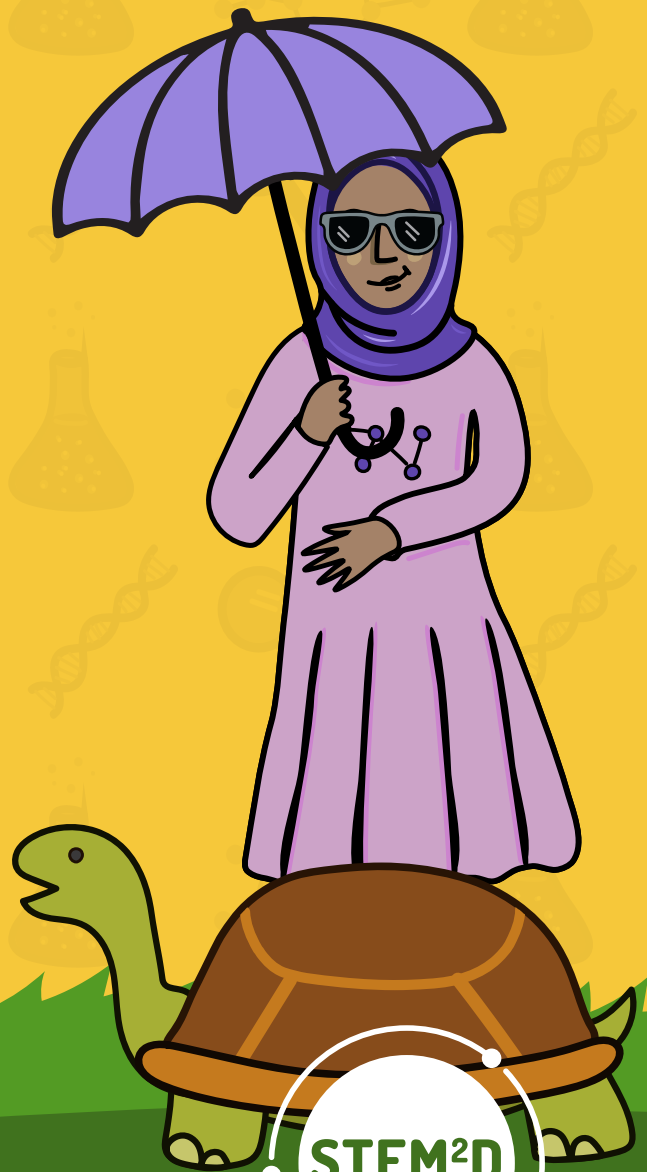


# DRESSED TO PROTECT

**Target Audience:**  
*Students, ages 5-8*

**STEM<sup>2</sup>D Topics:**  
*Science, Technology, Design*



**STEM<sup>2</sup>D**  
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Credits:

Design and cover: Sofia Elian, Smithsonian Science Education Center

# Dressed to Protect

## Challenge

Understand Sun safety for humans by modeling and connecting animal Sun safety adaptations to ways people can stay safe in the Sun.

## Target Population

Students, ages 5–8

## Activity Description

In this activity students will gain a better understanding of how animals keep safe from the Sun. They will also learn ways to protect themselves from the Sun, using human models that connect to animal Sun safety behaviors. The students will participate in a matching activity to pair animal Sun safety adaptations with human models of the adaptations. Student will then use animal Sun safety adaptations to dress a paper doll with Sun care clothing and accessories.

## Materials for Each Student:

- Student Sheet 1
- Student Sheet 2
- Student Sheet 3
- Scissors (shared)
- Pen or pencil (shared)
- Tape or glue (shared)



### Safety

When using scissors, cut in a direction away from your body.

