



lingoda

Ice ages

READING

LEVEL
Advanced

NUMBER
C1_3035R_EN

LANGUAGE
English





Goals

- Can read and understand a complex text about the different ice ages of Earth's history.
- Can speculate what effects the ice ages had and express my own views on the topic.

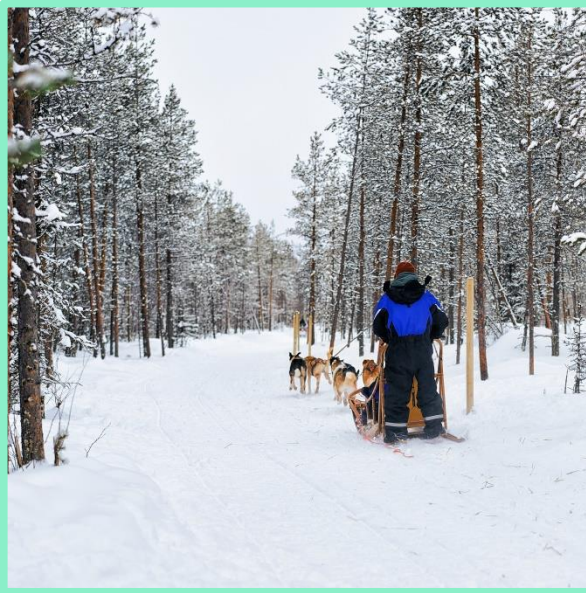






Where in the world?

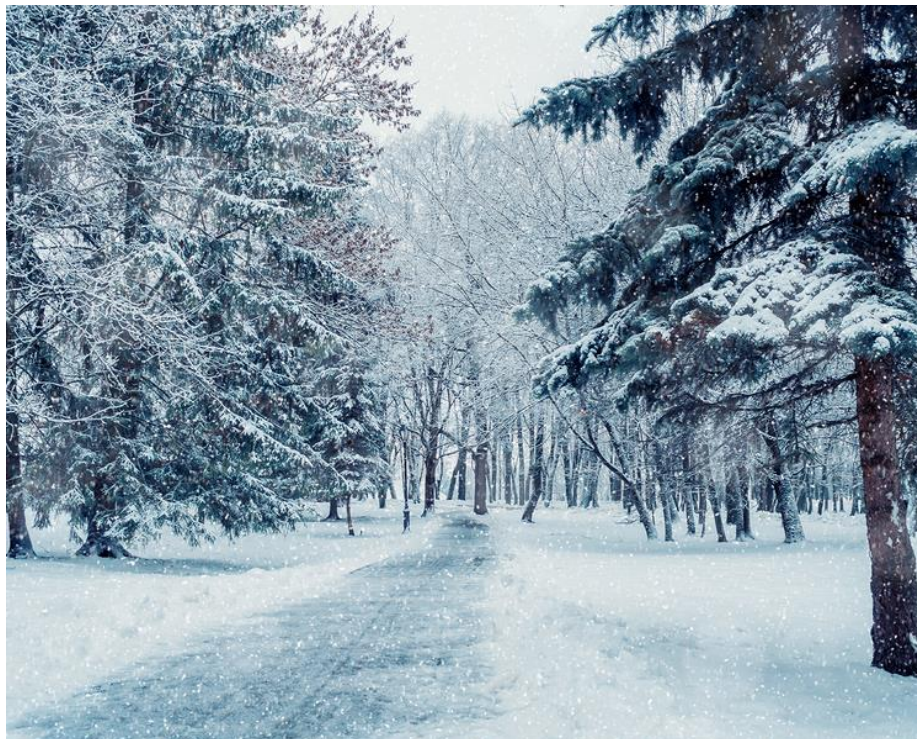
Where are the coldest regions on Earth at the moment? Would you like to visit any of these places?





Siberia

The coldest inhabited places on Earth are in Siberia. How do you think people, animals and plants have adapted to living there?





Your climate

Do you think the **climate** is
getting **warmer** or **cooler**
where you live?
Do you see any evidence of this?





Ice ages

For many of us, the term Ice Age brings to mind snow covered lands populated by **woolly mammoths** and human beings running around covered in **fur**. This image is not entirely incorrect, though it only relates to one of the many ice ages which our planet has seen.

