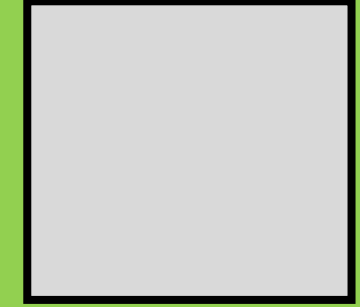
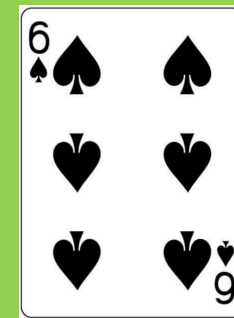
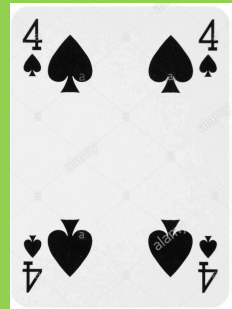
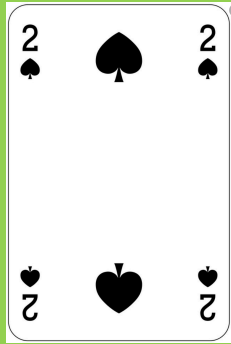
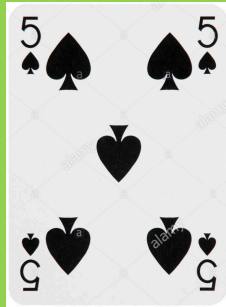
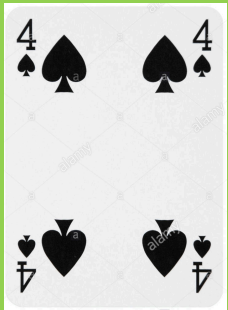
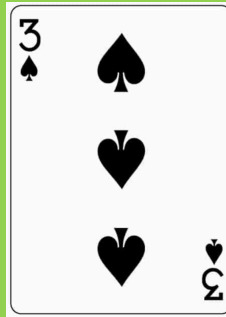
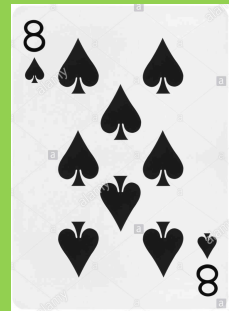
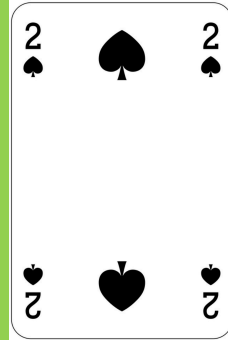
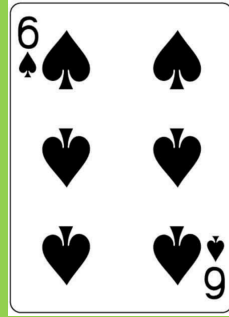


Magic Squares

Last week, I set you this tasty puzzle where you had to arrange the playing cards, numbered 1 – 9 to ensure that every row and column added to 15.



This is the answer.

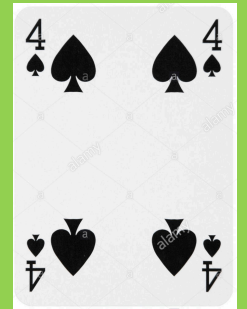
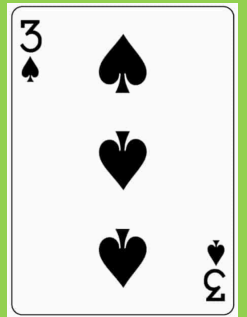
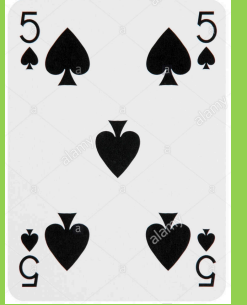
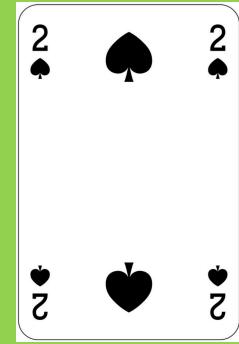
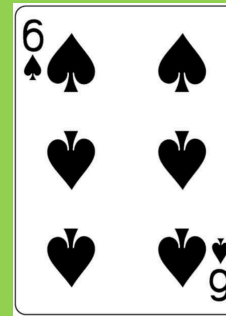
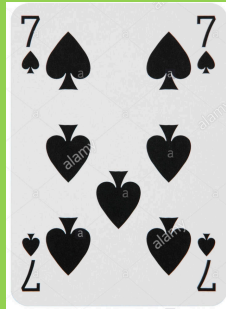
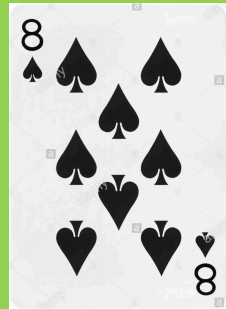


First step:

There are obviously numbers that cannot be in the same row and column.

