



# Day and night in the world

## Time

### time

50 minutes

### learning outcomes

To:

- know the difference between diurnal and nocturnal animals
- know that when it is day here, it is night on the other side of the world
- know that it is light when the Sun comes up
- know that it is dark when the Sun goes down

### end product

- cut-out worlds showing day and night

### materials needed

- photographs of diurnal animals (Appendix)
- photographs of nocturnal animals (Appendix)
- 24 split pins
- 2 cocktail sticks
- torch
- orange
- scissors
- A4 paper
- colouring pencils
- embroidery needles

## Preparation

For the activity **Animals in the night** you will need the photographs of diurnal and nocturnal animals from the Appendix. For the activity **Children in the world** cut 24 squares of paper, the same size as the square on the cut-out sheet.



## Animals in the night 10 min.

Sit in a circle with the children. Place the photographs of the diurnal and nocturnal animals in the middle of the circle. Ask if animals sleep at night, just like people. Which animals don't sleep at night? When are they awake? Remove the photographs of the diurnal animals. Look at the photographs of the nocturnal animals and talk about how you can recognise a nocturnal animal. Come to the conclusion that nocturnal animals often have bigger eyes than diurnal animals so that they can see better at night. Sometimes they have adapted in other ways as well.

Nocturnal animals can be recognised by specific features, because they live in the dark. The nocturnal animals in the photographs are the bat, the owl, the hedgehog, and the panther.



The children investigate the difference between day and night in the world.

**Good to know.** **Bats** have such poor eyesight that they do not find their prey by looking with their eyes but by emitting ultrasonic sounds. This sound is reflected from the prey back to their ears. This tells them the distance to their prey. **Owls** have strikingly large eyes. This means they can see their prey clearly at night. **A panther** has eyes with a reflective layer. This enables them to make optimal use of the little light during the night.



## Children in the world 15 min.

Give each child a paper square, a pair of scissors and colouring pencils. The children complete Task 1 on the worksheet. Read the instructions together and look at the example. Explain that they need to fold the paper into a triangle. They fold this triangle in half, and in half again. At the top of the folded paper they draw a child as shown in the example on the worksheet. Then they cut this out. Make sure the children only cut the outside of the paper (that they do not cut the centre point). The circle in the middle of the paper should remain intact. When the paper is unfolded, the children will see a planet with a group of children holding hands all around it. Explain that this represents all the children on Earth. Get everyone to colour in two opposite children in two different colours. Explain that one child lives in Europe and the other in Australia. Australia is all the way around the other side of the world.

## Day and night in the world 15 min.

Give each child an embroidery needle and a split pin. The children complete Task 2 on the worksheet. Ask them not to cut out the small black circle in the middle. The children place the square over the world with the children from task 1. They use the embroidery needle to prick a hole in the black circle and a hole in the centre of the world from task 1. They place the square over the world and fasten the two together with a split pin.

Demonstrate how it works. The children see that half of the world is covered by the semicircle.



The children turn the uppermost circle round and see that when it is day for the child in Europe it is night in Australia and vice-versa. Ask where it is light when it is dark in Europe. Turn the uppermost circle a little at a time. Can the children see that it is night at a different place on the planet each time? If it is day for the child in Europe, what is it for the child in Australia? Use this to make it clear to the children that when it is day for us, it is night on the other side of the world.

**Good to know.** Light always travels in a straight line. It is unable to travel around an object; the children saw this in lesson 29. The Earth turns on its own axis once in every 24 hours, and during this time the Sun only shines on the half of the Earth that is facing the Sun. On the other side of the planet it is then night. So we have day and night because the Earth turns on its own axis.



## Day and night in the world 10 min.

Take an orange. Explain to the children that you are going to stick a cocktail stick in it to show Europe and one to show Australia. Who knows where the sticks should go? Stick a piece of tape on the stick for Europe so you can tell them apart. Take a torch and say this represents the Sun. Make it dark in the classroom so the light of the torch shows up clearly. Ask the children from which direction the torch needs to shine if it is night in Australia. And if it is night in Europe? Come to the conclusion that it is night there because the Sun is not shining on that side of the Earth.

