Varied Fluency
Step 3: Calculate with Metric Measures

National Curriculum Objectives:

Mathematics Year 6: (6M5) Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
Mathematics Year 6: (6M9) Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate

Differentiation:

Developing Questions to support calculating with metric measurements, using numbers with up to 1 decimal place.
Expected Questions to support calculating with metric measurements, using numbers with up to 3 decimal places sometimes including 1 zero as a place holder, and including halves and quarters as fractions.
Greater Depth Questions to support calculating with metric measurements, using numbers with up to 3 decimal places using a number of zeros as place holders, and including any fractions and percentages.

More Year 6 Converting Units resources.

Did you like this resource? Don't forget to review it on our website.

Calculate with Metric Measures

1a. A programme is on for 1.5 hours. There is a power cut after 39 minutes.

How many minutes of the programme will be missed?

D VF

Calculate with Metric Measures

1b. Children are asked to cut a length of ribbon. Oliver's measures 1.2m. Steven's measures 80cm.

How many metres of material do they have altogether?

D VF

2a. Tick the correct statement.

A. 3 parcels, weighing 400g each, have a total weight of 1.4kg.

B. The total weight of a 2.5kg case and a 2.2kg bag is under the 4,800g limit.

C. If Tom takes 320g of flour out of a 1.1kg bag, he has 680g left in the bag.

D VF

2b. Tick the correct statement.

A. 1.3L of milk and 470ml of water will overflow a 2L jug.

B. I can pour 2L of pop out of five 320ml bottles.

C. If Rey pours 840ml out of a 1.5L bottle, 660ml will be left in the bottle.

D VF

3a. A wedding dress is 2.7m long. The box to store it in is 245cm long.

How many centimetres will need to be folded over?

D VF

3b. Wilma's suitcase weighs 21.5kg. She still needs to pack her 600g hairdryer.

How heavy will the case be when she puts the hairdryer inside?

D VF

4a. The recipe needs:

water	60ml
milk	0.75L
oil	_____ml

The total amount of liquid in this recipe is 820ml. How much oil is there?

D VF

4b. The different exercises are:

star jumps	7 minutes
jogging	0.5 hours
press ups	12 minutes
leg pulls	_____ minutes

The whole workout is 60 minutes long. How long do the leg pulls take?

D VF

Calculate with Metric Measures

5a. Jenny has 3.35 litres of milk left in the fridge. The porridge needs $\frac{3}{4}$ litres of milk.

How many millilitres of milk will she have left over?

VF

Calculate with Metric Measures

5b. Tom has three bags of sugar, each weighing 1.3kg. He is going to need 2.4kg to bake his cake orders this week.

How many grams of sugar will he have left over?

VF

6a. Tick the correct statement.

A. Sally can cut 14 lengths of 0.25m from a 3m plank of wood.

B. Toby can cut 12 lengths of $\frac{3}{4}$ m from a 9m plank of wood.

C. John can cut 6.5 lengths of 70cm from a 4m plank of wood.

VF

6b. Tick the correct statement.

A. We drove for $3\frac{3}{4}$ hours and had an 18 minute break. The journey took 4 hours.

B. 4 athletes run for 26 minutes each. They run for 1.5 hours in total.

C. Food is ready in 30 minutes. Jay can watch $\frac{1}{4}$ of a 2 hour film before then.

VF

7a. Daniel has a bath that lasts 1.25 hours. Later that day he showers for 16 minutes.

How many minutes in total does he spend washing himself that day?

VF

7b. There are 12.75L of lemonade. Ten tables will each have one jug which holds 750ml.

How much spare lemonade will there be in millilitres?

VF

8a. The table shows the weight of some animals at the wildlife park.

Tiger	Meerkat	Lion	Asian Otter	Indri Lemur
196kg	750g	_____kg	$\frac{1}{4}$ kg	9.5kg

Their total weight is 566.5kg. What is the weight of the lion?

VF

8b. The table shows the length of shadows at different times during the day.

8am	10am	12pm	2pm	4pm
1.95m	129cm	_____m	124cm	1.36m

The total length of shadows is 6.73m. How long is the shadow at 12pm?

VF

Calculate with Metric Measures

9a. A performance lasts for 150 minutes. It is shown four times during the week.

How many hours of performing time are left that week if 45% of it is already completed?

GD VF

Calculate with Metric Measures

9b. A running track is 200m long. The runner in the lead completes $\frac{6}{8}$ of the track before falling.

How much further in km did the runner have left to run?

GD VF

10a. Tick the correct statement.

A. $\frac{3}{5}$ of a litre can fill two 350ml glasses to maximum capacity.

B. Tim has drunk 2,050ml of water. He must drink 0.05L more to reach his 3L target.

C. If 15% has been poured out of a full 1.3L bottle, there will be 1.105L left.

GD VF

10b. Tick the correct statement.

A. Tom weighs 43.8kg. Jane weighs 36.5kg. Tom is 10% heavier than Jane.

B. Gary weighed 53.06kg. He lost 1,070g in weight. He now weighs 51.099kg.

C. A dog weighs 14kg. A cat weighs 4,000g. The cat is $\frac{2}{7}$ the weight of the dog.

GD VF

11a. A large bag of potatoes weighs 6kg and a box of sugar weighs $\frac{3}{5}$ of the weight of potatoes.

How heavy is the sugar in grams?

GD VF

11b. During a test, children are told they have 40% of the time left. The test is 1.5 hours long.

How many minutes of the test are left?

GD VF

12a. Four girls have their hair cut and donate it for wigs.

Maddie	Niamh	Amy	Eden
_____m	45% of 125cm	$\frac{4}{7}$ of 140cm	0.120m

The total length of hair donated is 182.25cm. How much hair did Maddie donate?

GD VF

12b. Three neighbours make their own wine.

Jim	Keith	Trevor
76% of 2L	_____ml	$\frac{7}{8}$ of 1L

3,440ml of wine was made in total. How much wine did Keith make?

GD VF

Varied Fluency
Calculate with Metric Measures

Developing
1a. 51 minutes
2a. B
3a. 25cm
4a. 10ml

Expected
5a. 2,600ml
6a. B
7a. 91 minutes
8a. 360kg

Greater Depth
9a. 5.5 hours
10a. C
11a. 3,600g
12a. 0.34m

Varied Fluency
Calculate with Metric Measures

Developing
1b. 2m
2b. C
3b. 22.1kg
4b. 11 mins

Expected
5b. 1,500g
6b. C
7b. 5,250ml
8b. 0.89m

Greater Depth
9b. 0.05km
10b. C
11b. 36 minutes
12b. 1,045ml