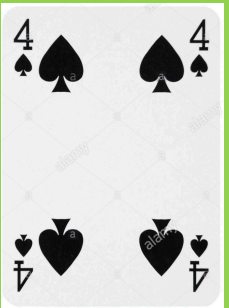
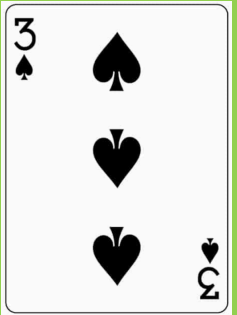
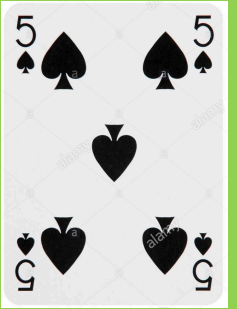
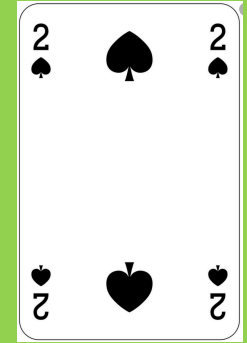
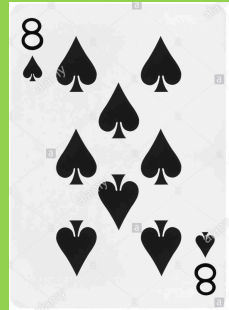
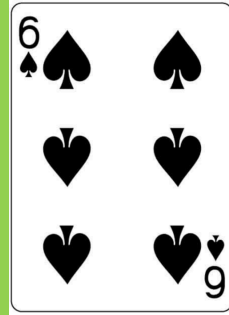
These are the 'big' numbers.

My advice would have been to separate them



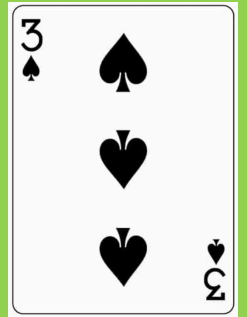
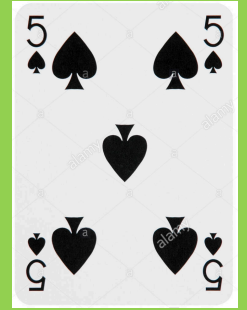
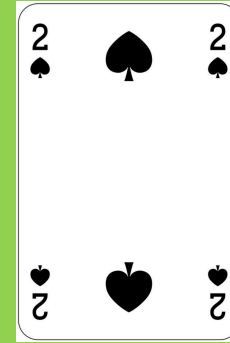
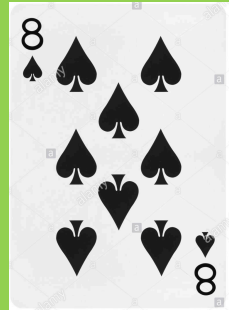
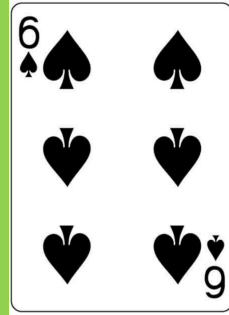
Second step:

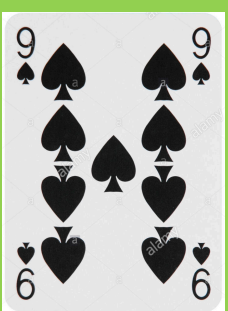
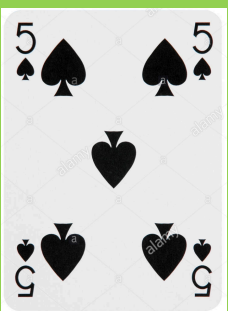
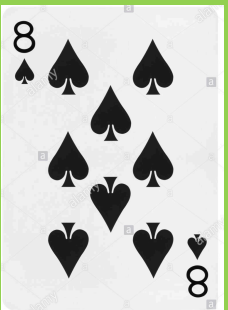
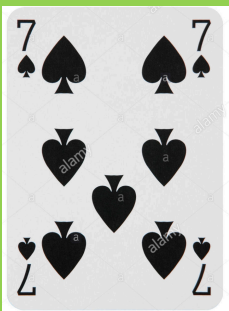
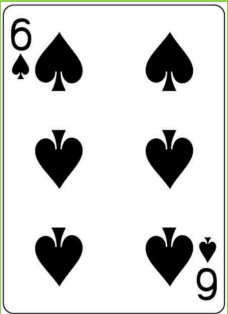
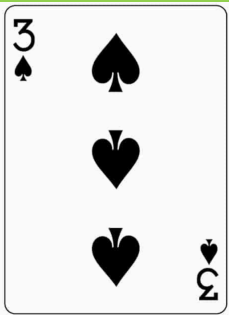
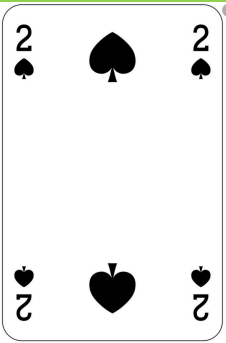
Some numbers CAN go together so long as they do not add up to or beyond 15.

