

E3 Investigating moments: the disc balance

Example session plan

Aim

To help learners discover and understand the importance of perpendicular distance in moments.

Objectives/learning outcomes

- Understand that a force can produce a turning effect.
- Identify the perpendicular distance and explain its significance.

Time	Teacher/trainer plan	Learner activity	Resources
00.00	Introduce topic, and how it relates to previous learning. Ask for examples of where a force causes a turning effect. Allow thinking time. Record responses.	Answering questions. Confirming understanding. Learners respond on mini-whiteboards.	Mini-whiteboards. Whiteboard or flip chart.
00.10	Introduce the activity and either conduct a demonstration or give groups of learners instructions to set it up themselves. Add pair of magnets to disc. Discussion 1: What is happening? Why?	Asking/answering questions as demonstration takes place or setting up and undertake the activity in small groups. Small groups construct disc balance and explore how to achieve balance by placing pairs of magnets.	For hands on activity, each group needs: <ul style="list-style-type: none"> • disc • four pairs of magnets (available in the resources pack) • graph paper • pin • rod. Mini-whiteboards.

00.10	<p>Predict and experiment where to place additional magnets to achieve balance.</p> <p>Discussion 2. What is happening? Why?</p> <p>Clarify:</p> <ul style="list-style-type: none"> a force can produce a turning effect: significance of the perpendicular distance. 	<p>Explaining findings in groups and agreeing understanding.</p> <p>Contributing to whole group discussion.</p>	
Time	Teacher/trainer plan	Learner activity	Resources
00.30	<p>Monitor and consolidate learning and check misconceptions using learner explanations and assertive questioning.</p>	<p>Responding using mini-whiteboards.</p>	
00.45	<p>Extension activities if required.</p> <p>Review and summarise key learning points.</p> <p>Revisit learning objectives.</p>		

Assessment of learning outcomes

- Oral contribution to small group and whole class question and answer sessions.
- Written mini-whiteboard responses.

Differentiation to meet individual needs

- Initial discussion to identify those that need additional learning support as well as those capable of more complex extension activities.
- Peer group selection strategies to pair less confident learners with more advanced learners.

Or:

- Group more confident learners together (extend the activities) and less confident learners together (provide additional support).

Teacher/trainer evaluation

Consider which parts of the session were effective and why.

Learner feedback

Consider whether the activities were suitable for all learners and the session helped to develop as expert learners.

Personal and social skills developed

- Working as a member of a team.
- Communicating understanding clearly.
- Responding to questions.
- Sharing ideas and expertise with others.

Skills for Life or Key Skills developed**Take part in a group discussion**

C2.1a.1 Make clear and relevant contributions in a way that suits the purpose and situation.

C2.1a.2 Respond appropriately to others.

C2.1a.3 Help to move the discussion forward.