

## Maths - Week Beginning 4th May 2020

### Year 6

This week's tasks are on the White Rose Home Learning page Summer Week 3:

<https://whiterosemaths.com/homelearning/year-6/>

Start with the lesson videos first, then complete the tasks. In the attachments below is an annotated version of the tasks for Monday - Thursday with extra hints, explanations and websites to go to if you need extra help.

If you need a word version of this document email the school office and we will send it to you. This may help those of you who have had trouble printing from the White Rose website. However, you don't need to print the worksheets - you can just record your working out and answers on plain or squared paper - it's up to you.

Do work hard to understand this as it will really help you in Year 7 at your secondary schools; this topic is revision of learning we all covered in class earlier in the year - but do ask for help if you're stuck.

Friday: this is the day for TTRockstars, finishing work and sending us photos.

If you would like to do some arithmetic, this is a good site:

<https://myminimaths.co.uk/year-6-arithmetic-practice-papers/>

### Year 5

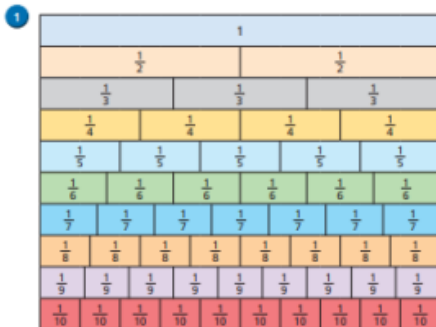
This week's maths will focus mainly on multiplication and division. You would have seen all of this before but it gives you an opportunity to consolidate some of your learning and practice skills you may not have used for a little while. The gentleman will use the phrase 'area model' but we know this as the 'grid method' - don't let this put you off or worry you. Make sure you watch the videos first even though this is revision. You can find them here: <https://whiterosemaths.com/homelearning/year-5/> .

We are on week 3. As always on a Friday, please spend your time practising your times tables. Thank you to those of you that have challenged me in the last week.

Please complete Corbett Maths each day too to keep your mental arithmetic strong. It only takes 5 minutes remember. Start with the silver level and if you get full marks in the allocated 5 minutes then have a look at the gold level. You can find the daily mental arithmetic here : <https://corbettmathsprimary.com/5-a-day/>

Have fun!

## Simplify fractions



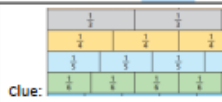
Use the fraction wall to write each fraction in its simplest form.

a)  $\frac{4}{6} = \frac{\quad}{\quad}$

b)  $\frac{8}{10} = \frac{\quad}{\quad}$

c)  $\frac{6}{8} = \frac{\quad}{\quad}$

d)  $\frac{4}{8} = \frac{\quad}{\quad}$



Clue:

See how  $\frac{4}{6}$  is exactly the same size as  $\frac{2}{3}$ ? That's because they are EQUIVALENT.

- 2 a) Use a fraction wall to explain why  $\frac{7}{10}$  does not simplify.

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- b) Find three more fractions on the fraction wall that cannot be simplified.

- 3 Mo, Eva and Ron are trying to simplify  $\frac{5}{20}$

Mo: I can't simplify this because one number is odd and the other is even.

Mo

Eva: I can't simplify this because only one number can be halved.

REMEMBER our work on simplifying fractions – think about factors and remember "What you do to the top, you must do to the bottom".

Top = numerator  
Bottom = denominator

Ron: I can simplify any fraction.

Ron

Do you fully agree, partly agree or completely disagree with each person?

Talk to a partner.

- 4 a) Draw lines on the bar model to show that  $\frac{9}{12}$  is equal to  $\frac{3}{4}$

- b) Complete each bar model and calculation.

