Reasoning and Problem Solving
Step 2: Convert 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:

Questions 1, 4 and 7 (Reasoning)
Developing Convert and add the given metric measurements to determine whether a statement is correct. Using multiples of 5 with up to 1 decimal place.
Expected Convert and add the given metric measurements to determine whether a statement is correct. Using any number with up to 3 decimal places. Sometimes includes zero as a place holder.
Greater Depth Convert and add the given metric measurements to determine whether a statement is correct. Using any number with up to 3 decimal places. Includes a number of zeros as place holders and fractions and percentages to convert measurements.

Questions 2, 5 and 8 (Problem Solving)
Developing Use the clues and knowledge of converting to determine the possible starting number. Give three possibilities. Using multiples of 5 with up to 1 decimal place.
Expected Use the clues and knowledge of converting to determine the possible starting number. Give three possibilities. Using any number with up to 3 decimal places. Sometimes includes zero as a place holder.
Greater Depth Use the clues and knowledge of converting to determine the possible starting number. Give three possibilities. Using any number with up to 3 decimal places. Includes a number of zeros as place holders and fractions and percentages to convert measurements.

Questions 3, 6 and 9 (Reasoning)
Developing Explain if a table is correct when converting metric measurements. Using multiples of 5 with up to 1 decimal place.
Expected Explain if a table is correct when converting metric measurements. Using any number with up to 3 decimal places. Sometimes includes zero as a place holder.
Greater Depth Explain if a table is correct when converting metric measurements. Includes a number of zeros as place holders and fractions and percentages to convert measurements.

More Year 6 Converting Units resources.

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

classroomsecrets.co.uk

Convert Metric Measures

1a. Luke thinks that his horse ate the most hay on Thursday.

	9am	12pm	8pm
Mon	1.5kg	3,500g	2,300g
Tue	1,500g	0.5kg	3.5kg
Wed	2.5kg	3,300g	2.5kg
Thu	1.5kg	3,500g	3,400g
Fri	2,650g	1,635g	4,015g

Do you agree? Explain why.

R

1b. Farah thinks that her sunflower grew the most in week 3.

	Day 2	Day 4	Day 7
Wk 1	9.5cm	60mm	10.5cm
Wk 2	20.5cm	35mm	5cm
Wk 3	105mm	15.5cm	20.5cm
Wk 4	3.5cm	15.5cm	0.5m
Wk 5	85mm	2.5cm	4.5cm

Do you agree? Explain why.

R

2a. Mike is practising converting different units of measure.

He says,

> I start off with a number of ml between 2,000 and 3,000. When converted to litres, my amount has 1 decimal place which is an odd digit.

Mike

What could his starting millilitres have been? Find 3 possibilities.

PS

2b. Sophie is practising converting different units of measure.

She says,

> I start off with a number of grams between 5,000 and 6,000. When converted to kg, my amount has 1 decimal place which is an even digit.

Sophie

What could her starting grams have been? Find 3 possibilities.

PS

3a. Grace has filled in a table after converting from cm to m.

cm	m
2,450cm	25.4m
3,240cm	34.2m
4,260cm	46.2m

Is her table correct? Explain why.

R

3b. Tim has filled in a table after converting from ml to L.

ml	L
450ml	4.5L
3,200ml	32.0L
6,400ml	64.0L

Is his table correct? Explain why.

R

classroomsecrets.co.uk

Reasoning and Problem Solving – Convert Metric Measures – Year 6 Developing

Convert Metric Measures

4a. John thinks that his pet snail travelled the farthest on Tuesday.

	9am	12pm	3pm
Mon	5.01m	120cm	471cm
Tue	149cm	1,300mm	200cm
Wed	355cm	1.25m	6,350mm
Thu	2,340mm	1.05m	125cm
Fri	6.851m	2,302mm	65cm

Do you agree? Explain why.

R

4b. Ellie thinks that her container filled with the most rainwater on Monday.

	7am	10am	1pm
Mon	104ml	0.025L	0.105L
Tue	0.05L	5.5ml	95.1ml
Wed	0.075L	15ml	13.255ml
Thu	105.2ml	0.035L	0.053L
Fri	0.105L	0.025L	110ml

Do you agree? Explain why.

R

5a. Aelin is practising converting different units of measure.

She says,

> I start off with a number of grams. When converted to kg, my amount has 2 decimal places and is between 4kg and 4.1kg.

Aelin

What could her starting grams have been? Find 3 possibilities.

PS

5b. Rowan is practising converting different units of measure.

He says,

> I start off with a number of metres with 3 decimal places, one of which is a zero. When converted to cm, it is more than 2,450cm, but less than 2,451cm.

Rowan

What could his starting metres have been? Find 3 possibilities.

PS

6a. Joey has filled in a table after converting from ml to L.

ml	L
24ml	0.042L
310ml	0.13L
1,820ml	1.28L

Is his table correct? Explain why.

