As outcomes, Year 8 pupils should, for example:	As outcomes, Year 9 pupils should, for example:
Use opportunities in other subjects to estimate and measure using a range of measuring instruments, particularly opportunities to measure volume and bearings.	
Suggest appropriate units and methods to estimate or measure volume. For example, estimate or suggest units to measure: • the volume of a matchbox, of a telephone box, of the school hall…	**Suggest appropriate units to estimate or measure speed.** For example, estimate or suggest units to measure the average speed of: • an aeroplane flying to New York from London, a mountain climber, a rambler on a country walk, a swimmer in a race, a snail in motion, a jaguar chasing prey…
Estimate measures within a given range. Suggest approximate measures of objects or events to use as reference points or benchmarks for comparison. For example, the approximate: • height of a door is 2 m; • height of an average two-storey house is 10m; • mass of a large bag of sugar is 1kg; • mass of a small family car is about 1000kg; • capacity of a small tumbler is about 250ml; • area of a football pitch is 7500m^2; • area of a postcard is 100 cm^2; • time to walk one mile is about 20 minutes.	
Suggest and justify an appropriate degree of accuracy for a measurement. For example: • John says he lives 400 metres from school. Do you think this measurement is correct to: A. the nearest centimetre, B. the nearest metre, C. the nearest 10 metres, or D. the nearest 100 metres? It takes John 7.5 minutes to walk to the school. Do you think this measurement is correct to: P. the nearest second, Q. the nearest 30 seconds, or R. the nearest minute?	**Know that no measurement can be made exactly** so it is conventional to give any measured value to the nearest whole unit or decimal place (e.g. the nearest mark on a scale). A measurement may be in error by up to half a unit in either direction. For example: • A length d m is given as 36 m. It is presumed to be to the nearest metre so $35.5 \leq d < 36.5$. • A volume V cm^3 is given as 240 cm^3. It is presumed to be to the nearest 10 cm^3 so $235 \leq V < 245$. • A mass m kg is given as 2.3 kg. It is presumed to be to the nearest 0.1kg so $2.25 \leq m < 2.35$. Suggest a range for measurements such as: • 123 mm 1860mm 3.54kg 6800m^2 Solve problems such as: • The dimensions of a rectangular floor, measured to the nearest metre, are given as 28 m by 16m. What range must the area of the floor lie within? Suggest a sensible answer for the area, given the degree of accuracy of the data. **Link to rounding and approximation (pages 42–7).**
Solve problems involving length, area, volume, capacity, mass, time, angle and bearings, rounding measurements to an appropriate degree of accuracy. **Link to problem solving (pages 18–21), area (pages 234–7), volume (pages 238–9), and bearings (pages 232–3).**	Solve problems involving length, area, volume, capacity, mass, time, speed, angle and bearings, rounding measurements to an appropriate degree of accuracy. **Link to problem solving (pages 18–21), area (pages 234–7), volume (pages 238–9), bearings (pages 232–3), and speed (pages 232–3).**