Emphasise what the children have learnt during this lesson by showing an entire day and night. Start with the Sun coming up. Show that the Sun makes it light in Europe. Show that this also means that it is dark on the other side of the world. It is night there. Turn the orange. Show the children that at a certain moment the sun is no longer shining on Europe. It is now night. The Sun is shining on the other side of the world. Compare this with what the children saw in Task 2.





# Day and night in the world

1 Children in the world

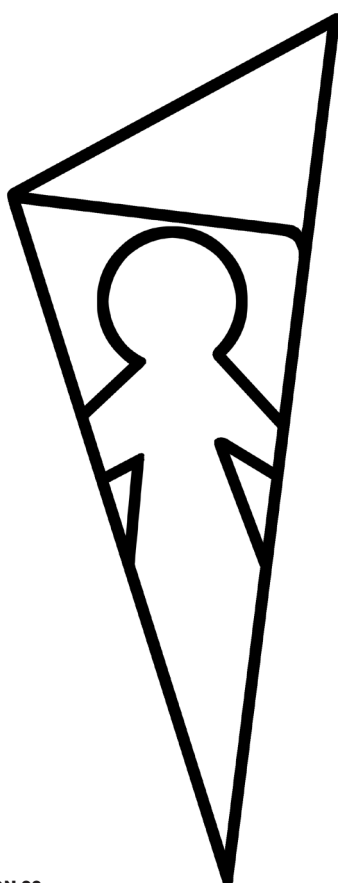


What do you need?

- scissors
- paper square
- colouring pencils

What are you going to do?

- 1 Fold the square into a triangle.
- 2 Fold this triangle in half and in half again.
- 3 Draw a child like the one in the example.
- 4 Cut out the child.
- 5 Unfold the paper.
- 6 Colour two opposite children.



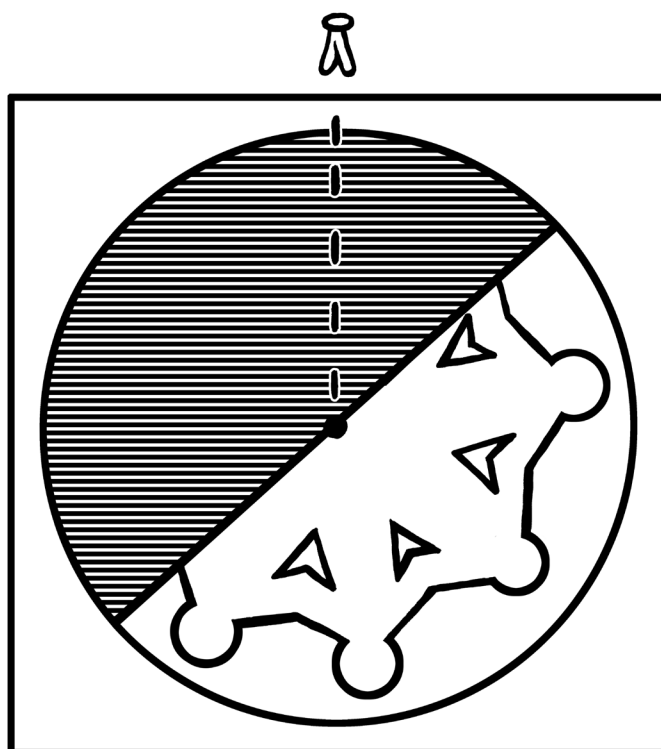
## 2 Day and night in the world

What do you need?

- scissors
- embroidery needle
- split pin

What are you going to do?