R

6b. Charlotte has filled in a table after converting from g to kg.

g	kg
2,003g	20.03kg
72,106g	721.06kg
6,021g	60.21kg

Is her table correct? Explain why.

R

classroomsecrets.co.uk

Reasoning and Problem Solving – Convert Metric Measures – Year 6 Expected

Convert Metric Measures

7a.
Hannah thinks that her garden was watered the most in Week 2.

	Day 2	Day 4	Day 7
Wk 1	3.541L	4,058ml	20% of 31,025ml
Wk 2	2,604ml	3,006ml	3,840ml
Wk 3	50% of 10.008L	1.090L	2.005L
Wk 4	2,875ml	5,210ml	3,001ml
Wk 5	658ml	3.047L	3.254L

Do you agree? Explain why.

R

Convert Metric Measures

7b.
Sartaq thinks that he built the tallest Lego tower in his group of friends.

	7am	10am	1pm
Sartaq	5% of 30.86m	2,875mm	35.4cm
Jean	81.63cm	2.652m	1,243.2mm
Rhoe	162.54mm	10% of 56.8m	10.5mm
Sue	1.489m	65.24cm	1,874.4mm
Bill	1,485mm	2,302.5mm	2.005m

Do you agree? Explain why.

R

8a.
James is practising converting different units of measure.

He says,

> I start off with a number of metres. When converted to km, my amount has 3 decimal places and is between 601km and 601.1km.

James

What could his starting metres have been? Find 3 possibilities.

PS

8b.
Lucy is practising converting different units of measure.

She says,

> I start off with a number of litres with 2 decimal places, one of which is a zero. When converted to ml, it is more than 30,000ml, but less than 30,050ml.

Lucy

What could her starting millilitres have been? Find 3 possibilities.

PS

9a.
Jack has filled in a table after converting from m to km.

¼	m	km
1,517m	3,034m	3.34km
1,003m	2,006m	2.06km
351m	702m	0.72km

Is his table correct? Explain why.

R

9b.
Beth has filled in a table after converting from mm to m.

10%	mm	m
5.08mm	508mm	0.058m
60.21mm	6,021mm	6.210m
40.3mm	4,030mm	4.303m

Is her table correct? Explain why.

R

classroomsecrets.co.uk

Reasoning and Problem Solving – Convert Metric Measures – Year 6 Greater Depth

Reasoning and Problem Solving
Convert Metric Measures

Developing
1a. Luke is correct because his horse at 8.4kg of hay on Thursday, which is more than any other day.
2a. Various answers, for example: 2,100ml (2.1L); 2,300ml (2.3L); 2,500ml (2.5L)
3a. Grace's table is incorrect. She has mixed up two digits in the m column.

cm	m
2,450cm	24.5m
3,240cm	32.4m
4,260cm	42.6m

Expected
4a. John is incorrect because his pet snail travelled 11.15m on Wednesday, which is more than any other day.
5a. Various answers, for example: 4,010g (4.01kg); 4,020g (4.02kg); 4,030g (4.03kg)
6a. Joey's table is incorrect. He has mixed up two digits in the L column.

ml	L
24ml	0.024L
310ml	0.31L
1,820ml	1.82L

Greater Depth
7a. Hannah is incorrect because her garden received 13.804L of water in Week 1, which is more than any other week.
8a. Various answers, for example: 601,013m (601.013km); 601,014m (601.014km); 601,015m (601.015km)
9a. Jack's table is incorrect. He has found a half of the measurements instead of a quarter and he has not included a zero as a placeholder when converting.

¼	m	km
758.5m	3,034m	3.034km
501.5m	2,006m	2.006km
175.5m	702m	0.702km

Developing
1b. Farah is incorrect because her sunflower grew 69cm in Week 4, which is more than any other week.
2b. Various answers, for example: 5,200g (5.2kg), 5,400g (5.4kg), 5,600g (5.6kg)
3b. Tim's table is incorrect. He has divided by 100 instead of 1,000.

ml	L
450ml	0.45L
3,200ml	3.2L
6,400ml	6.4L

Expected
4b. Ellie is incorrect because her container filled with 240ml on Friday, which is more than any other day.
5b. Various answers, for example: 24.501m (2,450.1cm); 24.502m (2,450.2cm); 24.503m (2,450.3cm)
6b. Charlotte's table is incorrect. She has divided by 100 instead of 1,000.

g	kg
2,003g	2.003kg
72,106g	72.106kg
6,021g	6.021kg

Greater Depth
7b. Sartaq is incorrect because Rhoe's tower was 585.304cm tall, which is taller than any of the other towers.
8b. Various answers, for example: 3012.26ml, 3024.16ml, 3082.04ml.
9b. Beth's table is incorrect. She has found 1% instead of 10% and mixed up two digits when converting.

10%	mm	m
50.8mm	508mm	0.508m
602.1mm	6,021mm	6.021m
403mm	4,030mm	4.03m