

Lesson 7

Great scientists in history

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Words Definitions

Experiment What scientists do to test out an idea

Laboratory Where many scientists work

Discover A doing word that means 'find'

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Medicine What a doctor gives you to make you better

Scientist Someone who works in science

Invention When something is made for the first time

Lesson 7 Great scientists in history

1 Talk about it



Look at the picture below. Do you know who this is?

What did he do? Do you know any famous scientists from history?



Ibn Nafis www.almanahj.com

He was a doctor.

Al-Khwarizmi, Ibn

Battuta, Al-Kindi, Marie

Curie, Einstein, Newton)



Fact file Ibn Nafis

Put your hand on your heart. Can you feel it pumping? Do you know what your heart is pumping around your body? That's right! It is sending blood around your body. Now take a deep breath! How do you do this? That's right! With your lungs. Your lungs and heart work together to send blood and oxygen around your body, to keep you strong and healthy.

Did you know that all this was discovered by a doctor called Ibn Nafis over 800 years ago? Ibn Nafis was born near Damascus, in 1210. He discovered how the heart pumped blood to the lungs, then around the rest of the body. At that time, other doctors didn't know this. They believed the information they read in very old books. Ibn Nafis taught them new ideas. They were amazed by the new information, and they used it to treat their patients better.



2 Read

Read the Fact file and check your answers to Activity 1. Then answer the questions below.

- 1 When was Ibn Nafis born? 1210
- 2 What did Ibn Nafis discover?
- 3 Was Ibn Nafis's idea written in the old books?
- 4 How did the other doctors use Ibn Nafis's idea?

2-How the heart pumped blood to the lungs and then around the body.

3 -No, it was a new idea

4 -They used it to treat their patients better.

3



Use of English

Look at the Language detective box and match the sentence halves.

- | | |
|------------------------------------|--------------------------------------|
| 1 Ibn Nafis was a doctor | a which is pumping blood. |
| 2 Feel your heart, | b who discovered something new. |
| 3 Ibn Nafis was born in Damascus, | c that were written a long time ago. |
| 4 The information was not in books | d which is in Syria. |
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WHO

the person in the
story
(ex. John, Sadie)



WHAT

a thing in the
story
(ex. a book, a dog)



Language detective

Who, which and that

Who, which and **that** give us important information about a thing or person. We don't use commas.

We use **who** or **that** to talk about people: ... and scientists **who** think about how the world ...

We use **that** or **which** to talk about things: *The book **that** Ibn Nafis wrote ...*

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This - That - These - Those

Demonstratives



English
Grammar

singular

plural

here

this

these

there

that

those

Demonstrative
Pronouns

singular This is a red pen.

plural These are blue pens.

Demonstrative Pronoun + Verb*

* or by itself. - e.g. Do you want this?

Demonstrative
Adjectives

singular This pen is red.

plural These pens are blue.

Demonstrative Adjective + Noun



this book

(here / close)



that book

(there / not close)



these books

(here / close)



those books

(there / not close)



1 Use of English

Add **who** or **which** to add the information to each sentence.

- 1 We liked the visitor who told us about science.
- 2 Omar went to the museum on the bus, which was very busy.
- 3 Meera read the book, which was about science.
- 4 He drove the car which went fastest.
- 5 They were the scientists who discovered the new bird.

2 Talk

Ibn Nafis used his sense of touch to feel the blood pumping around his body. We can use all our senses to help us to understand the world around us.

Match the picture of the body part to the words that show what we can do to find information.

touch

see

smell

hear

taste



touch



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see



hear



taste



smell

What kind of information can you find using your senses?

