



Mum, my torchlight is getting dim.

Maybe the batteries are weak. We will change them later.

What are the lady and her son doing?
Why do they need the torch?



Sources of Light

Light is an important requirement in our lives. Light is obtained from various sources such as the sun, lamps, and fire.

The Sun

During the day, the sun is the main source of light. Sunlight is a natural source of light.



The sun is not visible at night. Lamps and fire give light to dark areas.

Lamps

There are many types of lamps such as street lamps, car lamps, and home lamps.

Fire

Light can also be obtained from fire, such as the flame of a candle, an oil lamp, and a torch.



HOTS

Can fireflies be a source of light? Why?





Light and Dark

We can easily do activities in a lighted area. How can an activity be done in a dark area?



I Investigate

Investigate Which Activity is Faster

Apparatus and Materials



box A



box B

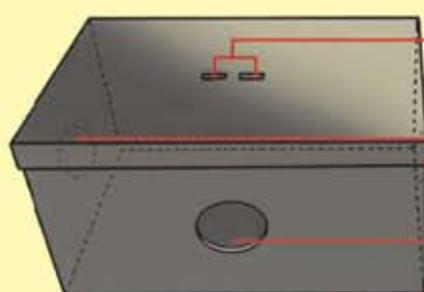


torch



2 sets of number cards

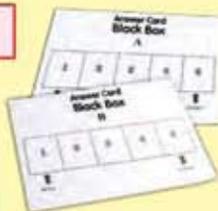
How to make a black box:



peepholes

holes for hands

hole for torch (box A only)



2 answer cards



glue

Paired Activity

Steps



1. Scatter a set of number cards inside each black box. Then, close the boxes.

Teacher's Notes

- Prepare black box A, black box B, and answer cards before the activity.

6.1.2

Activity Book

Pages:

38-40



2. Fix the torch to box A only.



3. Observe the number cards from the peepholes.



4. Pick the number cards in the correct sequence simultaneously. Hand it over to a friend. If it is correct, paste it on the answer cards. If it is incorrect, put the card back into the box.



5. Repeat step 4 until all the number cards are pasted on the answer cards.

6. Record your observation in the table as shown below.

Black box	Time to paste number cards (fast/slow)
A	
B	

Questions

1. Which answer card was completed earlier?
2. Which answer card was completed later?
3. Why is there a time difference in completing the answer cards in the two situations above?



HOTS

Is light important to humans? Why?



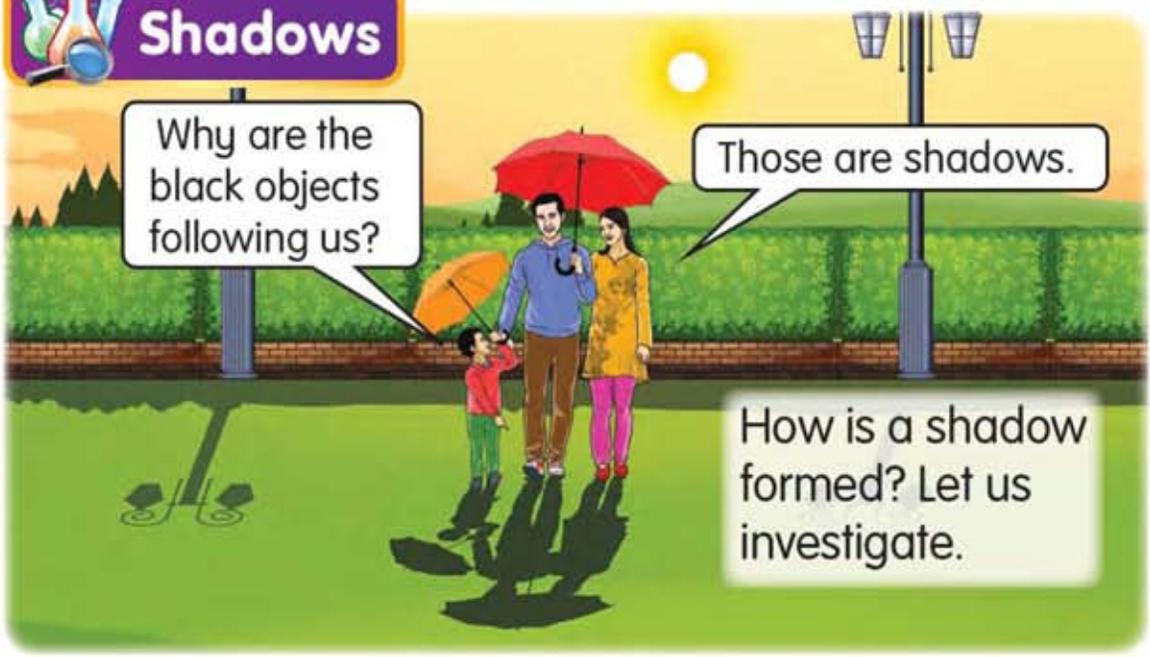


Shadows

Why are the black objects following us?

Those are shadows.

How is a shadow formed? Let us investigate.



