

# Human evolution and the role of tools

READING

LEVEL  
Advanced

NUMBER  
C1\_4035R\_EN

LANGUAGE  
English

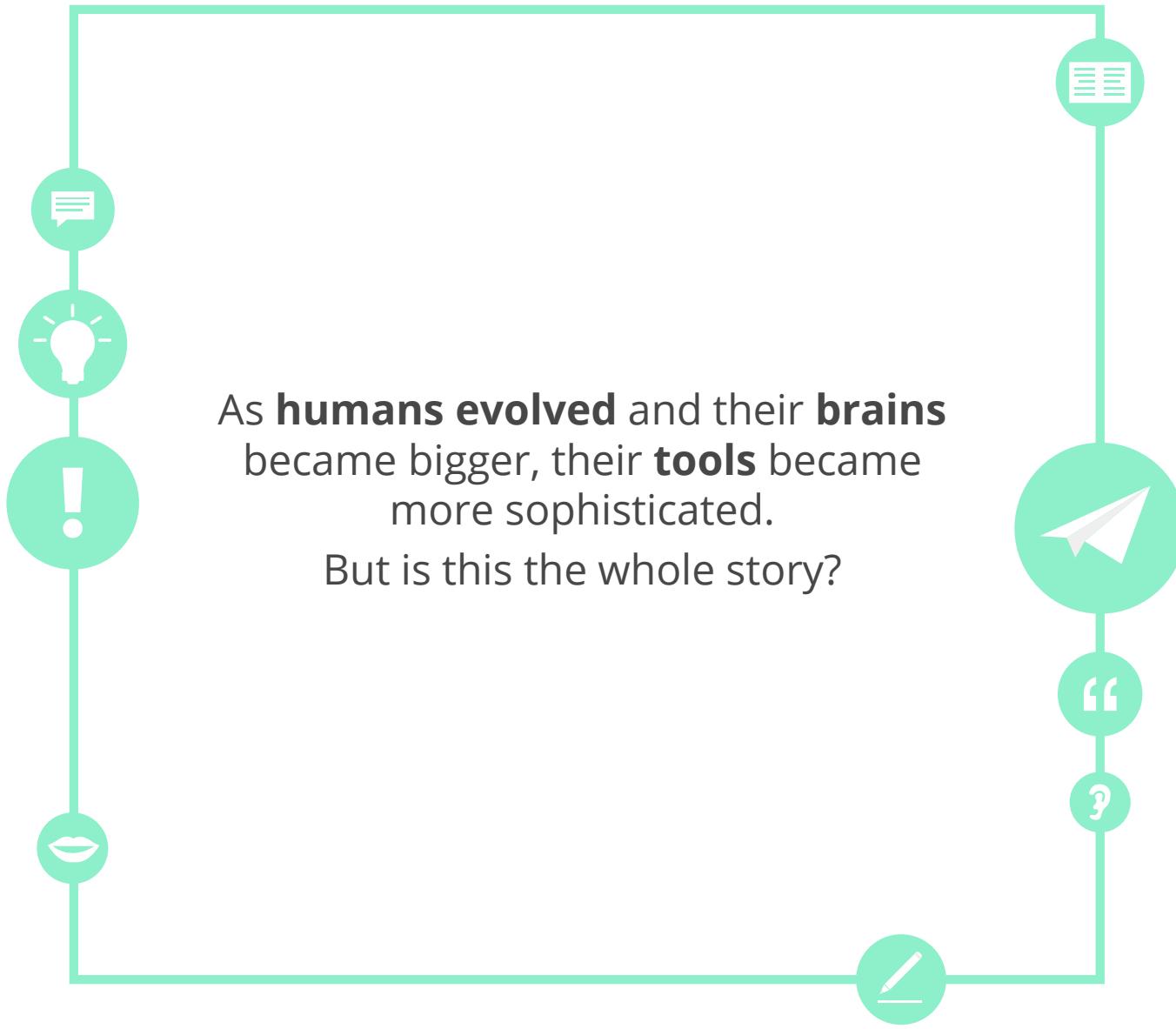




## Goals

- Can read and understand a complex text about the role tools have played in human evolution.
- Can discuss how humans have evolved alongside their tools at length.







# Stages of evolution

What do you know about the stages of human evolution?

