MATHEMATICS Unit 10: Measuring Space	Year Group: 7 set 1-3

Key Vocabulary

Metric system	Units based on multiples of 10, 100, 1,000, e.g. metre, litre
Imperial system	Old system based on physical objects e.g. foot, stone
"centi-"	Prefix meaning one hundredth
"milli-"	Prefix meaning one thousandth
"kilo-"	Prefix meaning one thousand
Analogue clock	A clock with an hour, minute and sometimes a second hand.
Digital clock	A clock with a display showing the time
am / pm	am is an abbreviation of ante meridiem which means before midday. pm is post meridiem, after midday
Angle	A measure of turn, usually given in degrees. Measured with a protractor
Acute angle	An angle less than 90°
Right angle	An angle of 90°, marked with a little square in the corner of the angle
Obtuse angle	An angle greater than 90° but less than 180°
Straight line	180°
Reflex angle	An angle greater than 180°
Full turn	360°

Key facts / Diagrams

Abbreviations of key units:

mm	millimetre	cm	centimetre
m	metre	km	kilometre
l	litre	ml	millilitre
cl	centilitre	mg	milligram
g	gram	kg	kilogram
lb	pound	oz	ounce

Key metric conversions:

10mm = 1cm	100cm = 1m
1,000m = 1km	1,000mg = 1g
1,000g = 1kg	1,000kg = 1 tonne
1,000ml = 1l	100cl = 1l

Key imperial conversions:

12 inches = 1 foot   3 feet = 1 yard
8 pints = 1 gallon
16 ounces = 1 pound   14 pounds = 1 stone

Key metric and imperial comparisons:

1 inch ≈ 2.5cm	1 foot ≈ 30cm
1 mile ≈ 1.6km	5 miles ≈ 8 km
1 pint ≈ ½ l	1 gallon ≈ 4 ½ l
1 pound ≈ ½ kg	

Units of time:

60 seconds = 1 minute   60 minutes = 1 hour
24 hours = 1 day   365 days in a year
12 hour clock – am for morning, pm for afternoon
12 pm is midday or noon
12 am is midnight
1:00 pm in 12 hour time = 13:00 in 24 hour time
11:00 pm in 12 hour time = 23:00 in 24 hour time

Common misconceptions

- Seeing an answer of £3.5 and getting confused and thinking this is £3.05 rather than the correct answer of £3.50
- Thinking that there are 100 minutes in an hour. So 2.5 hours is seen as 2 hours and 50 minutes rather than the correct answer of 2 ½ hours = 2 hours and 30 minutes
- Errors when converting 24 hour time to 12 hour time, e.g. thinking 15:00 is 5pm
- Using the wrong scale on a protractor and thinking a 60° angle as 120°
- Many students these days have limited experience of reading time from an analogue clock and may need extra practice

Worked examples

1. 100 minutes. 1 hour is 60 minutes, so 100 minutes= 1 hour 40 minutes

2. 250cm to m. 250 ÷100 = 2.5. So 250cm = 2.5m

3. 2.3kg to grams. 2.3 X 1,000 – 2,300. 2.3kg = 2,300g

4. 30 inches. Each foot is 12 inches, therefore 2 feet = 24 inches. 30 inches = 2 foot 6 inches

5. 20:30 in 12 hour clock time. As the hour is > 12 this is a pm time. 20-12 = 8. 20:30 =8:30pm

6. 8:45 in 24 hour clock time = 08:45