

Investigate and represent balanced and unbalanced forces, including gravitational force...

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Learning intention

- investigate and represent balanced and unbalanced forces, including gravitational force, acting on objects, and relate changes in an object's motion to its mass and the...

Teach and model

- investigating the effects of applying different forces to familiar objects of the same and different mass
- analysing the effect of balanced and unbalanced forces on an object's motion, such as starting, stopping and changing direction
- measuring the magnitude of a force using a force meter and representing the magnitude and direction of forces acting on an object using force arrow diagrams

Check understanding

- Explain the main idea in investigate and represent balanced and unbalanced forces, including gravitational force... 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.