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# arctic maths lesson plan 1

Test your arctic  
maths skills!



## Maths 1 - Graphs and charts

### Learning Objectives

- To understand data presented in a bar chart and a pie chart.
- To represent information in a bar chart and a pie chart.

### Key Vocabulary

Bar chart

Pie chart

Vertical axis

Horizontal axis

Comparison

Least

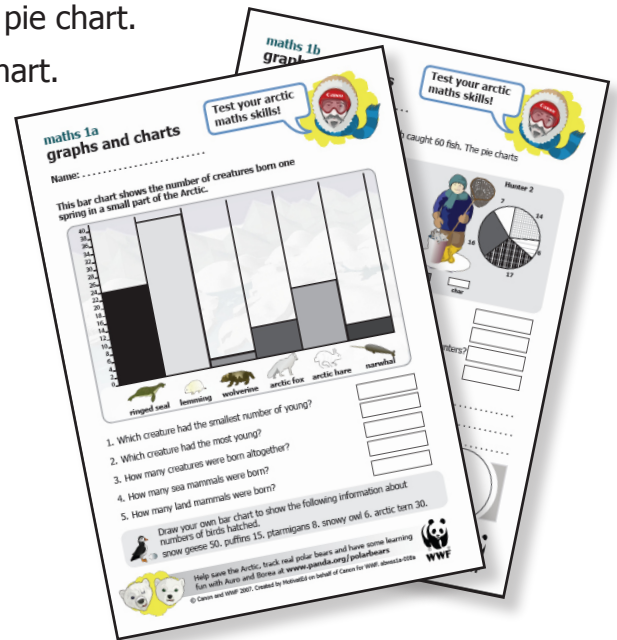
Most

Smallest

Largest

### Resources

- Maths Activity Sheet 2
- Squared maths paper
- Pencils, crayons
- Follow the link to the standards site to enable children to enter their own data.  
[http://www.standards.dfes.gov.uk/primary/teachingresources/mathematics/nns\\_itps/data\\_handling/datahandling\\_3\\_0.swf](http://www.standards.dfes.gov.uk/primary/teachingresources/mathematics/nns_itps/data_handling/datahandling_3_0.swf)



### Warm-up

- Count in twos – up to 40 and back down again.
- Count in twos – starting on an odd number, up to 41 and back again.
- How many multiples of 2 are there in 12, 18, & 24?
- Play a game of **polar bear on the ice block**. The children pair up; one sits on the chair (the polar bear on the ice) and the other stands behind the chair (polar bear waiting to get on the ice). Teacher calls out a sum appropriate to age and ability level e.g.  $10 \times 2$ , both children call out the answer. The child (bear) who answers most quickly moves on to the ice block. They should keep a tally of how many ice blocks they visit.

### Whole Class Introduction

- Choose around 12 children to demonstrate the first activity. You call out the question and instruction.  
'How many languages can you speak? Find any other children who speak the same number as you and make a group.'

continued...



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Challenge the rest of the children to tally up the numbers.

- Supplementary questions:  
How many would there be in the group if the size was doubled/halved/tripled?  
How many more to make the group up to 7?  
How many should leave to make the group the second smallest? And so on.
- Play again with alternative questions:  
How many arctic sea creatures can you draw in 30 seconds?  
How many arctic mammals can you write down in 20 seconds?

### Independent Activities

- Before the children start work on the sheet check that they can locate both the vertical and horizontal axis on the bar chart.  
You may want to complete the first activity together with younger or less able children.
- They can then go on to draw up their own bar charts to show the number of Arctic birds that hatched during the spring.
- Side 2 uses a pie chart to show the number of fish caught by two hunters.  
The children answer questions based on the charts and then make up three of their own questions to ask their friends. Older and more able children should be challenged to write more questions.
- Finally they make up a third pie chart based on the combined data from the two hunters.

### Plenary

- Recap on the difference between a bar chart and a pie chart. Can the children show you the vertical and horizontal axis?
- Ask them to read out some of the questions which they made up about the fishermen and their catches. Do they all make sense? Is it possible to answer the questions from the data?
- Do the children now have some other ideas about areas they might research and gather data for?

### Extension Activities

- Challenge the children to find a way to represent much larger numbers. For example bird colonies: Arctic tern 256, snow geese 1200, snowy owl 32, ptarmigans 842, puffins 377. How will they represent the number of birds on the vertical axis?
- Invite the children to explore the rest of the WWF site and to compile data based on a subject that interests them. This might be number of animals, days of sunlight, rate of ice-melt and so on. They can then choose the best way to represent this information, and to share it with the rest of the class.
- Explore how a chart can plot the effect of continued global warming on a species over time and the effect on the chart if we lessen global warming by acting now. See actions on cards on website.
- Make a display of different charts and graphs based on the data gathered by the children.



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# maths 1a

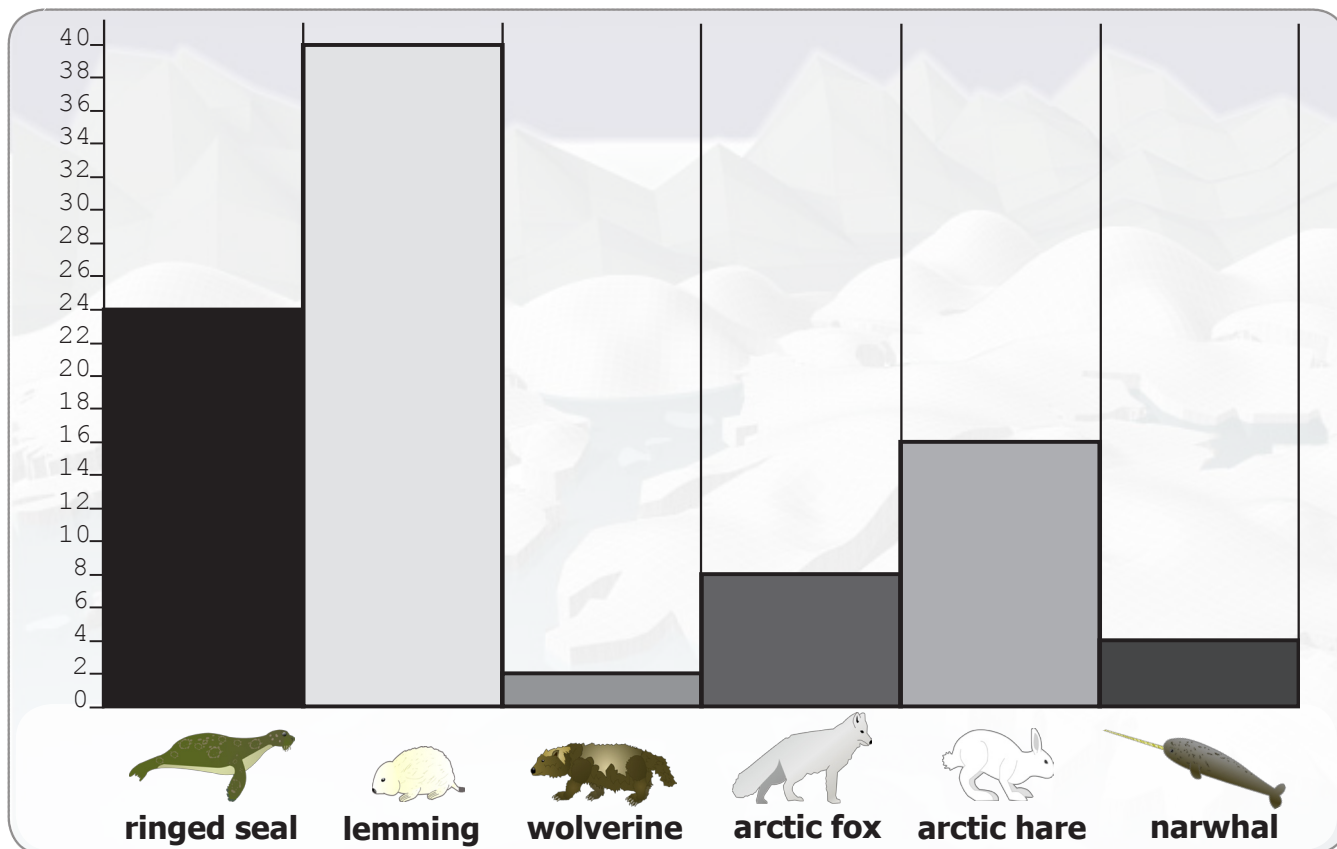
## graphs and charts

Test your arctic maths skills!