$\frac{\quad}{\quad} = \frac{3}{9}$

$\frac{\quad}{\quad} = \frac{5}{15}$

- 5 Simplify the fractions.

a)  $\frac{4}{12} = \frac{\quad}{\quad}$  b)  $\frac{8}{12} = \frac{\quad}{\quad}$  c)  $\frac{40}{120} = \frac{\quad}{\quad}$  d)  $\frac{12}{4} = \frac{\quad}{\quad}$

$\frac{4}{16} = \frac{\quad}{\quad}$   $\frac{8}{16} = \frac{\quad}{\quad}$   $\frac{40}{160} = \frac{\quad}{\quad}$   $\frac{120}{4} = \frac{\quad}{\quad}$

$\frac{4}{20} = \frac{\quad}{\quad}$   $\frac{8}{20} = \frac{\quad}{\quad}$   $\frac{40}{200} = \frac{\quad}{\quad}$   $\frac{12}{400} = \frac{\quad}{\quad}$

Describe and explain any patterns that you noticed.

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- 6 Write 3 fractions that simplify to  $\frac{3}{5}$

- 7 Teddy and Dora are both simplifying  $\frac{30}{42}$

Teddy:  $\frac{30}{42} = \frac{15}{21} = \frac{5}{7}$

Dora:  $\frac{30}{42} = \frac{5}{7}$

- a) How do you think Dora was able to simplify the fraction in one step?

- b) Simplify these fractions in one step.

$\frac{24}{30} = \frac{\quad}{\quad}$   $\frac{16}{20} = \frac{\quad}{\quad}$

$\frac{56}{64} = \frac{\quad}{\quad}$   $\frac{99}{121} = \frac{\quad}{\quad}$

Think about prime numbers – numbers that can only be divided by themselves and 1.  
e.g.  
2, 3, 5, 7, 11, 13, 17, 19, ...

- 8 ☆ is a prime number. ♥ is a multiple of 10  
The fraction can be simplified.  
What could each number be? Explain your reasoning.

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# Compare and order (denominator)

1 Write <, > or = to compare the fractions.

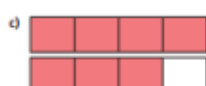
Use the bar models to help you.



$$\frac{1}{5} \bigcirc \frac{3}{5}$$



$$\frac{5}{7} \bigcirc \frac{4}{7}$$



$$\frac{4}{4} \bigcirc \frac{3}{4}$$



$$\frac{1}{8} \bigcirc \frac{7}{8}$$



$$\frac{4}{9} \bigcirc \frac{6}{9}$$

You will need to colour the right number of sections here

f) What do you notice about your answers?

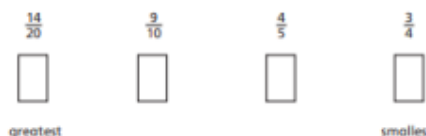
g) Complete the sentence.

When the denominators are the same, the \_\_\_\_\_ the numerator, the \_\_\_\_\_ the fraction.

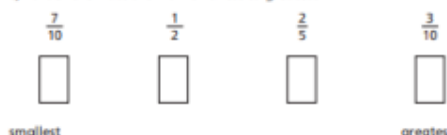
2 a) Colour the bar models to show the fractions.



b) Use the bar models to sort these fractions in order from greatest to smallest.



c) Order the fractions from smallest to greatest.



3 Amir is comparing the fractions  $\frac{4}{15}$  and  $\frac{3}{10}$

$$\frac{4}{15} = \frac{8}{30} \quad \frac{3}{10} = \frac{9}{30}$$

$\frac{9}{30}$  is greater than  $\frac{8}{30}$

$\frac{3}{10}$  is greater than  $\frac{4}{15}$

Vocabulary you will need for Amir's explanation:

Converted  
Equivalent  
Multiplied  
Numerator  
Denominator  
Same multiplier

Explain Amir's method.

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4 Ron and Rosie are practising penalties.

Ron scored 7 out of 10.

Rosie scored 23 out of 30

I scored more than you, so I should take penalties for the school team.

I did not miss as many as you, so I should take the penalties.

Compare fractions to explain who should take penalties for the school team.

