# MATHS EXTENSION ACTIVITIES

WB 20.4.20

# Monday's Extension Activities

1. Some shapes have been removed from a number line.


I am the smallest of all fractions.



I am worth more than the hexagon but less than the rectangle.

I sit more than halfway along the number line.

I am the largest of all the fractions

a) Where could each shape be placed? Find all possibilities.
b) Write a clue for a different shape that could be placed on an empty part of the number line.

2. Only part of each number line can be seen – the rest is hidden. Each line stops at a whole. Which line is longer? Explain.

Line A: $\frac{1}{2}$

Line B: $\frac{1}{4}$

3. Some shapes sit on **part** of a number line.
The heart represents $\frac{3}{8}$ and sits $\frac{1}{8}$ before the hexagon

Use this information to solve the values of other shapes.

# Tuesday's Extension Activities

1. Sarah entered a 100-word story competition. She wrote her story over 2 evenings. On the first evening, she wrote $\frac{6}{10}$ and on the second evening she wrote the rest.

a. How many words did she write on the first evening?

b. How many words did she write on the 2nd evening and what fraction was this?

2. There were 120 school children going on a school residential trip. There were 2 coaches, each carrying $\frac{1}{2}$ of the children. On coach B, $\frac{1}{6}$ of the children had medication with them.

a. How many children were on each coach?

b. How many children had medication on coach B?

3. A retired couple won £400 on the lottery. They decided to give $\frac{3}{4}$ to their family and to spend $\frac{1}{4}$ on a weekend away for themselves.

a. How much did they give to their family?

b. How much did they spend on their weekend away?

# Wednesday's Extension Activities

1) When we find $\frac{2}{5}$ of each multiple of 10 between 19 and 51, the answers are all smaller than $\frac{4}{8}$ of each multiple of 8 between 19 and 51. Do you agree? Use reasoning to explain your answer.

2) Bob has been finding fractions of 48. He says that all of the answers to these fractions will give an answer that is a multiple of 4.

| | | | |
|---|---|---|---|
| $\frac{1}{4}$ of 48 | $\frac{1}{8}$ of 48 | $\frac{3}{4}$ of 48 | $\frac{2}{6}$ of 48 |
| $\frac{1}{2}$ of 48 | $\frac{1}{12}$ of 48 | $\frac{2}{3}$ of 48 | $\frac{2}{8}$ of 48 |

Do you agree? Explain your reasoning.

# Thursday's Extension Activities

1. 2 hours (120 minutes) of a school's timetable is shown. Use the information in the timetable to calculate how long the lessons and breaks last. **Both breaks should be the same.**

| | English | Break | Maths | Break |
|---|---|---|---|---|
| Fraction | $\frac{2}{5}$ | | $\frac{1}{5}$ | |
| Length of Time | | | | |

2. Matthew needs to make four flags for a school project. Each flag uses 150cm of material cut from a roll. He says, "I have a 700cm roll of material. I can only make 3 flags."

a) Do you agree? Explain.

b) Once he has finished, what fraction of the material is left? Draw your method to show your working.

3. Millie is reading a book with 78 pages. On Monday she reads $\frac{2}{6}$ of the book. On Tuesday she reads $\frac{1}{6}$ of the book.

a) Explain how you can work out what fraction of the book Millie read on Wednesday.

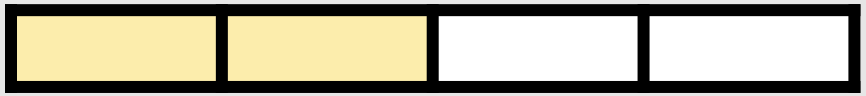
b) How many pages did she read on Wednesday?

# Friday's Extension Activities

1. Two friends are discussing the bar model. Who do you agree with? Use reasoning to explain your answer.

"I can make an equivalent fraction with a denominator of 10." – Fred.

"I can make an equivalent fraction with a denominator of 8." – Bob.



2. Do you agree with Amy? Within your explanation, provide examples where this may or may not be true. Amy thinks, "When a denominator is odd, you cannot have an equivalent fraction."

3. Sort the fractions into the table. If it is not equivalent to $\frac{1}{4}$ or $\frac{1}{3}$ write an example of a fraction it is equivalent to.

