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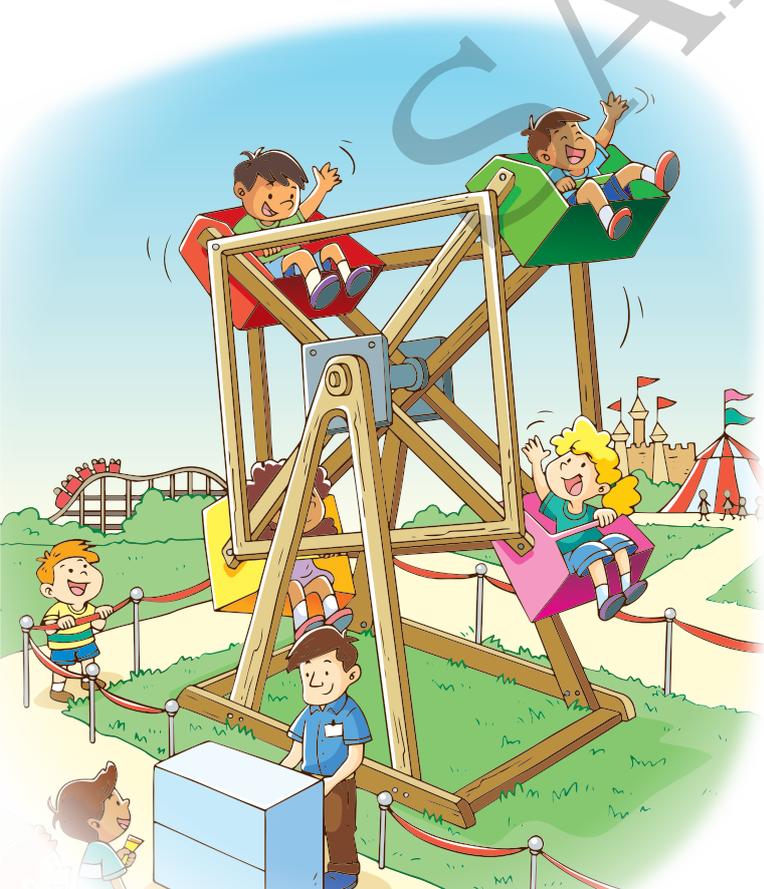
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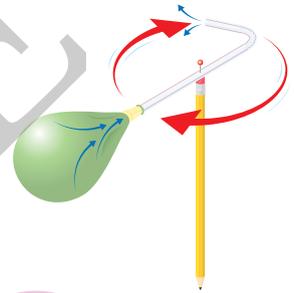
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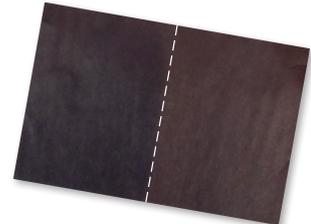
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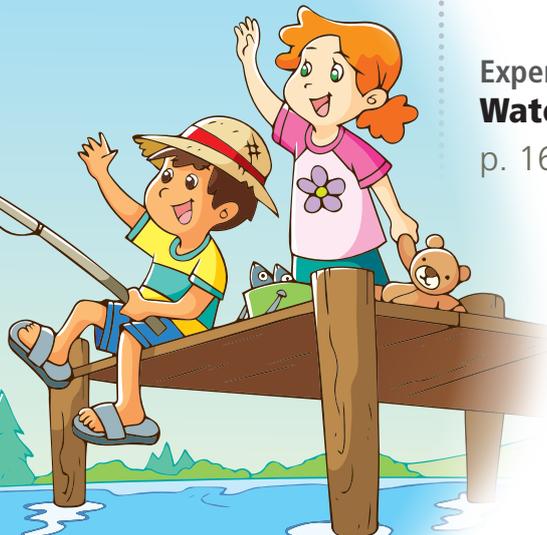
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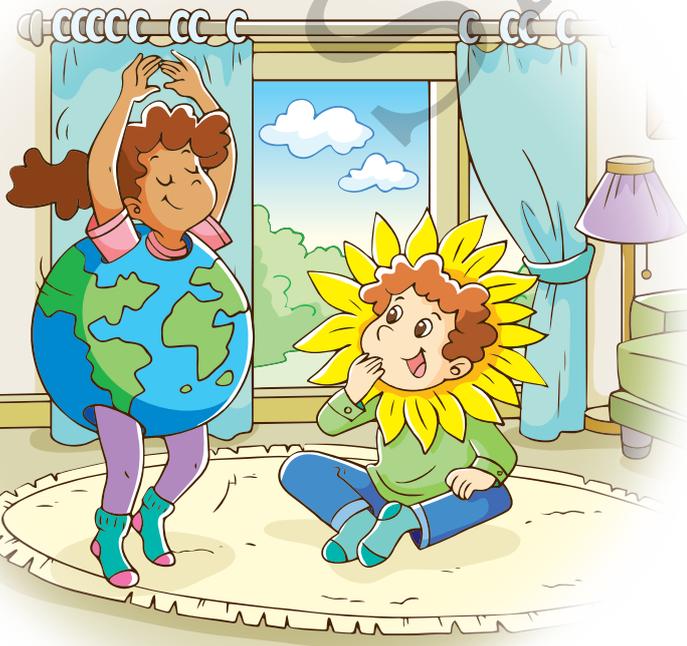
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3 More about Materials and Objects

