

Castle Maths Quest

Shape spotters

Edinburgh Castle is made up of lots of different shapes. Each shape was chosen carefully to make the castle stronger, easier to defend or just to look nice.



Find the following shapes around your house, school or an outdoor area. Discuss why you think each item is that shape?

- Cylinder
- Rectangle
- Arch
- Triangle

Castle attack

Edinburgh Castle was one of the most attacked places in the UK. When enemies attacked, people in the castle would not be able to leave. The well supplied all the water. If the water ran out, the castle would have to surrender.

During attacks the castle had 120 soldiers. Each soldier needed 3 litres of water per day to drink, wash and cook with.

How much water would 120 soldiers need each day?

If the well holds 60,000 litres, how long could 120 soldiers survive during an attack?

A different angle

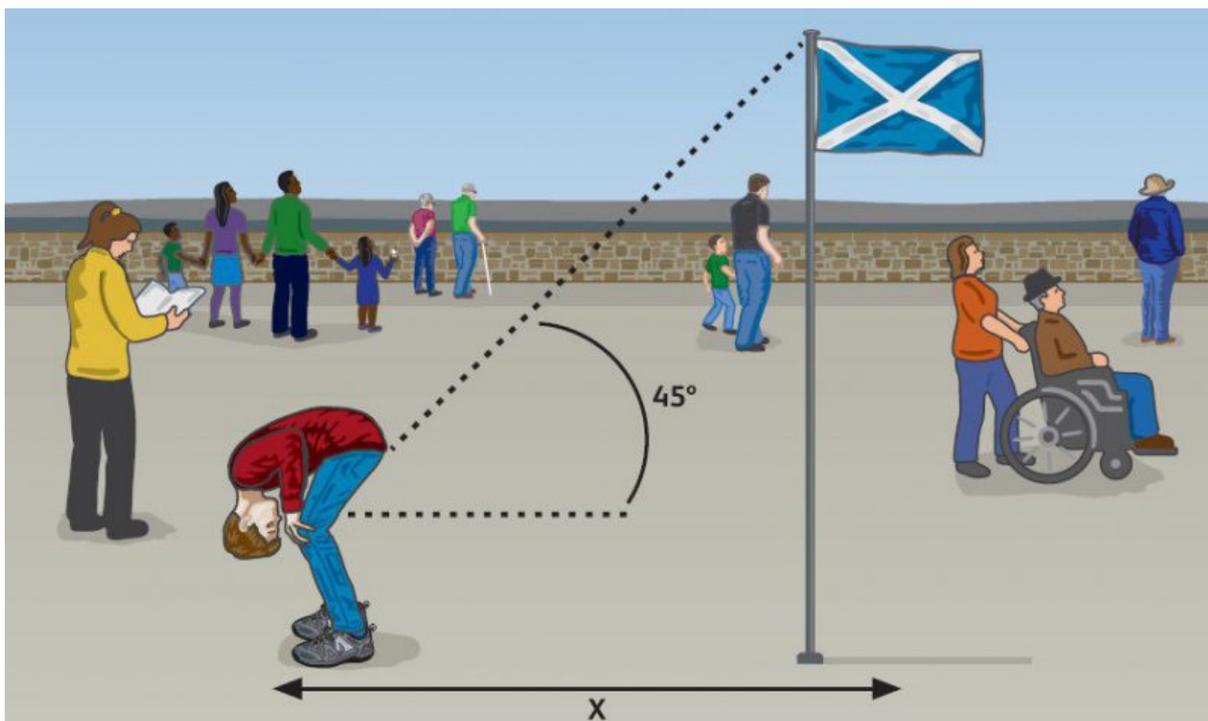
Accurate measurements were essential when building castles. Builders used lots of different ways of measuring over the years including string, sticks, compasses and even body parts!

Have a go at working out the height of a tree, pole or building.

Pick a landmark and stand at its base. Then estimate its height using these steps:

1. Walk away, stopping regularly to look between your legs.
2. Stop walking when you can see the top of the landmark between your legs.
3. Measure the distance between yourself and the landmark using paces or a measuring tape.

This distance is roughly equal to the height of the landmark.



How does this work?

