

22.02.21 Convert Metric Measures

Reasoning and problem solving—Maths extension

Answer and reason the questions below to deepen your mathematical

- 1) Mo thinks that 12,000 g is greater than 20 kg because $12,000 > 20$

Explain why Mo is wrong.

- 2) Put these capacities in order, starting with the smallest.

3 litres	3,500 ml
0.4 litres	0.035 litres
450 ml	330 ml

- 3) A shop sells one-litre bottles of water for 99p each.

300 ml bottles of water are on offer at 8 bottles for £2

Whitney wants to buy 12 litres of water.
Find the cheapest way she can do this.

22.02.21 Convert Metric Measures

ANSWER SHEET

- 1) Mo thinks that 12,000 g is greater than 20 kg because $12,000 > 20$

Explain why Mo is wrong.

12,000 g = 12 kg,
which is less than
20 kg.

- 2) Put these capacities in order, starting with the smallest.

3 litres

3,500 ml

0.4 litres

0.035 litres

450 ml

330 ml

0.035 litres
330 ml
0.4 litres
450 ml
3 litres
3,500 ml

- 3) A shop sells one-litre bottles of water for 99p each.

300 ml bottles of water are on offer at 8 bottles for £2

Whitney wants to buy 12 litres of water.
Find the cheapest way she can do this.

£11.88 to buy 12
one-litre bottles.

12 litres = 40
bottles of size 300
ml.

$40 \div 8 = 5$ so
this will cost
 $5 \times 2 = \text{£}10$
Whitney should
buy 40 bottles of
300 ml.

23.02.21 Calculate with Metric Measures

Reasoning and problem solving—Maths extension

Answer and reason the questions below to deepen your mathematical

- 1) Jack, Alex and Amir jumped a total of 12.69 m in a long jump competition.


Alex jumped exactly 200 cm further than Jack.

Amir jumped exactly 2,000 mm further than Alex.

What distance did they all jump?

Give your answers in metres.

- 2) Dora made a stack of her magazines. Each magazine on the pile is 2.5 mm thick. The total height of the stack is 11.5 cm high. How many magazines does she have in her pile?
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- 3) Each nail weighs 3.85 grams. 

There are 24 nails in a packet.

What would be the total mass of 60 packets of nails? Give your answer in kilograms.

How many packets would you need if you wanted $\frac{1}{2}$ kg of nails?

How many grams of nails would be left over?

Answers can be found on the next page.

23.02.21 Calculate with Metric Measures

ANSWER SHEET

Answer and reason the questions below to deepen your mathematical

- 1) Jack, Alex and Amir jumped a total of 12.69 m in a long jump competition.

Alex jumped exactly 200 cm further than Jack.

Amir jumped exactly 2,000 mm further than Alex.

What distance did they all jump?

Give your answers in metres.


Jack jumped
2.23 m.

Alex jumped
4.23 m.

Amir jumped
6.23 m.

- 2) Dora made a stack of her magazines. Each magazine on the pile is 2.5 mm thick. The total height of the stack is 11.5 cm high. How many magazines does she have in her pile?

There are 46
magazines in
Dora's pile.

- 3) Each nail weighs 3.85 grams. 

There are 24 nails in a packet.

What would be the total mass of 60 packets of nails? Give your answer in kilograms.

How many packets would you need if you wanted $\frac{1}{2}$ kg of nails?

How many grams of nails would be left over?

5.544 kg

6 packets

(554.4 g)

55.4 g left over

24.02.21 Miles and Kilometres

Reasoning and problem solving—Maths extension

Answer and reason the questions below to deepen your mathematical

- 1) Ron and Annie are running a 5 mile race.



I have run 6.4 km so far

I have run 3.8 miles so far



Who has the furthest left to run?

- 2) The distance between Cardiff and London is 240 km.

A car is travelling at 60 mph.

How long will it take them to get to London from Cardiff?

- 3) Mo cycles 45 miles over the course of 3 days.

On day 1, he cycles 16 km.

On day 2, he cycles 10 miles further than he did on day 1

How far does he cycle on day 3?

Give your answer in miles and in kilometres.

Answers can be found on the next page.

24.02.21 Miles and Kilometres

ANSWER SHEET

Answer and reason the questions below to deepen your mathematical

- 1) Ron and Annie are running a 5 mile race.



I have run 6.4 km so far

I have run 3.8 miles so far



Annie has 1 mile left to run, whereas Ron has 1.2 miles left to run. Ron has the furthest left to run.

Who has the furthest left to run?

- 2) The distance between Cardiff and London is 240 km.

A car is travelling at 60 mph.

How long will it take them to get to London from Cardiff?

240 km \approx 150 miles

$$150 \div 60 = 2 \frac{1}{2}$$

hours

Or

60 miles \approx 96 km

$$240 \div 96 = 2 \frac{1}{2}$$

hours

- 3) Mo cycles 45 miles over the course of 3 days.

On day 1, he cycles 16 km.

On day 2, he cycles 10 miles further than he did on day 1

How far does he cycle on day 3?

Give your answer in miles and in kilometres.

On day 1 he cycles 16 km / 10 miles.

On day 2 he cycles 32 km / 20 miles.

On day 3 he cycles 24 km / 15 miles.

25.02.21 Imperial Measures

Reasoning and problem solving—Maths extension

Answer and reason the questions below to deepen your mathematical

- 1) Jack is 6 foot 2 inches tall.

Rosie is 162 cm tall.

Who is taller and by how much?

- 2) 60 gallons of water are drunk at a sports day.

Each child drank 3 pints.

How many children were at the sports day?

- 3) Eva wants to make a cake.

Here are some of the ingredients she needs:

- 8 ounces of caster sugar
- 6 ounces of self-raising flour
- 6 ounces of butter

This is what Eva has in her cupboards:

- 0.5 lbs of caster sugar
- 0.25 lbs of self-raising flour
- $\frac{3}{8}$ lbs of butter

Does Eva have enough ingredients to bake the cake?

If not, how much more does she need to buy?



Answers can be found on the next page.

25.02.21 Imperial Measures

ANSWER SHEET

Answer and reason the questions below to deepen your mathematical

1) Jack is 6 foot 2 inches tall.

Rosie is 162 cm tall.

Who is taller and by how much?

Jack is 185 cm tall,
he is 23 cm taller
than Rosie.

2) 60 gallons of water are drunk at a sports day.

Each child drank 3 pints.

How many children were at the sports day?

60 gallons = 480
pints
 $480 \div 3 = 160$
children

3) Eva wants to make a cake.

Here are some of the ingredients she needs:

- 8 ounces of caster sugar
- 6 ounces of self-raising flour
- 6 ounces of butter

This is what Eva has in her cupboards:

- 0.5 lbs of caster sugar
- 0.25 lbs of self-raising flour
- $\frac{3}{8}$ lbs of butter

Does Eva have enough ingredients to bake the cake?

If not, how much more does she need to buy?

Eva has the exact amount of butter and caster sugar, but does not have enough self-raising flour – she needs another 2 ounces.

