



Guided Reading

Take your time to read the article entitled '**Bad news as Arctic sea ice shrinks**', which appeared in **The Week Junior** on 1st October 2016.

Next, answer the questions below.



Animals and the environment

WHAT DOES IT MEAN?

The word Arctic comes from the Greek word *arctos*, meaning bear. It is named after two famous constellations (groups of stars that create recognisable patterns), the Great Bear and Little Bear. The constellations appear in the sky above the Arctic all year round.

The ice at the Arctic is in danger.

Tales from the Arctic



14-year-old Benji Edwards saw the lack of Arctic sea ice first-hand after recently becoming the youngest person to sail around the North Pole in one season. Setting off on 19 June, Benji (along with a crew of experts) spent more than four months at sea. Benji described the challenge as amazing, but also alarming, as he saw very little ice. One of the crew described it as "extremely worrying".

Bad news as Arctic sea ice shrinks

Average temperatures at the Arctic can reach a seriously frosty -40°C . It may be a vast and barren landscape, but it is home to thousands of plants and animals, including the polar bear. Last month, it was announced that the Arctic sea ice had shrunk to its second-lowest level ever recorded. This isn't just bad news for the creatures that live there; the shrinking ice affects the entire planet.

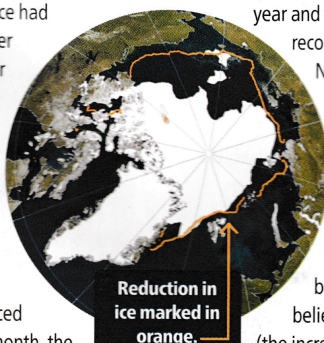
What's happened?

On 15 September, the National Snow and Ice Data Centre (NSIDC) – a US organisation that researches the Earth's frozen regions – announced that during the first 10 days of the month, the sea ice in the Arctic melted to its second-lowest level since records began. The Arctic sea ice extent (the

measurement of the area of Arctic ocean where sea ice is present) was recorded at 1.6 million square miles on 10 September. This is lower than the 1.71 million square miles measured during the same month last year and the 1.94 million square miles recorded in 2014. Mark Serreze from NSIDC, said, "it's a tremendous loss we're looking at here".

Why is the Arctic sea ice shrinking?

The Arctic sea ice melts naturally every year owing to the warmer weather during summer months, but returns in the winter. However, it's believed that the rate of global warming (the increase in the planet's temperature) is speeding up the loss of sea ice. The sea ice was also thinner than usual, so didn't take long to disappear.



Reduction in ice marked in orange.

Why is sea ice important?

Vast areas of sea ice help keep the planet's climate stable. Since the sea ice has a bright surface, it reflects 80% of sunlight back into space. When the sea ice melts, however, the dark ocean surface is revealed and absorbs 90% of the sunlight. The sunlight then warms up the ocean, which makes the polar temperature rise, and causes more ice to melt. Currently, sea ice in the Arctic during September is decreasing at a rate of 13% every 10 years – that's the same as losing more than the size of Scotland every year.

What does this mean for the Earth?

If the Arctic sea ice continues to shrink or the low levels of sea ice become more long-term, it could affect the planet's weather patterns. Rising sea levels caused by melting ice could lead to more flooding in lots of countries, as well as making it harder for animals, such as polar bears, to survive.

Questions

1. Where does the word '*Arctic*' come from?
2. What is a **constellation**?
3. What record did **Benji Edwards** set?
4. How does **Benji Edwards** describe his recent challenge?
5. What is the **landscape** like in the Arctic?
6. Name **one animal** that you might see there.
7. According to the National Snow and Ice Data Centre (NSIDC), what happened during the **first ten days of September 2016**?
8. By how much has the Arctic sea ice extent changed in recent years (**difference between the figures** given for **September 2014 and September 2016**)?
9. What **three** reasons are given for the Arctic sea ice shrinking?
10. Why is **sea ice** so important?
11. At what **rate** is sea ice in the Arctic currently decreasing?
12. What **three** things that might happen to our planet if the Arctic sea ice continues to shrink or the low levels of sea ice become more long-term?

Answers

1. The word Arctic comes from the Greek word *arctos*, meaning bear.
2. A constellation is a group of stars that create a recognisable pattern.
3. Benji Edwards became the youngest person to sail around the North Pole in one season.
4. Benji Edwards described his recent challenge as 'amazing, but also alarming'.
5. The landscape is cast and barren.
6. You might see a polar bear.
7. During the first 10 days of the month, the sea ice in the Arctic melted to its second-lowest level since records began.
8. It has changed by 0.11 million square miles, or 110,000 square miles. (1.71 million square miles in September 2014 to 1.6 million square miles in September 2016).
9. The three reasons are:
 - a. Natural melt owing to warmer weather during summer months.
 - b. The rate of global warming is speeding up.
 - c. Thinner sea ice than usual so it didn't take long to disappear.
10. Vast areas of sea ice help keep the planet's climate stable.
11. 13% every ten years. The same as losing more than the size of Scotland every year.
12. The three things that might happen to our planet due to shrinking sea ice are:
 - a. It might affect the planet's weather system.
 - b. More flooding due to rising sea levels caused by melting ice.
 - c. It will be harder for animals, such as polar bears, to survive.