



INDIAN SCHOOL AL WADI AL KABIR
DEPARTMENT OF SCIENCE 2019 – 2020
WINTER HOLIDAY HOMEWORK
CLASS 7
MODEL MAKING WITH WRITE-UP

When students are engaged in scientific modeling, they are able to:

- **predict and explain**
- **make their own scientific knowledge stronger**
- **help them to think critically**
- **help them know more about the nature of science.**

ELECTROMAGNET

1. Choose ANY ONE topic from the following for making a model -
 - ❖ Electromagnet
 - ❖ Application of electromagnets
2. Prepare a file with a write up which should include the following-
 - ✓ the scientist who invented electromagnets
 - ✓ working of electromagnets
 - ✓ applications of electromagnets in the modern world

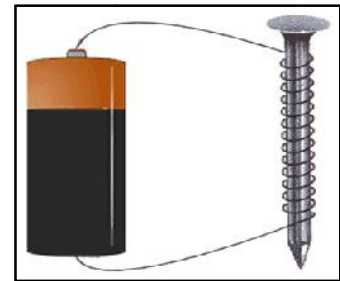
An electromagnet

Things required-

Thin Plastic insulated wire, 5-volt AA Battery, Iron Nail

Procedure-

- Wrap 20-30 turns of insulated wire on an iron nail tightly
- Trim about an inch of plastic coating from both ends of the wire.
- Connect one end of the wire with the positive terminal of the battery and other with negative terminal. Use the electric wire tape if necessary.
- Disconnect wires from the battery, if wire or battery gets hot.



OR

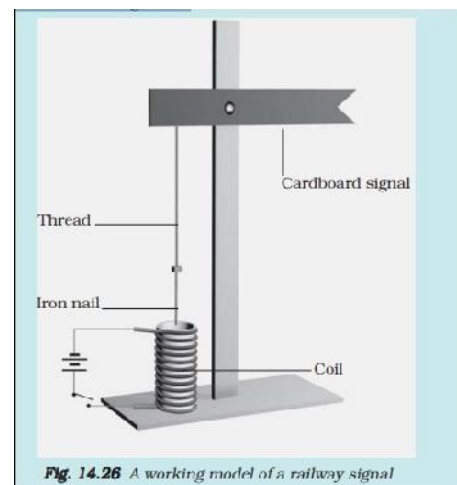
Making Railway Signal Using Electromagnet

Things required-

an iron nail, a straw, two pieces of plywood, a paper clip, a battery, a pencil and a length of copper wire.

Procedure-

- Fix the two pieces of plywood to each other. They should be perpendicular to each other. Push the nail through the straw and fix the straw to the vertical plywood board.
- Take a card and cut out a signal arm and fix it to the upper end of the jaw with the help of paper clip.
- Next take the pencil and wind some copper wire around it, making a hollow coil. There should be extra copper wire at both the ends.
- Place the coil on the horizontal plywood and connect it to the battery.
- Insert an iron nail inside the coil loosely.
- Taking another drawing pin and a paper clip, create a circuit.



- When the circuit is complete, the nail will be attracted inwards into the coil. This is because it creates a magnetic field.
- The signal arm moves up and down lifting the signal.

GENERAL INSTRUCTIONS-

- ✓ The write up is to be done in A-4 size paper- white or coloured.
- ✓ It should be neatly compiled in a file with an attractive cover page.
- ✓ The written part should be neatly presented in your own handwriting.
- ✓ Support the write up with few pictures.
- ✓ Take the help of your parents only when required.
- ✓ Submit on 12-1-2020

WEBSITES FOR REFERENCE-

<https://www.youtube.com/watch?v=hq8XK-z9Y5A>

<https://www.youtube.com/watch?v=Rclw3IGifRk>

CRITERIA OF ASSESSMENT:

Presentation, Creativity, Originality, Appropriate to the theme,Punctuality



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