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5 Write <, > or = to compare the fractions.

a)  $\frac{3}{4} \bigcirc \frac{5}{6}$

d)  $\frac{3}{5} \bigcirc \frac{5}{7}$

b)  $\frac{2}{3} \bigcirc \frac{5}{9}$

e)  $\frac{9}{10} \bigcirc \frac{3}{4}$

c)  $\frac{2}{3} \bigcirc \frac{7}{8}$

f)  $\frac{9}{10} \bigcirc \frac{19}{20}$

6 Annie, Tommy and Kim are making flags for the school fair.

Annie has completed  $3\frac{3}{4}$  flags, Tommy has completed  $3\frac{2}{3}$  flags and Kim has completed  $\frac{18}{5}$  flags.

Who has completed the most flags?

Turn the mixed numbers into improper fractions?

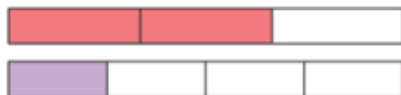
Or turn the improper fraction Kim has into a mixed number.

Extra help on improper fractions and mixed numbers:

<https://www.khanacademy.org/math/arithmetic/fraction-arithmetic/arithmetic-review-mixed-number/v/changing-an-improper-fraction-to-a-mixed-number>

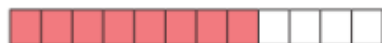
## Add and subtract fractions (2)

- 1 Amir is using fraction strips to work out  $\frac{2}{3} + \frac{1}{4}$



Amir says he needs to find a common denominator.

- a) Complete Amir's method.



$$\frac{2}{3} = \frac{\boxed{8}}{12}$$



$$\frac{1}{4} = \frac{\boxed{3}}{12}$$

$$\frac{2}{3} + \frac{1}{4} = \frac{\boxed{8}}{12} + \frac{\boxed{3}}{12} = \frac{\boxed{11}}{12}$$

- b) Show the addition on the fraction strip.



- c) Could you have used a different denominator?

- 2 What common denominator can you use to add the fractions?

a)  $\frac{2}{5} + \frac{1}{2}$  Common denominator =

b)  $\frac{2}{3} + \frac{4}{5}$  Common denominator =

c)  $\frac{7}{8} - \frac{1}{4}$  Common denominator =

d)  $\frac{7}{9} - \frac{1}{6}$  Common denominator =

e)  $\frac{11}{15} + \frac{3}{10}$  Common denominator =

- 3 Ron and Eva are working out  $\frac{1}{4} + \frac{5}{6}$

Ron's method

$$\frac{1}{4} + \frac{5}{6} = \frac{3}{12} + \frac{10}{12} = \frac{13}{12}$$

Eva's method

$$\frac{1}{4} + \frac{5}{6} = \frac{6}{24} + \frac{20}{24} = \frac{26}{24}$$

- a) What is the same about Ron's and Eva's methods?

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\_\_\_\_\_

- b) What is different about their methods?

\_\_\_\_\_

\_\_\_\_\_

- c) Which method do you prefer? Why?

- 4 Complete the calculations.

a)  $\frac{1}{5} + \frac{3}{4} = \boxed{\phantom{00}}$

c)  $\frac{1}{2} - \frac{1}{7} = \boxed{\phantom{00}}$

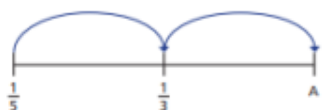
b)  $\frac{7}{8} - \frac{1}{3} = \boxed{\phantom{00}}$

d)  $\frac{11}{18} + \frac{7}{12} = \boxed{\phantom{00}}$

Remember to find a common multiple for both denominators.

Try multiplying them by each other e.g. a)  $5 \times 4 = 20$

- 5 Mo is drawing jumps on a number line. The jumps are the same size.



- a) What is the size of the jump?

This is asking "How much bigger is one third than one fifth?"

- b) What is the value of A?

- 7 Complete the additions.

