



# Science and Innovation

Multiple choice: school innovation | Cambridge IGCSE ESL 0510/0511

## 1. Lead-in discussion

Talk with a partner before you read.

1. What could a simple robot do in a school or community?
2. Is innovation more about ideas or testing?
3. Why might a design fail even if it looks good?
4. Would you enjoy a robotics club? Why, or why not?

### Exercise 4 at a glance

Read one longer text and answer six multiple-choice questions. Choose A, B or C. The correct answer may depend on attitude, purpose or a detail across a whole paragraph, not just one matching word.

## 2. Read for overall understanding

Read the article. What did Noah learn from the robotics project?

### Building a robot for real life

by Noah Mensah

Our robotics club entered a competition to design a machine that could help in everyday life. At first, we wanted to build something impressive, with flashing lights and a complicated arm. Our teacher listened politely and then asked who would actually use it. That question annoyed us because it made our idea sound childish, but she was right. A robot can look exciting and still solve no real problem. We had been influenced by videos of machines doing dramatic tasks, and none of us had asked whether our design would help a real person.

We eventually chose to design a small robot that could carry library books from the returns desk to the sorting table. It was not glamorous, but the librarian said it would save time when many students returned books after lunch. Our first model moved across the floor, but it turned too sharply and dropped the books. We had spent so long decorating the outside that we had not tested the tray properly. The failure was useful because it happened early, before we had spent weeks perfecting the wrong part of the design.

The librarian became our most useful adviser. She explained that books were different sizes, that the robot needed to fit between tables and that it should stop if someone stepped in front of it. We had thought of her as the person who would receive our finished invention, but she became part of the design process. After her comments, we made the tray deeper, slowed the wheels and added a simple sensor. Her comments were not technical in a complicated way, but they were exactly the kind of details we would not have noticed from the club room.

Testing was often frustrating. One afternoon the robot worked perfectly three times, then refused to move when the judges visited our practice session. I wanted to blame the battery, but another student noticed a loose wire. We learned to keep a testing diary, noting what changed each time. This felt boring compared with building, but it helped us stop repeating the same mistakes. The diary also made our final presentation more convincing because we could explain our improvements. It also helped us decide which problems were random accidents and which ones happened often enough to fix.

We did not win the competition. Another team designed a device that helped people water plants during hot weather, and it deserved first place. I was disappointed for about an hour. Then our librarian asked if we could keep improving the book robot for the school. That felt better than a prize. The project taught me that innovation is not about making the most dramatic object. It is about noticing a real need and being patient enough to make a simple idea work. I now understand why inventors talk to users before and after building, not only when they are ready to show something finished.

### 3. Strategy focus

#### Read for purpose

When a question asks why the writer mentions something, decide what the example proves in that paragraph.

### 4. Exam-style multiple-choice questions

For each question, choose the correct answer, A, B or C.

#### Question 1

Why did the teacher's question annoy Noah's team at first?

- A It suggested they were unlikely to finish the robot.
- B It showed she preferred simple machines to creative ones.
- C It made them think their exciting idea lacked a real purpose.

#### Question 2

Why did the first model fail?

- A The team had not tested one practical part carefully enough.
- B The library floor was too narrow for the robot.
- C The librarian changed the task after seeing it.

#### Question 3

What changed in the team's relationship with the librarian?

- A They asked her to judge the competition.
- B They began to treat her as part of the design process.
- C They expected her to repair the robot.

#### Question 4

Why was the testing diary useful?

- A It made the robot work when visitors arrived.
- B It helped the team understand and explain improvements.
- C It replaced the need for further practical testing.

#### Question 5

How did Noah feel after the competition?

- A disappointed briefly, then encouraged by a real use for the robot
- B angry because the winning project was less technical
- C relieved that the club would not need to continue testing

#### Question 6

What does Noah suggest about innovation?

- A It is usually successful only when the first idea is simple.
- B It depends more on competitions than everyday problems.
- C It should respond to real needs rather than simply look impressive.

### 5. Follow-up tasks

1. Discussion: What simple invention would solve a real problem in your school?
2. Strategy: Compare the correct answer with one wrong option. What detail makes the wrong option incorrect?
3. Writing: Write a short proposal for a useful school invention.
4. Vocabulary: Circle words and phrases connected to design, testing and innovation.

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## 2. Read for overall understanding

Suggested answer: He learned that useful innovation depends on testing, listening to users and improving simple ideas.

## 4. Exam-style multiple-choice questions

1. C; 2. A; 3. B; 4. B; 5. A; 6. C

1. C - The question challenged whether their impressive idea solved a real problem.
2. A - They had decorated the outside but not tested the tray properly.
3. B - Her practical comments shaped the design.
4. B - The diary stopped repeated mistakes and supported the final presentation.
5. A - He was disappointed for about an hour, then pleased the librarian wanted the robot improved.
6. C - He concludes that innovation means noticing a real need and making a simple idea work.