## EVOLUTION OF HUMAN



*Sahelanthropus tchadensis*



*Australopithecus africanus*



*Homo erectus*



*Homo neanderthalensis*



*Homo sapiens*



## Early tools

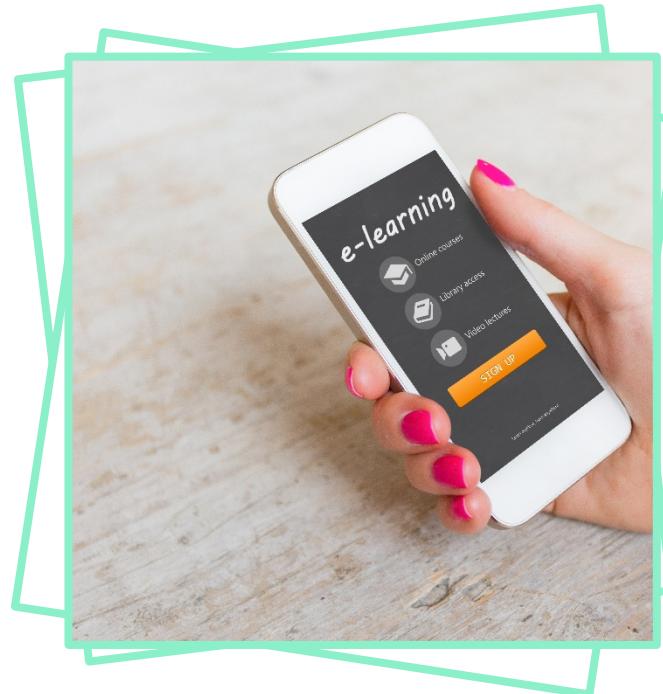
**What kind of tools do you think early humans might have used?  
What materials do you think they were made from?**





## Modern tools

**What tools do you think we cannot live without in the modern world? How do they help us?**





## Vocabulary

**Discuss the words below. Do you know what they all mean?**



genus

species

family tree

hominids

homo

genomes



## Human evolution and the role of tools

Scientists are increasingly making the connection between the development of tools and human evolution. While this may not seem like anything revolutionary, scientists are now proposing that the tools themselves **propelled** our evolution, **expounding a two-way relationship** between humans and objects.

All living humans now are classified as **Homo sapiens**, **Homo** meaning man, and **sapiens** meaning wise. We have to look way back in our **family tree** to see the first tool-users. However, we do not always have to look back in time, chimpanzees and other apes can create and use **rudimentary** tools such as **spears**. This suggests that our **genus** has been using tools for as long as we have existed.



## Human evolution and the role of tools



The first **unquestionable** known users of tools were the **Homo habilis**, the aptly named handy man. They lived about 2.6 million years ago, and whose fossilised evidence of the use of tools was found in modern-day Ethiopia. These tools were **crude**: early humans used **hammerstones** to strike stone **cores** and produce sharp **flakes** to be used as implements for making cuts.

Scientists point out that these early members of our genus did not carry tools around, rather creating tools on the spot and then dropping them again when they were no longer required. This type of technology existed for almost one million years.



# What can you see in the pictures?

A



B



C



D





## Fill in the gaps

Fill in the gaps using the words from the text.

hammerstones

handy

sapiens

crude

family tree

1. We call ourselves Homo \_\_\_\_\_, which means wise man.
2. We called the species which we believe first used tools, Homo habilis, which means \_\_\_\_\_ man.
3. The tools of Homo habilis were \_\_\_\_\_.
4. Chimpanzees are a part of our \_\_\_\_\_.
5. Homo habilis used \_\_\_\_\_ to strike stone cores and create sharp flakes.





## Classifying humans

Why do you think scientists have chosen to classify us as *Homo sapiens* and the earlier humans as *Homo habilis*? What do you think humans in the next stage of evolution might be called?





