

8b Invention for the eyes

Speaking

1 Work in groups. Discuss the importance of these inventions. Put the inventions in order from 1 (the most important) to 7 (the least important).

- the aeroplane
- the bicycle
- the camera
- the engine
- the internet
- the telephone and mobile phone
- the washing machine

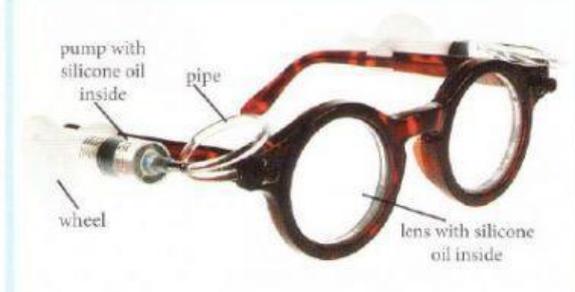
2 Present your list to the class and compare it with other groups. What other important inventions would you add to the list? Why?

Listening

3 ▶ 63 Listen to a science programme. Answer the questions.

- 1 What is the problem for more than one billion people in the world?
- 2 What has Joshua Silver invented?

4 ▶ 64 Listen to the first half of the programme again. Number the instructions on the diagram in the correct order (1–4).



1 The lens changes shape.
You turn the wheels on each side.
The silicone oil moves into the lens.
The pump pushes the silicone oil through the pipe.

5 ▶ 65 Listen to the second half of the programme again. Are the sentences true (T) or false (F)?

- 1 Silver had to do experiments with the glasses before they worked properly.
- 2 A man in Ghana used the glasses first.
- 3 The glasses are expensive to produce.
- 4 The centre is making a big difference in cities around the world.

Grammar defining relative clauses

▶ DEFINING RELATIVE CLAUSES

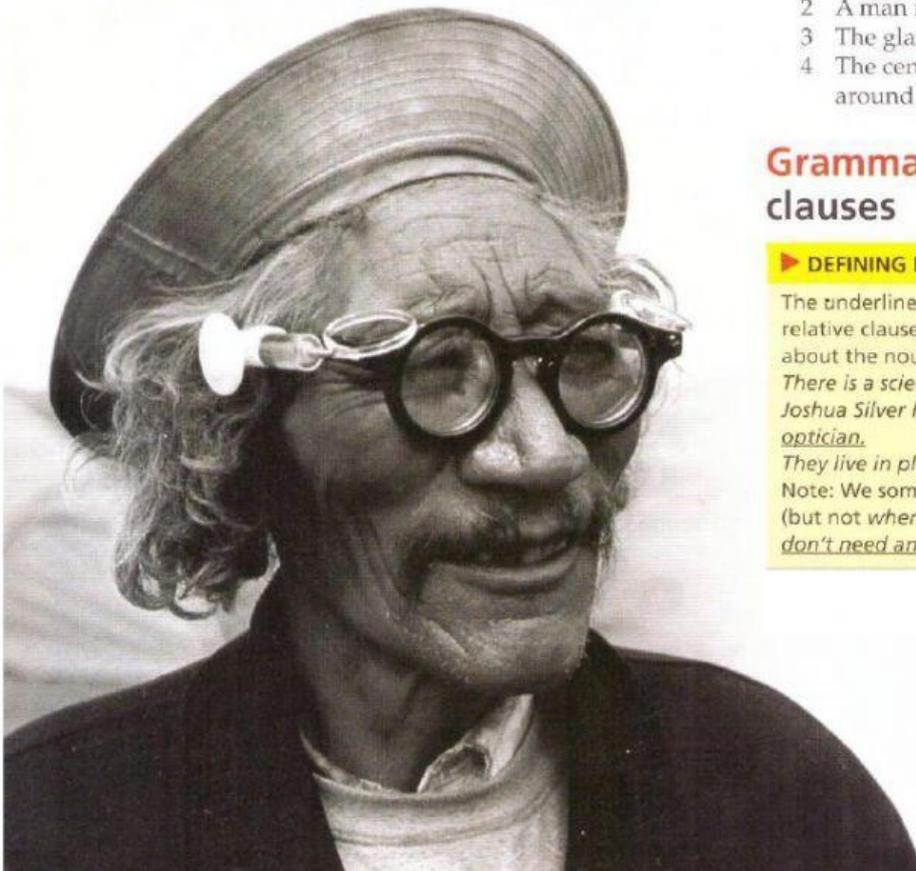
The underlined part of each sentence is a defining relative clause. This clause gives essential information about the noun.

There is a scientist who has solved the problem.

Joshua Silver has invented glasses which don't need an optician.

They live in places where there aren't any opticians.

Note: We sometimes use *that* instead of *who* or *which* (but not *where*): *Joshua Silver has invented glasses that don't need an optician.*



6 Look at the sentences in the grammar box. Which word (*who, which* or *where*) do we use:

- a for people?
- b for things?
- c to talk about what exists or happens in a place?

7 Look at these sentences from the listening. Underline the relative clause.

- 1 A man in Ghana was the first person who used the new glasses.
- 2 Silver started an organization which is called the 'Centre for Vision in the Developing World'.
- 3 The centre works with schools in countries where people can't get glasses easily.

8 Complete these sentences with *who, which* or *where*.

- 1 Thomas Edison is the person _____ invented the electric light bulb.
- 2 I live in a village _____ there is no public transport.
- 3 The Tesla is the first sports car _____ uses electricity.
- 4 Silicon Valley is a place _____ many successful technology companies like Apple and Microsoft are based.
- 5 In 1800 Alessandro Volta made an invention _____ was the first battery.
- 6 Maria Beasley was the inventor _____ made the first life raft.

9 In which sentences in Exercise 8 can you use *that* at the beginning of the relative clause?

10 Look at the photo and the text about another invention, Lifestraw. Complete the text with *who, which* or *where* and these phrases.

~~cleans the water~~ like hiking and camping
 there is a lake can break
 there is no safe
 invented Lifestraw

11 Think of a famous person, an invention, and a place or city. Write a sentence to define or explain each one. Then exchange sentences with your partner. Can your partner guess what they are?

It's a thing which you use to find information and to contact people. (a mobile phone)
It's a city where you can see Big Ben. (London)

LIFESTRAW

LifeStraw is an invention ¹ *which cleans water* while you drink, so it's useful in areas ² _____ water supply. It's also small, so you can carry it to places ³ _____ or river and it's popular with people ⁴ _____. *LifeStraw* can turn 1,000 litres into drinking water and it doesn't have any moving parts ⁵ _____. The people ⁶ _____ also make other products for cleaning water in 64 countries around the world.



RELATIVE PRONOUNS

WHO

It is used to refer to people

Example: The man who works at the Post Office is very kind.



WHICH

It is used to refer to animals and objects

Example: Tina has a bunch of flowers which his friend bought.



WHOSE

It is used to refer to possession

Example: Whose is that dictionary?
Have you seen the girl whose father died.



THAT

It is used to refer to people, animals,

It can replace WHO or WHICH

Example: The blue jacket that she is putting on belongs to her friend.



WHERE

It used to refer to places

The hotel where we slept was excellent



WHEN

It is used to refer to time

That was the day when my sister was born



COMPLETE THE SENTENCES. USE **WHEN/WHERE/WHICH/WHO/WHOSE**

1. A coach is a person helps you train.
2. That's the politician daughter got married in Miami.
3. A court is a place people play tennis.
4. That is the race millions of people watch.
5. 1992 is the year the Olympics were held in Barcelona.
6. I have a friend father is working in the local hospital
7. You will never forget the day you were born.