Currently, we know of five major ice ages. The first was recorded 2.4 - 2.1 billion years ago; it is both the oldest and the longest period of **glaciation** to date and has been named the **Huronian Ice Age**. It occurred at a time when only **single-celled organisms** populated Earth and it led to a **mass extinction** event. It is believed that this ice age was **triggered by** the appearance of large amounts of oxygen in the atmosphere for the first time when the aforementioned single-celled organisms exploded in great numbers.

There are two competing theories as to how much of the planet was covered in ice at that time. The **Snowball Earth** theory says that the whole earth was covered in ice, while the **Slushball Earth** theory maintains that the earth was covered mainly in slush.



Do you know this vocabulary from the text?

woolly mammoth

fur

glaciation

single-celled
organism

mass extinction

triggered by



Ice ages

**Are you surprised that
Earth has been
through five ice ages?**



Snowball or slushball?

What is the difference between a snowball Earth and a slushball Earth?





Snow or slush?

Read through the hypothesis of how life survived during a snowball or slushball Earth. Which do you think is more likely to have occurred?

- During a snowball Earth, life would have survived near to the surface of thin ice where sunlight could penetrate and photosynthesis could occur.



- During a slushball Earth, there were pockets of water near to the equator which were not frozen and where life was able to survive.





Ice ages

Three more ice ages occurred between 860 million years ago and 260 million years ago. During this time, Earth went through several phases of being covered, partially or completely, in ice. During the **Cryogenian Ice Age**, the land was **reshaped** by the **shifting** and breaking up of a **super continent**, and volcanoes released large amounts of CO₂ which warmed up Earth's surface, eventually causing the ice age to **cease**. Life during this period was made up of **microscopic organisms**. The next ice age, the **Andean-Saharan**, which was relatively minor in comparison with what had come before, mainly covered West Africa and southern South America.





Ice ages



Despite the mild nature of the Andean-Saharan glaciation, a mass extinction event occurred, interrupting the **explosion of life** which had happened before it. However, the planet managed to recover fairly quickly and life once again began to develop.

The **Karoo Ice Age** occurred at a time when there was an explosion of new plants and trees. These **life forms** released huge amounts of oxygen into the atmosphere and the level of CO₂ was greatly reduced, stopping the greenhouse effect that CO₂ helps to create. This led to the gradual cooling of Earth's surface and the **expansion** of the **polar ice caps**.



Fill in the gaps

Fill in the gaps with vocabulary from the boxes.

reshaped

polar ice

shifts

expanding

cease

1. When something is growing or getting bigger it is _____.
2. When something has its shape changed, we say that it is _____.
3. Stop is a synonym for _____.
4. The areas of ice which cover the most northern and southern parts of our planet are called the _____ caps.
5. When something changes position we can say that it _____.





Ice ages

Write one sentence about each of these ice ages according to what you have read.

Cryogenian

Andean-Saharan

Karoo

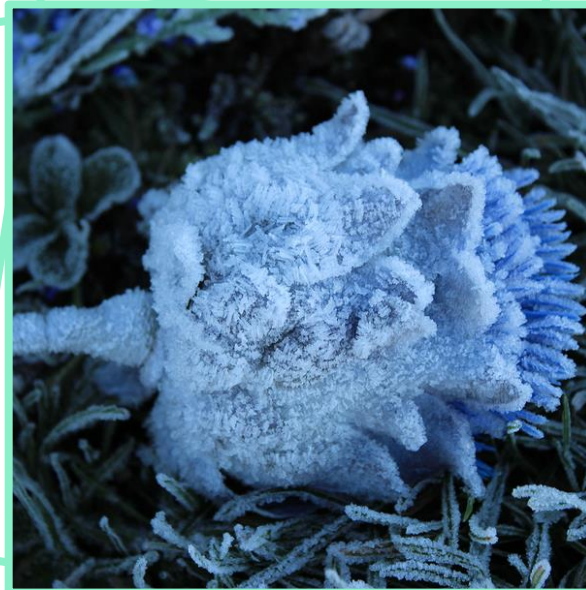
Handwriting practice lines for notes:



Mass extinctions

Previous ice ages caused **mass extinction** events and then life **came back**.

How do you think a mass extinction would affect our **planet** now, and how would life look afterwards?