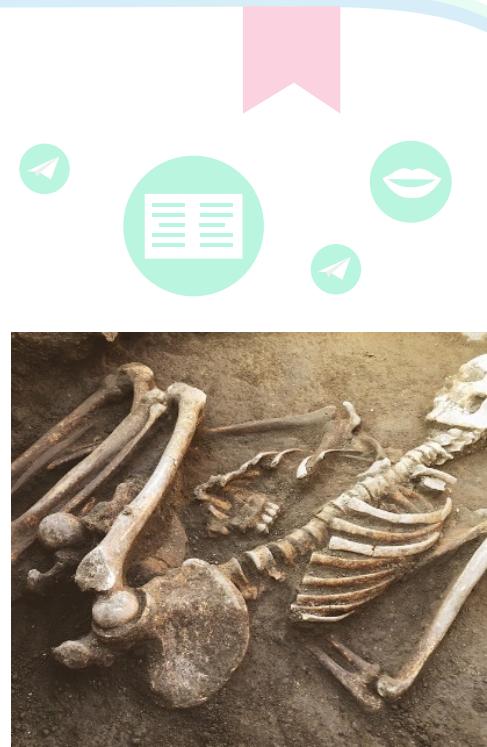
## Humans and chimpanzees

We often believe the use of tools is one of the things that makes us human. If chimpanzees can use tools too, what really **differentiates** us from them?



## Human evolution and the role of tools

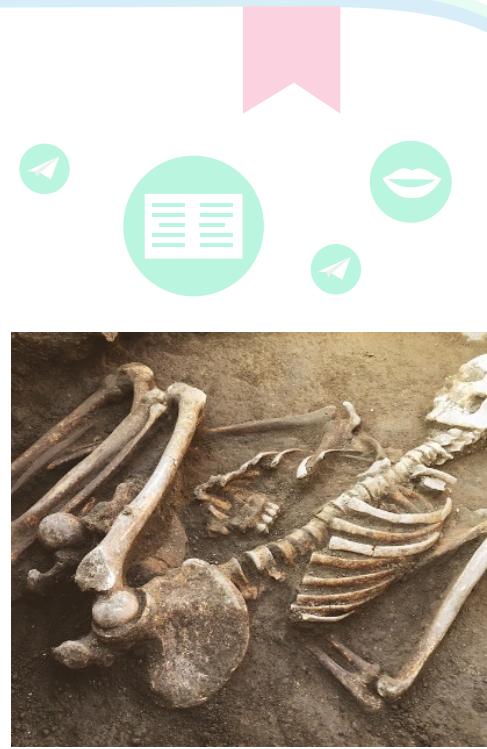
**Hominids** at that time used the tools to butcher animals, as evidenced on cut marks in fossilised bones. They also used tools to **crush** and **pound** animals for meat, and to break open their bones for **marrow**. The landscape of Sub-Saharan Africa was undergoing huge changes between 2 and 3 million years ago, and tools would have helped early humans access new food sources.





## Human evolution and the role of tools

Around 1.8 million years ago, *Homo habilis* had evolved into ***Homo erectus***, and with them new technology came. **Hand axes** and **cleavers** now constituted the tool kit of these early humans, and were no longer **discarded** but carried around by individuals. These tools required more shaping and forming, and were more specialised in their use. They were relied on regularly; the first evidence of consistent **butchery** activities dates from this period.





## Human evolution and the role of tools



How did tools influence our evolution? Greater access to meat **propelled** our evolution forward in several ways. Meat is a concentrated source of **protein**, fat, calories and other **nutrients**, and as early humans' meat intake increased, so too did the size of their **brains**. This was connected to a reduction in the size of their **gut**. Energy which would previously have gone straight to the stomach could be diverted to the brain.

Furthermore, while **tearing** and **ripping** an animal **carcass** straight from the bone required large **jaws** and teeth, using tools to remove and cut the meat up meant that we developed smaller teeth and a less **prominent** jaw. This made early humans look more like us, even allowing us to develop advanced speech organs.



## Defining vocabulary

Match some of the words in bold from the text to their definitions below.

1. The body of a dead animal, especially one that will be eaten.
2. To throw something away.
3. To hit something repeatedly with lots of force.
4. To pull apart, or pull pieces off.
5. Something which sticks out.
6. Soft tissue at the centre of a bone.





## Evolutionary changes

What were the main evolutionary changes in our appearance mentioned in the text? Do you think our appearance would have changed without the use of tools?





## Meat-eaters?

**Do you think human evolution shows that we should be meat-eaters as a species? What arguments are there for and against this view?**





## Human evolution and the role of tools

The next great **leap forward** came after another million years had passed. This came with the control of **fire**, allowing for food to be cooked, making the food **edible** year round. The heat assisted in releasing nutrients in the food, making it easier to **digest**.

The use of tools shows **natural selection** being influenced by **cultural inventions**. When late Homo erectus moved into colder climates, **natural selection** should have determined an increase in stored body fat and additional hair covering the body to account for the freezing weather. However, because humans could control fire and thus give themselves warmth, and because they could hunt for and process meat effectively, these changes did not happen. Homo erectus remained a mainly tropical species living in a cold climate. As a result, natural selection continued to select for increased brain size.