I Investigate >> Produce a Shadow

Apparatus and Materials



torch



clay



white card



model of an animal (object)



mahjong paper

Individual Activity

Steps



1. Mark A to D on the mahjong paper.



2. Place a torch on the clay in the middle of the mahjong paper.

Teacher's Notes

- Search on YouTube videos on shadow formation.

Activity Book

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6.1.3





- Switch on the torch. Place the model of the animal (object) in position A. Observe the screen.
- Move the model of the animal (object) to positions B, C and D.
- Record your observation in the table as shown below.

Position of model (object)	Shadow (Formed/Not formed)
A	
B	
C	
D	

Question

At which position of the object is the shadow formed?

A shadow is formed when light is blocked by an object.



Clarity of Shadows

Is a shadow formed when light is blocked by a plastic book wrapper?



I Investigate >> **Observe the Clarity of Shadows**

Apparatus and Materials



white card



torch



pencil



skewer



scissors





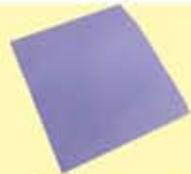
adhesive tape



plastic sheet



tracing paper



thick paper

Paired Activity

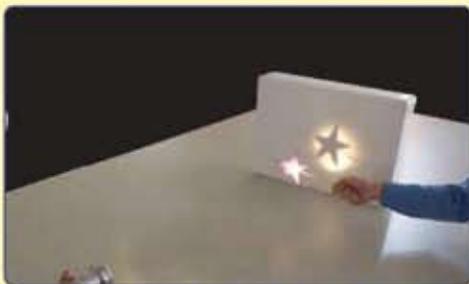
Steps



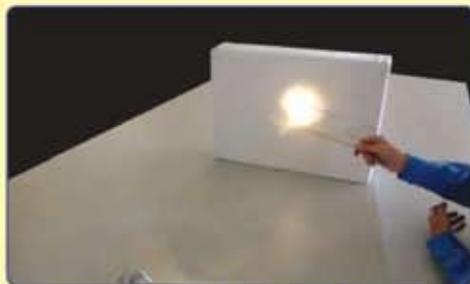
1. Draw the shape of a star on a piece of thick paper.



2. Cut and paste it on a skewer.



3. Flash the light on the star. Observe the shadow formed.



4. Repeat steps 1 to 3 using a plastic sheet and tracing paper.

5. Record your observation in the table as shown below.

Object	Clarity of Shadows (Clear/Less clear/No shadow)
Plastic sheet	
Tracing paper	
Thick paper	

Question

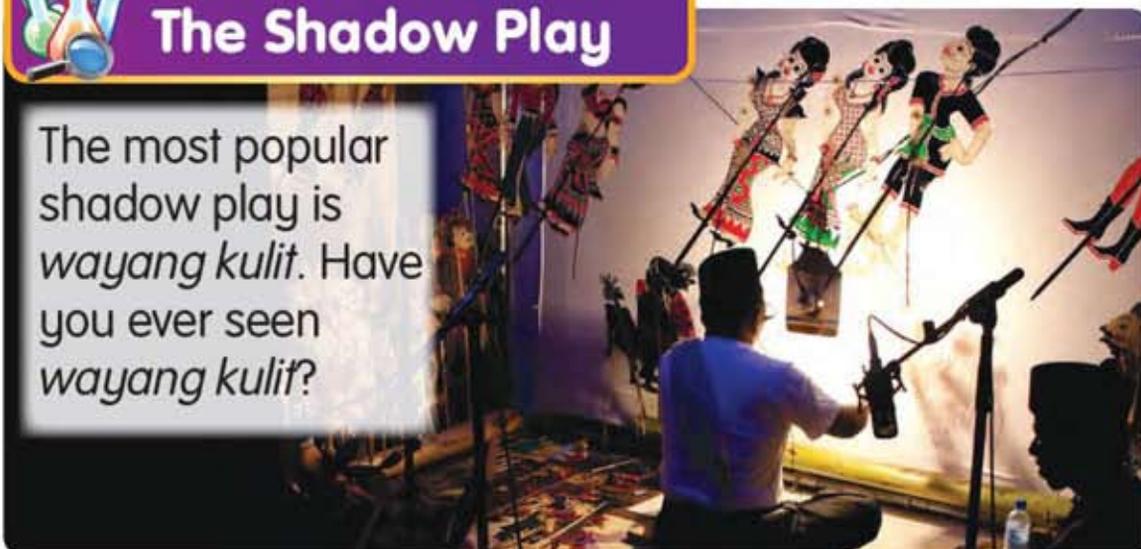
Which object produced the clearest shadow? Why?





The Shadow Play

The most popular shadow play is *wayang kulit*. Have you ever seen *wayang kulit*?



Notice the shadows formed on the white screen during the *wayang kulit* show.



object of character



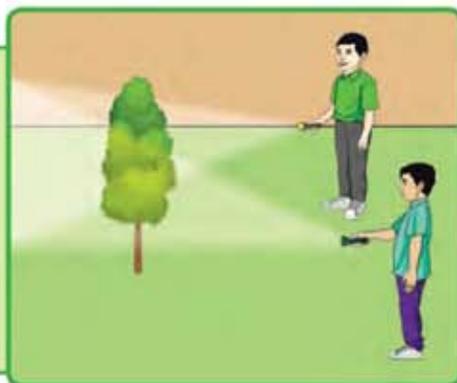
shadow of character

In the shadow play, the shadow of the character is similar to the object of the character. The shadow is clear because the object of the character does not allow light to pass through.