Lesson 9

Different types of science

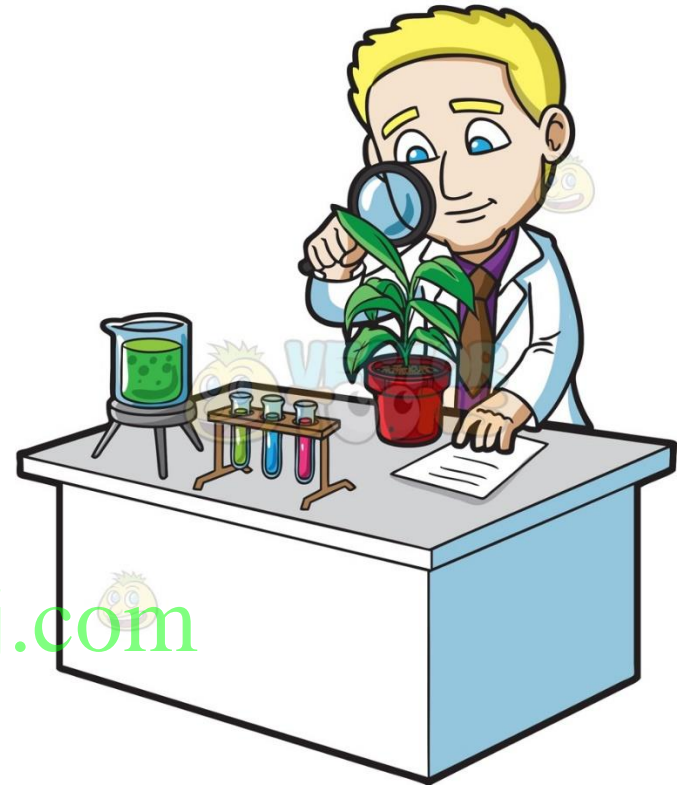
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engineer



plant scientist



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microscope earth scientist

Lesson 9 Different types of science

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microscope

1 21st Read

Read about different types of scientists.
Which one do you think is the most interesting?

SCIENTISTS

Did you know that there are hundreds of different types of scientists? Some work in a laboratory, and others work outdoors or in an office.

Engineers

Some scientists are **engineers**. They work out how to build things we need. Sometimes they study big things like roads, bridges or buildings. Sometimes they study smaller things like machines for a doctor to use. They may **also** study something so small you can't see it without a microscope.

Plant scientists

Some scientists work with **plants**. They spend time outside working with plants, seeing how they grow. Sometimes they are in a laboratory **too**. They might look at parts of the plant with a microscope or work in a team with other kinds of scientists to look at insects that eat plants, or how the weather affects their plants.

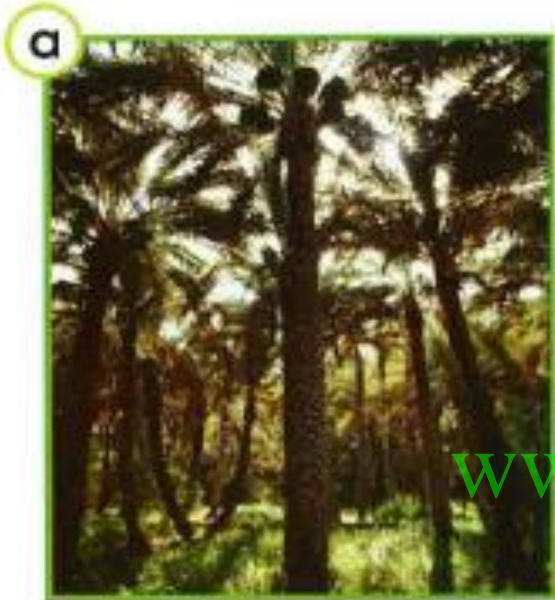
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Earth scientists

Some scientists study the **earth**. They try to find out more about earthquakes or volcanoes and why they happen. They might spend time outside looking at the shape of hills or collecting rocks. They might spend some time at a computer **as well**, trying to work out when earthquakes will happen or how big they will be.

2 Write

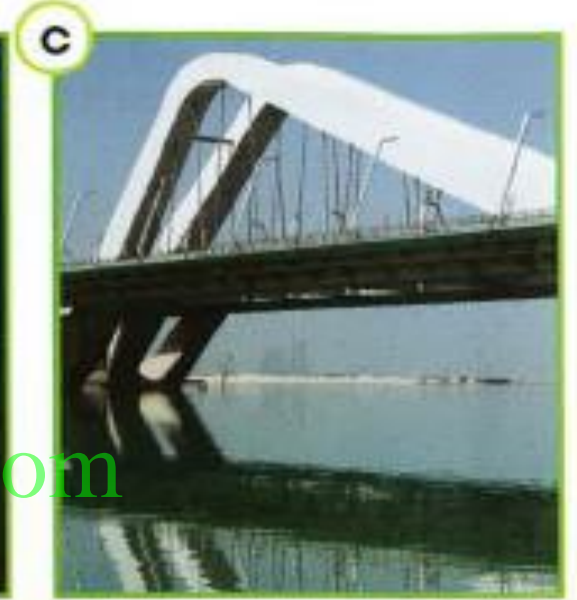
Match the pictures to the text. Write the type of scientist below each picture.



plant scientist



earth scientist



engineer

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Use of English

Adding information

Use **both**, **and**, **as well**, **too** and **also** to add information.