Nowadays, we can see how tools protect us in many areas, and how we could potentially **perish** in a cold climate, when tools are taken away from us.



## Discuss

**What other tools from  
our past may have had  
an impact on our  
evolution?**



## Evolution in the future



Do you think the tools we have now will change the way we look in the future? Do you think modern technology will have an impact on our evolution?



## Imagine you are a museum guide

You are a guide at a museum and you are going to give a short talk on the role of tools in human evolution. Your audience will be a group of teenagers.

- Use facts from the reading texts and discussions to be as creative as possible!





## Write a text

**Write a text of about 100 words to accompany your museum talk. This will be a handout for the teenagers who are listening.**



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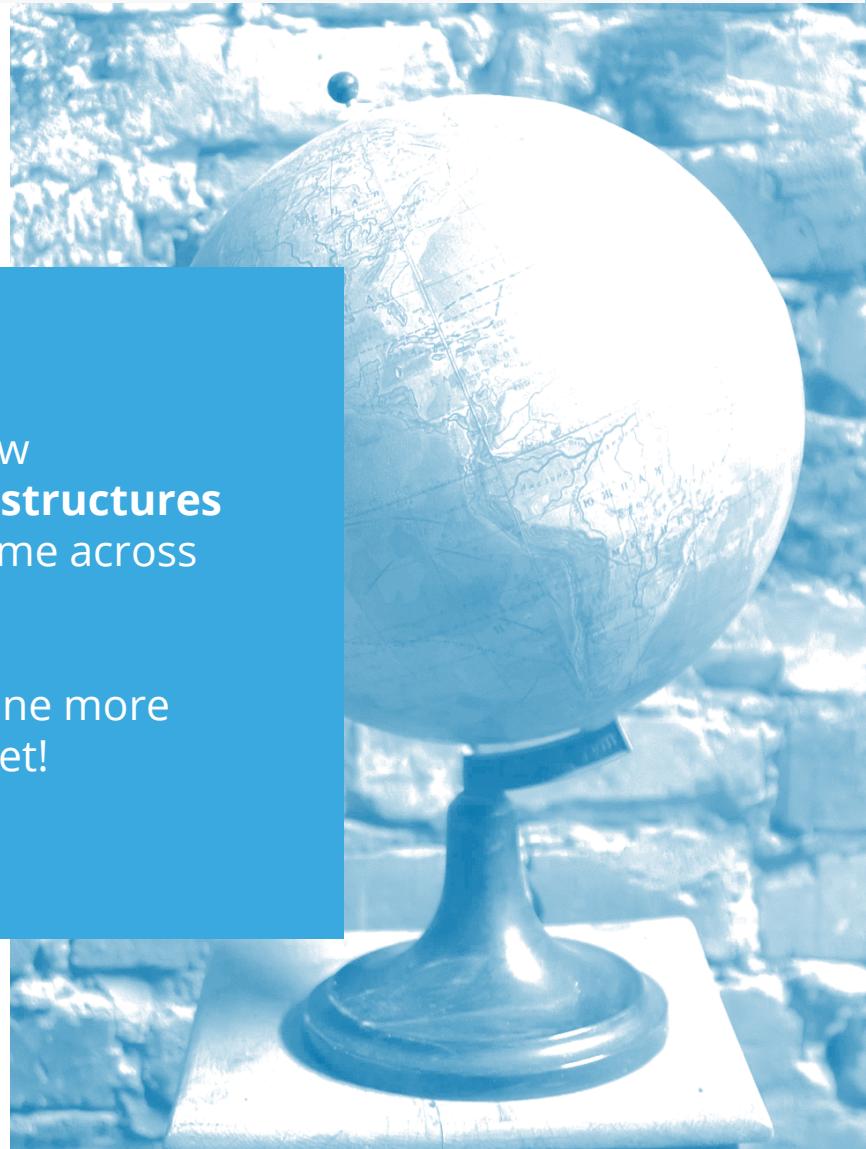
Handwriting practice lines for the student to write their 100-word text.