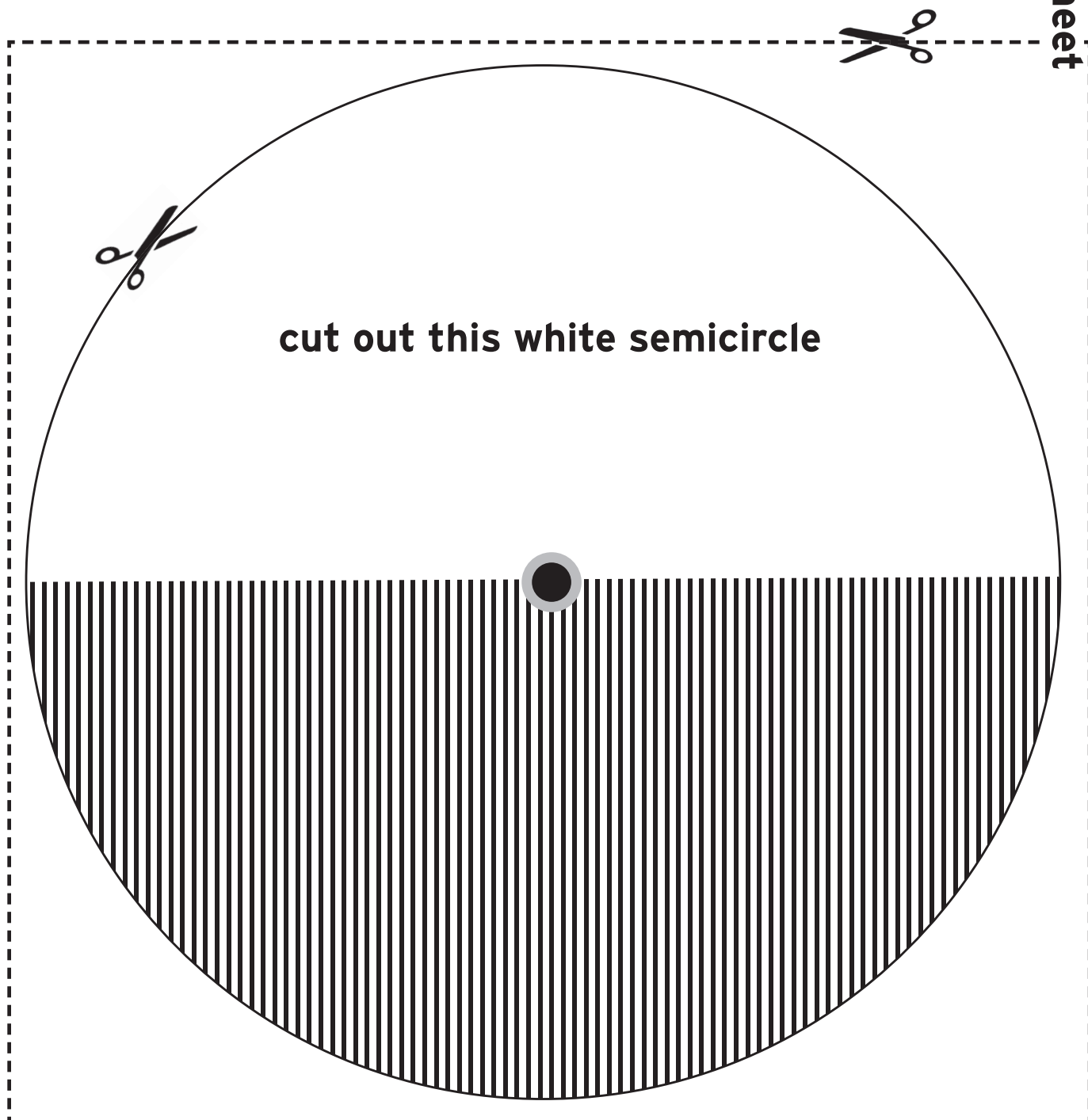
- 1 Cut out the square on the cut-out sheet.
- 2 Cut out the white semicircle in the square.
- Important! Make sure you do not cut out the black circle in the centre.
- 3 Use the embroidery needle to prick a hole in the middle.
- 4 Prick a hole in the centre of the world from Task 1.
- 5 Place the square on top of the world.
- 6 Push the split pin through the two holes as shown in the drawing below.
- 7 Open the split pin to fasten it.





**30**

cut-out sheet









**Nocturnal animals** [owl, bat, hedgehog, and panther] • LESSON 30