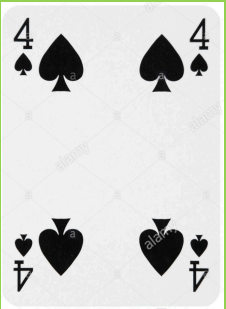
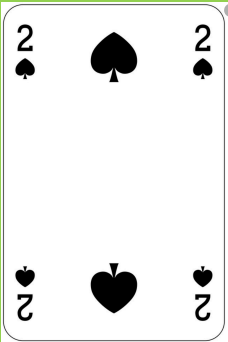
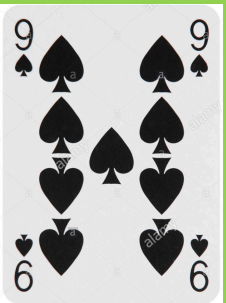
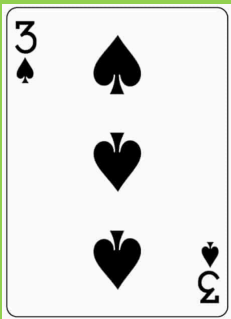
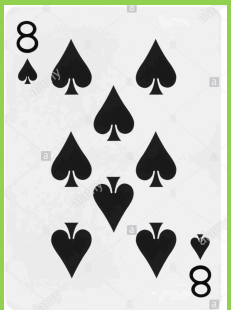
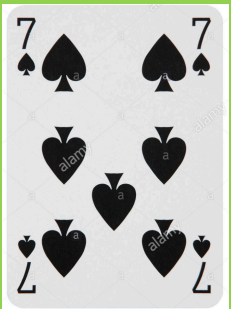
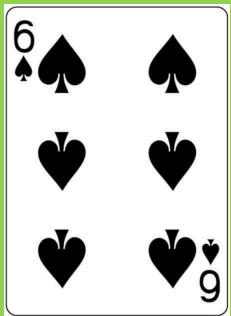


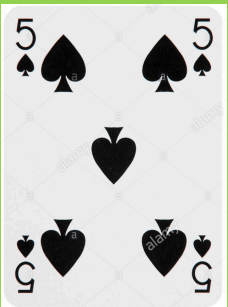
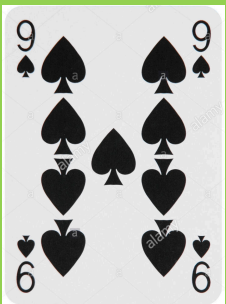
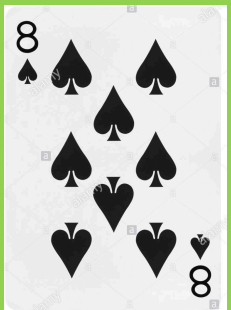
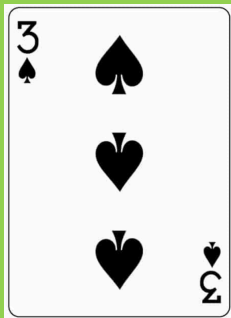
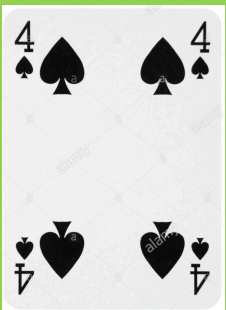
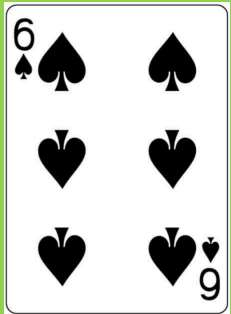
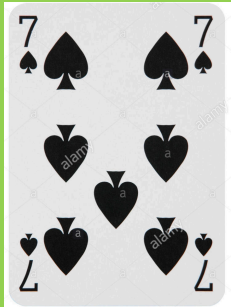
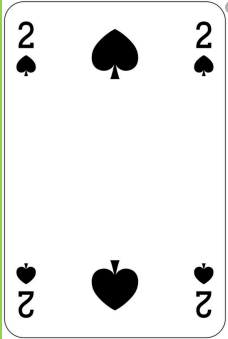
Third step:

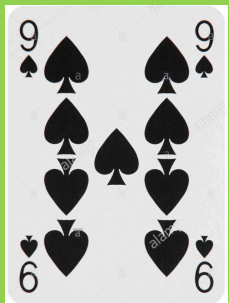
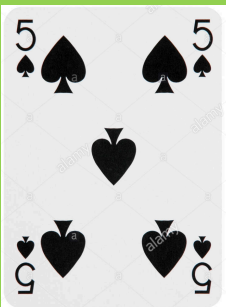
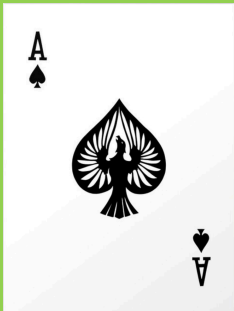
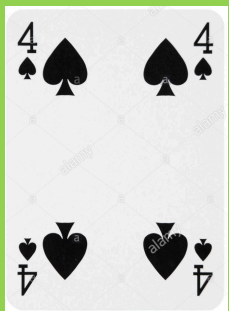
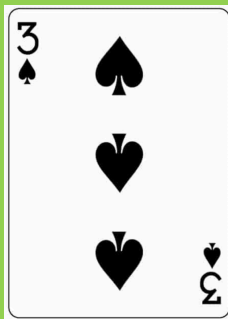
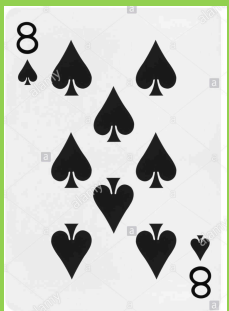
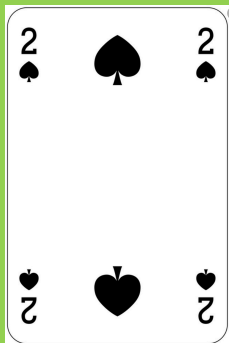
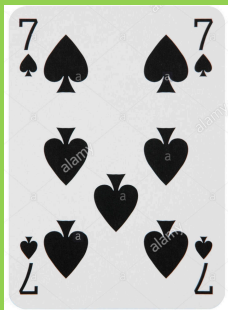
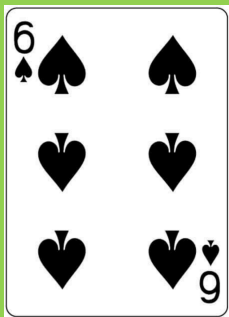
It will take a bit of trial and error to them rearrange the remaining numbers in order to solve the problem.