## 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!





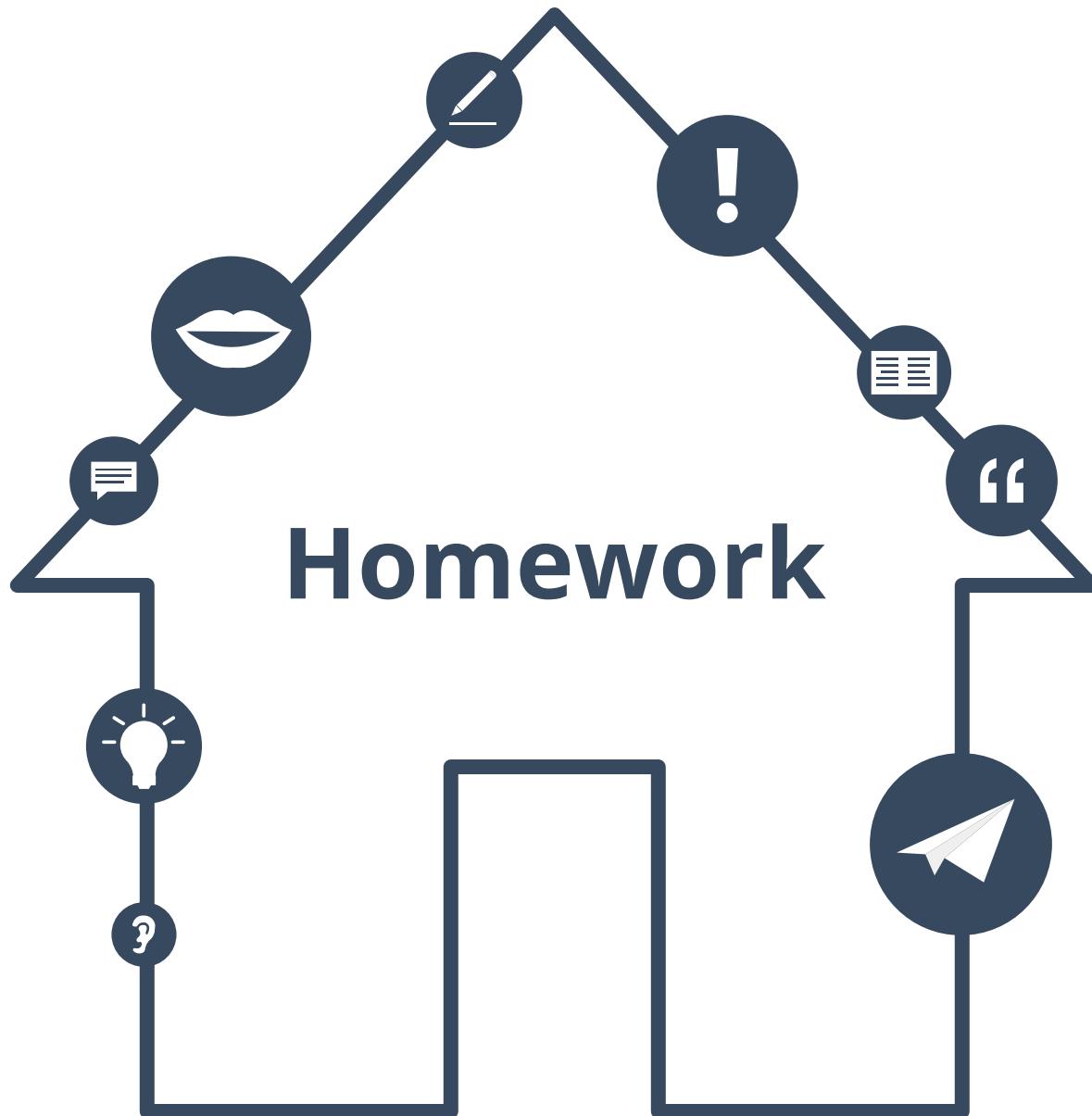
## Answer key

### Exercise p. 17

1. carcass, 2. discard, 3. pound, 4. tear/rip, 5. prominent, 6. marrow

### Exercise p. 11

1. sapiens, 2. handy, 3. crude, 4. family tree, 5. hammerstones





## Unscramble

A

what scientists  
are *Homo sapiens* call  
modern-day *humans.*

B

*species* to use the first tools.  
was *Homo habilis*



## Lists

**Make a list of the tools that each species used. How they were used?**

Tools

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Their use

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## Homework answer key

**Exercise p. 27**

- A. Homo sapiens are what scientists call modern-day humans.
- B. Homo habilis was the first species to use tools.



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