28.1.21

LI: To apply my knowledge to solve reasoning problems

Rosie writes, $85 \div 3 = 28\ r\ 1$ She says 85 must be 1 away from a multiple of 3 Do you agree?	I agree, remainder 1 means there is 1 left over. 85 is one more than 84 which is a multiple of 3
37 sweets are shared between 4 friends. How many sweets are left over? Four children attempt to solve this problem. • Alex says it's 1 • Mo says it's 9 • Eva says it's 9 r 1 • Jack says it's 8 r 5 Can you explain who is correct and the mistakes other people have made?	Alex is correct as there will be one remaining sweet. Mo has found how many sweets each friend will receive. Eva has written the answer to the calculation. Jack has found a remainder that is larger than the divisor so is incorrect.

Whitney is thinking of a 2-digit number that is less than 50 When it is divided by 2, there is no remainder. When it is divided by 3, there is a remainder of 1 When it is divided by 5, there is a remainder of 3 What number is Whitney thinking of?	Whitney is thinking of 28

Dexter is calculating 208 ÷ 8 using part-whole models.

Can you complete each model?

208 ÷ 8 =

80 ÷ 8 =   80 ÷ 8 =   48 ÷ 8 =

208 ÷ 8 =

208 ÷ 8 =

160 ÷ 8 =   40 ÷ 8 =   8 ÷ 8 =

160 ÷ 8 =   48 ÷ 8 =
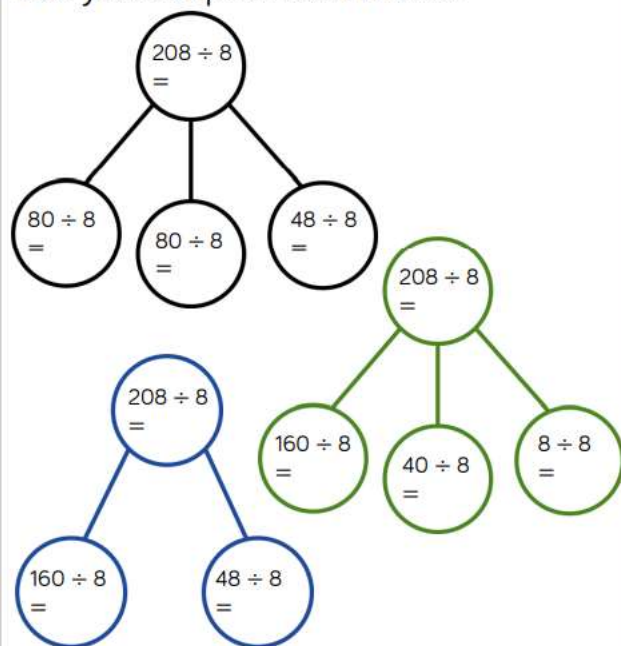
How many part-whole models can you make to calculate 132 ÷ 4?

$208 \div 8 = 26$
$80 \div 8 = 10$
$48 \div 8 = 6$
$160 \div 8 = 20$
$40 \div 8 = 5$
$8 \div 8 = 1$

Children can then make a range of part-whole models to calculate 132 ÷ 4

e.g.
$100 \div 4 = 25$
$32 \div 4 = 8$

You have 12 counters and the place value grid. You must use all 12 counters to complete the following.

Hundreds	Tens	Ones
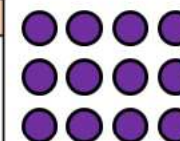
Create a 3-digit number divisible by 2
Create a 3-digit number divisible by 3
Create a 3-digit number divisible by 4
Create a 3-digit number divisible by 5
Can you find a 3-digit number divisible by 6, 7, 8 or 9?

2: Any even number

3: Any 3-digit number (as the digits add up to 12, a multiple of 3)

4: A number where the last two digits are a multiple of 4

5: Any number with 0 or 5 in the ones column.

Possible answers

6: Any even number

7: 714, 8: 840

9: impossible

Here are the meal choices in the school canteen.

Starter	Main	Dessert
Soup	Pasta	Cake
Garlic Bread	Chicken	Ice-cream
	Beef	Fruit Salad
	Salad	

There are 2 choices of starter, 4 choices of main and 3 choices of dessert.

How many meal combinations can you find? Can you use a systematic approach?
Can you represent the combinations in a multiplication?

If there were 20 meal combinations, how many starters, mains and desserts might there be?

Alex has 6 T-shirts and 4 pairs of shorts.
Dexter has 12 T-shirts and 2 pairs of shorts.
Who has the most combinations of T-shirts and shorts?
Explain your answer.