

The Mechanical Universe
INDUCTION
8min



This video sequence presents the story of how Michael Faraday completed the connection between electricity and magnetism.

Read the following questions before the video begins. Answer the questions while the video is in progress. This is an **INDIVIDUAL** effort, so complete it by yourself. **DON'T ASK OTHERS FOR ANSWERS** since doing so would be cheating. Your neighbor might even have a different set of questions. So copying will likely lead to confusion and error.

Most of the important information (and answers to the questions on this sheet) is in the text spoken during the presentation. So don't become entranced by the visual imagery; concentrate and stay focused on the words!

1. Ørsted's great discovery was about how _____ could be turned into _____.
2. Michael Faraday constructed the world's first _____.
3. Could a magnetic field create an electric current? In 18_____, Michael Faraday had the answer.
4. Magnetic fields apply forces to electric charges only if _____.
5. Faraday found that any method of _____ the _____ field through a _____ would make an electric current flow.
6. Current flows through a wire whenever the _____ is _____.
7. The flux created by the induced current always _____ the change in the external flux. (This is known as Lenz's law.)
8. Before Faraday's discovery, magnetic fields were thought to
 - A. converge to a point
 - B. form closed loops
 - C. both of these
 - D. none of these
9. As it turns out, it is possible to make _____ after all.
10. After Faraday, electricity and magnetism became known as _____.

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1. After Ørsted's discovery, scientists knew it should be possible to use

_____ to create _____.

2. Michael Faraday constructed the world's first _____.

3. Could a magnetic field create an electric current? In 18_____, Michael Faraday had the answer.

4. Just moving a wire through a magnetic field makes a

5. Faraday found that any method of _____ the _____ field through a _____ would make an electric current flow.

6. Current flows through a wire whenever the _____ is _____.

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- A. converge to a point
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