



Engaging Places

A resource to support teaching and learning through buildings and places



Estimating and measuring, by Mark Worrall, East Manchester Academy

Curriculum subject/s	Maths
Key stage/s	KS3
Curriculum outcomes	Students will be able to make sensible estimates of measures in relation to everyday situations Students will be able to solve problems involving conversion of units
Lesson objectives	To be able to use mathematics in a real life situation To be able to estimate distances and heights To be able to convert metric units

Starter

- Students to answer a number of metric length conversions involving millimetres, centimetres and metres. Use mini whiteboards if possible. (10)

Main

- Discuss the meaning of the word 'estimate'. Why do we estimate?
- Students to estimate height of a door (approx 2m) and other building-related features (e.g. the height of the classroom, the height of a house etc.).
- In groups, students to sketch a part of a plan of the school (classroom, corridor, school grounds etc.). Students to estimate the lengths in their sketches.
- Students to measure actual lengths with measuring tapes and/or trundle wheels.
- Extension – students to convert their estimated lengths from metres to centimetres or millimetres. (40)

Just around the corner

- As above: students to visit the parts of the school building / grounds to measure actual lengths.

Plenary

- Students to compare their estimates to the actual measurements.
- How accurate were they?
- What strategies did they use for estimating?
- How would they improve the accuracy of their estimates next time? (10)

Homework

- Give the students various lengths to estimate (e.g. the distance from school to London, the length of a finger) – what units would you use for each of the estimates and why?

Assessment for learning

Formative:

Share learning objectives. Use effective questioning techniques. Self assessment

Summative:

Assess through answers given in main body of lesson and homework.

Resources

- Mini whiteboards
- Tape measures
- Trundle wheels

Cross-curricular links

Literacy: Present information and points of view clearly.

Personal, learning and thinking skills: Independent enquirers - Identify questions to answer and problems to solve, support conclusions, using reasoned arguments and evidence; Team workers - Collaborate with others to work towards common goals; Creative thinkers - Ask questions to extend their thinking; Self managers - Work towards goals, showing initiative, commitment and perseverance; Reflective learners - Evaluate experiences and learning to inform future progress.

This resource is from a bank of resources created for Engaging Places by practising teachers and education professionals. If you have ideas for using buildings and places in teaching and learning, and would like to help us create further resources, please email: engagingplaces@cabe.org.uk