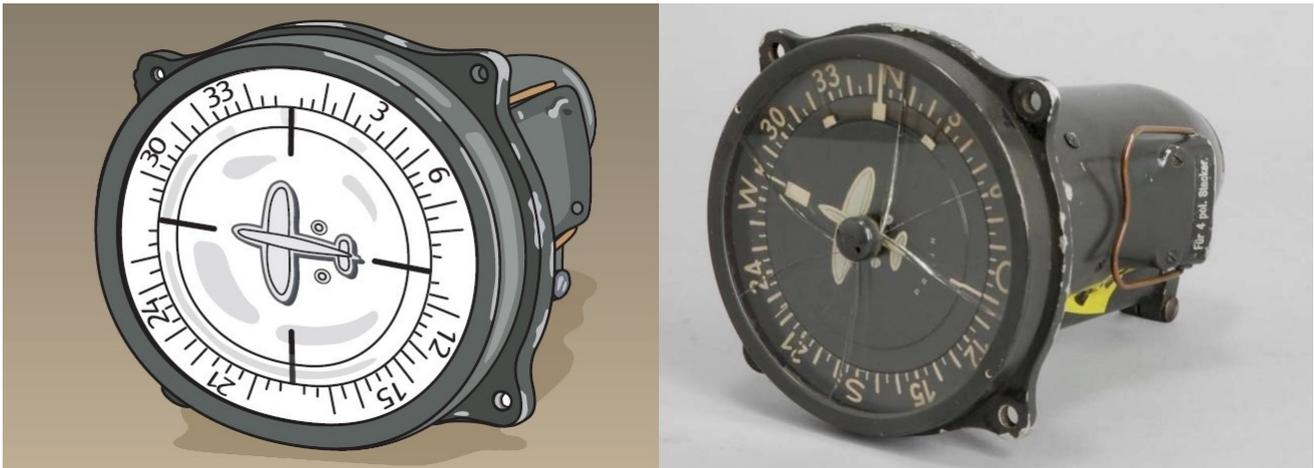
This works because you are looking at the top of the landmark at a 45 degree angle. This makes a right angle triangle between the ground, landmark and your line of sight. Therefore the height of the landmark is the same as the distance that you are from that landmark.

Find your way

The pilots of planes such as the Heinkel III would have navigated their way using a compass and maps.

Work out where North, South, East and West would go on the drawing of the compass below using the photo next to it of a compass in the National War Museum.

Why do you think there is an O on the compass?



Pilots would have looked for large buildings, hills and rivers on the ground below to help their navigation.

Find a high point of ground near you or use a viewpoint on Google Maps like the top of Arthurs Seat.

Use a compass to find north. You can find a compass on most smart phones or on Google Maps.

If you turn 90 degrees to the left, what can you see now?

Masons' marks

Masons carved the stones used to build Edinburgh Castle. They would carve a mark into each stone like a signature.

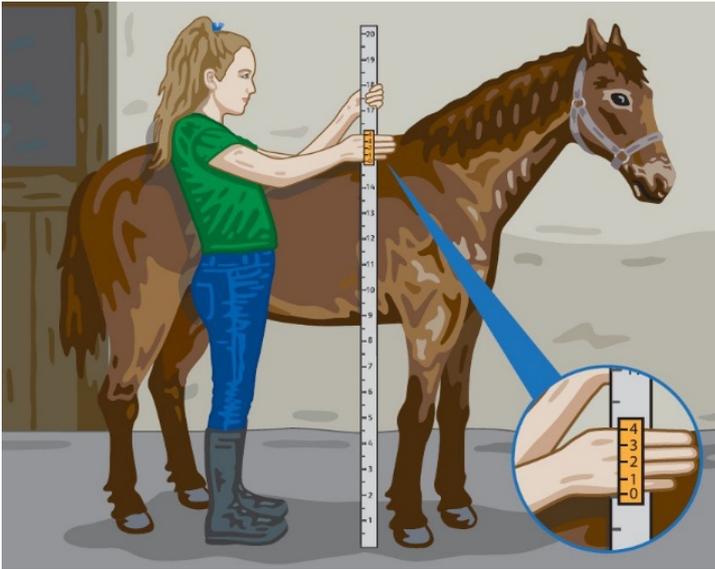
Copy the masons' marks in the drawing.
Find the lines of symmetry for each one.



Create your own mason's mark with 2 or more lines of symmetry.

Measuring up

Horses' heights are measured in Hands (hh). Since the time of ancient Egypt this unit of measurement has been used and was roughly the width of a man's hand. This eventually got a bit confusing, so in 1541 King Henry VIII standardised the measurement so that 1hh = 4 inches



Work out how tall you are in hands.

Measure yourself in inches using a tape measure or ruler. If 1 Hand (hh) is equal to 4 inches, you need to divide your measurement by 4.

Example: 54 Inches divided by 4 equals 13.5. So we would call this 14hh.

How many hands tall are you?

Something to eat

During war and training exercises, soldiers call their food supply 'field rations'. The 24 Hour Ration Pack can feed one person for one day and includes high energy snacks, drinks and three main meals which are fully cooked and ready to eat.

The ration pack in Edinburgh Castle has 36 items. What would you include in your 24 hour ration pack?

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