Home Learning: Mathematics

Summer 1: Week 4

Monday 11th May – Friday 15th May 2020

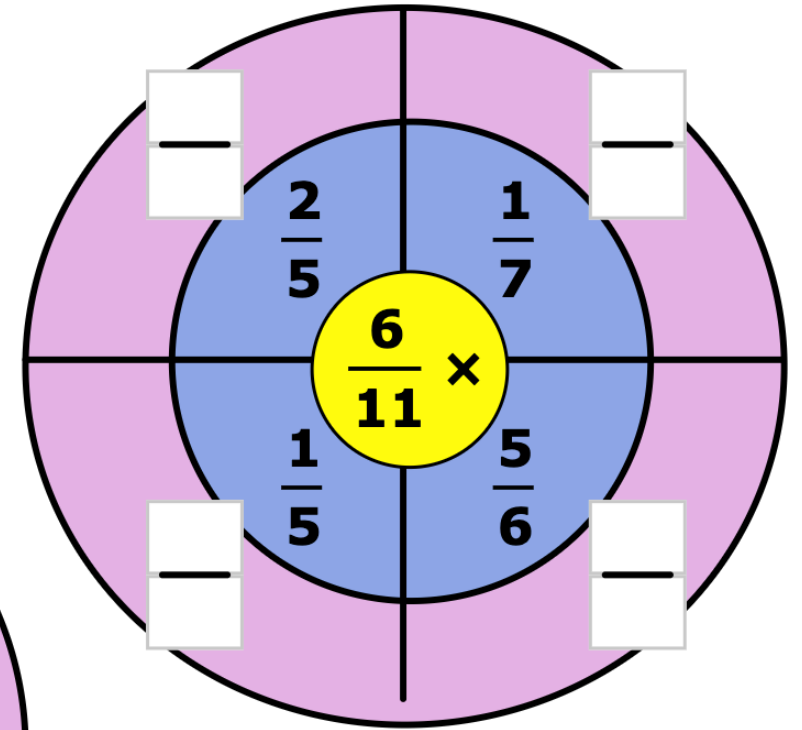
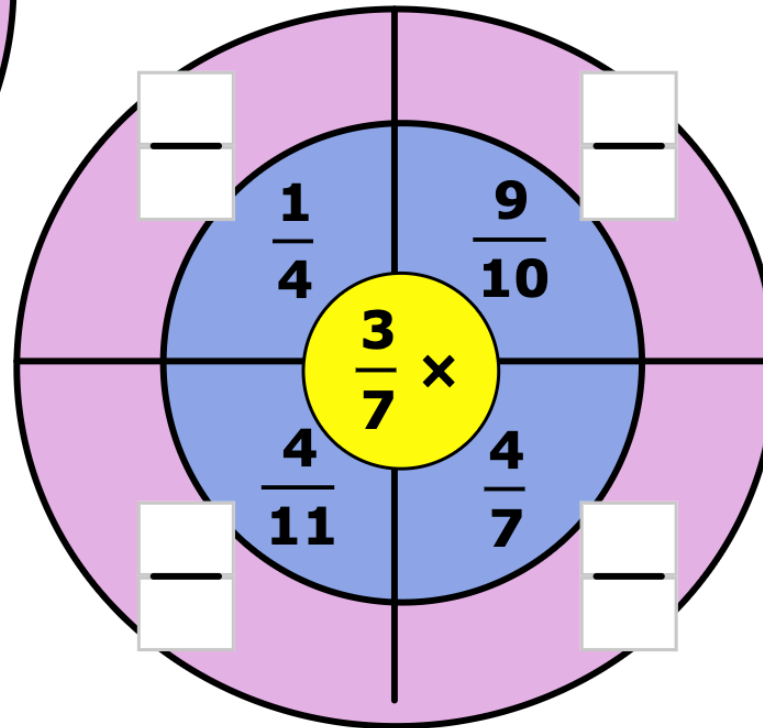
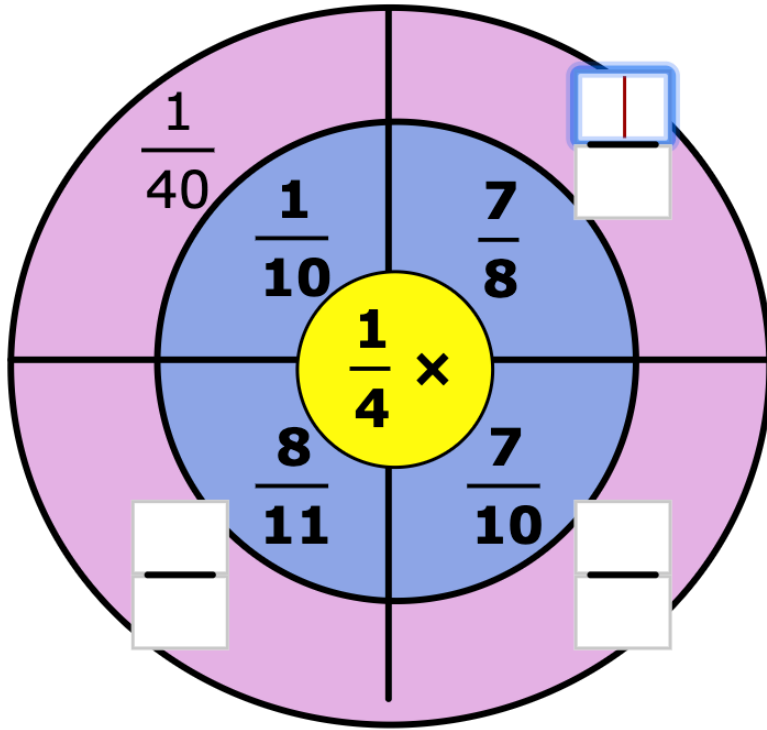