*I work in Science to help people **and** to find out new things **as well**.*

*At school I enjoy **both** Science and English **too**.*

*Science is important for businesses and **also** a way to work with other countries.*

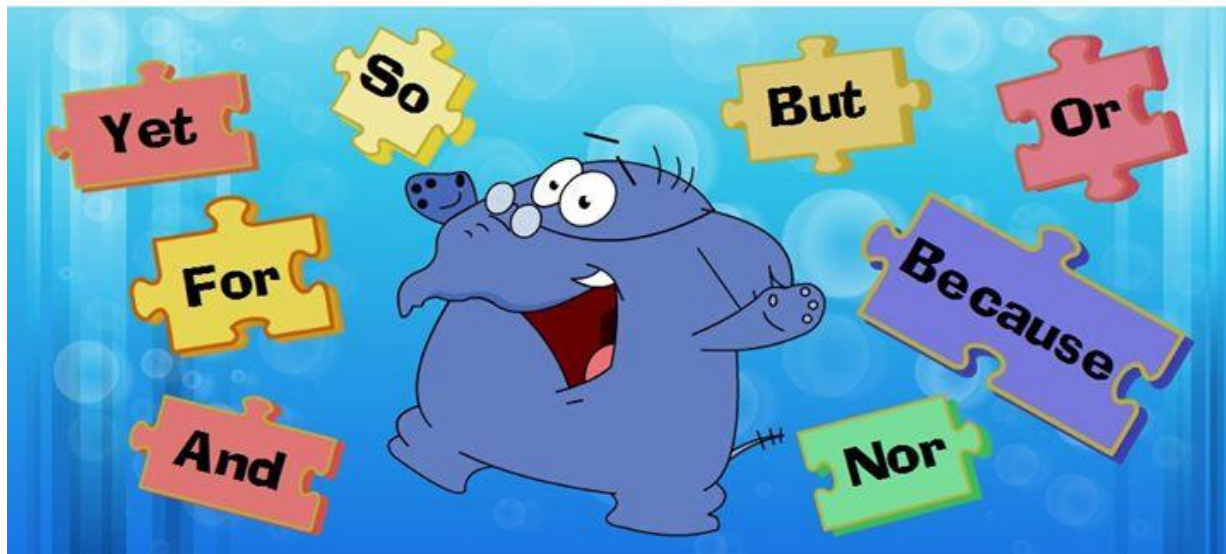
Use **but** to add contrasting information.

*I don't enjoy History lessons, **but** I like English.*

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Conjunctions

Conjunctions are joining words. They join words or sentences.



3   Write

Circle the correct word.

- 1 Scientists work in laboratories, hospitals and offices **but** **too**.
- 2 Engineers build **both** / **as well** very small things and very large things.
- 3 Scientists use lots of equipment and might **as well** / **also** need to use a microscope.
- 4 Plant scientists work outdoors and in a laboratory **both** **as well**.
- 5 Plant scientists might work in a team with other types of scientists studying insects **and** **but** weather.
- 6 Earth scientists work outside **but** / **both** they often work in an office **too** **and**.

1 Read

Read about three scientists from the UAE. What does each scientist study?

Dr Amal Al Ghaferi

Works at: Masdar Institute

Works on: Environment science - solar power and making or changing things so small they can only be seen with a microscope.

Has studied in: USA, UAE

Dr Habiba Alsafar

Works at: Khalifa University

Works on: Medicine science - finding out how some illness is passed on in families, particularly in the UAE.

Has studied in: USA, UK, Australia, UAE

Dr Nabil Bastaki

Works at: United Arab Emirates University

Works on: Engineering science – making robots that climb and walk that can go where it is difficult or dangerous for people to go.

Has studied in: UAE, USA

2 Write

Write a sentence about each scientist. Use linkers to add information.

1 Dr Amal Ghafar Works on environment
science and making or changing things

2 Dr Habiba Alsafar has studied in
USA, UK and in Australia as well.

3 Dr Nabil Bastaki Works on making
robots that walk and climb where
people can't go.

3 Imagine you are going to interview one of the scientists. Think of three questions you could ask them.

Why is science important?