Give your answers as mixed numbers and as improper fractions.

a)  $\frac{4}{5} + \frac{5}{4} = \boxed{\phantom{00}} = \boxed{\phantom{00}}$  c)  $\frac{9}{8} + \frac{8}{9} = \boxed{\phantom{00}} = \boxed{\phantom{00}}$

b)  $\frac{2}{3} + \frac{3}{2} = \boxed{\phantom{00}} = \boxed{\phantom{00}}$  d)  $\boxed{\phantom{00}} = \boxed{\phantom{00}} = \frac{5}{5} + \frac{3}{5}$

What patterns do you notice?

- 8 Look at these additions.

$\frac{1}{2} + \frac{1}{3} = \boxed{\phantom{00}}$   $\frac{1}{2} + \frac{1}{3} + \frac{1}{4} = \boxed{\phantom{00}}$   $\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} = \boxed{\phantom{00}}$

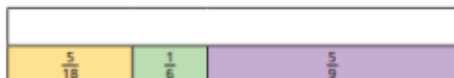
- a) When does this pattern first give an answer greater than 2?

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\_\_\_\_\_

- b) Do you think the pattern will ever give an answer greater than 100?

- 6 Complete the bar model.



Question 6 is asking you to add all the fractions to find the value of the top bar.

You will need to find A COMMON MULTIPLE of 18, 6 and 9.

# Mixed addition and subtraction

Use Maths

1 Work out the calculations.

a)  $\frac{2}{5} + \frac{3}{4} = \square$

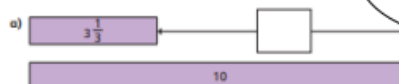
b)  $2\frac{1}{4} - \frac{2}{3} = \square$

c)  $3\frac{7}{10} - 2\frac{1}{4} = \square$

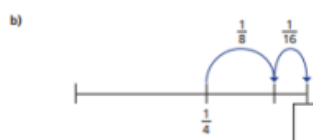
2 Complete the calculation.

$\frac{5}{6} + 1\frac{2}{9} - \frac{1}{2} = \square$

3 Work out the missing fractions.



Question 3 is asking you to subtract 3 and one third from 10.



First add  $\frac{1}{8}$  and  $\frac{1}{16}$   
Next add that total to  $\frac{1}{4}$

4 Complete the calculations.

a)  $\frac{2}{5} + \frac{1}{5} + \square = 1$

b)  $\frac{2}{5} + \frac{1}{5} + \square = 1\frac{1}{2}$

c)  $\frac{2}{5} + \frac{1}{5} + \square = \frac{4}{3}$

d)  $\frac{4}{5} = \square - \frac{4}{5}$

Extra support:

<https://www.khanacademy.org/math/arithmetic/fraction-arithmetic/arith-review-add-sub-mix-num-w-unlike-den/v/adding-subtracting-mixed-numbers-1-ex-2>

5 Which of these are true and which are false?

Can you decide without having to do the additions or the subtractions?

Talk about your reasons with a partner.

	True or false?
$2\frac{1}{3} + 3\frac{3}{4}$ is equal to $3\frac{1}{3} + 2\frac{3}{4}$	
$3\frac{3}{4} - \frac{1}{3}$ is less than $4\frac{3}{4} - 1\frac{1}{3}$	
$3\frac{3}{4} - 2\frac{1}{3}$ is equal to $3\frac{1}{3} - 2\frac{3}{4}$	

6 Complete the addition grid.

$1\frac{1}{4}$		$\frac{1}{4}$	$= 3\frac{3}{5}$
$\frac{1}{25}$	$1\frac{3}{20}$		$= 3\frac{39}{100}$
	$1\frac{1}{50}$	$1\frac{3}{100}$	$= 5\frac{9}{20}$
$\square$	$\square$	$\square$	

7 A painter uses the following mixtures.

How much more green paint does she have than purple paint?



8 Eva and Amir are working out this calculation.

$\frac{1}{4} + \frac{25}{100} - \frac{2}{8} - \frac{9}{36}$



This is going to be very difficult, because I can't find a common denominator.



I have found an easier way.

Find Amir's solution. Explain how this calculation can be solved.

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