus	108,200,000	464
Earth	149,600,000	15
Mars	227,900,000	-65
Jupiter	778,600,000	-110
Saturn	1,433,500,000	-140
Uranus	2,872,500,000	-195
Neptune	5,906,000,000	-200

The distances are listed in kilometers: one kilometer is a little over half a mile.

The temperatures are listed in °C (degrees Celsius). On the Celsius scale, water freezes at 0 °C, water boils at 100 °C, and normal room temperature is 25 °C. <sup>1</sup>

Venus is even warmer than you would expect because it has a lot of heat-trapping gases in its atmosphere.



### SHOW WHAT YOU KNOW

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? 1. Draw two Sun Blockers, one that works well and one that doesn't. They can be yours or they can be ones you make up. For each Sun Blocker, show the sunlight as an arrow, and be sure to include the chocolate.

- **?** 2. Label where sunlight either bounces off or changes to thermal energy in each part of the drawings you made in #1.
- 3. Under the drawings, write how you know what happens to light, or what evidence you have that it bounces off or changes to thermal energy.



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Kit	SU-SUNBLK
Instructions	IN-SUNBLKS
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