Maths this Week

Maths this week is to try and get you thinking.

In the middle of each card is a problem in its simplest form and more complicated questions around the outside.

Once you have completed the simplest question, have a go at the questions around the outside. When you are answering the other questions, think about how the questions have changed and what that has made you have to do differently.

CARD 11

Teddy and Megan are playing a game.
Teddy scores 4003 points and Megan scores 2899 points.

What is the difference between the two scores?

The difference between Teddy and Megan's score is 3450.
Teddy has the least amount of points with 4987 points.
How many points does Megan have?

What if...

...the way to score points changed?

In the game, Teddy and Megan collect pots of gold and crystals.
Pots of gold are worth 50 points and pots of crystals are worth 30 points.
What combination of pots of gold and crystals could they have collected if they have 300 points?
Find different solutions.

Teddy and Megan are playing a game.
Teddy scores 4003 points and Megan scores 2899 points.
What is the difference between the two scores?
How many more points does Teddy need to make the difference 2000?

Teddy and Megan are playing a game.
Teddy scores 4003 points and Megan scores 2899 points.
How many more points does Teddy need to make the difference 2000?

Megan scores 324 points and Teddy scores 300 more.
Teddy says his score is a multiple of 9.
Is he correct?
How do you know?

What if...
Less straight forward
Finding all possibilities
Explain
Instructions left out
More steps
Simple
−/+ difference rules of divisibility %

tts
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4987 + 3450 = 8437

Megan has 8437 points.

One possible approach...

For every 1000 points scored, Teddy and Megan get 10% extra bonus points.

How does this affect the other challenges?

Pots of gold = 50	Crystals = 30
6	0
3	5
0	10

4003 – 2899 = 1104

4003 – 2899 = 1104

2000 – 1104 = 896

4003 – 2899 = 1104

2000 – 1104 = 896

No because to be divisible by 9 the digits must add to make 9.
Megan's score is divisible by 9
3 + 2 + 4 = 9.
Teddy's score would be 624.
6 + 2 + 4 = 11 so it would not be divisible by 9.

CARD 12

During winter in Norway, the temperature drops by 7 degrees each month. In November the temperature was 11 degrees. What will the temperature be in January?

In Norway, the temperature dropped by 14 degrees over two months. It was –9 degrees in December. What was the temperature in the previous October?

What if...

...the temperature varies?

In January the temperature in Sweden was -18°C and -12°C in Denmark. The temperature increases by 6°C each month in Sweden and 4°C in Denmark. Between January and August, in which months do the countries have the same temperature? Can you find the 3 solutions?

During winter in Norway, the temperature drops by 7 degrees each month. In November the temperature was 11 degrees. What will the temperature be in January? How many degrees lower was the temperature from November to January?

During winter in Norway, the temperature drops by 7 degrees each month. In November the temperature was 11 degrees. How many degrees lower was the temperature from November to January?

It can be -16 degrees in Denmark during the month of February. It can be -18 degrees in Sweden during the same month. Jenny says it is colder in Sweden but Frankie says it is colder in Denmark. Who is correct? Explain how you know.

What if...

Less straight forward

Finding all possibilities

Explain

Instructions left out

More steps

Simple

Negative numbers –

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-9 plus 14 = 5 degrees.

One possible approach...

What if the temperature changes in different multiples each month?

	Sweden	Denmark
Jan	-18°C	-12°C
Feb	-12°C	-8°C
Mar	-6°C	-4°C
April	0°C	0°C
May	6°C	4°C
June	12°C	8°C
July	18°C	12°C
Aug	24°C	16°C

1. February in Sweden and January in Denmark.
2. April in Sweden and April in Denmark.
3. June in Sweden and July in Denmark.

Dec: 11 – 7 = 4

January: 4 – 7 = -3

Dec: 11 – 7 = 4
January: 4 – 7 = -3

Nov temp = 11
Jan temp = -3

Temperature was 14 degrees lower.

Dec: 11 – 7 = 4
January: 4 – 7 = -3

Nov temp = 11
Jan temp = -3

Temperature was 14 degrees lower.

Jenny is correct.

-18 is colder than -16 by 2 degrees.

CARD 13

A shopkeeper buys a box of 420 lollies. He wants to put them in 6 containers.

How many lollies will each container hold?

In the stockroom, there are 7 shelves each holding 417 lollies.
How many lollies are there in total?

What if...

...the number of lollies and boxes changes?

Lollies can be bought in 2 flavours in boxes of 30.
A shopkeeper buys twice as many of one flavour than the other.
He buys up to 630 lollies in total.
What are the different amounts of each flavour he could have bought?

A shopkeeper buys a box of 420 lollies.
He wants to put them in 6 containers.
How many lollies will each container hold?
If a tenth of the lollies in every container is damaged and has to be thrown away, how many lollies will be left in total?

A shopkeeper buys a box of 420 lollies.
He wants to put them in 6 containers.
If a tenth of the lollies in every container is damaged and has to be thrown away, how many will be left in each container and how many lollies will there be in total?