Objects are all around us, and they are all made of at least one material. In this unit, you will examine the materials that everyday objects are made of and the special properties of different materials.

winter hat (wool):
keeps us warm

helmet (plastic):
gives us protection

**After completing this unit,
you will**

- understand that objects are made of one or more materials.
- know that the properties of materials can be observed.
- know that similar objects can be made of different materials.

Vocabulary

source: where something comes from

waterproof: does not let water pass through

durable: strong and long-lasting



Extension

Objects with the same function are not necessarily made of the same material. You may notice that different materials are used to make the same type of furniture in your home.

Take a look at the chairs in your home and make a record. You will find that they are made of different materials and they have different characteristics.



Chair's Location Material (e.g. wood, plastic) Weight (heavy/light)

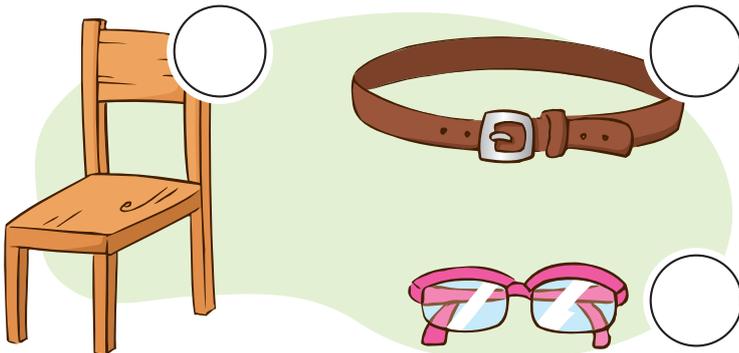
