

Ice

You can skate on it, you can put it in drinks and it covers about 10% of the Earth's surface – ice. It has some surprising behaviour and uses.

You might be surprised to know that water doesn't always freeze at 0° Celsius. Ice needs something to form around, such as dust. If there is nothing for it to freeze around, you can lower the temperature of water down to –42° Celsius before it freezes. Another surprising fact is that hot water freezes more quickly than cold water. Aristotle was the first person to notice this in the fourth century BC, but it was Tanzanian schoolboy Erasto Mpemba who proved it in 1963 by demonstrating that a hot ice cream mixture freezes faster than a cold mixture. Scientists still don't know why this happens.

Ice became very popular in London in the 19th century, a long time before people had fridges. The ice produced in the UK was not of good quality and there wasn't enough, so it was imported from Lake Wenham in the USA. To show that the ice was good quality, a shop in London put a block of ice in their window every day with a newspaper behind it. The ice was so clear that you could read the newspaper through the ice and crowds of people came to see it every day.

Ice is also used to build things. Possibly the first ice structure was the Ice Palace in Saint Petersburg in 1740, to celebrate the 10th anniversary of the reign of the Empress of Russia, Anna Ioannovna. The Ice Palace had ice furniture and ice sculptures, including two elephants. As part of the celebration there was also a pretend 'wedding' of couples in traditional costumes from different areas of Russia. In 2006, ice artists recreated the Ice Palace using three tons of ice, but this time there were real weddings in the Ice Palace!

Another use of ice is for entertainment. When it's winter in the northern hemisphere, there are ice festivals and ice sculpture competitions in many countries including Japan, Russia, Canada and Finland. Possibly the most famous is the Harbin Ice and Snow Festival in China, which attracts ice sculptors from more than 20 countries and displays around 2,000 ice sculptures, including sculptures of famous people, animals and famous buildings like the Eiffel Tower or the Great Wall of China.

1 Before reading the text, think about all the ways you can use ice. Now read the text. How many of your ideas are talked about in the text?

2 Read the article and decide if the sentences are true (T) or false (F). Circle the correct statements and correct those that are false.

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| 1 | Water always freezes at 0° Celsius. | T/F |
| 2 | Aristotle demonstrated that hot water freezes faster than cold water. | T/F |
| 3 | The UK couldn't produce enough ice for their needs in the 19 th century. | T/F |
| 4 | The ice from Lake Wenham was very clear. | T/F |
| 5 | The Ice Palace in St Petersburg celebrated the 1 st anniversary of a Russian Empress. | T/F |
| 6 | There was a real wedding in the Ice Palace in 1740. | T/F |
| 7 | The Harbin Ice and Snow Festival has international sculptors. | T/F |

3 The article uses adjectives ending in *-ing* and *-ed*, eg *Ice has some surprising uses*. You might be surprised.

- Which adjective describes how you feel: *-ed* or *-ing*? _____
- Which adjective describes things or situations that make you feel that way: *-ed* or *-ing*?

4 Now choose the correct adjective.

- 1 The ice sculpture of the Great Wall of China was very *interesting* / *interested*.
- 2 It's *amazing* / *amazed* that ice doesn't always freeze at 0° Celsius.
- 3 I was very *frightening* / *frightened* the first time I went ice skating.
- 4 The children were a bit *boring* / *bored* by the ice museum.
- 5 It's *surprising* / *surprised* that hot ice cream freezes faster than cold ice cream.
- 6 People were very *interesting* / *interested* to see that they could read a newspaper through a block of ice.

5 The article says *The ice was so clear that you could read a newspaper through a block of ice*. This means the same as *The ice was very clear. For that reason you could read a newspaper through a block of ice*. Rewrite the following sentences using *so* (adjective) *that* ...

- 1 The ice sculpture competition was very interesting. For that reason I went to see it twice.
- 2 Ice was very popular in the London in the 19th century. For that reason some ice was imported from the US.
- 3 The ice palace was very big. For that reason they needed three tons of ice to recreate it.
- 4 Ice festivals are very popular. For that reason there are ice festivals in many countries.

6 Match the nouns to the definitions below.

ice bucket	black ice	ice cap	iceberg	Ice Age
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- 1 a period of time thousands of years ago when large areas of the Earth were covered in ice _____
- 2 a large area of ice that covers the land and sea around the North or South Pole _____
- 3 a dangerous layer of ice that is difficult to see on a road or path _____
- 4 a very large piece of ice floating in the sea, most of which is below the surface _____
- 5 a container for keeping small pieces of ice or bottles in to keep them cold _____

7 Now complete the sentences using one of the nouns above.

- 1 You should drive carefully in winter when there is _____ on the roads.
- 2 The ship hit an _____ and sank.
- 3 Large areas of the Earth were covered in ice for thousands of years during the _____.
- 4 If the drinks aren't very cold, put them in an _____ to get cold.
- 5 At the North and South Poles, there are _____ covering the land and sea.

8 Discuss these questions with your partner(s).

- What did you find interesting or surprising about the text?
- Have you visited / Would you like to visit an ice and snow festival?

Glossary

- block** (*noun*) – a solid piece of wood, stone, ice etc with straight sides
demonstrate (*verb*) – to show clearly that something is true or that it exists
display (*verb*) – to put something in a particular place so that people can see it easily
dust (*noun*) – very small pieces of dirt that cover surfaces inside buildings like a powder
empress (*noun*) – a woman who rules a number of countries ruled by one person or government
notice (*verb*) – to become conscious of someone or something by seeing, hearing, or feeling them
recreate (*verb*) - to make something exist again
sculpture (*noun*) – a solid object that someone makes as a work of art by shaping a substance such as ice, stone, metal, or wood **sculptor** (*noun* – a person)
structure (*noun*) – something large such as a building or a bridge that is built from different parts