Name: .....

This bar chart shows the number of creatures born one spring in a small part of the Arctic.



1. Which creature had the fewest young?
2. Which creature had the most young?
3. How many creatures were born altogether?
4. How many sea mammals were born?
5. How many land mammals were born?




Draw your own bar chart to show the following information about numbers of birds hatched.

snow geese 50, puffins 15, ptarmigans 8, snowy owl 6, arctic tern 30



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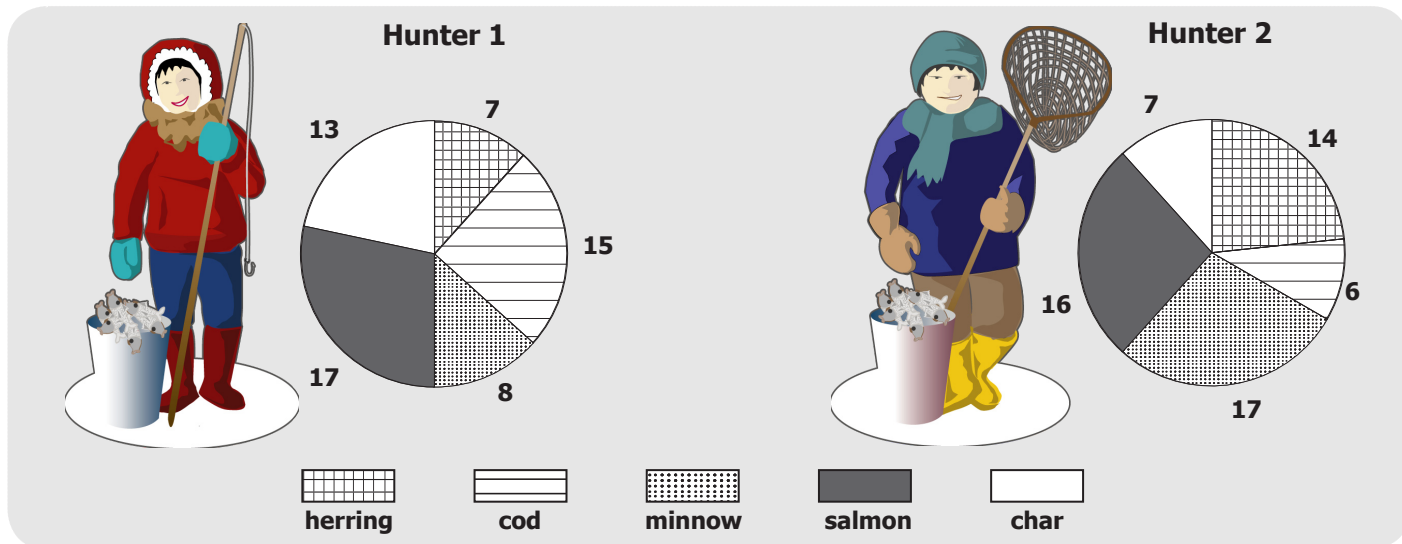
# maths 1b graphs and charts

Test your arctic  
maths skills!



Name: .....

**Two hunters went fishing.** They both caught 60 fish. The pie charts show the fish in their catch.



1. Which hunter caught the most cod?

2. Which hunter caught the most char?

3. Which fish made up the largest catch between the two hunters?

4. How many fish were caught altogether?

Write three questions for your friend to answer from the chart.

1. ....

2. ....

3. ....

Fill in the empty pie chart to show the joint catch of the two hunters.

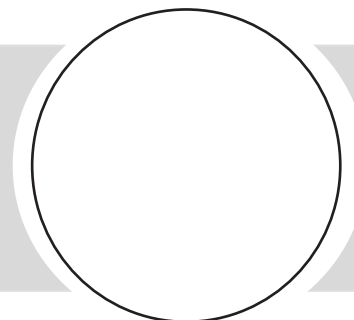
herring

cod

minnow

salmon

char



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# arctic maths lesson plan 2

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## Maths 2 - Arctic shapes

### Learning Objectives

- To be able to recognise and name 3D shapes including cube, cuboid, cone, pyramid, sphere and cylinder.
- To identify the faces, vertices and edges of the 3D shapes.
- To work with nets of cubes.
- To solve a number problem involving 3D shapes.

### Key Vocabulary

Cube

Cuboid

Cone

Pyramid

Sphere

Cylinder

Net

3D

2D

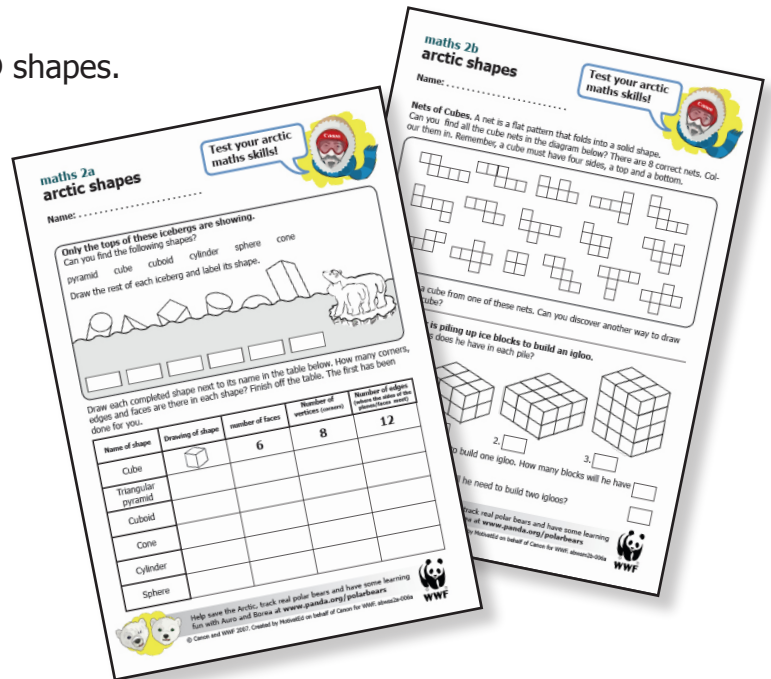
Faces

Vertices

Edges

Planes

Iceberg



### Resources

- Maths Activity Sheet 2
- Squared paper
- Pencil, crayons
- Ruler
- Scissors
- Die
- Sheet of paper with a 7 x 8 grid

### Warm-up

- For this game of **igloo wall** you need a dice, coloured pencils and a sheet of paper with a 7 x 8 grid. Children work with a partner and take turns to throw one dice. The score shown on the dice shows the number of squares (blocks) which can be coloured in any one row. You can only colour in if the blocks are on the same row. So, throwing a 4 and then a 5 means you have to miss a turn as the target number is 7. The first player to colour in all the blocks in the igloo wall is the winner.

continued...



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- Once the children have played the game a couple of times ask them to suggest new strategies and rules.  
For example, what happens if you colour in columns rather than rows?  
What happens if you change the number of squares in the grid?

### Whole Class Introduction

- If the square was three dimensional, rather than two dimensional, what new shape would be created?
- Ask the children to look around the classroom and to point out any 3D shapes which they can see.
- Give them one minute to draw all the 3D shapes they can see.
- How many of these shapes can they name?

