Light **Worksheet 18**

Shadows

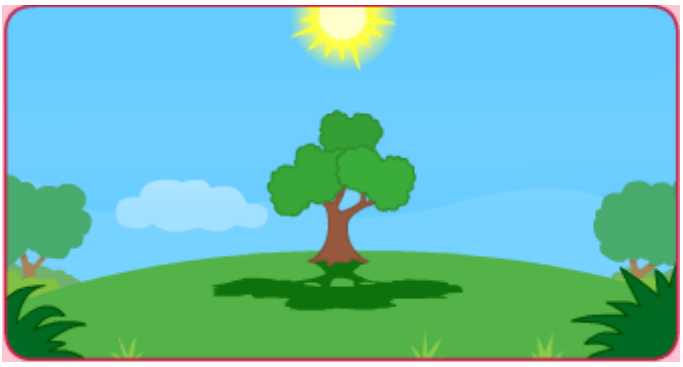
You will need:

a sunny day

a piece of chalk

a partner

a clock or stopwatch



- Go into the playground.
- Stand with the sun behind you.
- Ask your partner to draw round your shadow carefully.
- Ask our partner to draw round your shoes.
- This will show where you have been standing.
- Put your name on your shadow.
- Now draw round your partner's shoes and shadow.

- After 20 minutes, go into the playground again.
- Stand in your shoe marks. Make sure your feet are where they were before.
- What has happened to your shadow?
- Draw pictures in your notebook to show what you have done.
- Write about what you have found.

2. Draw a picture here to show how your shadow is formed on the ground on a sunny day.

3. Alan and Paul moved a torch further away from a toy. They were investigating how this would affect the **size** of the shadow. Here is a table showing the results:

Distance between torch and toy (cm)	10	20	30	40
Size of shadow (cm)	80	65	53	48

a. When is the shadow biggest? When the torch is closest to the object.

b. When is it smallest? When the torch is furthest away from the object.

c. Write a conclusion: A torch shining on an object creates a shadow. The nearer the torch is to the object, the bigger the shadow. When an object is closer to a light source more light is blocked out.

4. Now Alan and Paul try investigating the length of shadows. They move the torch higher. Help them to predict the table:

Height of the torch (cm)	5	20	35	50
Length of shadow (cm)	100			

Explain your predictions and tell your mates.

The length of the shadow is getting shorter. As the light source gets higher, the angle at which the light shines on the object changes. This will change the length and shape of the shadow.