A large, irregular blue ink splatter or watercolor blotch serves as the background for the text. The splatter is centered and has a textured, painterly appearance with various shades of blue and white. The text is written in a white, elegant serif font, with the date split across two lines.

Monday 11th May
2020

Subject of Focus: Multiply Fractions

Multiply the fraction in the middle of each target by each fraction in the blue ring.
The first one has been done for you.



[11]

Mark it

Multiply these fractions.

Write each answer in its lowest terms.

$$\frac{3}{7} \times \frac{4}{5} = \frac{\boxed{12}}{\boxed{35}} \quad [2]$$

$$\frac{3}{5} \times \frac{10}{11} = \frac{\boxed{6}}{\boxed{11}} \quad [2]$$

$$\frac{6}{11} \times \frac{5}{9} = \frac{\boxed{10}}{\boxed{99}} \quad [2]$$

$$\frac{2}{9} \times \frac{9}{14} = \frac{\boxed{2}}{\boxed{14}} \quad [2]$$

$$7\frac{1}{4} \times \frac{3}{5} = \frac{\boxed{28}}{\boxed{4}} \times \frac{3}{5} = \frac{\boxed{84}}{\boxed{20}} = \boxed{4}\frac{\boxed{4}}{\boxed{5}} \quad [3]$$

$$\frac{9}{10} \times 3\frac{5}{6} = \frac{9}{10} \times \frac{\boxed{23}}{\boxed{6}} = \frac{\boxed{207}}{\boxed{60}} = \boxed{3}\frac{\boxed{27}}{\boxed{10}} \quad [3]$$

$$1\frac{5}{6} \times 2\frac{1}{4} = \frac{\boxed{11}}{\boxed{6}} \times \frac{\boxed{9}}{\boxed{4}} = \frac{\boxed{99}}{\boxed{24}} = \boxed{4}\frac{\boxed{3}}{\boxed{4}} \quad [4]$$

Jarvis works in a garage for £8 an hour.

If he works on Saturday he is paid time and a quarter.

If he works on Sunday he is paid time and three quarters.

Last weekend Jarvis worked for seven hours on Saturday and three hours on Sunday.

How much was Jarvis paid last weekend altogether?

£

[7]

'Time and a half' means
for every hour you work
you get paid for one
and a half hours.

Working out box		
hours paid Saturday	<div><div></div><div>—</div><div></div></div>	hours
hours paid Sunday	<div><div></div><div>—</div><div></div></div>	hours
total hours paid	<div><div></div></div>	hours

Solve the problems. Simplify if possible.

Callum used $\frac{1}{8}$ of a metre of wood to make a model boat.
He used $\frac{2}{7}$ of this amount to make a model aeroplane.
How much wood did he use to make the aeroplane?

of a metre



Susie used $\frac{1}{2}$ of a litre of water to make squash.
If she wanted to make $\frac{5}{9}$ of this amount
how much water would she need?

of a litre

Eddie ran $\frac{4}{7}$ of a kilometre. The next day he was
tired and only ran $\frac{9}{10}$ of this distance.
How far did Eddie run?

of a kilometre

Mandy bought $\frac{3}{5}$ of a kilogram of carrots.
She used $\frac{4}{9}$ of them to make soup.
What mass of carrots did she use in the soup?

of a kilogram

[8]