Ice ages

The final ice age is the one we are living in now. The so-called **Quaternary glaciation** began around 2.5 million years ago, and has been characterised by the **cyclical expansion** and **retreat** of **glacial ice fields**. For the last 10,000 years we have been living in a time of retreat and the glacial ice sheets are **confined to** Greenland and Antarctica. The Quaternary glaciation is the only one in which **homo sapiens** have been involved and thus we know more about this ice age than any other.





Ice ages

The **Pleistocene**, as the cooler era from 2.5 million years ago to around 11,000 years ago is called, saw the continents in the same position as they are in now. At one point during this era, large parts of the continents of Europe, North America and South America were covered in ice, along with smaller parts of Asia. Very large mammals are known to have **roamed** the planet during this period, the best-known being the **woolly mammoth**, but there were others such as the **sabre-toothed cat** and the **giant ground sloth**. The end of this era's ice age saw these large mammals **become extinct**. However, many smaller animals and birds **survived** and still exist today.



Ice ages



The period of time called the **Last Glacial Maximum** occurred around 20,000 years ago. Great **ice sheets** covered the far north of our planet and sea levels were around 300 metres lower than they are today. This meant that a **land bridge** was exposed between Asia and modern-day Alaska, which **hunter-gatherers** crossed, joining the so-called old world with the new. Since then, the earth has undergone a **period of warming** and sea levels have risen considerably to where they are today.



Match the words to the pictures

1. hunter-gatherer

2. woolly mammoth

3. ice sheet

4. period of warming

5. rising sea levels

6. continents

A



C



E



B



D



F

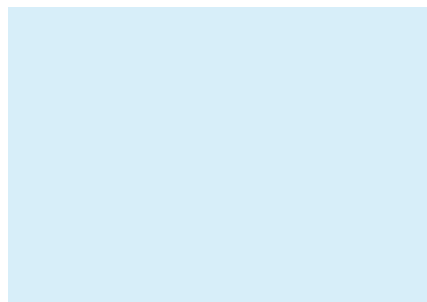
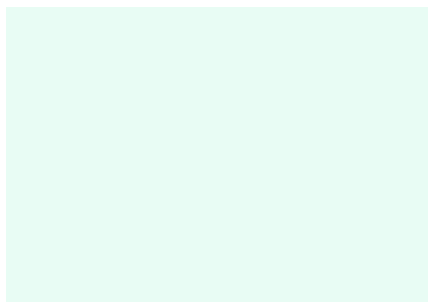
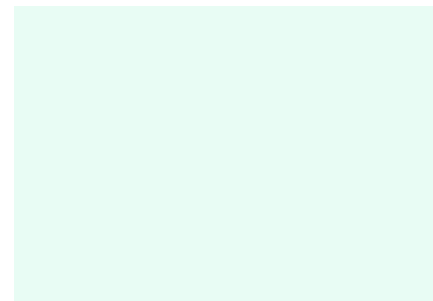
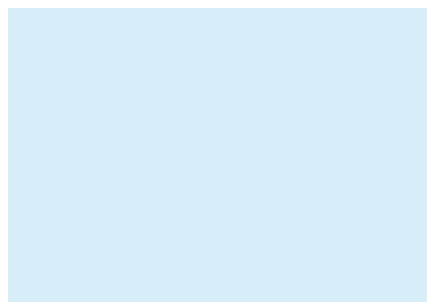




Ice ages

Fill in the chart with the ice ages you have read about and put in the dates of each one.

Huronian Ice Age
2.4 – 2.1 billion
years ago





Human migrations

Ice ages have enabled human migrations in history.
How do you think the world would be different if these migrations had not been able to occur?



Siberia to Alaska

Indonesia to
northern Australia



Predicting a changing climate

Do you think it is possible for **scientists** to **predict** how our **climate** is going to **change** next?

Have you heard any of the **predictions**?





Speaking

Read through the sentences below and discuss with your teacher whether you agree or disagree.



The melting ice that we see now is not due to human activity but is part of a much longer cycle of warming and cooling that Earth goes through.



Humans will adapt to a changing climate and will survive if a harsh ice age comes to Earth again.