### Independent Activities

- Can the children tell you what an iceberg is?  
Remind them that typically about 80 – 90% of an iceberg is below the surface of the water?  
How much, therefore, is showing?
- Look at the first activity on side one of the sheet. The children are asked to draw in the unseen part of the icebergs.  
The pyramid could possibly be three or four sided, they need to make a decision about this before moving on to the second activity.
- Recap on the meaning of the terms vertices, faces and edges. Choose a shape from the classroom e.g. a dice or a book to demonstrate these terms before asking the children to complete the grid.
- If possible, prepare a net of a cube, either in paper or from ready made construction shapes. Show the children how the flat plan converts into a solid shape.
- Explain that there are several ways to make a net of a cube. (There are 6 possible arrangements, apart from rotations and reflections). Ask the children to find the 8 nets on the Activity Sheet.
- They can then choose one pattern to make their own cube.
- Finally the children solve the number puzzle based on calculating the number of blocks of ice in a pile. Remind them to include the blocks that can't be seen in this two-dimensional representation of a three-dimensional construction.

### Plenary

- Take a look around the classroom and see how many of the six 3D shapes can be found in everyday objects.
- Have the children all got the same answers for the numbers of faces, vertices and edges?  
Which was the most difficult shape to work out and why?
- Which shape is used in building an igloo, and how is the shape changed as the igloo forms the dome? Check Science Sheet 1 to remind you.

continued...



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### Extension Activities

- Show the children a cube on which each face is a different colour. Can they make a net which will reassemble into the cube with the same colour combination?
- Challenge the children to draw nets for other 3D shapes. Start with a tetrahedron (triangular pyramid). This can be made from four triangles. Can they find the difference between a tetrahedron and the Great Pyramid in Egypt? (It has a square base.)
- Invite the children to make up some more puzzles involving stacks of ice blocks. How many different ways (using complete columns and rows) can they find to stack a pile of 48 blocks?
- Explore the effect of global warming on the aboriginal peoples of the Arctic.



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# maths 2a

## arctic shapes

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Name: .....


**Only the tops of these icebergs are showing.**

Can you find the following shapes?

pyramid cube cuboid cylinder sphere cone

Draw the rest of each iceberg and label its shape.

Draw each completed shape next to its name in the table below. How many corners, edges and faces are there in each shape? Finish off the table. The first has been done for you.

Name of shape	Drawing of shape	number of faces	Number of vertices (corners)	Number of edges (where the sides of the planes/faces meet)
Cube		6	8	12
Triangular pyramid				
Cuboid				
Cone				
Cylinder				
Sphere				



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# maths 2b

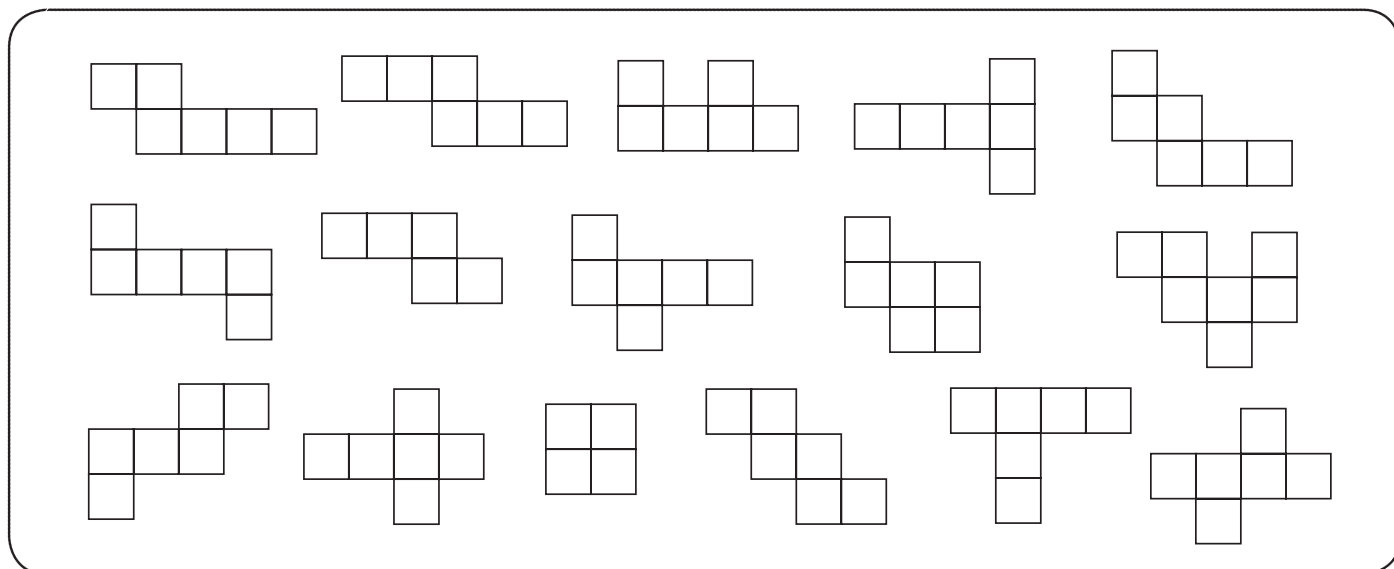
## arctic shapes

Test your arctic maths skills!



Name: .....

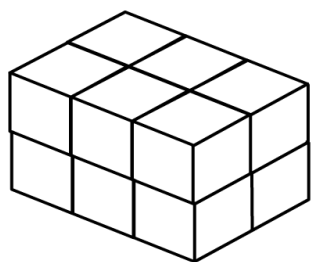
**Nets of Cubes.** A net is a flat pattern that folds into a solid shape. Can you find all the cube nets in the diagram below? There are 8 correct nets. Colour them in. Remember, a cube must have four sides, a top and a bottom.



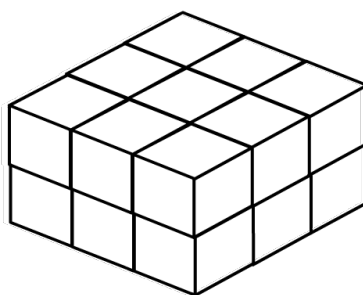
Try making a cube from one of these nets. Can you discover another way to draw the net of a cube?

**The professor is piling up ice blocks to build an igloo.**

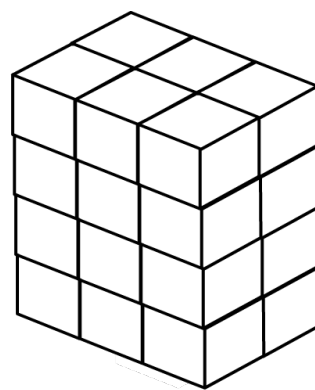
How many blocks does he have in each pile?



1.



2.



3.

4. He will need 50 blocks to build one igloo. How many blocks will he have left over?

5. How many more blocks will he need to build two igloos?



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# arctic maths lesson plan 3

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## Maths 3 - Arctic Take 6

### Learning Objectives

- To understand the properties of the number 6, working with addition, subtraction, multiplication and division.
- To know that a snowflake is always a hexagon.
- To understand what is meant by tessellation.
- To solve a number problem using addition.