Mark it



Tuesday 12th May
2020

Subject of Focus: Multiply & Divide Fractions

Work out these multiplication and division questions.
If the answer is an improper fraction write it as a mixed number.

$$2 \times \frac{4}{5} = \frac{\boxed{8}}{\boxed{5}} = \boxed{} \frac{\boxed{}}{\boxed{}} \quad [2]$$

$$9 \times \frac{3}{8} = \frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}} \quad [2]$$

$$\frac{2}{9} \times 8 = \frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}} \quad [2]$$

$$\frac{5}{6} \times 7 = \frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}} \quad [2]$$

$$\frac{1}{3} \div 4 = \frac{\boxed{}}{\boxed{}} \quad [2]$$

$$\frac{3}{5} \div 4 = \frac{\boxed{}}{\boxed{}} \quad [2]$$

$$\frac{7}{8} \div 4 = \frac{\boxed{}}{\boxed{}} \quad [2]$$

$$\frac{4}{5} \div 9 = \frac{\boxed{}}{\boxed{}} \quad [2]$$



4 friends share $\frac{5}{6}$ of a pizza.

What fraction of a pizza does each person get?

[3]



7 boys take part in a relay event. Each boy runs $\frac{3}{5}$ of a mile.

How far do the boys run altogether?

miles

[3]

Nikki spends $\frac{1}{2}$ of an hour driving to work each day and

$\frac{3}{4}$ of an hour driving home. She works every day except Sunday.

How long does she spend travelling each week?

hours

[4]

Mark it

Work out these division problems on paper. Write each answer in its lowest terms, using mixed numbers where appropriate.

$$2 \div \frac{1}{5} = \boxed{} \quad [1]$$

$$3 \div \frac{1}{7} = \boxed{} \quad [1]$$

$$\frac{5}{9} \div \frac{1}{7} = \boxed{} \frac{\boxed{}}{\boxed{}} \quad [3]$$

$$\frac{3}{8} \div \frac{1}{6} = \boxed{} \frac{\boxed{}}{\boxed{}} \quad [3]$$

$$\frac{3}{8} \div \frac{2}{3} = \boxed{} \frac{\boxed{}}{\boxed{}} \quad [2]$$

$$\frac{3}{8} \div \frac{5}{6} = \boxed{} \frac{\boxed{}}{\boxed{}} \quad [2]$$

$$\frac{4}{7} \div \frac{3}{7} = \boxed{} \frac{\boxed{}}{\boxed{}} \quad [3]$$

$$\frac{7}{8} \div \frac{4}{5} = \boxed{} \frac{\boxed{}}{\boxed{}} \quad [3]$$

Mrs Jones uses $\frac{1}{4}$ of a pint of milk on her cereal each morning.

How many bowls of cereal will 4 pints of milk last for? [2]

Joe has eaten $\frac{4}{5}$ of a pizza. Jane has eaten $\frac{1}{4}$ of a pizza.

How many times more pizza has Joe eaten than Jane?

[3]



Compared to Jenny, Sally is $\frac{5}{6}$ as tall and May is $\frac{4}{5}$ as tall.

How many times taller is Sally than May?

[3]

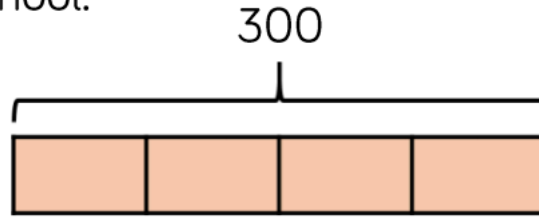
Mark it

A large, irregular blue ink splatter or watercolor blotch serves as the background for the text. The splatter has a textured, grainy appearance with various shades of blue and white, giving it a hand-painted or ink-splashed look. The text is centered within the main body of the splatter.

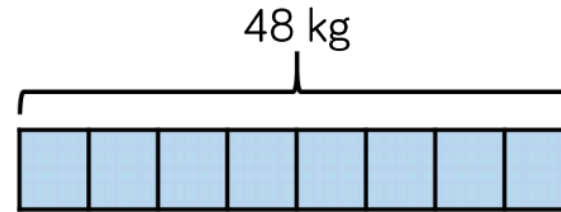
Wednesday 13th May
2020

Subject of Focus: Fractions of Amounts

- A football team has 300 tickets to give away.
They give $\frac{3}{4}$ of them to a local school.
How many tickets are left?

