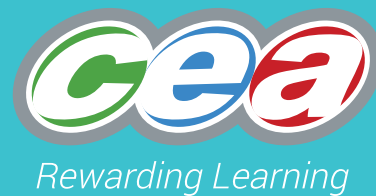


GCSE

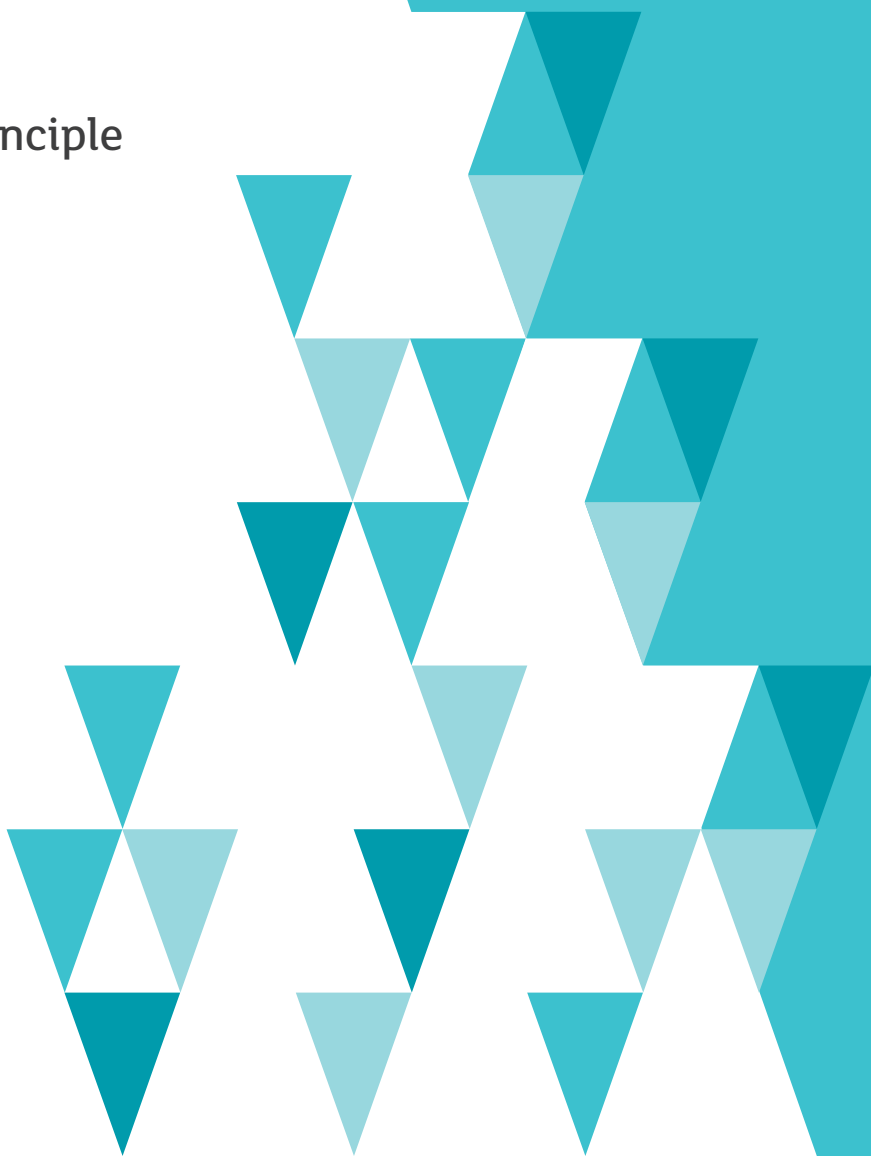


CCEA GCSE TEACHER GUIDANCE
**Double Award Science
Practical Manual**

Unit 7: Practical Skills

P3: Investigating the Principle
of Moments

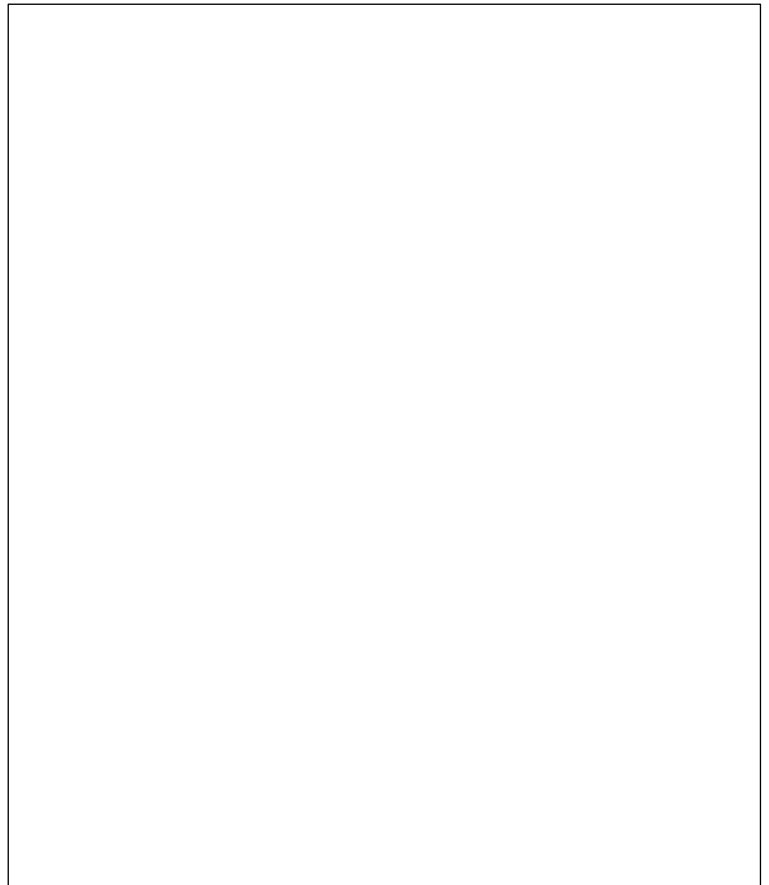
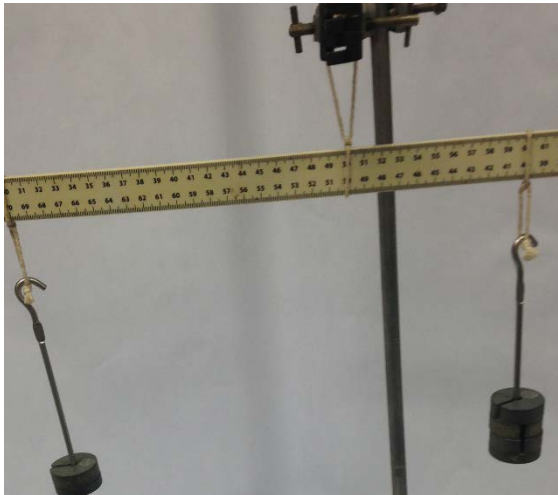
For first teaching from September 2017



Investigating the Principle of Moments

- Plan and carry out experiments to verify the Principle of Moments using a suspended metre rule and attached weights or a pivoted beam and square weights

The apparatus needed for this investigation is shown below. Make a drawing in the space provided.



Method

- Suspend a metre ruler at the 50 cm mark using string.
- Balance the ruler and adjust the string so the ruler doesn't rotate
- Hang unequal masses from either side of the metre ruler starting with 0.1 kg (100g) mass at 0.3 m (30 cm) from the string as shown in the table
- Adjust the position of the masses until the metre ruler is balanced (in equilibrium) again
- Gravity exerts forces F_1 and F_2 on the masses m_1 and m_2
- Record the results in this table

m_1 /kg	F_1 /N	d_1 /m	$F_1 \times d_1$ /Nm	m_2 /kg	F_2 /N	d_2 /m	$F_2 \times d_2$ /Nm
0.10		0.3		0.15			
0.15				0.175			
0.20				0.275			

Explain how your investigation verified the principle of moments.

State a conclusion based on your results.