What do you like about your job?

Speaking tip

Asking questions

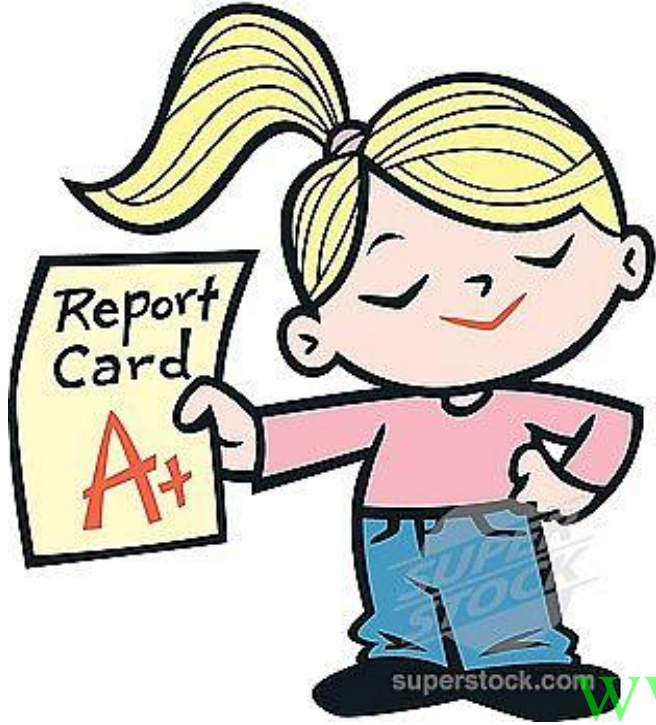
Think about what sort of information you want to get.

- place Use **where**: **Where** did you go to school?
- time Use **when**: **When** did you go to university?
- people Use **who**: **Who** helped you to study?
- reason Use **why**: **Why** is science important?
- action or objects Use **what**: **What** do you like about your job?