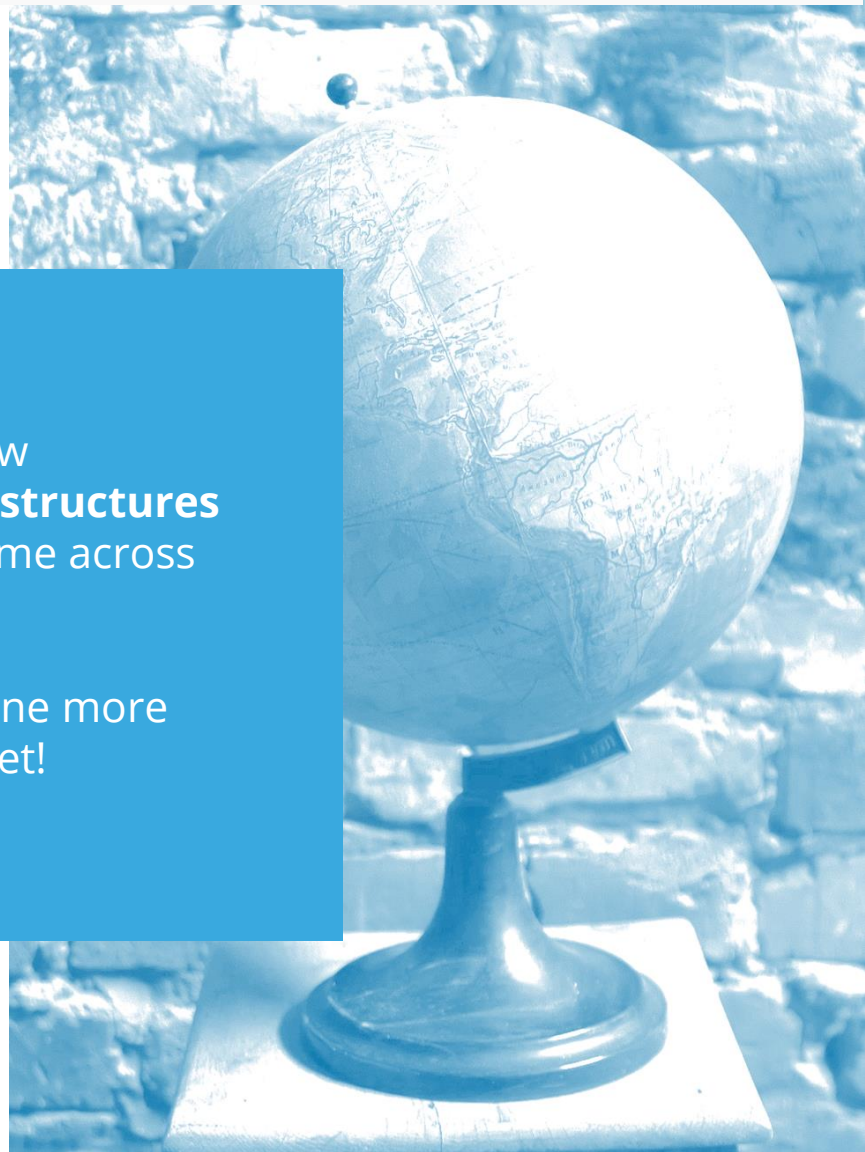




Reflect on this lesson

Take a moment to review any new **vocabulary, phrases, language structures** or **grammar points** you have come across for the first time in this lesson.

Review them with your teacher one more time to make sure you don't forget!