## Background Information

Have you ever had to squint your eyes because the Sun made it hard to see? Have you ever worn sunscreen to protect your skin or used a hat for shade? These are ways you protect yourself from the Sun. Animals have special adaptations and behaviors that help them stay safe in the Sun. Elephants use dirt as protection from the Sun. They throw dirt on their backs to cover their skin, so they don't get sunburn. Sea urchins cover themselves with algae from the seafloor to keep the Sun from hitting them from above the water. Meerkats and cheetahs have black markings around their eyes. These black areas protect their eyes from the glare of the Sun. Some animals have coats that protect their skin. Dogs have fur and sheep have wool that protects them from the Sun. Tortoises have protection from the Sun too. They have shells. The shell can create a shadow for the tortoise's head and legs, or the tortoise can pull its head into the shell to avoid the Sun. Can you think of ways these animal adaptations are like the ways people protect themselves from the Sun?

Both animals and people must avoid getting too much Sun. One way people stay safe is by using sunscreen. Sunscreen is especially important to a person's health because it blocks the Sun's rays from hitting and damaging the skin. Too much Sun causes sunburn, which can be very painful. Using sunscreen is a good idea whenever you plan on going outside for a long time. Even on cloudy days when the Sun does not seem very strong, sunscreen can protect your skin from damage.

## Explaining the Problem Conversation Starters

- Has anyone ever had sunburn?
- Did you know animals can get sunburn too?
- Do you know what a model is?
- Did you know humans are animals? We can model animal strategies to keep ourselves protected from the Sun.

## Step-by-Step Instructions

### Card set matching

- Cut out the 10 cards on Student Sheet 1 by cutting on the dashed lines.
- Hold up the cards and let students look at the images on the cards.
- Explain to the students that each card has a photograph of either an animal or an item that humans have made.
- Explain that the students will sort the cards into pairs. In each pair there will be one animal with a Sun safety adaptation and one human-made model for a similar Sun safety strategy.
- Give students a couple of minutes to sort the cards into matching pairs.
- Discuss the results and review which animal adaptations match which human-made models.

### Paper doll game

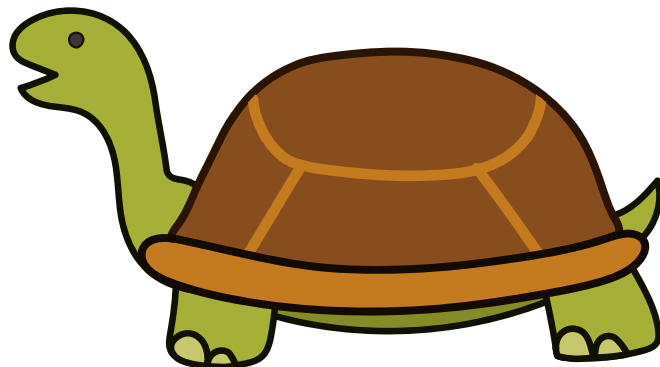
- Pick out the five animal cards from the card set matching activity. You will not need the human-made item cards for this part of the activity.
- Cut out the paper doll and the human-made items on Student Sheet 2.
- Place the animal cards face down.
- Mix up the face-down animal cards so you don't know which one is which.

## Round 1

- Select three animal cards.
- Tape or glue the cards into the Round 1 row, Animal column of Student Sheet 3.
- Look at the animal cards you chose and select the human-made items from Student Sheet 2 that model the animals' Sun safety adaptations.
- Dress the paper doll with the Sun safety items and draw your result in the Round 1 Doll column of Student Sheet 3.

## Round 2

- Tape or glue the remaining two animal cards into the Round 2 row, Animal column of Student Sheet 3.
- Look at the animal cards you chose and select the human-made items that model the animals' Sun safety adaptations.
- Dress the paper doll with the Sun safety items and draw your result in the Round 2 Doll column of Student Sheet 3.



