

Investigate the transfer and transformation of energy in electrical circuits...

investigate the transfer and transformation of energy in electrical circuits, including the role of circuit components, insulators and conductors

Learning intention

- investigate the transfer and transformation of energy in electrical circuits, including the role of circuit components, insulators and conductors

Teach and model

- identifying necessary components for an electric circuit such as a source of electrical energy and conducting material such as metal wires
- constructing a real or virtual circuit to examine requirements to allow the flow of electricity, including exploring the construction and role of switches
- constructing representations of electrical circuits and their components using accepted conventions

Check understanding

- Explain the main idea in investigate the transfer and transformation of energy in electrical circuits... using an example.
- Show the idea in a second way: with words, a model, a diagram or symbols.
- Apply the idea to a short unfamiliar situation and justify the result.

Teaching cautions

- Ask the student to explain their choice, not only state an answer.
- Check that key vocabulary is understood in a new example.
- Mix representations so the skill is transferred rather than copied.

Quick lesson sequence

- Connect to prior knowledge and introduce the key vocabulary.
- Model one clear example, then solve a second example together.
- Finish with an independent check and a short student explanation.