The shopkeeper says his 630 lollies, can be divided equally between 8 containers.
Is the shopkeeper correct?
Explain how you know.

What if...
Less straight forward
Finding all possibilities
Explain
Instructions left out
More steps
Simple
Division scaling short x fractions recognising multiples

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417 x 7 = 2919

Orange	Strawberry
30	60
60	120
90	180
120	240

etc.

420 ÷ 6 =
42 ÷ 6 = 7
420 ÷ 6 = 70

Each container will hold 70 lollies.

One possible approach...

In the Red Challenge there is a different number of lollies and 3 times as many of one of the flavours is bought.

420 ÷ 6 =
42 ÷ 6 = 7
420 ÷ 6 = 70
Each container will hold 70 lollies.

$\frac{1}{10}$ of 70 = 7
7 x 6 = 42
420 – 42 = 378 lollies left.

420 ÷ 6 =
42 ÷ 6 = 7
420 ÷ 6 = 70
Each container will hold 70 lollies.

$\frac{1}{10}$ of 70 = 7
7 x 6 = 42
420 – 42 = 378 lollies left.

No the shopkeeper is not correct

8 x 8 = 64

640 lollies would be needed to be able to divide them equally.

CARD 14

Class 4 ask the whole school of 200 children 'What is your favourite chocolate bar?'
The responses were:
Rocket bar = 98
Comet bar = 34
Planet bar = 43
Asteroid bar = ?
Moon bar = 21
How many children chose the Asteroid bar?

Moon bars cost £2.40 for a pack of 6 bars.
What is the cost per bar?

What if...

...the cost of the bars changed?

Rocket bars cost 60p each.
Comet bars cost 30p each.
Phoebe has £3.
How many of each bar could she buy?
Find all the possibilities.

Class 4 ask the whole school of 200 children 'What is your favourite chocolate bar?'
The responses were:
Rocket bar = 98 Comet bar = 34
Planet bar = 43 Asteroid bar = ?
Moon bar = 21
Asteroid bars are sold in packs for £1.17.
How much would it cost to buy a pack for each child who chose Asteroid bars?

Class 4 ask the whole school of 200 children 'What is your favourite chocolate bar?'
The responses were:
Rocket bar = 98 Comet bar = 34
Planet bar = 43 Asteroid bar = ?
Moon bar = 21
How much would it cost to buy a pack for each child who chose Asteroid bars?

Phoebe says that more children liked Rocket bars than Planet bars and Comet bars added together.
Is she correct?
Explain how you know.

What if...
Less straight forward
Finding all possibilities
Explain
Instructions left out
More steps
Simple

+/– money decimals short x interpreting data mental ÷ deriving from known facts

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240p

6 x 10 = 60p

6 x 20p = 120p

6 x 30p = 180p

6 x 40p = 240p

Each bar costs 40p.

One possible approach...

All bars are half price.

Rocket bars	Comet bars
5	0
4	2
3	4
2	6
1	8
0	10

93 + 43 + 21 + 34 = 196

4 chose Asteroid bars.

93 + 43 + 21 + 34 = 196

4 chose Asteroid bars.

£1.17 x 4 = £4.68

93 + 43 + 21 + 34 = 196

4 chose Asteroid bars.

£1.17 x 4 = £4.68

Yes she is correct.

When rounding the number of children who chose Planet and Comet bars up to the nearest 5, the total would be 80 which is fewer than the number of children who chose Rocket bars.

CARD 15

Aneesha said that she is 520 weeks old.

How many years old is she?

If Priya is 7 $\frac{1}{2}$ years old, how many weeks old is she?

What if...

...the age was given in months?

In total, two friends are 416 weeks old.
What could their possible ages be?

Aneesha said that she is 520 weeks old.
How many years old is she?
How many years old will she be in another 104 weeks?

Aneesha said that she is 520 weeks old.
How many years old will she be in another 104 weeks?

Aneesha is 520 weeks old.
Aneesha says that in five years time her age in weeks will be over 1000 weeks.
Is she correct?
Explain how you know?

What if...

Less straight forward

Finding all possibilities

Explain

Instructions left out

More steps

Simple

X ÷ 10 approximating + PV time (months, weeks, years)

tts

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7 x 52 = 364

364 + 26 = 390

Priya is 390 weeks old.

One possible approach...

Aneesha is ? months old.

How many years old is she?

Possible ages could be:

52 weeks (1 yr) + 364 weeks (7 yrs).

104 weeks (2 yrs) + 312 weeks (6 yrs).

etc.

Aneesha is
10 years old.

520 ÷ 52 = 10

(52 weeks in a year).

Aneesha is 10 years old.

52 weeks x 2 = 104

10 yrs + 2 yrs = 12 yrs old.

Aneesha is 10 years old.

52 weeks x 2 = 104

10 yrs + 2 yrs = 12 yrs old.

Aneesha is not correct because 10 years old is approximately 500 weeks so she would be nearer 20 years old when she is 1000 weeks old.