### Key Vocabulary

Snowflake

Hexagon

Tessellation

### Resources

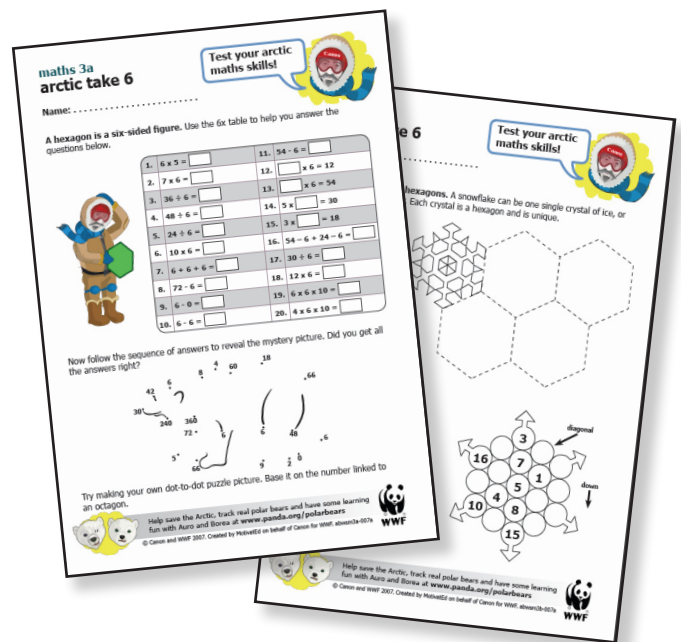
- Maths Activity Sheet 3
- Website

### Warm-up

- Practice the six times table.
- How many number facts about 6 can the children tell you in 10 seconds?
- If 6 seals each ate 6 fish how many fish would they have eaten all together?
- How many multiples of 6 are there in 36, 42, 60?
- What is the difference between 6 and 24?
- What is 48 divided by 6?

### Whole Class Introduction

- Explain to the children that they are going to be working with the number six and its properties.
- How many number facts can they tell you about 6 (5+1, 7-1, 3x2 etc)?
- Show the children a die and challenge them to add up the numbers of each side of the die as quickly as they can. What do they notice (the numbers always add up to 7)
- Demonstrate the **frozen cube** dice game to the class: ask for a volunteer to take turns throwing the die with you. You each have to keep a tally of your score. The aim is to get as high a score as possible before you throw a one.



continued...



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- Who can tell you the name of a shape that has six sides (hexagon)?
- Look at the picture of the snowflake pattern on side 2 of the activity sheet. Did the children already know that a snowflake always has six sides?
- What other natural things have six sides (a honeycomb, some flowers, etc)?
- Explore what is meant by 'tessellation' and if possible look at some tessellating patterns which you can find on the Internet. Are there any tessellating patterns in the classroom or elsewhere in the school? Examples could include floor and wall tiles.

### Independent Activities

- The children should all answer the questions relating to the six times table on side one of the activity sheet. How quickly can they find the answers?
- The children will enjoy completing the dot-to-dot puzzle and can work out some more of their own based on Arctic Animals or birds.
- Side 2 of the activity sheet provides another number puzzle based on a snowflake pattern with six sides. Again the children can try making up other number patterns and puzzles of their own to play with a friend.
- Ask the children to draw some tessellating patterns with six sides – perhaps as a set of floor tiles or snowflakes.
- The children could try the **Frozen Cube** game with a partner or in a small group. With practise the children will begin to work out some tactics to avoid losing their score so far. They could for example decide to 'pass' on a turn and give the die to the next player.

### Plenary

- Challenge the children to another round of mental maths about the properties of six. This time they take turns to think of a question to ask another member of the class.
- Invite the children who have created tessellating patterns to show and describe their work to the rest of the class.

### Extension Activities

- Working with a partner the children could make up another game with die or dice and think of a good name for it that has something to do with the Arctic.
- They can also write a page of 'take 6' number problems and puzzles and type it into the computer, add a piece of clip art and print it to take home.
- Create an extended 6x table for the numbers of an arctic species. If global warming continues we go down the table but we can go up it if we start to do actions to stop global warming. *See actions on collector cards on site.*
- Compile an 'arctic 6' puzzle book for a younger class. This could contain:
  - 6 arctic animals
  - 6 arctic Plants
  - Some snowflake patterns
  - Six igloos
  - Six number puzzles, such as dot-to-dot pictures



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# maths 3a

## arctic take 6

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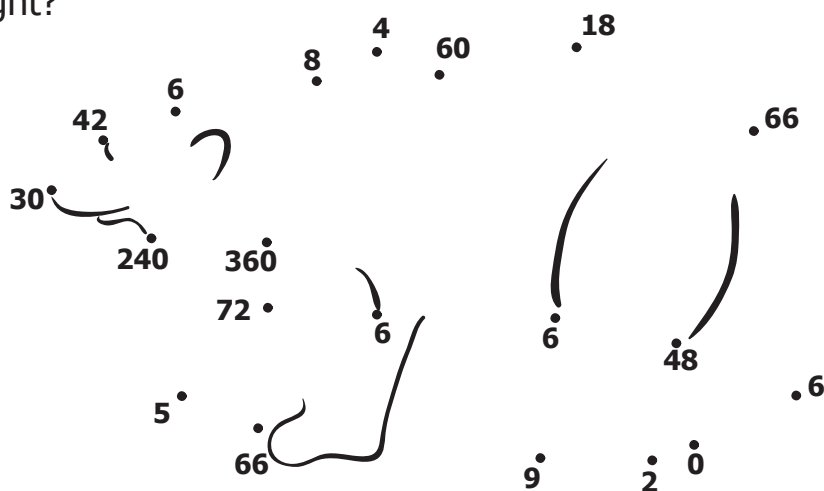
Name: .....

**A hexagon is a six-sided figure.** Use the 6x table to help you answer the questions below.



1.	$6 \times 5 = \square$	11.	$54 - 6 = \square$
2.	$7 \times 6 = \square$	12.	$\square \times 6 = 12$
3.	$36 \div 6 = \square$	13.	$\square \times 6 = 54$
4.	$48 \div 6 = \square$	14.	$5 \times \square = 30$
5.	$24 \div 6 = \square$	15.	$3 \times \square = 18$
6.	$10 \times 6 = \square$	16.	$54 - 6 + 24 - 6 = \square$
7.	$6 + 6 + 6 = \square$	17.	$30 \div 6 = \square$
8.	$72 - 6 = \square$	18.	$12 \times 6 = \square$
9.	$6 - 0 = \square$	19.	$6 \times 6 \times 10 = \square$
10.	$6 - 6 = \square$	20.	$4 \times 6 \times 10 = \square$

Now follow the sequence of answers to reveal the mystery picture. Did you get all the answers right?



Try making your own dot-to-dot puzzle picture. Base it on the number linked to an octagon.