HOTS

Amin and Khairul are flashing light onto a tree from different directions. How many shadows of the tree are formed? Why?



Teacher's Notes

6.1.5
6.1.6



- Search on YouTube videos on *wayang kulit*.

Activity Book

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Create a Paper Puppet Play

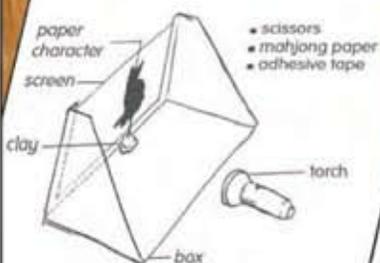
Wow! The *wayang kulit* was very interesting.

Yes. We can create a play just like *wayang kulit* too.

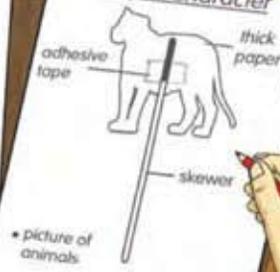
Let's plan our paper puppet play.



Paper Puppet Stage



Paper Character



We must build a stage using a box and use puppets as the characters.

Let's do it.



1. Cut the front, back, and top of the box to build a mini stage.



2. Paste the white paper as a screen at the front of the cut box.



3. Trace pictures of animals and cut them.



4. Stick the paper characters to the skewers.



5. Poke the paper characters into the clay.



6. Switch on the torch and start the play.



HOTS

Create your own shadow play.



Science Recreation

Hand Shadow Play

Various shadows can be formed using your hands. Produce the shadows below using light from a torch.



I Remember

1. The examples of sources of light are the sun, fire, and lamps.
2. The sun is a natural source of light.
3. An activity can be carried out easily in a bright area.
4. In the dark, we need light to carry out activities.
5. Shadow is formed when light is blocked by an object.
6. The clarity of shadows depends on the objects used.
7. *Wayang kulit* and hand shadow play are examples of interesting shadow games.

Teacher's Notes

- Search on YouTube videos on interesting hand shadow play.





I Answer

Answer all the questions below in your Science exercise book.

1. Fill in the blanks with the correct answers.

sun

objects

fire

light

lamps

a) The sources of light are the _____, _____, and _____.

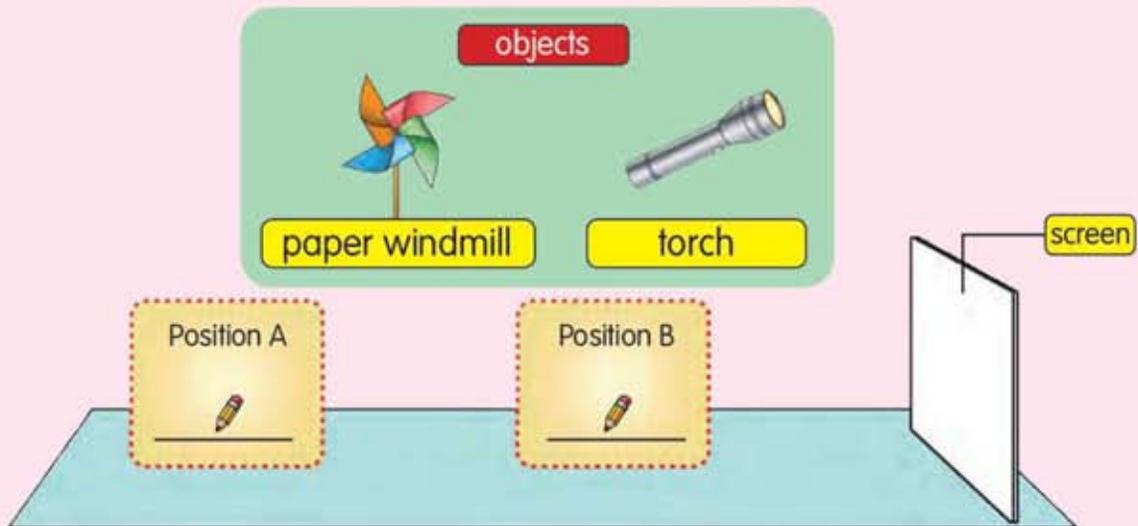
b) A shadow is formed when _____ is blocked by an object.

c) The clarity of shadows is influenced by the type of _____ that blocks the light.

2. a) It is (easy/difficult) to do activities in lighted areas.

b) It is (easy/difficult) to do activities in dark areas.

3. Arrange the position of the objects to produce a shadow on the screen.



4. State the clarity of shadows formed when light passes through the objects below:

Object	Clarity of shadows (Clear/Less clear)
Tracing paper	
Pencil	
Glass	
Frosted glass	
Steel ruler	



HOTS

Light is needed for our daily activities. Why is it so?