Living Room

Dining Room

Kitchen

Backyard

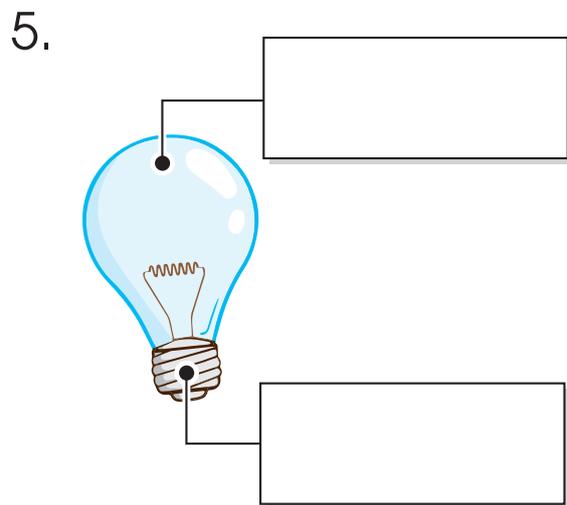
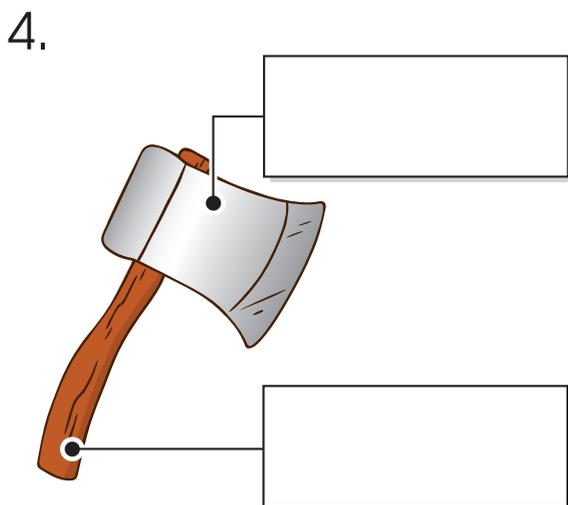
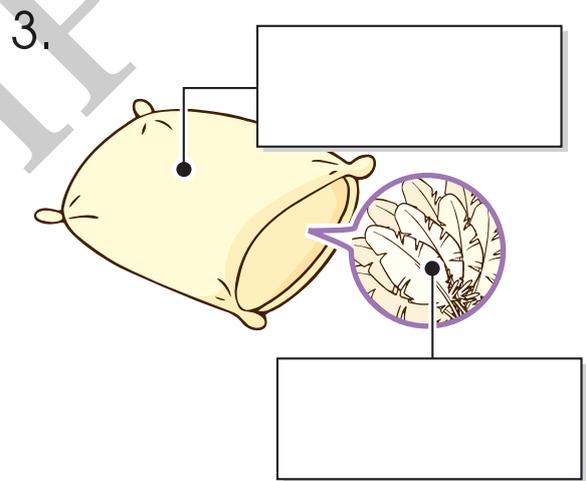
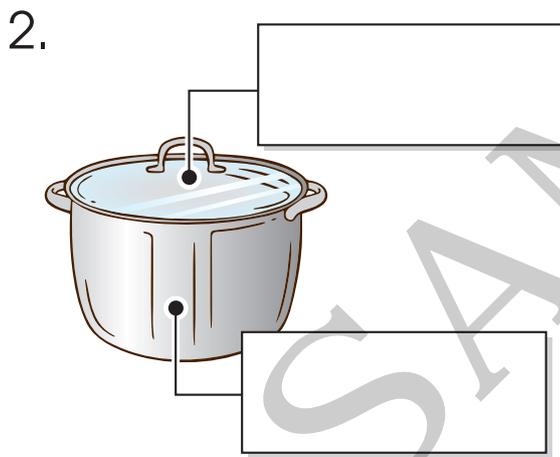
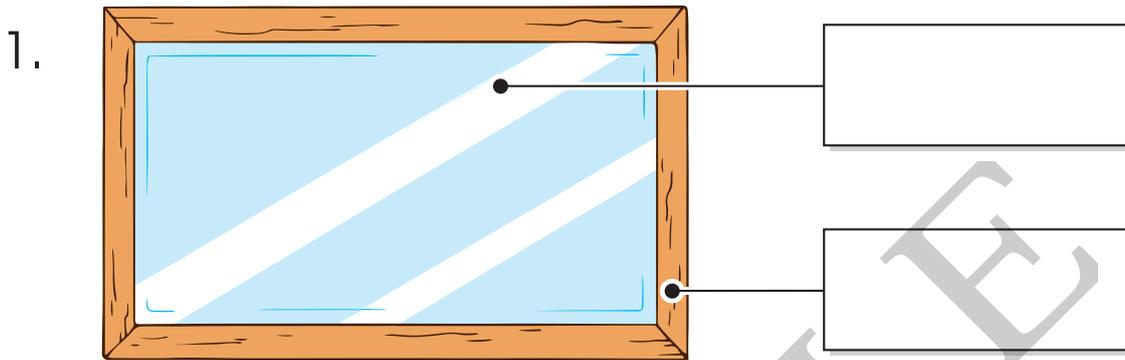
A. Match the objects with the materials they are made of. Write the letters.



- A** metal + wood
- B** plastic + glass
- C** leather + metal

B. Write the materials each object is made of.

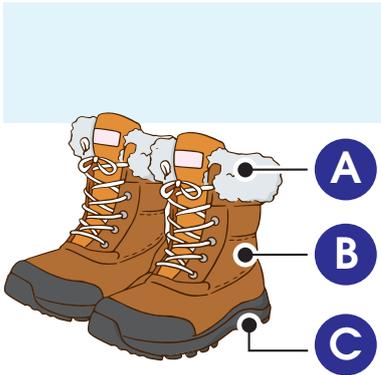
wood glass feathers metal cloth



C. Identify the footwear. Write the materials used and the sources of the materials. Then fill in the blanks.

Footwear	Material	Source
winter boots sneakers	leather rubber fabric	sheep fur trees cotton plants

1.

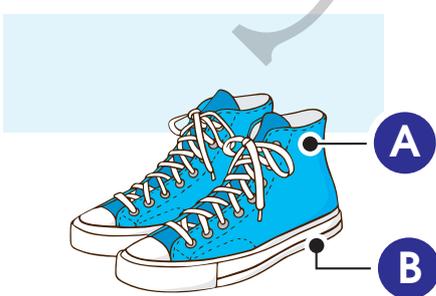


	Material	Source
A	wool	
B		animal hide
C		

• The shafts are _____
soft/hard
and _____,
rigid/flexible, which are
comfortable and keep you
_____.
cool/warm

• The soles are _____ and
soft/hard
_____, which keep the
waterproof/brittle
feet _____ and provide
dry/wet
good grip.

2.