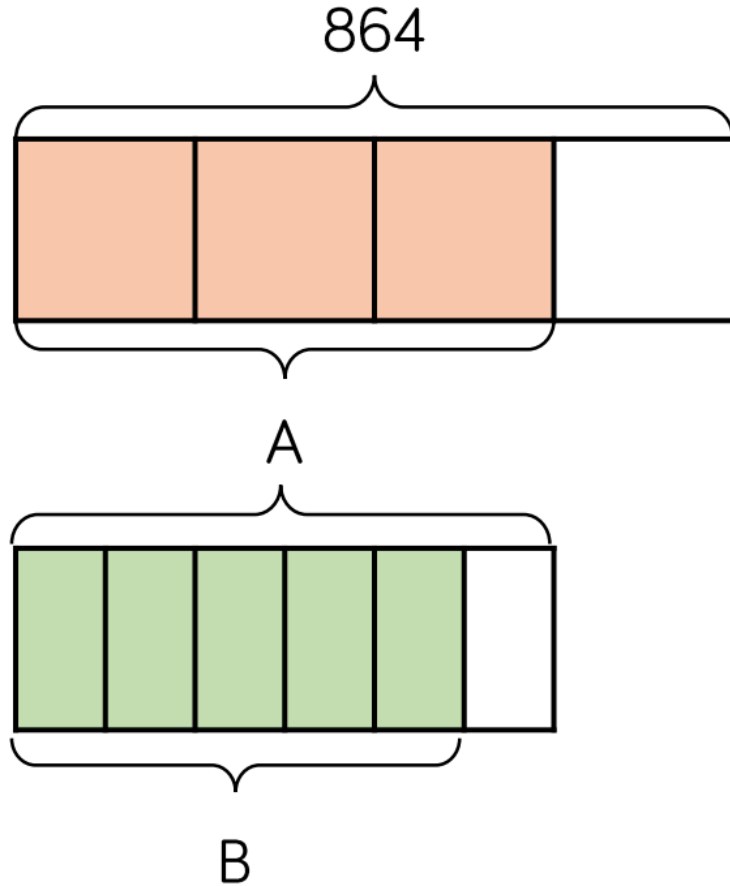


- A cook has 48 kg of potatoes. He uses $\frac{5}{8}$ of the potatoes. How many kilograms of the potatoes does he have left?
Use the bar model to find the answer to this question.



- Calculate:
- | | | | |
|-----------------------|--------------------------|-------------------------|-------------------------|
| $\frac{1}{5}$ of 30 = | $\frac{1}{5}$ of 60 = | $\frac{1}{5}$ of 120 = | $\frac{1}{5}$ of 240 = |
| $\frac{2}{5}$ of 30 = | $\frac{1}{5}$ of 600 = | $\frac{1}{10}$ of 120 = | $\frac{6}{5}$ of 240 = |
| $\frac{4}{5}$ of 30 = | $\frac{1}{5}$ of 6,000 = | $\frac{1}{20}$ of 120 = | $\frac{11}{5}$ of 240 = |

What is the value of A?
What is the value of B?



Two fashion designers receive $\frac{3}{8}$ of 208 metres of material.

One of them says:



We each receive 26 m

Is she correct?
Explain your reasoning.

Calculate the missing digits.

$$\frac{3}{8} \text{ of } 40 = \frac{?}{10} \text{ of } 150$$

$$\frac{1}{5} \text{ of } 315 = \frac{?}{8} \text{ of } 72$$

A large, irregular blue ink splatter or watercolor blotch serves as the background for the text. The splatter is centered and has a textured, painterly appearance with various shades of blue and white. The text is written in a white, elegant script font.

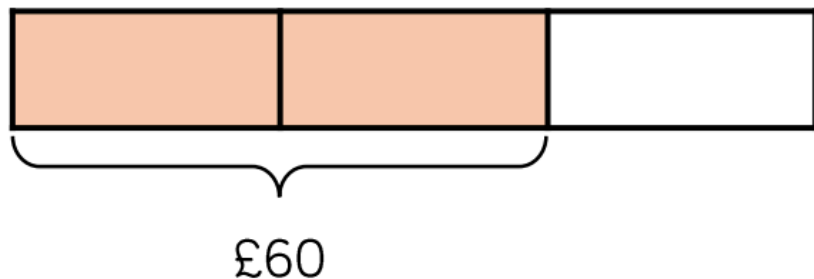
Thursday 14th May
2020

Subject of Focus: Fractions of Amounts (Finding the Whole)



Jack has spent $\frac{2}{3}$ of his money.

He spent £60, how much did he have to start with?



Use a bar model to represent and solve the problems.

- Rosie eats $\frac{2}{5}$ of a packet of biscuits. She eats 10 biscuits. How many biscuits were in the original packet?
- In an election, $\frac{3}{8}$ of a town voted. If 120 people voted, how many people lived in the town?

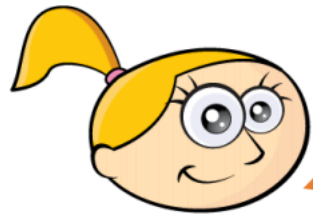


Calculate:

$$\frac{1}{4} \text{ of } \underline{\hspace{2cm}} = 12 \quad \frac{1}{4} \text{ of } \underline{\hspace{2cm}} = 36 \quad \frac{1}{4} \text{ of } \underline{\hspace{2cm}} = 108$$

$$\frac{1}{12} \text{ of } \underline{\hspace{2cm}} = 12 \quad \frac{3}{4} \text{ of } \underline{\hspace{2cm}} = 36 \quad \frac{4}{4} \text{ of } \underline{\hspace{2cm}} = 108$$

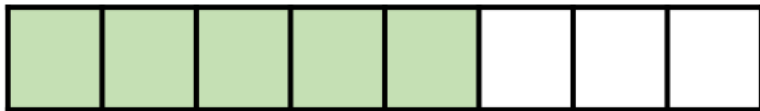
Eva lit a candle while she had a bath.
After her bath, $\frac{2}{5}$ of the candle was left.
It measured 13 cm.
Eva says:



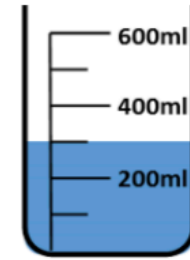
Before my bath
the candle
measured 33 cm

Is she correct?
Explain your reasoning.

