



Science and Innovation

Short-answer questions: Jodrell Bank | Cambridge IGCSE ESL 0510/0511

1. Lead-in discussion

Talk with a partner before you read.

1. What can radio telescopes detect?
2. Why do scientists need large instruments?
3. Should science sites be protected as heritage?
4. What makes a discovery centre interesting?

Exercise 1 at a glance

Read one factual text. Answers are in the text. Copy exact words and check the question carefully before choosing your answer.

2. Read for overall understanding

Read the text. Why is Jodrell Bank important for science and heritage?

Jodrell Bank

Jodrell Bank Observatory is in Cheshire, in north-west England. It became famous for radio astronomy, a branch of science that studies radio waves from space. After the Second World War, Bernard Lovell used radar equipment at the University of Manchester's Jodrell Bank site to investigate cosmic rays and objects beyond Earth.

The best-known instrument at Jodrell Bank is the Lovell Telescope. When it was completed in 1957, it was one of the largest fully steerable radio telescopes in the world. Fully steerable means it can be moved to point at different parts of the sky, rather than looking in only one direction.

Radio telescopes do not work like ordinary optical telescopes. They detect radio signals from space, which can come from objects such as pulsars, galaxies and clouds of gas. Because radio waves can reveal information that visible light cannot, they help scientists build a fuller picture of the universe.

Jodrell Bank also played a role during the early Space Age. Its instruments helped track spacecraft and gather signals from missions beyond Earth. This made the site important not only for astronomy but also for the history of space exploration.

In 2019, Jodrell Bank Observatory became a UNESCO World Heritage Site. This recognised its scientific importance and its influence on the development of radio astronomy. Protecting the site means caring for historic instruments while allowing scientific work and public education to continue.

Today, Jodrell Bank includes a discovery centre where visitors can learn about space, engineering and the history of the observatory. The site shows that innovation can become heritage. A place built for scientific research can later become part of a country's cultural memory.

The Lovell Telescope is striking because of its size as well as its scientific purpose. Its large dish can be seen from far away in the Cheshire landscape. For many visitors, the telescope is a symbol of curiosity: a machine built on Earth to listen to signals from far beyond it.

Radio astronomy also depends on patience. The signals being studied can be weak, and scientists need careful measurements rather than quick dramatic pictures. This makes Jodrell Bank a useful place to explain that science is not only about sudden discoveries. It is also about collecting evidence, checking results and improving instruments over time.

This patient work has helped make the observatory a symbol of long-term scientific curiosity in Britain. It also reminds visitors that space research often depends on listening carefully, not only looking through a telescope.

3. Strategy focus

Check science or heritage

This text mentions scientific work and heritage protection. Check which aspect the question asks about.

4. Exam-style short-answer questions

Answer the questions using words from the text.

1. Which branch of science made Jodrell Bank famous? [1]

2. Who used radar equipment at the Jodrell Bank site after the Second World War? [1]

3. What does fully steerable mean? [1]

4. What can radio signals come from? Give one example. [1]

5. What did UNESCO recognition acknowledge besides scientific importance? [1]

6. According to the text, what are three things visitors can learn about at Jodrell Bank today? [3]

5. Vocabulary notebook

Underline five useful words or phrases. Check their meaning, then record them in your vocabulary notebook.

6. Follow-up tasks

1. Discussion: Should scientific sites become tourist attractions?

2. Summary: Summarise Jodrell Bank in about 50 words.

3. Creative task: Write a museum label for the Lovell Telescope.

4. Research: Find one other UNESCO science site.

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Short-answer questions: Jodrell Bank

2. Read for overall understanding

Suggested answer: It is important because it helped develop radio astronomy, contains the Lovell Telescope and is recognised as a UNESCO World Heritage Site.

4. Exam-style short-answer questions

1. radio astronomy
2. Bernard Lovell
3. it can be moved to point at different parts of the sky
4. Any one from: pulsars; galaxies; clouds of gas.
5. its influence on the development of radio astronomy
6. Any three from: space; engineering; history of the observatory; radio astronomy; space exploration.

Notes for checking

1. Answers should be short and clearly based on the text.
2. Accept bracketed or optional wording if the meaning is clear.
3. For the final question, learners need three separate details.