



VOCABULARY BANK

Science and Innovation

Science and Innovation | Bank 1: inventions, research and problem-solving | Cambridge IGCSE ESL 0511

1. Quick confidence check

Before you study the topic, mark the column that best describes your confidence with each word or phrase.

Word or phrase	New to me	I recognise it	I can use it
scientific research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
experiment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
discovery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
invention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
inventor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
solve a problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
test an idea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
collect data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
make progress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
scientific evidence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
laboratory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
come up with an idea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Vocabulary bank

Here are some useful words, adjectives, verbs and chunks that can be reused in exam answers. If you are not sure of their meaning, check online or ask your teacher.

Category	Useful vocabulary
Research	scientific research, experiment, collect data, scientific evidence, laboratory, research team
Innovation	invention, inventor, discovery, come up with an idea, test an idea, future development
Problem-solving	solve a problem, work out a solution, make progress, safety testing, useful invention, improve lives
Opinion chunks	This invention could..., Scientists need to..., One benefit is..., A possible risk is..., The evidence suggests...

3. Match the meaning

Match each word or phrase with the correct meaning. Then choose four and write your own examples.

Word or phrase	Meaning
1. scientific research	a. a new machine, product or idea
2. experiment	b. facts or information that support an idea
3. invention	c. careful study to discover new information
4. collect data	d. think of a new plan or suggestion
5. scientific evidence	e. a test done to find out what happens
6. come up with an idea	f. gather information for study or research

4. Build useful chunks

Choose useful chunks from the grid. Then write three natural sentences you could use in a speaking or writing answer.

scientific research	carry out an experiment	collect data
make a discovery	create an invention	come up with an idea
solve a problem	test an idea	scientific evidence

1. _____
2. _____
3. _____

5. Read in context

Read the text. The bold words are from the vocabulary bank.

How Inventions Change Lives

Many inventions begin with a problem. Scientists and engineers use **scientific research** to understand the problem before they try to solve it.

An **experiment** can help a research team test an idea and **collect data**. This information becomes useful when there is enough **scientific evidence** to support a conclusion.

Not every **invention** succeeds immediately. Inventors often need to change their designs, repeat tests and learn from mistakes before they make progress.

Useful inventions can improve lives by saving time, making tasks safer or helping people communicate. Innovation is most powerful when it responds to real human needs.

6. Check your understanding

Answer the questions in your own words. Use the vocabulary bank where it fits naturally.

READING CHECK

1. Why do many inventions begin with a problem?

2. How can experiments help a research team?

3. Why might inventors need to repeat tests?

4. How can useful inventions improve lives?

VOCABULARY IN CONTEXT

What does 'collect data' mean?

- A. Gather information for research
- B. Throw away old machines
- C. Buy a new product
- D. Give a speech

What is the writer's main idea?

- A. Innovation works best when it solves real problems.
- B. All inventions succeed immediately.
- C. Experiments are not useful.
- D. Scientists never make mistakes.

7. Use the vocabulary

Task	What to do
Speaking 1	Describe an invention that has improved people's lives.
Speaking 2	Discuss this question: Should schools teach more practical science?
Writing	Write a short paragraph explaining why research is important.
Review	Return to the confidence table. Choose one item you want to improve and write a clear example sentence.

8. Topic discussion questions

Use these for pair work, small-group discussion, or speaking-test warm-up practice.

- What invention do you use every day?
- Why do scientists need evidence?
- Can mistakes help inventors improve?
- What problem would you like to solve?
- Is technology always positive?

**ANSWER KEY**

Science and Innovation

3. Match the meaning

1. c = careful study to discover new information
2. e = a test done to find out what happens
3. a = a new machine, product or idea
4. f = gather information for study or research
5. b = facts or information that support an idea
6. d = think of a new plan or suggestion

6. Check your understanding

1. Scientists and engineers need to understand the problem before solving it.
2. They can test ideas and collect data.
3. They may need to improve designs or learn from mistakes.
4. They can save time, make tasks safer or help people communicate.

MCQ 1: A. Gather information for research.

MCQ 2: A. Innovation works best when it solves real problems.