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# maths 3b arctic take 6

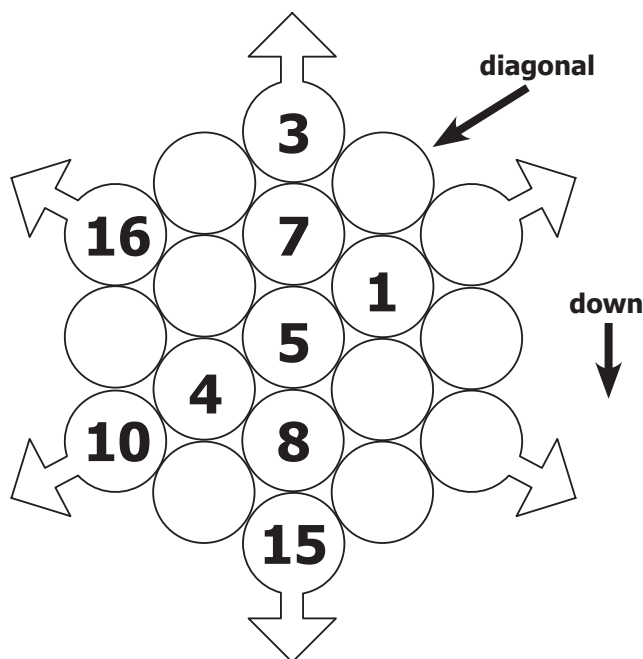
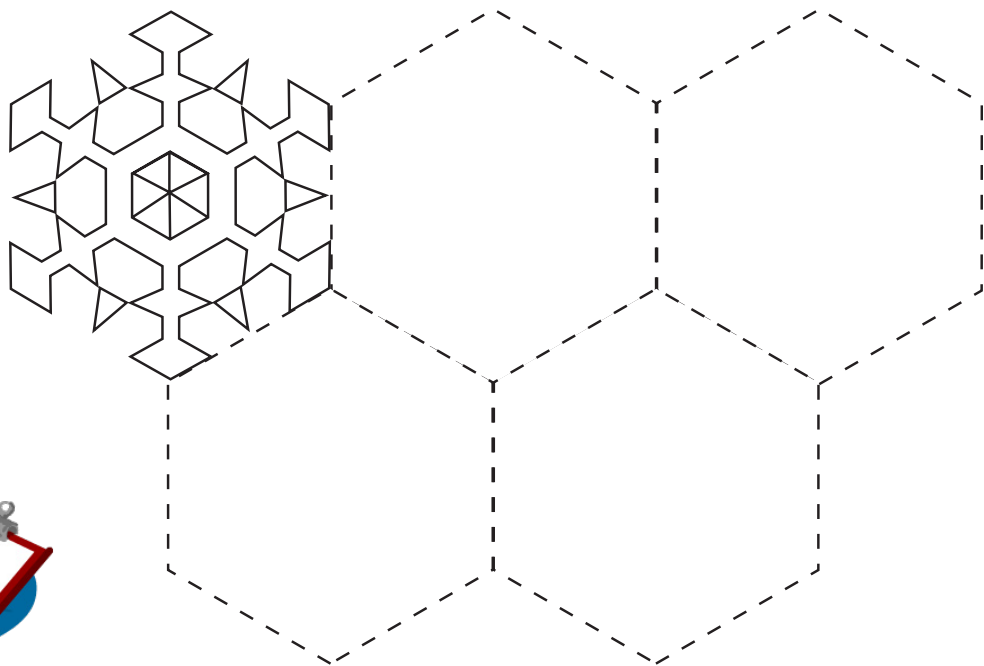
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Name: .....

**Snowflakes are all hexagons.** A snowflake can be one single crystal of ice, or several stuck together. Each crystal is a hexagon and is unique.

Draw four more snowflakes to complete this tessellating pattern.



Here are 19 spaces arranged in the snowflake. Whichever way you add up a line, diagonally or downwards, you will always make a total of 38. Fill in the missing numbers.



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# arctic science lesson plan 1

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science skills!



## Science 1 - How to build an igloo

### Learning Objectives

- To understand how materials and their properties can provide insulation.
- To consider how humans and animals living in the Arctic have adapted to extremely cold temperatures.

### Key Vocabulary

**Materials**

**Properties**

**Adaptation**

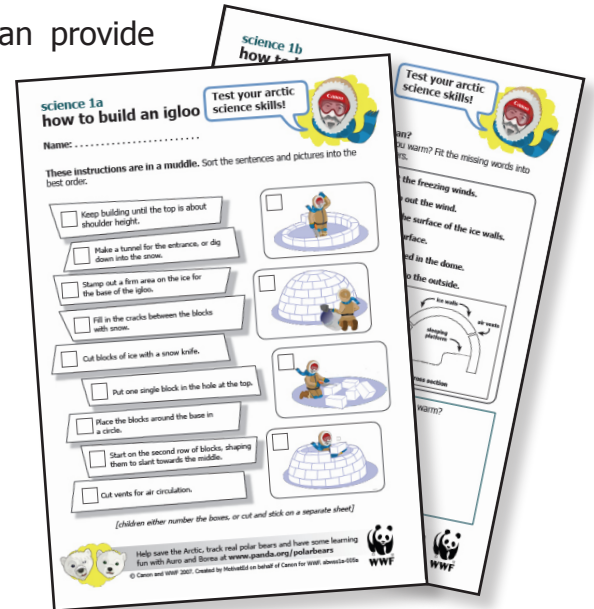
**Interdependence**

**Insulation**

**Warmth**

### Resources

- Website – Arctic Science
- Science Activity Sheet 1
- Thermometer
- A range of materials for experimenting with heat retention and insulation
- Beakers or cups for hot water



### Whole class introduction

- You might like to share the images and information from the Arctic Science section of the website with the whole class, and give them an opportunity to answer some of the questions about Arctic wildlife and science.
- What can the children tell you about what the climatic conditions are like in the Arctic?
- How different is the Arctic climate to that of the United Kingdom? Can the children help you to make a list of the major differences between a typical Arctic winter and British one?
- Show the children Activity Sheet 1. Talk about what an igloo is and how it is made. What materials are used in the construction? How do the inhabitants exclude the cold air?
- Establish that snow is used to fill in the gaps between the blocks of ice and that animal skins are used as insulation.
- What do the children understand by the word 'insulation?' Why is it important to insulate our own houses?
- Discuss both sides of the Activity sheet and make sure the children understand the tasks.

continued...



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### Independent Activities

- The children can work individually or with a friend on first side one then side two of the activity sheet.
- A small group of children could use the Internet – beginning with the **www.panda.org/polarbears** site – to research how three different Arctic animals stay warm in the extremely cold winters in and around the North Pole.
- The children could draw two pictures of themselves – one wearing summer clothes, the other dressed up for a cold British winter. They should label their drawings to explain e.g. the different types of materials used (cotton, wool, thermal linings etc), the number of layers worn, what they wear on their feet, heads and hands etc.
- Ask them to write down three things they have learned about how animals in the Arctic have adapted in order to survive the extreme cold.

### Plenary

- Can the children now tell you how an igloo is built and what sorts of materials are used to keep out the cold and draught?
- Ask them to describe some of the ways in which Arctic animals have adapted to cope in the Arctic climate, e.g. thick fur, splayed hooves and feet so they can walk on the snow, long shaggy coats etc.
- Who can tell you what the word 'insulation' means? Can they write a definition of the word and list three materials that are used for insulating houses and homes in Britain?

### Extension Activities

- Ask the children to draw a picture of their own house. Now ask them to annotate the drawing with explanatory captions showing where heat may be lost (roof, doors, windows, floors.) How can we make sure energy is not lost from these areas (lagging/insulating roofs, curtains and double glazing, floor boards covered etc)
- You could conduct an experiment to test the insulating qualities of a range of materials. Collect a range of different materials such as cotton, wool, cardboard, fake fur, aluminium foil, tissue paper etc. Fill three or four beakers with hot water, wrap each one in a different material. Take the temperature of the water at the start of the experiment and at regular intervals for 10 minutes. Which material seems to be the most efficient at retaining the heat?
- The children could each bring in one item of winter and one item of summer wear and make a class display called perhaps, 'staying warm and keeping cool.' They could label the display and write short explanatory notes about the properties of the different materials used in the clothing and footwear.
- Explore the effects of global warming on the aboriginal peoples of the Arctic.



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# science 1a

## how to build an igloo

Test your arctic science skills!



Name: .....

**These instructions are in a muddle.** Sort the sentences and pictures into the best order.

Keep building until the top is about shoulder height.

Make a tunnel for the entrance, or dig down into the snow.

Stamp out a firm area on the ice for the base of the igloo.

Fill in the cracks between the blocks with snow.