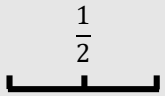
| Equivalent to $\frac{1}{4}$ | Equivalent to $\frac{1}{3}$ | Equivalent to a different fraction. |
|---|---|---|
| | | |

$\frac{8}{32}$ $\frac{2}{9}$ $\frac{4}{16}$ $\frac{2}{6}$ $\frac{3}{7}$ $\frac{8}{24}$ $\frac{4}{10}$ $\frac{4}{12}$ $\frac{2}{8}$

# Monday's Extension Answers

1. a)  $\frac{0}{6}, \frac{1}{6}, \frac{2}{6}$ or $\frac{3}{6}$  $\frac{4}{6}$  $\frac{5}{6}$  $\frac{6}{6}$ or 1 whole

b) Any clue that places another shape at $\frac{0}{6}, \frac{1}{6} \frac{2}{6}$ or $\frac{3}{6}$ depending on where the triangle has been placed.

2. Line A: 

Line B: 

Line A needs 1 more part to make it whole, whereas Line B would need 3 more parts to make it whole ($\frac{2}{4}, \frac{3}{4}$ and $\frac{4}{4}$). Therefore Line B is longer than Line A.

3.  The hexagon represents $\frac{4}{8}$

 The triangle represents $\frac{7}{8}$

 The rectangle represents $\frac{8}{8}$ or 1 whole

 The circle represents $1\frac{1}{8}$

# Tuesday's Extension Answers

**1.** Sarah entered a 100-word story competition. She wrote her story over 2 evenings. On the first evening, she wrote $\frac{6}{10}$ and on the second evening she wrote the rest.

**a)** 100 ÷ 10 = 10. $\frac{1}{10}$ = 10 10 x 6 = 60 $\frac{6}{10}$ = 60 She wrote 60 words on the first evening.

**b)** $\frac{10}{10} - \frac{6}{10} = \frac{4}{10}$ She wrote $\frac{4}{10}$ on the second evening.
10 x 4 = 40 She wrote 40 words on the second evening.

**2.** There were 120 school children going on a school residential trip. There were 2 coaches, each carrying $\frac{1}{2}$ of the children. On coach B, $\frac{1}{6}$ of the children had medication with them.

**a)** $\frac{1}{2}$ of 120 = 120 ÷ 2 = 60. 60 Children on each coach.

**b)** 60 children on coach B. $\frac{1}{6}$ of 60 = 60 ÷ 6 = 10. 10 children had their medication with them on coach B.

**3.** A retired couple won £400 on the lottery. They decided to give $\frac{3}{4}$ to their family and to spend $\frac{1}{4}$ on a weekend away for themselves.

**a)** $\frac{3}{4}$ of £400. £400 ÷ 4 = £100 = $\frac{1}{4}$ £100 x 3 = £300 = $\frac{3}{4}$ They gave £300 to their family.

**b)** $\frac{1}{4}$ of £400. £400 ÷ 4 = £100. They spent £100 on their weekend away.

# Wednesday's Extension Answers

1. This is not true.

$\frac{2}{5}$ of 20 = 8 $\frac{2}{5}$ of 30 = 12 $\frac{2}{5}$ of 40 = 16 $\frac{2}{5}$ of 50 = 20

$\frac{4}{8}$ of 24 = 12 $\frac{4}{8}$ of 32= 16 $\frac{4}{8}$ of 40 = 20 $\frac{4}{8}$ of 48 = 24

The answers show that only $\frac{2}{5}$ of 20 gives a smaller answer. Three of the answers are the same.

2. Bob is incorrect. Although most of the answers are multiples of 4, not all are.

**Answers that are multiples of 4**

$\frac{1}{4}$ of 48 = 12

$\frac{2}{6}$ of 48 = 16

$\frac{2}{3}$ of 48 = 32

$\frac{2}{8}$ of 48 = 12

$\frac{1}{2}$ of 48 = 24

$\frac{1}{12}$ of 48 = 4

**Answers that are not multiples of 4**

$\frac{3}{4}$ of 48 = 18

$\frac{1}{8}$ of 48 = 6

# Thursday's Extension Answers

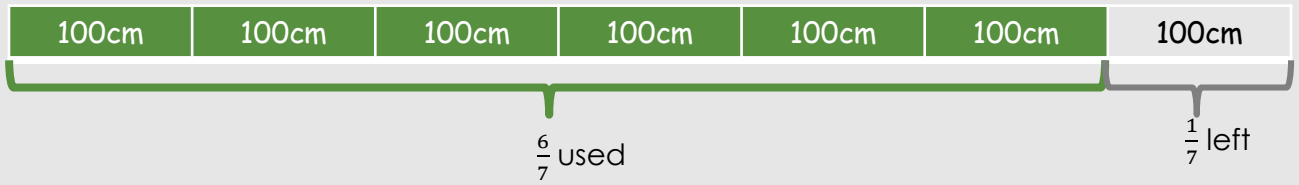
1.