Lesson 11

Describing scientist

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clever



jolly



illustrations of.com #440231

grumpy

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tough



lazy



anxious



weepy



rude

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strong

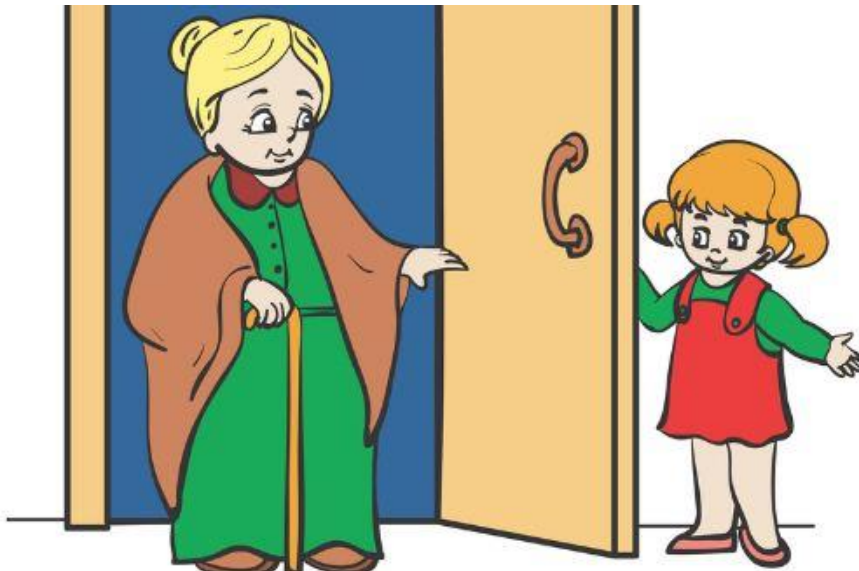


intelligent

bad-tempered

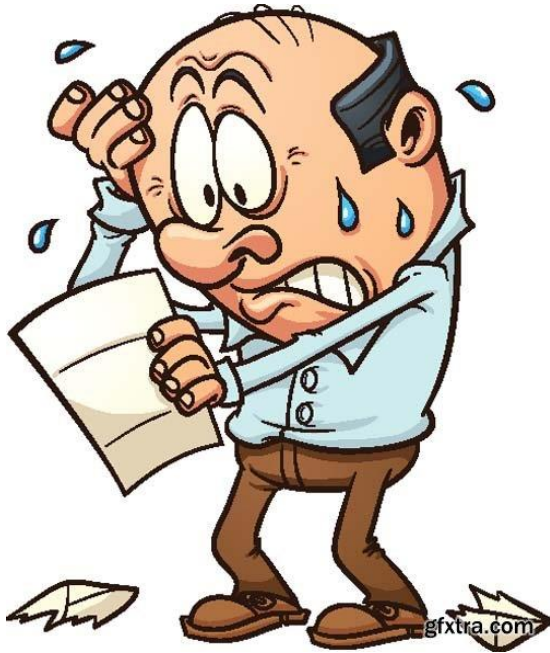


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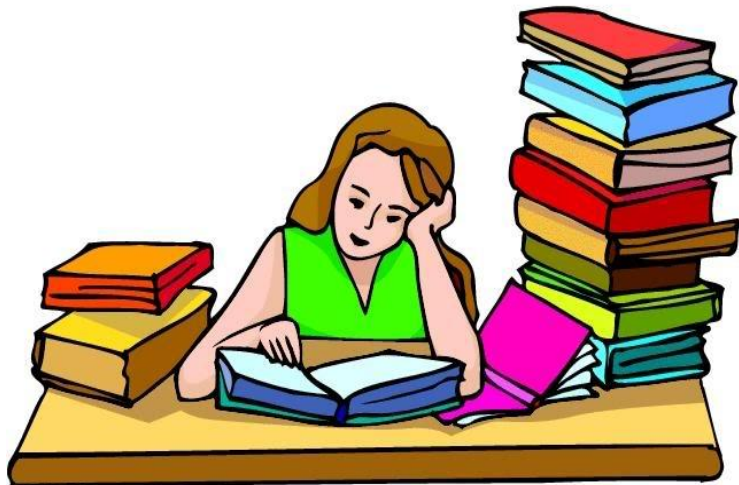
polite

good-humoured



worried

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hard-working

weak



cheerful

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nervous





calm



miserable

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stupid

1 Talk about it



What kind of science do you think these scientists do?

Can you describe how they look?



Professor Walid



Professor Yasser



Professor Zainab

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2 Listen

Listen to a short description of the three professors and their work.

What does each professor study?

Which adjectives are used to describe each scientist?

Name	Science	Adjectives
Professor Walid	space	clever, rude, grumpy (not polite)
Professor Yasser	insects	happy, anxious, weepy, worried
Professor Zainab	medicines	jolly, hard-working, tough

3 Word study Synonyms

Match the adjectives with the definitions. Use your dictionary to help you.

- | | |
|-----------|---------------------------|
| 1 clever | a strong |
| 2 grumpy | b someone who cries a lot |
| 3 jolly | c intelligent |
| 4 tough | d not polite |
| 5 lazy | e bad-tempered |
| 6 anxious | f good-humoured |
| 7 weepy | g not hard-working |
| 8 rude | h worried/nervous |

Speaking tip

Remember to use adjectives to describe a person. Think about how the person looks as well as how they might behave.

1 Read

Read about the scientists. Underline the facts. Circle the opinions.

Language tip

A **fact** is something that can be proved. Other people will agree it is true.

Mars is the fourth planet from the sun.

An **opinion** is something that someone believes. Other people may disagree whether it is true.

We should send astronauts to Mars.

2 I am Professor Yasser. I study insects.

I want to stop insects from eating the plants we grow for food. When the work is going well, I am the happiest man in the world. When things go wrong in the laboratory, though, it is terrible and I can be anxious and weepy. Solving scientific problems is the most important thing, so I worry a lot.



1 I am Professor Walid. I study space. I am very clever and I have discovered three new stars. My students are sometimes lazy so I shout at them.

They think I am rude and grumpy because I don't speak politely, but they just don't work enough!



3 I am Professor Zainab.

I study new medicines. I am a jolly person, but I'm hard working too. I am very tough and like to make my students work hard. I have already thought of many new medicines to help others, which have been bought by medicine companies.



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2 Antonyms

Match the opposites. Use your dictionary to help you.

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rude	weak	polite	calm
clever	anxious	weepy	hard working
jolly	dry-eyed	tough	stupid
lazy			miserable