	Material	Source
A		
B		

• The shafts are _____
soft/hard
and _____.
rigid/flexible

• The soles are _____
waterproof/brittle
and _____, which
light/heavy
provide more comfort.

SUN PROTECTION

understanding how
sunscreen works

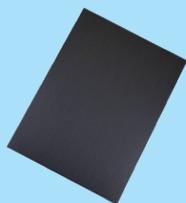


The sun is our main source of energy. It provides us with light and heat, which all living things on Earth need to live and grow. However, too much sunlight can be harmful. This is why we look for ways to protect our skin when we are outdoors. Using sunscreen is one option, but does it really work to prevent us from getting sunburns?

An illustration of a woman with dark skin and curly hair applying sunscreen to a young child's face. The child has red curly hair and is wearing a green and yellow polka-dot inflatable ring. In the background, another child is swimming in a pool.

Sunscreen only works for a couple of hours. So remember to reapply it regularly to protect your skin from the sun.

What you need:



black construction paper



tape



sunscreen



2 zipper bags

STEM Note

SPF stands for Sun Protection Factor, which tells you the level of protection against UVB rays a sunscreen provides. The minimal SPF rating of 15 is advised. In fact, the higher the number, the more protection a sunscreen provides.



Difficulty:



Time needed:

1 – 3 days

In this experiment, you will explore the effects of sunscreen.

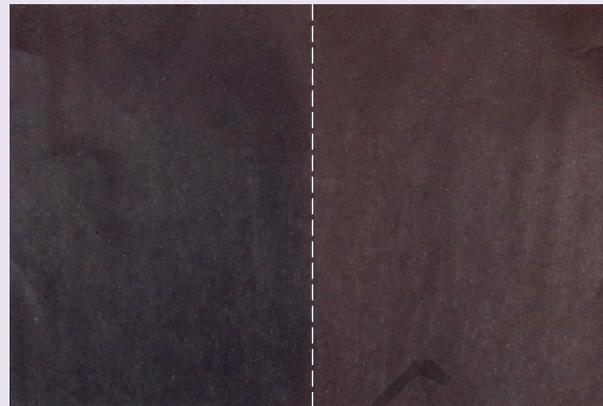
What to do:

- 1 Fold the construction paper in half.
- 2 Squeeze some sunscreen into one of the zipper bags and spread it around inside the bag.
- 3 Tape the bag with sunscreen on one side of the paper and the empty bag on the other side.
- 4 Tape the paper on a window with the bags facing the sun. Leave it for one to three days, depending on the amount of sun it gets.
- 5 Observe the construction paper.



WHAT *just* happened?

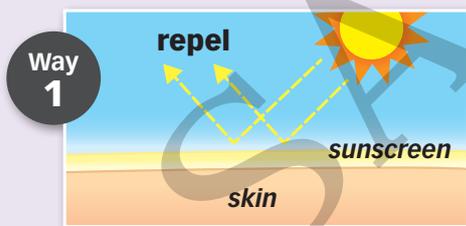
In this experiment, the construction paper represents our skin. You should have noticed that the side without sunscreen looked pale and the other side remained unchanged. The sunscreen blocked the sun's rays, protecting the paper from damage. Without sunscreen, the sun caused the color of the paper to fade.



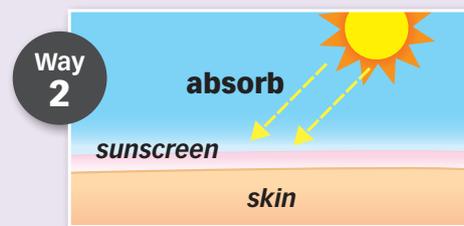
sunscreen

no sunscreen

So how does sunscreen work to protect our skin? It works in two ways.



repels the sun's rays away from our skin



absorbs the sun's rays to prevent it from reaching our skin

Both ways work effectively in protecting our skin. Whichever type of sunscreen you choose, make sure to reapply regularly every couple of hours for it to protect your skin.



- Why is it important to protect your skin from sun damage?
- What are the signs of sun damage on the skin?
- In the experiment, why do you think the sunscreen was not applied to the paper directly but put into the zipper bag?



- We often hear meteorologists mention the UV index. With the help of an adult, research to find what the UV index is and how it relates to your daily activities. How do you check what the UV index is in your area?



- If sunscreen is not available, how do you protect your skin from the sun?



- For proper and effective protection, sunscreen needs to be reapplied every couple of hours. Find a bottle of sunscreen in your home and read the labels to find out how often the sunscreen should be applied.
- Imagine going on a day trip to a park. You will leave the park to go home at 2:00 p.m. If you apply sunscreen at 9:30 a.m., what other times do you need to apply sunscreen again before going home?

Times to Apply Sunscreen