## Vocabulary

**Animal:** a living thing that feeds itself by eating plants or other animals

**Adaptation:** a special skill that helps an animal survive

**Sunburn:** a painful skin reaction that happens after too much exposure to sunshine

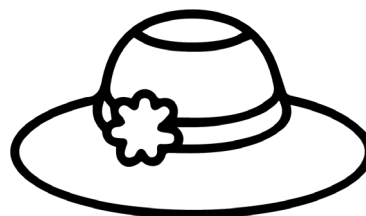
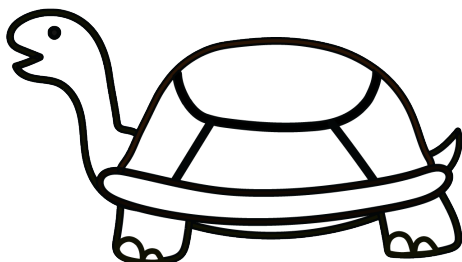
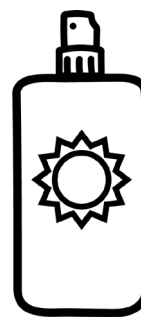
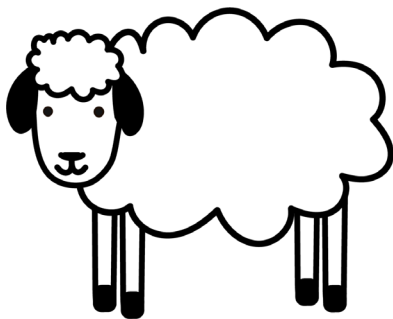
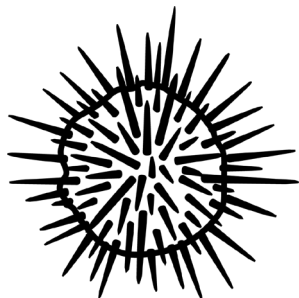
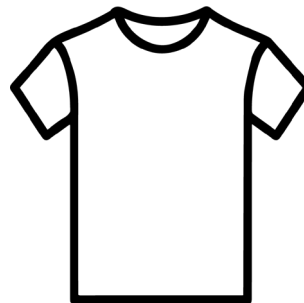
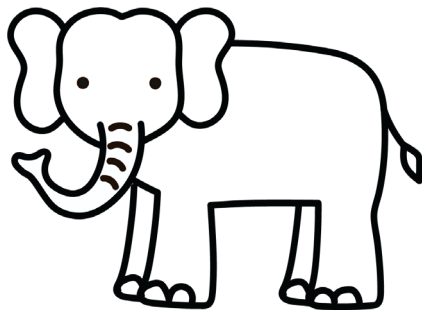
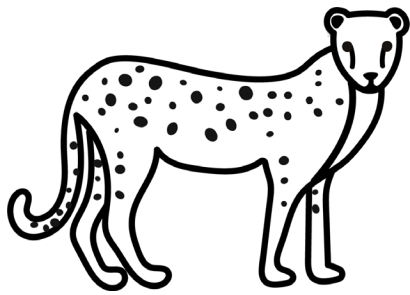
**Sunscreen:** lotion or spray that is applied to the skin to protect skin from the Sun

