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Lesson aims

Content aims

Learn about the life of Charles Darwin, his theory of evolution and its influence

Learn about how Darwin formulated his theory of natural selection and what the theory is

Communication aims

Speculating about the theory of evolution and people's reaction to it

Explaining why false sentences about a Biology topic are incorrect

Expressing opinions on evolution

Describing, analysing and presenting information about either how humans developed from primates; or the life and work of Galileo

CLIL vocabulary

Natural selection

Language focus

Past perfect

make + object + adjective/verb

Defining relative clauses

Charles Darwin

Getting started

21st-century skills: Communication, Collaboration, Critical thinking and problem solving

- Books closed. Write the questions on the board.
- In pairs. Tell students they have three minutes to discuss the questions.
- Ask a strong student the first question. Invite other students to add information. Repeat the process for the other questions. If appropriate, tell students about the theory of Creationism, described in the Extra background box.

KEY

Students' own answers.

NOTE

There are two possible pronunciations of the word *evolution*: /,i:və'lu:ʃn/ or /,evə'lu:ʃn/.

Culture note

For centuries, important figures in the UK have been buried in Westminster Abbey. These include past kings and queens like Elizabeth I, members of the nobility, politicians, and famous writers, like Charles Dickens.

Although Darwin faced criticism initially, by the time he died in 1882, he was so highly respected by key figures in British science and society that he was also buried in Westminster Abbey.

His death was reported across the world and in many places it was front page news. His obituaries, even those from people who disagreed with him, were complimentary.

Extra background: Reaction to Darwin theories and creationism

Within 20 years of the publication of *On the Origin of Species* in 1859, most scientists had accepted Darwin's Theory of evolution. Although most churches eventually accepted it too, some religious groups rejected his scientific explanations. As a result, the theory of creationism – the belief that God created the universe and life out of nothing – became popular among conservative religious groups.

Creationism, the USA and education

In the early 20th century, some states in the USA banned the teaching of evolution in Science lessons. In 1925, John T. Scopes was convicted of unlawfully teaching the theory of human evolution in a state-funded high school.

Nowadays the theory of evolution is taught, but most creationists in the United States would prefer to eliminate evolution from the school curriculum or to teach creationism too.

Reading

Ex.1

Competenze 1

- Before reading the instructions, focus attention on the photo of Darwin and ask students: *What did he do? Why is he famous?*
- Elicit answers from the class before drawing attention to the information in the fact file.

Transcript  T5.12 See SB p.238 Ex.1

KEY

Because it was different to the Bible's version of creation and history, and it suggested that humans had evolved from apes.

Ex.2

Competenze 1

KEY

Students' own answers.

Ex.3

Competenze ①

- In pairs. Tell students they have two minutes to read the questions and predict the answers without looking at the text.
- Now ask students to complete Ex.3 alone. Tell them that they should underline the part of the text where they find the answer.
- Check answers as a class, asking students to tell you the section of the text where they found the answer.

KEY

1 d 2 c 3 b 4 e 5 a

Language focus: Past perfect

- Write the following on the board and ask students which tense this is. Elicit: *Past simple* and write *Past simple* under the word *believed*.
They believed...
- In pairs. Tell students they have one minute to find the sentence in the text and complete it.
- Elicit the answer and write it on the board, underlining the Past perfect:
They believed that God had made the world in six days...
- Ask students: *When did people believe this idea? (The 19th century) When did God create the world – before or after the 19th century? (Before).* Explain that *had made* is the Past perfect and that we use the Past perfect to describe what happened before another past action.
- Focus students' attention on the sentence and elicit the differences in how the tenses are formed.

Unit 7, Grammar Reference p.172 • Section B: Past perfect

Language focus: *make + object + adjective/verb*

- Write the following on the board:
and his theories [...] many people [...] their religious beliefs
- In pairs. Tell students they have one minute to find the sentence in the text and complete it.
- Elicit the answer and write it on the board, underlining the word *made*:
and his theories made many people doubt their religious beliefs
- Ask a strong student to tell you a synonym for the word *made* in this sentence, e.g. *caused, forced*. Ask the same student to translate the phrase into Italian and write the sentence on the board.
- Focus students' attention on the sentences and explain/ elicit that the object always goes before the verb in English.

Unit 11, Grammar Reference p.205 • Section C: *make + object + adjective/verb*

Natural selection

Listening

Ex.1

Competenze ①

- Read the instructions and draw attention to the drawings of finches. Ask for volunteers to describe the differences between the beaks.

NOTE

Beak is pronounced /bi:k/.

KEY

They are different lengths, shapes and sizes.

Ex.2

P Listening, Part 3

Competenze ①

- Before you listen, ask students to look at the notes in pairs and predict the missing information.
- Check answers as a class and write the answers on the board. Ask students questions to check they've understood the text, e.g. *Why do the finches need sharp beaks if they eat insects? (to cut them), Can you think of any other animals that have evolved to suit their environment or diet? (giraffes – long necks).*

Transcript T5.13

Darwin's observations

Darwin observed that the finches on the different Galapagos Islands had beaks of different shapes and sizes. The type of beak varied according to the type of food that the finches ate. On each island, the finches had developed beaks which were perfect for their habitat. The birds who lived in areas where there were lots of nuts had developed large, strong beaks, while the birds who lived in areas where there were lots of insects had developed thin, sharp beaks.