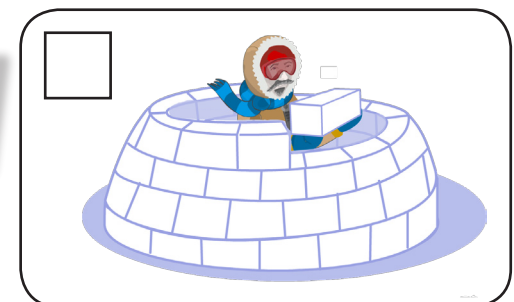
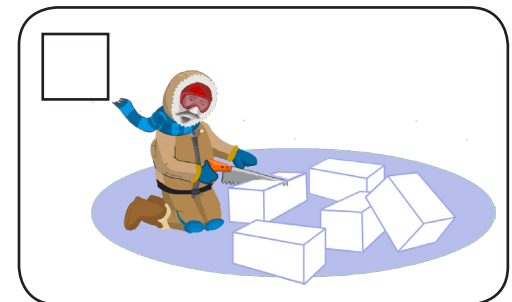
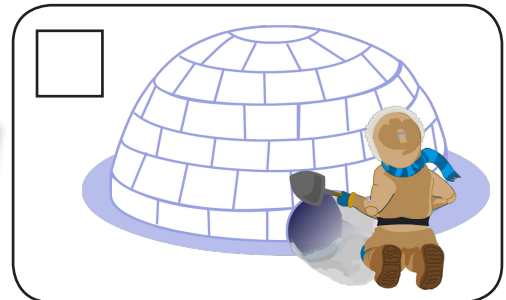
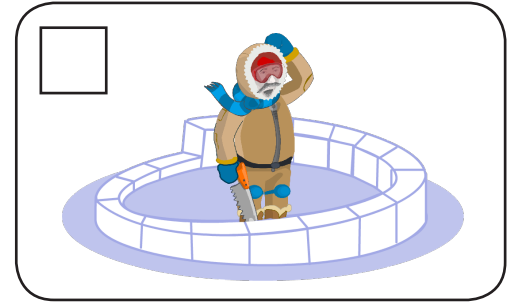
Cut blocks of ice with a snow knife.

Put one single block in the hole at the top.

Place the blocks around the base in a circle.

Start on the second row of blocks, shaping them to slant towards the middle.

Cut vents for air circulation.



*[children either number the boxes, or cut and stick on a separate sheet]*



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# science 1b

## how to build an igloo

Test your arctic science skills!



Name: .....



### What does insulation mean?

So how does an igloo keep you warm? Fit the missing words into the passage to find the answers.

The ice  keep out the freezing winds.

Snow is pushed into the  to keep out the wind.

The warmth inside of the  melts the surface of the ice walls.

This freezes again and forms an  surface.

Hot air from your body  and is trapped in the dome.

Cold air  into the 'sink pit' and flows to the outside.

#### Words to help you:

cracks

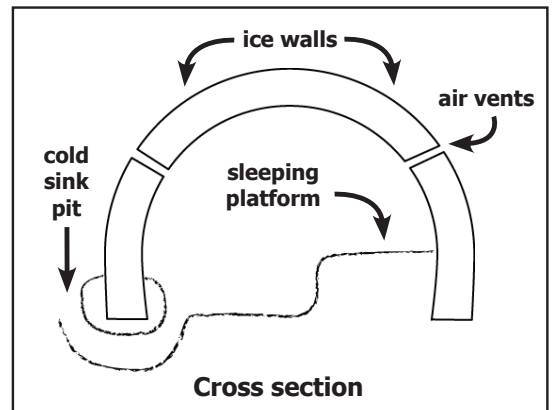
air-tight

igloo

falls

walls

rises



How did people living in the Arctic use these materials to keep warm?



animal skins



ice blocks



snow



animal fat



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# arctic science lesson plan 2

Test your arctic  
science skills!



## Science 2 - Arctic food chain

### Learning Objectives

- To teach the children about the importance food chains in the Arctic.
- To introduce the children to the idea of interdependence.
- To identify where we as humans fit into the food chain.

### Key Vocabulary

Food chain

Plankton

Krill

Fish

Seals

Polar Bears

Arctic Fox

Interdependence

Predator

Food web

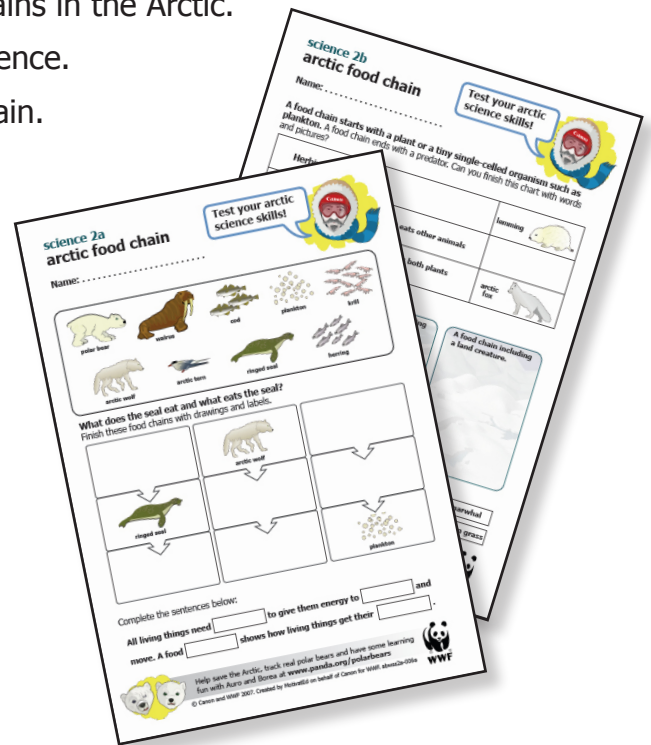
Carnivore

Herbivore

Omnivore

### Resources

- Website – Arctic Science
- Science Activity Sheet 2 – Arctic Food Chain



### Whole Class Introduction

- Ask the children if they know – or can guess what is meant by – the term 'food chain'?
- Establish that a food chain is essentially the order in which animals – including humans – eat other animals and plants. Generally the larger animals, such as hunters and predators, get the 'first pickings' while the smaller ones come lower down the food chain.
- Can the children work out why it is important that species survive. Talk about the concept of interdependence, which can be defined as reliance all living things have on each other in order to survive. In relation to the Arctic mention that global warming is having an effect on the food chain.
- Make a list with the class of the living things we as humans depend on, such as animals for food, materials, plants for food, wood for building, etc.
- Read through both sides of Activity Sheet 2 with the whole class. Ask for volunteers to explain the food chain process as shown on the sheet
- Explore the unfamiliar words, such as herbivore, carnivore and predator, and check that the children understand what they mean. Are humans carnivores, herbivores or omnivores? Do we

continued...



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all fall into the same category?

### Independent Activities

- Ask the children to complete both sides of the activity sheet. They may need, or want to carry out further research to find out more about food chains for birds, sea creatures or land creatures.
- The children could also find out about a range of arctic animals such as the polar bear, musk ox, walrus or caribou. They should write down their findings about what these different animals eat. Which animals are dependent on sea creatures for food and how does the food chain work for them?
- Ask the children to think of themselves in the food chain. Can they make a flow chart showing how they fit into the food chain?
- The children could try writing a definition for each of the words listed under 'key vocabulary' above. Can they think of any other words to add to the food chain list?
- Ask children to explore what happens to the food chain if seals and/or polar bear numbers are diminished by global warming.

### Plenary

- Ask the children to tell you two things they know now that they didn't know before about food chains. Can they describe one of the food chains shown on the activity sheet?
- Do the children understand what is meant by 'interdependence' and why this is so important for the environment?

### Extension Activities

- Look into the effects global warming is having on arctic food chains and what the children can do to stop global warming.
- To reinforce and extend the concept of interdependence and food chains, the children could use the Internet to find out about food webs. What does a food web show that a food chain doesn't?
- Although it is a simple organism the krill is an essential part of the food chain for huge creatures like whales. Ask the children to find out about krill and to make an illustrated fact sheet about how the krill supports the survival of other creatures. Can they produce a food chain diagram showing where the Krill fits in?
- Ask the children to learn to spell the 'key vocabulary' words and to construct a piece of information text using some or all of the words.