**Human-made:** made by people and not from nature

**Safety:** protection from danger or harm

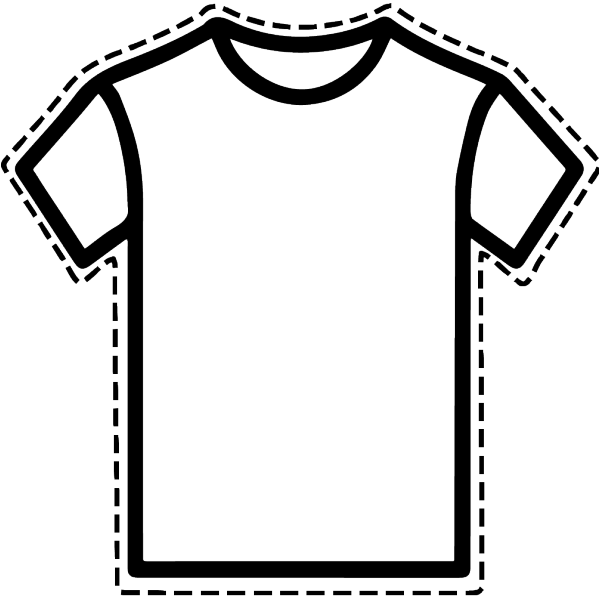
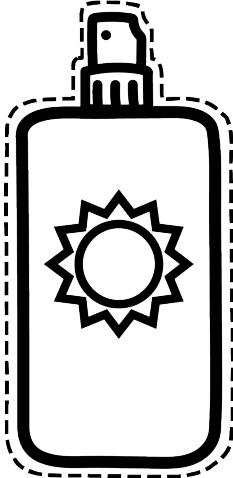
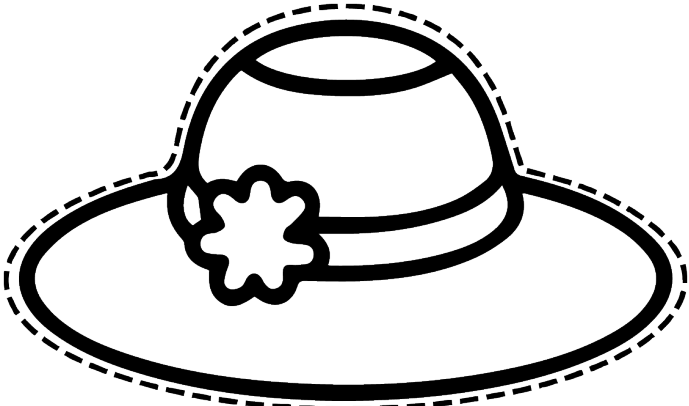
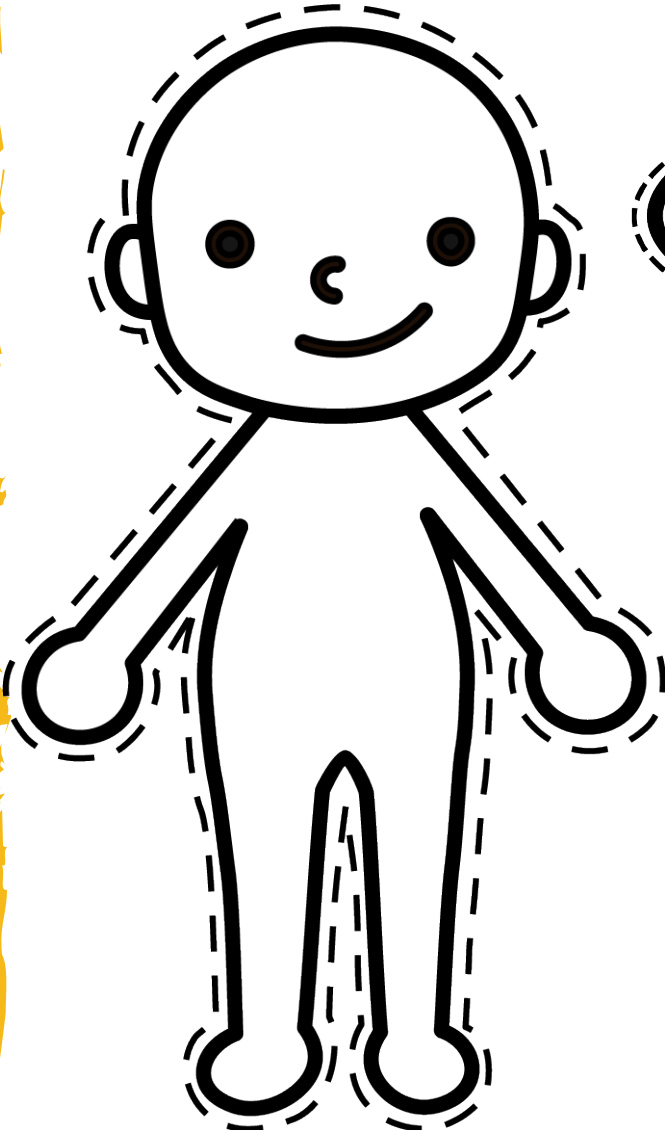


# Student Sheet 1





Student Sheet 2



# Student Sheet 3

Round	Animals	Doll
1		
2		



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