KEY

1 shapes 2 sizes 3 food 4 ate 5 perfect 6 habitat
7 large 8 strong 9 insects 10 thin

Reading

Ex.3

P Reading, Part 3

- Before students listen and read, draw attention to the CLIL vocabulary. Read the words aloud and have students repeat them to practise the pronunciation.
- Now ask a strong student to read the instructions, and then all students listen and read the text.
- Now ask students to complete Ex.3 alone. Tell them that they should underline the part of the text where they find the answer.
- Check answers as a class, asking students to tell you the section of the text where they found the answer.

KEY

- 1 F There *aren't* enough resources in nature for every animal that is born.
- 2 T
- 3 F *Some* mutations are bad for a species.
- 4 F The babies of an animal with a mutation will *always* have the same mutation.
- 5 T

Language focus: Defining relative clauses

- Write the following on the board, underlining the defining clauses:
An example of this is a primate whose thumb developed in a different way.
- Tell students that the underlined sentence tells us necessary information about the primate. This type of clause is a Defining relative clause.
- Now focus on the word *whose* and tell students that relative clauses begin with relative pronouns. Elicit/explain that other relative pronouns are: *who, which, where, that, when.*
- Write on the board:
A teacher is a person who...
A school is a place where...
- Suggest an ending for each sentence. Then ask a strong student to suggest their own endings to the sentence.

Unit 4, Grammar Reference p.148 • Section A:
Defining relative clauses
Discussion

21st-century skills: Communication, Collaboration, Critical thinking and problem solving **Competenze 1 2 7**

- In pairs/small groups. Students discuss the questions.
- Elicit answers from the class and have a whole-class discussion.

KEY**Possible answers:**

I think it is possible to be Christian and believe in Darwin's theories. I think it depends on how you interpret what is written in the Bible. Although the Bible does not talk about evolution, it also doesn't give specific dates regarding when things were created. The seven days of the creation could actually have been thousands of years.

I think Darwin felt like he was 'confessing to a murder' because of how shocked people were by his theories. It must have been very difficult for people to accept something which was entirely different from everything they had previously been taught.

Webquest

21st-century skills: Communication, Collaboration, ICT literacy, Critical thinking and problem solving, Leadership and responsibility, Productivity and accountability, Information literacy **Competenze 1 4 6 7**

- Students should work in pairs/small groups. They should decide which areas each student should focus on in their research and which person will deliver each part of the presentation/film.

- For task 1, students should decide which person in the group is researching these areas:
 - Charles Darwin's ideas
 - the discovery of 'Lucy' by Donald C. Johanson
 - the role of DNA testing
 - which animals humans developed from
 - where the earliest humans came from and when they existed
 - how humans changed over time.
- For task 2, students should decide which person is researching these areas:
 - his background and early life
 - formative events in his life/career
 - his theories and why they were controversial
 - later life and death
 - legacy and impact on the field he worked in.
- Students should choose photos/pictures/diagrams from the Internet and include those in their presentation/film.

KEY**Sample answer:**

Question 1 Find information about how scientists believe humans developed from primates.

The idea of evolution is a simple one. It is the idea that things change and adapt to their present situation or circumstances in order to survive. Charles Darwin developed his theory of evolution in the 1800s and, although his ideas shocked society at the time, many scientists have continued to study his findings and develop them further.

One very important discovery in the evolution of man was made by Professor Donald Johanson and his student Tom Gray, while they were searching for animal fossils in Ethiopia in 1974. They discovered 47 bones of a hominid, an early ancestor of *Homo sapiens* (human), which lived around 3.2 million years ago. The scientists arrived at the conclusion that the hominid had been female and they called her 'Lucy'. Lucy had a small brain, long arms, short legs and a cone-shaped body, like a chimpanzee. But the structure of her knees and legs showed that she walked mainly on two legs, not four, which classified her as a separate species very like a human. Scientists believe that Lucy's species had evolved from an ancestor of the modern African ape.

Due to the recent discovery of genetics and DNA, scientists can now test fossils of early specimens like Lucy and provide more precise information about when and how they evolved. It is a common belief that the earliest people evolved from primates about six million years ago in East Africa. These people could run fast on two legs so they could run away from predators and hunt for food. Their arms were shorter and weaker because they now didn't have to swing through trees, but they were still quite hairy, like primates.

Humans continued to slowly change and about two million years ago modern humans began to evolve. Their brains were becoming bigger and the shape of their throats and tongues was changing as they developed language to communicate. It is certain that humans have been through many stages of development since then, from the *Homo heidelbergensis*, the first Europeans, to the Neanderthal ice people. And many scientists believe that the human species is still evolving even now. It is very interesting to think about what characteristics humans will have a million years from now.