| | English | Break | Maths | Break |
|---|---|---|---|---|
| **Fraction** | $\frac{2}{5}$ | $\frac{1}{5}$ | $\frac{1}{5}$ | $\frac{1}{5}$ |
| **Length of Time** (Minutes) | 48 | 24 | 24 | 24 |

English and Maths take up $\frac{3}{5}$ of the time. $\frac{5}{5} - \frac{3}{5} = \frac{2}{5}$. $\frac{2}{5} \div 2 = \frac{1}{5}$. $\frac{1}{5}$ = break time. Maths and both breaks: $\frac{1}{5}$ of 120 = 24 (120 ÷ 5 = 24) English: $\frac{1}{5}$ of 120 = 24. 24 x 2 = 48.

2.a) Matthew is wrong, there is enough to make 4 flags. 150cm x 3 = 450cm. 450cm = 3 flags. 150cm x 4 = 600cm. 600cm = 4 flags.

b) He will use 600cm out of 700cm. He will have 100cm left or $\frac{1}{7}$.

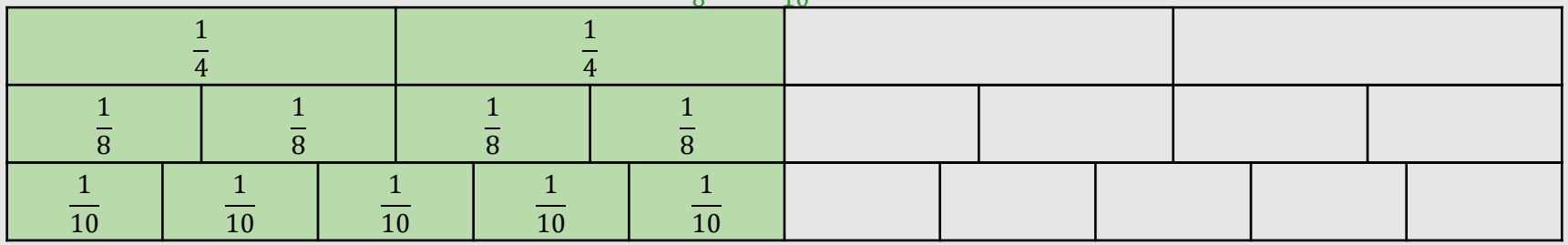



3. We know what fraction of the magazine Mia read on Monday and Tuesday, so we can use this information to work out what fraction she read on Wednesday. First, add together the fractions from Monday and Tuesday. Then, subtract this total from the whole. This will give you the fraction of the magazine Mia read on Wednesday.

b) $\frac{2}{6} + \frac{1}{6} = \frac{3}{6}$ (one half). $\frac{1}{2}$ of 78 is 39. She read 39 pages on Wednesday.

# Friday's Extension Answers

1. Both are correct. $\frac{1}{2}$ was shaded on the bar model. $\frac{4}{8}$ and $\frac{5}{10}$ are both equivalent to $\frac{1}{2}$




2. Amy is incorrect. For example, $\frac{1}{7}$ has an odd denominator and $\frac{2}{14}$ is equivalent. $\frac{1}{3}$ has an odd denominator too and $\frac{2}{6}$ is equivalent. There are many examples.

3.

| Equivalent to $\frac{1}{4}$ | Equivalent to $\frac{1}{3}$ | Equivalent to a different fraction. |
|---|---|---|
| $\frac{8}{32}$ | $\frac{2}{6}$ | $\frac{2}{9} = \frac{4}{18} = \frac{6}{27} = \frac{8}{36}$ and so on. |
| $\frac{4}{16}$ | $\frac{8}{24}$ | $\frac{3}{7} = \frac{6}{14} = \frac{9}{21} = \frac{12}{28}$ and so on. |
| $\frac{2}{8}$ | $\frac{4}{12}$ | $\frac{4}{10} = \frac{2}{5} = \frac{6}{15} = \frac{8}{20}$ and so on. |