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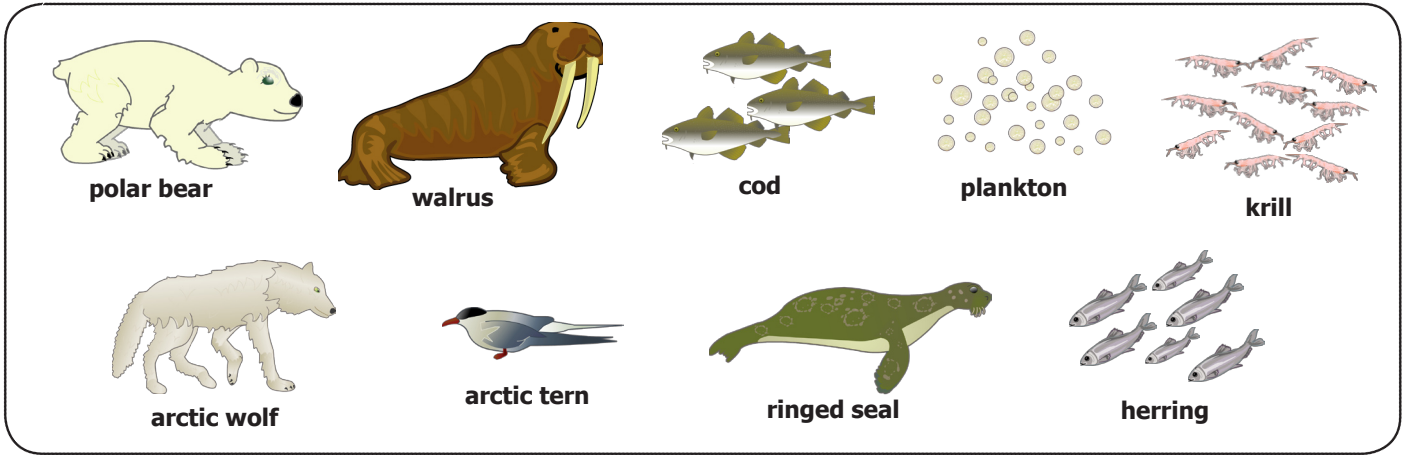
# science 2a

## arctic food chain

Test your arctic science skills!

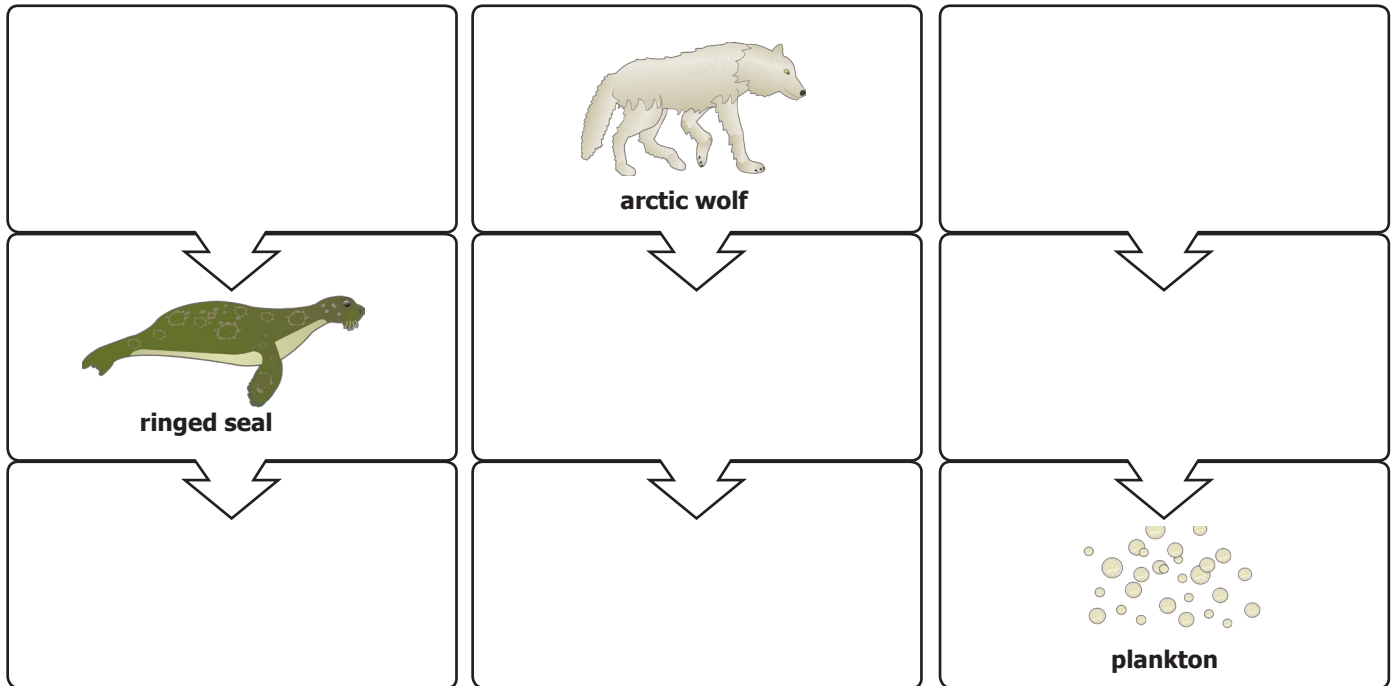


Name: .....



### What does the seal eat and what eats the seal?

Finish these food chains with drawings and labels.



Complete the sentences below:

All living things need  to give them energy to  and move. A food  shows how living things get their .



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# science 2b



## arctic food chain

Test your arctic science skills!



Name: .....

A food chain starts with a plant or a tiny single-celled organism, such as plankton. A food chain ends with a predator. Can you finish this chart with words and pictures?

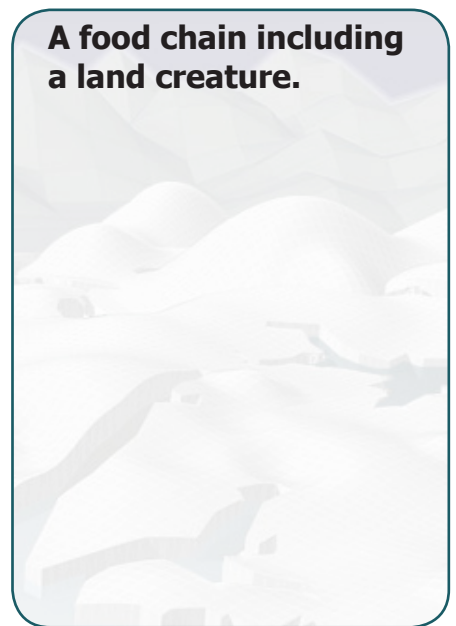
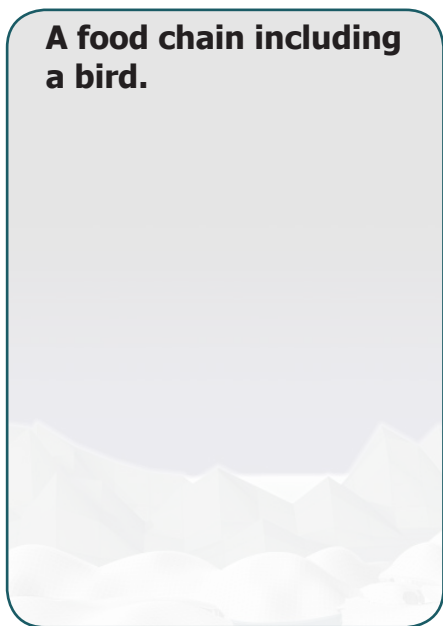
<b>Herbivore</b>		lemming 
	<b>an animal that eats other animals</b>	
<b>Omnivore</b>	<b>an animal that eats both plants and animals</b>	arctic fox 

Make up three more food chains:

A food chain including a bird.

A food chain including a sea creature.

A food chain including a land creature.



