

arctic science lesson plan 3

Test your arctic
science skills!



Science 3 - Land of the midnight sun

Learning Objectives

- To help the children to understand that the angle at which the Earth tilts on its axis and the rotation of the Earth around the sun gives rise to seasons.
- To consider the impact of the seasons on animals and birds in the Arctic.
- To think about what migration means and why it happens.

Key Vocabulary

Earth

Axis

Tilt

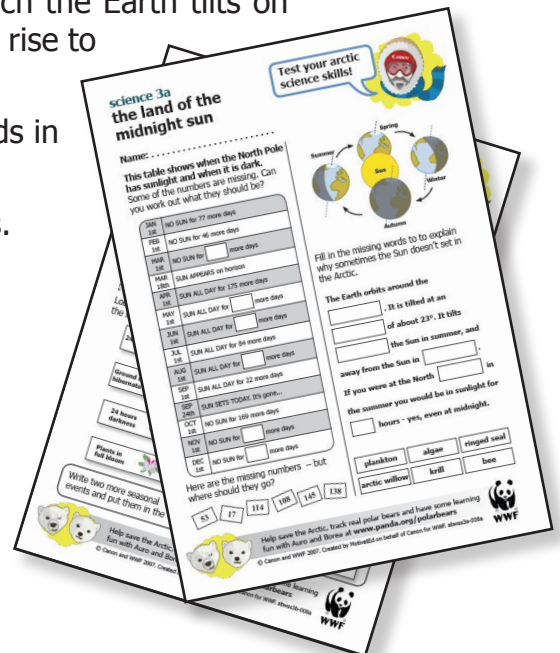
Seasons

Degrees

Migration

Rotation

Orbit



Resources

- Website – Arctic Science
- Science Activity Sheet 3

Whole Class Introduction

- What can the children tell you about the seasons? If they have already completed the tasks on activity sheet 1 ask them to recall what they learned.
- Locate pictures from the website www.panda.org/polarbears showing the Arctic in winter. You'll find pictures of ice berg, sea ice, glaciers and people dressed against the freezing winds.
- Discuss and explain any of the words in the 'key vocabulary' with which the children are unfamiliar. What does migration mean, for example, or rotation?
- Talk about the information on side 1 of the activity sheet and make sure the children understand the reasons why the Arctic has such long/short daylight hours.

Independent Activities

- The children could work with a partner to fill in the missing words on side one of the activity sheet and go on to work out the missing numbers relating to hours of daylight.
- The children can work with a 'talk partner' to explain the diagram on side one of the activity sheet.

continued...



Help save the Arctic, track real polar bears and have some learning fun with Auro and Borea at www.panda.org/polarbears

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- Working with a partner the children could construct a 3D model of the Earth orbiting the Sun as shown on side one of the activity sheet. Invite them to give a demonstration using their models as visual aids of how the movement of the Earth on its axis and during its orbit of the Sun affects daylight hours in the Arctic.
- Side two of the sheet is essentially a classification exercise where the children are asked to place the pictures in the correct part of the seasonal calendar.
- Can the children now write two or three sentences about migration, including examples of animals and birds that migrate to and from the Arctic at different times of the year?
- Ask the children to write an explanation in their own words for why the Arctic might be called the 'land of the midnight sun'. What else might this sheet have been called?

Plenary

- Ask for volunteers to explain to the rest of the class why we have seasons.
- Now ask other volunteers to speak for no longer than a minute about 'the land of the midnight sun.'
- What have the children learned about how the seasons affect the migratory habits of birds and animals in the Arctic?

Extension Activities

- The children could research the website – and other sites – to find out more about migratory birds and animals that visit the Arctic region in different seasons.
- Explore how global warming happens and its effects on the Arctic.
- How do other animals that stay in the Arctic during the winter months adapt to such extremes of cold? Can the children find out about an Arctic animal that hibernates?
- The children could find out about the dates of the equinox. What does this mean and how does it affect the seasons?
- Using the Internet the children could find out how many hours of sunlight there will be in the Arctic today. How does this compare with the weather where they are today?
- The children could make a chart showing how many hours of sunlight there has been over a week compared with the number of sunlight hours in the Arctic over the same time period. Can the children write a short explanation at the end of the chart explaining the differences?



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