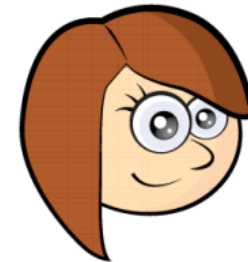
Write a problem which this bar model
could represent.



Rosie and Jack are making juice.
They use $\frac{6}{7}$ of the water in a jug and are
left with this amount of water:



To work out how much
we had originally, we
should divide 300 by 6
then multiply by 7



No, we know that
300ml is $\frac{1}{7}$ so we need
to multiply it by 7

Who is correct?
Explain your reasoning.



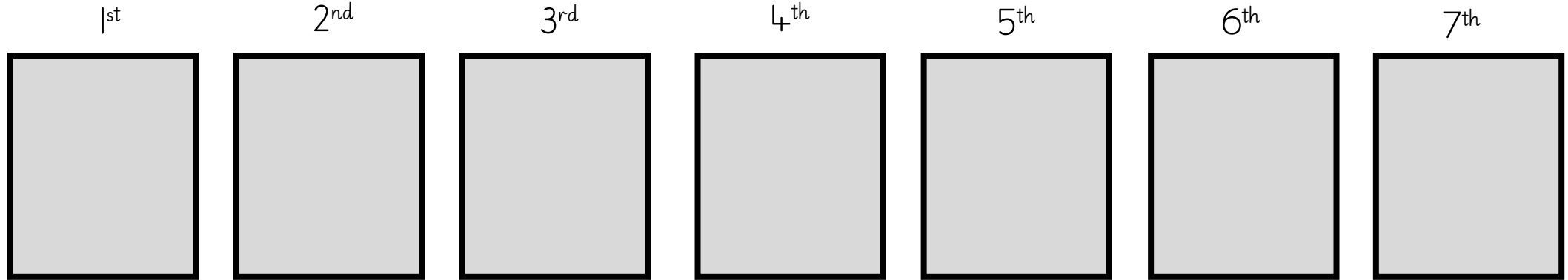
Friday 15th May
2020

Subject of Focus: Maths Challenge

LAST WEEK'S PROBLEM

Playing Cards

I have **fifteen** cards, numbered **1 – 15**.



I placed **seven** of them at random in the spaces above.

The numbers on the first two cards **add to 15**.

The numbers on the second and third cards **add to 20**.

The numbers on the third and fourth cards **add to 23**.

The numbers on the fourth and fifth cards **add to 16**.

The numbers on the fifth and sixth cards **add to 18**.

The numbers on the sixth and seventh cards **add to 21**.

You can only use each card **ONCE**.

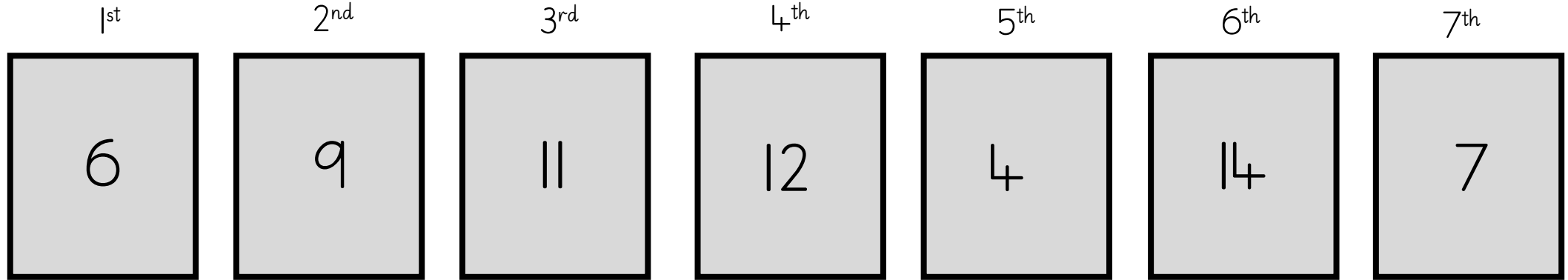
Questions

1. What are my cards?
2. Are there any other solutions to the problem?
3. How do you know that you've found all the different solutions?

ANSWER

Playing Cards

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Questions

1. What are my cards?
2. Are there any other solutions to the problem?
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A Magician's Problem

A magician took a suit of thirteen cards and held them in his hand face down.

He took the top card off the pile and put it at the bottom , saying 'A' as he did it.

He took the next card and said 'C' as he put it at the bottom.

He took the next card and turned it over, saying 'E' as he did it – and the card was an ACE!

He carried on with the letters T-W-O and as he said the 'O' he turned over the card and it was a TWO!

He carried on with T-H-R-E-E, the FOUR and so on, and in each case as he said the last letter of the name he turned over the card and everyone was amazed that he had predicted what it would be.

How did he do it?



Have a look at this video for more information...

