

Worksheet | Innovation is **GREAT**

Task 2

Discussion



1. In pairs, talk about innovation.

Consider the following:

- What does the word 'innovation' mean to you? As a pair, write your own definition.

2. Can you think of any innovative people? Who are they, and in which ways are they innovative?

3. Do you think the poster shows a good example of innovation? Why?

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Task 3

Vocabulary

4. Match the words to their definitions.

Word	Definition
1. vaccine	a. to copy or make something exactly like another thing
2. pneumatic	b. a circular shaped sports track which starts and ends in the same place
3. suspension bridge	c. a type of antibiotic medicine which kills bacteria
4. circuit	d. a tube which carries blood from the heart around the body
5. smallpox	e. able to continue over a period of time because little or no damage is caused to the environment
6. penicillin	f. containing air
7. supersonic	g. a bridge which is supported at each end by strong metal ropes which are connected to towers
8. artery	h. to be the first person/ people to do something
9. sustainable	i. faster than the speed of sound
10. to pioneer	j. to make something smaller in size
11. to shrink	k. seeming to be everywhere
12. ubiquitous	l. an infectious and dangerous illness which causes a fever and spots on the skin
13. to replicate	m. a substance which contains a form of a bacteria or virus, which is injected into a person to prevent them from developing an illness or disease

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Task 4

Video

You are going to watch a video about some famous examples of British innovation:

<https://www.youtube.com/watch?v=PXsZ6IV0dLM>

Some of these examples of innovation are included in the grid below.

- Cross out each invention as it appears on the video
- Try to write down the date each one was invented if you can

the television set	iPod design	the first scheduled international flight service	the camera
the car	the first automatic landing with passengers	the World Wide Web	the motor racing circuit
the supersonic passenger plane	nuclear power	the computer	Formula One

Which inventions were not mentioned?

- Do you know anything about these inventions?
- When were they invented?
- Where were they invented?
- Who invented them?

Task 5

Worksheet | Innovation is GREAT**Reading**

- Which other examples of British innovation can you find in the text below?

British innovation in transport.

Throughout the years, British inventors have made a significant contribution to transport, and this continues to this day.

From tractors to trains, the steam engine was a popular way of powering all kinds of machinery during the industrial revolution. In 1765, the steam engine was developed (by the Scotsman James Watt and his contemporaries) to greatly improve its efficiency. This had a huge impact on industry in Britain and throughout the world, and later, in 1928, Britain pioneered another type of engine. The jet engine was invented by Frank Whittle – the man who some people say ‘shrank the world’ by enabling people to travel by aircraft.

Before cars, cycling was a preferred method of getting around. The Penny Farthing bicycle was invented in 1871 by James Starley, and was very popular in Victorian times. It was named after the ‘penny’ (a large coin) and the ‘farthing’ (a smaller coin) because the front wheel was much bigger than the back wheel, and therefore the bicycle represented the two coins in appearance.

Riding a bike became a more comfortable experience when the pneumatic tyre was invented in 1885. Since then, pneumatic tyres have become ubiquitous and are now used on all modern bikes – including motorbikes. Unlike environmentally friendly bicycles, however, motorbikes produce pollutants which some people believe are responsible for global warming. In 2005, the hydrogen fuel cell motorbike was designed to address this problem. Although the current price for this kind of motorbike is very high, they will become more affordable as demand for them increases, and scientists predict that, in the future, all major car manufacturers will be mass-producing hydrogen fuel vehicles.

Londoners, and visitors to the capital city, are likely to be very familiar with ‘The Tube’, which carries more than one billion passengers every year. The subway train was invented in 1865 and London was the first city to have an underground railway system. Countries throughout the world soon replicated the idea and there are now approximately 160 similar systems in operation internationally.

In the future, transport may be taken to a much greater extreme and, in the same way that Frank Whittle shrank the world with the jet engine, spacecraft looks set to shrink the universe. The idea of space travel was invented in 2009 and people have already bought tickets for the British company *Virgin* space flights, which are scheduled for 2013.

- Which of these inventions do you think is most impressive?
- Which do you think has had/ will have the biggest impact?

Task 6

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2. Now try to change these active sentences into passive ones.

a. Active: Tim Berners-Lee invented the World Wide Web in 1991.

Passive: _____

b. Active: Hugh Locke-King designed the motor racing circuit in 1907.

Passive: _____

c. Active: Alexander Fleming discovered Penicillin in 1928.

Passive: _____

Task 7

Speaking and listening

- Work with a partner. Ask each other questions to complete the information in the table.

Student A

Q: When was ... invented/ discovered? A: The ... was invented/ discovered in ...	date
the first vaccine for smallpox	
the suspension bridge	1826
the telephone	
the electric light	1878
The structure of DNA	
hawk-eye	2001
the artificial artery	
the most sustainable stadium in Olympic history	2012

Student B

Q: When was ... invented/ discovered? A: The ... was invented/ discovered in ...	date
the first vaccine for smallpox	1798
the suspension bridge	
the telephone	1876
the electric light	
The structure of DNA	1953
hawk-eye	
the artificial artery	2010
the most sustainable stadium in Olympic history	

Task 8

Worksheet | Innovation is GREAT**Cooler**

- Work in a small group. Cut up the year cards from the grid below.
- Listen to your teacher call out examples of innovation from the previous activity
- As your teacher calls out the examples, choose the corresponding date and take it to him/ her
- The first team with the correct date wins a point. You may get an extra point if you can use the date to make a passive sentence.

1765	1798
1826	1865
1871	1876
1878	1885
1907	1919
1925	1928
1950	1953
1976	1991
2000	2001
2005	2009
2010	2012

Extension

Worksheet | Innovation is GREAT**Prepare a short presentation**

Choose your favourite innovation from today's lesson, or another innovation you know about, and prepare a short presentation about it.

Your presentation should last approximately 5 minutes. You could think about:

- Who was responsible for the innovation
- When it happened
- Where it happened
- Why it was innovative
- What the benefits of the innovation have been/ will be
- Whether there have been/ will be any negative effects of the innovation
- How the innovation has changed/ will change people's lives and the world

- Use the internet and include images and video to make your presentation as interesting as possible

For those interested in the Olympic stadium, the following link may be of use:

<http://www.london2012.com/documents/venue-documents/olympic-stadium-design-leaflet.pdf>