This list of plants and creatures will help you:

plankton	algae	ringed seal	kittiwake	arctic tern	narwhal
arctic willow	krill	bee	polar bear	lemming	cotton grass



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# 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

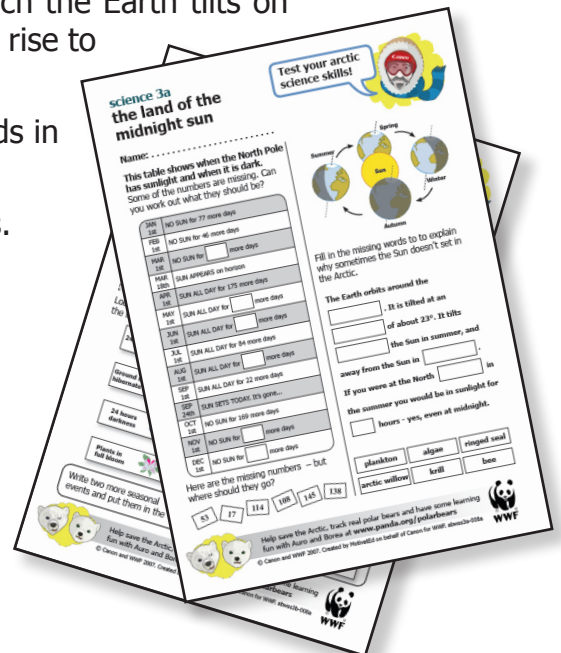
Seasons

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](http://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...



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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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# maths 3a

## arctic take 6

Test your arctic maths skills!



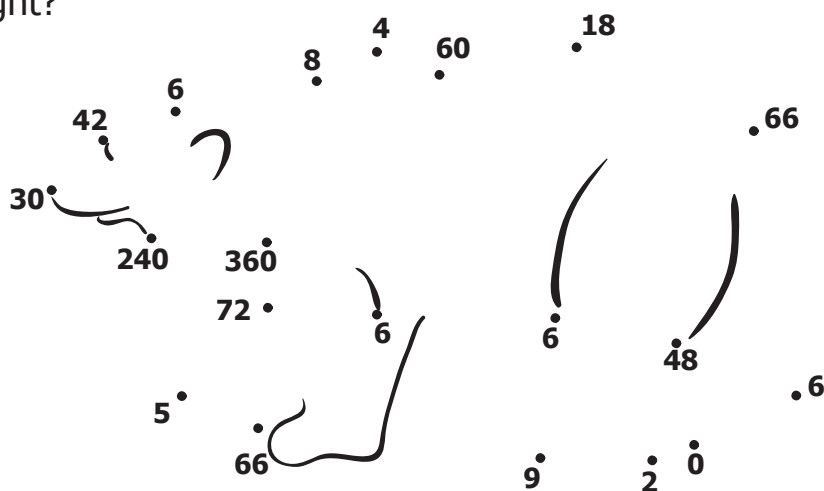
Name: .....

**A hexagon is a six-sided figure.** Use the 6x table to help you answer the questions below.



1.	$6 \times 5 = \square$	11.	$54 - 6 = \square$
2.	$7 \times 6 = \square$	12.	$\square \times 6 = 12$
3.	$36 \div 6 = \square$	13.	$\square \times 6 = 54$
4.	$48 \div 6 = \square$	14.	$5 \times \square = 30$
5.	$24 \div 6 = \square$	15.	$3 \times \square = 18$
6.	$10 \times 6 = \square$	16.	$54 - 6 + 24 - 6 = \square$
7.	$6 + 6 + 6 = \square$	17.	$30 \div 6 = \square$
8.	$72 - 6 = \square$	18.	$12 \times 6 = \square$
9.	$6 - 0 = \square$	19.	$6 \times 6 \times 10 = \square$
10.	$6 - 6 = \square$	20.	$4 \times 6 \times 10 = \square$

Now follow the sequence of answers to reveal the mystery picture. Did you get all the answers right?



Try making your own dot-to-dot puzzle picture. Base it on the number linked to an octagon.



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# maths 3b

## arctic take 6

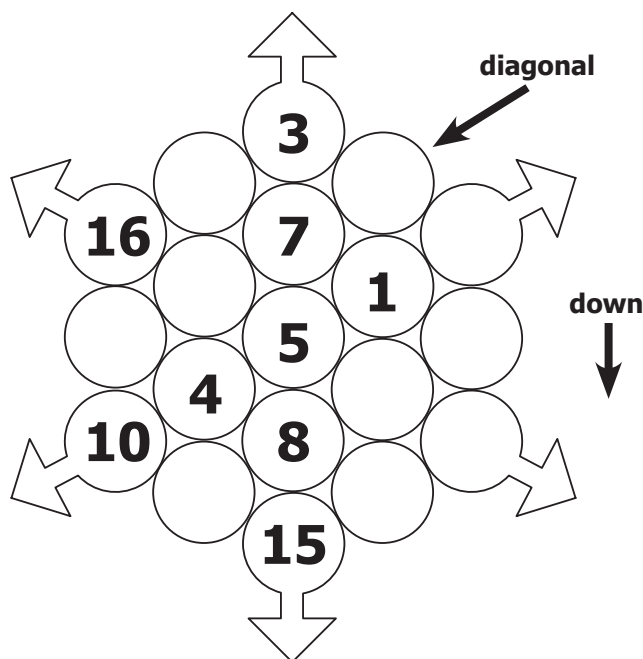
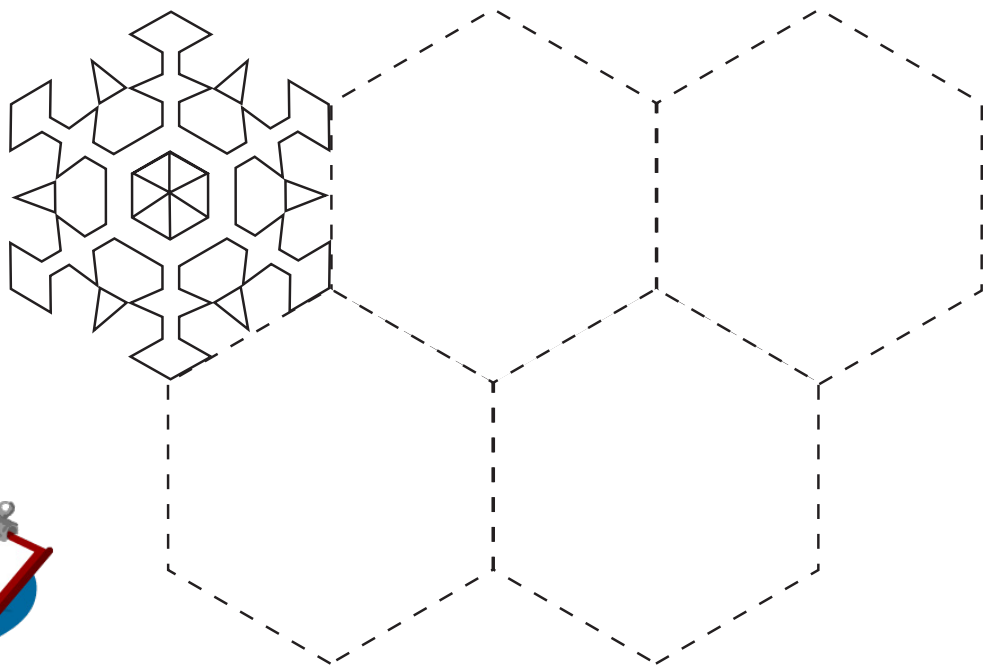
Test your arctic maths skills!



Name: .....

**Snowflakes are all hexagons.** A snowflake can be one single crystal of ice, or several stuck together. Each crystal is a hexagon and is unique.

Draw four more snowflakes to complete this tessellating pattern.



Here are 19 spaces arranged in the snowflake. Whichever way you add up a line, diagonally or downwards, you will always make a total of 38. Fill in the missing numbers.



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