Science and Innovation

Multiple choice: practical experiments | Cambridge IGCSE ESL 0510/0511

1. Lead-in discussion

Talk with a partner before you read.

1. What could people cook using sunlight?
2. Why do experiments sometimes fail at first?
3. Can simple technology be innovative?
4. How can science projects connect to real life?

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 Isla learn from building the solar cooker?

Building a solar cooker

by Isla Chen

Our science club decided to build solar cookers for a community fair. I imagined a shiny invention that would boil water quickly and impress everyone. The design we started with was much simpler: a cardboard box, black paper, clear plastic and reflective foil. I was disappointed at first because it looked more like a craft activity than science. Our teacher smiled and said good innovation is not always complicated; sometimes it is about using ordinary materials carefully.

The first test was embarrassing. We placed a small pan of water inside the box and waited in the playground. After twenty minutes, the water was barely warm. I blamed the design, but another student noticed that the reflective foil was sending sunlight past the box instead of into it. We adjusted the angle and sealed a gap where warm air was escaping. The next reading was better, though still not dramatic. We began to see that small details changed the result.

For the fair, we decided not to promise meals cooked from start to finish. Instead, we demonstrated how the cooker could warm flatbread and melt chocolate safely. That sounded less impressive than boiling water, but visitors understood it quickly. A parent from a camping group told us that a light cooker could be useful when fires were not allowed. Another visitor asked whether a stronger version could help in places where fuel was expensive. Their questions made the project feel less like a school display.

The most interesting discussion was about limits. Solar cookers need sun, time and careful positioning. They do not replace every stove, and they are not useful during a storm. But the same is true of many technologies: they work best when people understand the conditions they need. We added a sign explaining when the cooker worked well and when it did not. I liked that honesty more than pretending our box was a perfect invention.

By the end of the fair, I was proud of the cooker precisely because it was simple. It showed that science is not only laboratories and expensive equipment. It is also testing, adjusting and explaining what a design can realistically do. The cooker did not change the world, but it changed how I think about innovation. A clever idea can be small, cheap and useful, as long as it is tested honestly.

3. Strategy focus

Watch for limits

A good option may mention both success and limitation. Avoid answers that make the project sound perfect or useless.

4. Exam-style multiple-choice questions

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

Question 1

Why was Isla disappointed with the first design?

A It required expensive equipment.
B It had already been built by another club.
C It looked too simple to her.

Question 2

What improved the second test?

A Using a metal oven instead of a box
B Adjusting the foil and sealing a gap
C Testing the cooker indoors

Question 3

Why did the club change its demonstration plan?

A The fair banned all food demonstrations.
B They wanted to hide the cooker's limits.
C A realistic demonstration was easier for visitors to understand.

Question 4

What did visitors' questions show Isla?

A The cooker might connect to real practical needs.
B The design was too weak to interest anyone.
C Camping groups disliked simple technology.

Question 5

Why did the club add a sign about limits?

A They wanted to explain the conditions honestly.
B They were told to apologise for the project.
C They believed the cooker worked in every situation.

Question 6

What is Isla's final view of innovation?

A It always needs advanced equipment.
B It can be simple and useful if tested carefully.
C It should avoid showing weaknesses.

5. Follow-up tasks

1. Discussion: What simple invention could help people in everyday life?
2. Strategy: Read each option for attitude. Does it match how the writer feels at that point?
3. Writing: Write a short explanation of a simple invention and its limits.
4. Vocabulary: Circle words and phrases connected to science, testing and innovation.

ANSWER KEY

Science and Innovation

Multiple choice: practical experiments

2. Read for overall understanding

Suggested answer: She learned that simple scientific designs need careful testing and can still solve practical problems.

4. Exam-style multiple-choice questions

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

1. C - She says it looked like craft rather than science.
2. B - They adjust the angle and seal escaping warm air.
3. C - They demonstrated warming food rather than promising full meals.
4. A - Visitors connect it to camping and expensive fuel.
5. A - They explain when it worked well and when it did not.
6. B - She concludes clever ideas can be small, cheap and useful if tested honestly.