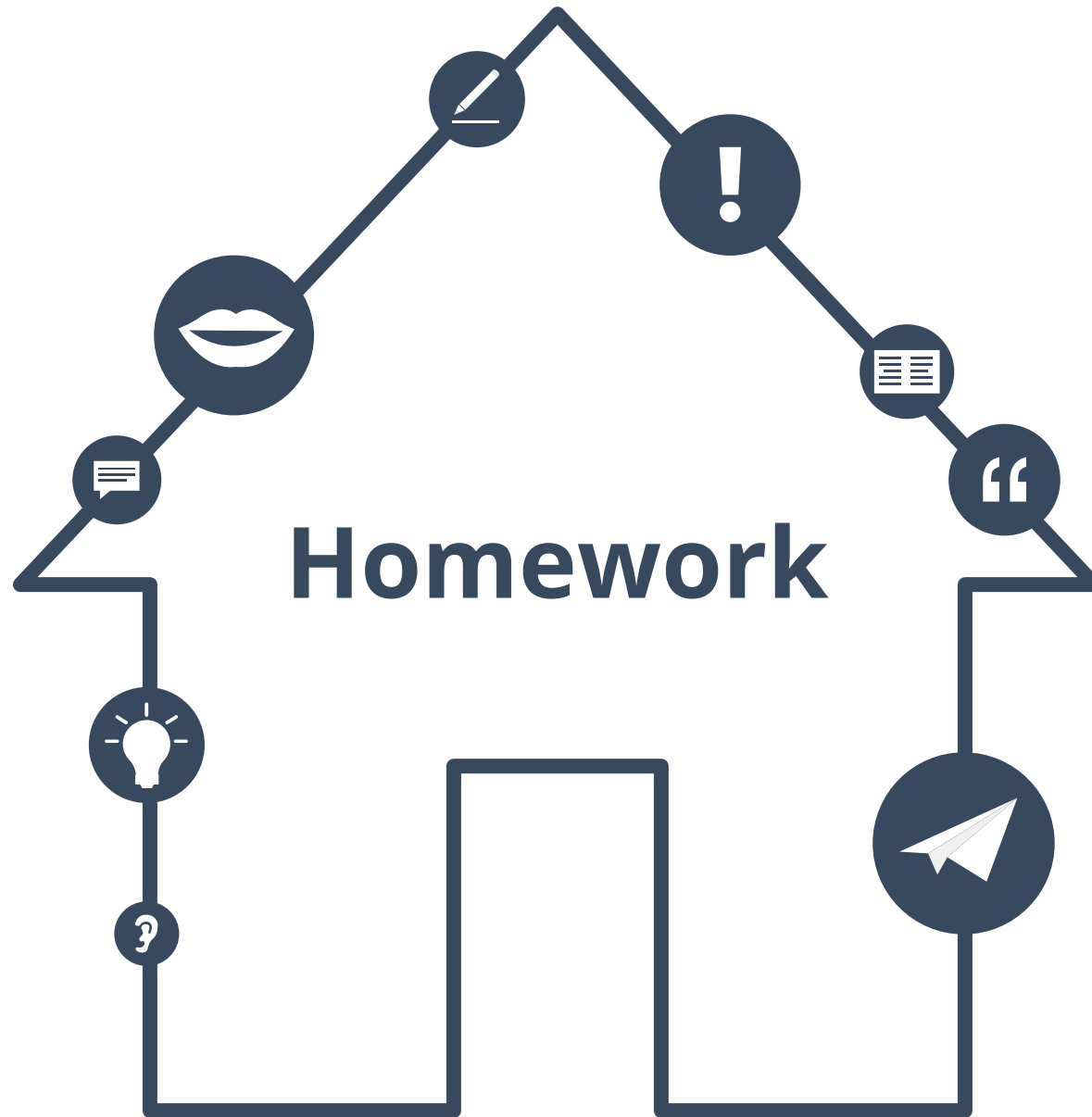
Answer key

Exercise p. 20

A = 6. continents, B = 5. rising sea levels, C = 4. period of warming, D = 2. woolly mammoth, E = 3. ice sheet, F = 1. hunter-gatherer

Exercise p. 14

1. expanding, 2. reshaped, 3. cease, 4. polar ice, 5. shifts





Ice ages

The _____ was the first known ice age to have occurred on Earth. It began about 2.4 billion years ago. The next ice age was called the _____; this period of glaciation started about 860 million years ago. The following ice age, the _____, was relatively mild, but was followed by the much harsher _____ Ice Age. The ice age which we are still living through is called the _____ glaciation.

Andean-Saharan

Karoo

Quaternary

Cryogenian

Huronian



Complete the sentences

Using your knowledge from the lesson, complete the following sentences.

1. The Huronian Ice Age was...
2. During the Cryogenian Ice Age...
3. The Andean-Saharan Ice Age...
4. The Karoo Ice Age occurred...
5. The present glaciation, the Quaternary, is...



Homework answer key

Exercise p. 28

1. Huronian, 2. Cryogenian, 3. Andean-Saharan, 4. Karoo, 5. Quaternary



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