Year 4

Remote Learning

Maths Week 17 – Fractions Answers

Message

Hello, Year 4!

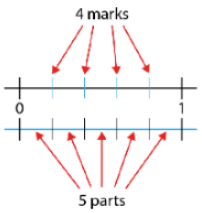
We hope this message finds you well. This week we are starting the new topic, 'Fractions', in maths.

We have also included Video Lessons again so that you can follow on at home. We hope you find it helpful to have a teacher talk you through some of these activities.

Good Luck!

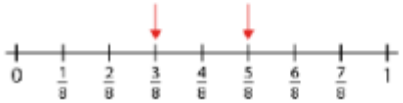
Love, Ms Schmidt, Ms Davies, Mr Goddard, Mr Shiel

Teaching – Fractions



Bar model:

Number line:

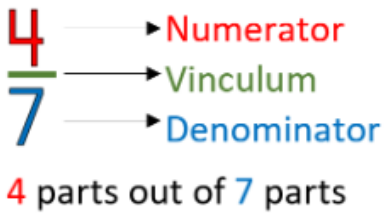


Fraction

Verbal reasoning:

'$\frac{3}{8}$ is three lots of $\frac{1}{8}$.'

'$\frac{5}{8}$ is five lots of $\frac{1}{8}$.'



Website Links

Equivalent fractions:
https://www.bbc.co.uk/bitesize/articles/znsc86f

Ways to visualise data:
https://www.bbc.co.uk/bitesize/topics/z7rcwmn/articles/z8dp8mn

Negative numbers:
https://www.bbc.co.uk/bitesize/articles/zjbk8xs

Negative Numbers: extra worksheets:

Counting backwards through zero.docx

Negative Number Puzzle.docx

BBC bitesize learning:

Data Handling in Football:
https://www.bbc.co.uk/bitesize/articles/zsrgp4j

Lesson One – Fractions Warm Up

Order these fractions from the smallest.

$\frac{3}{6}$ $\frac{1}{6}$ $\frac{5}{6}$ $\frac{2}{6}$ $\frac{4}{6}$

$\frac{1}{6}$ $\frac{2}{6}$ $\frac{3}{6}$ $\frac{4}{6}$ $\frac{5}{6}$

Order these fractions from the biggest.

$\frac{4}{12}$ $\frac{6}{12}$ $\frac{8}{12}$ $\frac{10}{12}$ $\frac{11}{12}$

$\frac{11}{12}$ $\frac{10}{12}$ $\frac{8}{12}$ $\frac{6}{12}$ $\frac{4}{12}$

Colour the boxes according to its fraction. Which fraction is greater?

$\frac{3}{7}$

$\frac{6}{7}$

$\frac{6}{7}$ is the greater fraction.

$\frac{5}{8}$

$\frac{3}{4}$

$\frac{3}{4}$ is the greater fraction.

Order these fractions from the smallest.

$\frac{7}{9}$ $\frac{3}{9}$ $\frac{9}{9}$ $\frac{1}{9}$ $\frac{4}{9}$

$\frac{1}{9}$ $\frac{3}{9}$ $\frac{4}{9}$ $\frac{7}{9}$ $\frac{9}{9}$

Order these fractions from the biggest.

$\frac{4}{4}$ $\frac{1}{2}$ $\frac{2}{3}$ $\frac{2}{4}$

$\frac{4}{4}$ $\frac{2}{3}$ $\frac{2}{4}$ = $\frac{1}{2}$

Colour the boxes according to its fraction. Which fraction is smallest?

$\frac{6}{6}$

$\frac{4}{6}$

$\frac{4}{6}$ is the smallest fraction.

$\frac{2}{7}$

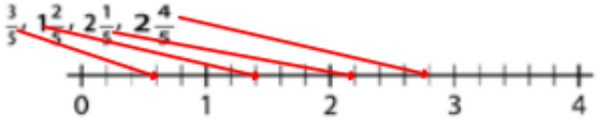
$\frac{5}{7}$

$\frac{2}{7}$ is the smallest fraction.

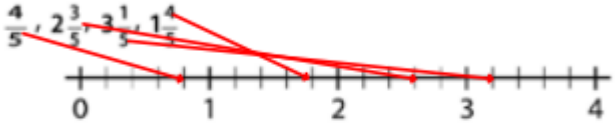
Fractions on a Number Line

1)

'Position these numbers on the number line:'

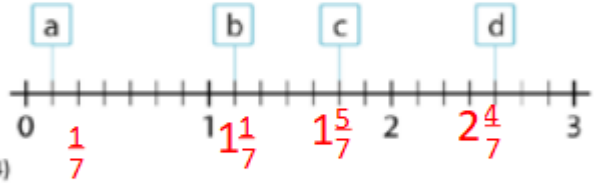


2)



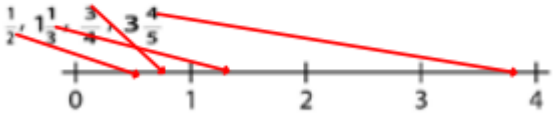
3)

What is the value of a, b, c and d?



4)

'Estimate the position of the following numbers on this number line.'



5)

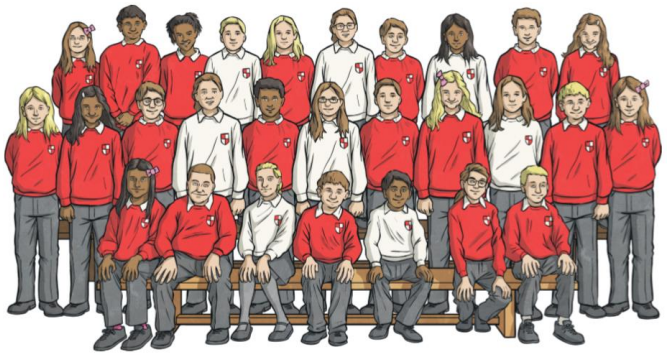
Which of these numbers is represented by "a"?'

$\frac{4}{5}$ $2\frac{1}{2}$ $2\frac{9}{10}$ $3\frac{3}{4}$ $2\frac{4}{5}$

Class Photo

Use the fraction bars to help you to work out how many children fit each clue. There are 28 children in the photo.

You can find this activity to print out in the attachments called **Class Photo.**



The first one has been done for you.

$\frac{1}{2}$ of the children have brown hair.

14	14

14 children have brown hair.

$\frac{1}{4}$ of the children have blonde hair.

7	7	7	7

7 children have blonde hair.

$\frac{1}{4}$ of the children have black hair.

7	7	7	7

7 children have black hair.

$\frac{1}{4}$ of the children are sitting down.

7	7	7	7

7 children are sitting down.

$\frac{3}{4}$ of the children have brown eyes.

7	7	7	7

21 children have brown eyes.

$\frac{1}{4}$ of the children have blue eyes.

7	7	7	7

7 children have blue eyes.

$\frac{1}{7}$ of the children wear glasses.

4	4	4	4	4	4	4

4 children wear glasses.

$\frac{4}{7}$ of the children are girls.

4	4	4	4	4	4	4

16 children are girls.

$\frac{3}{7}$ of the children are boys.

4	4	4	4	4	4	4

12 children are boys.

$\frac{5}{7}$ of the children are wearing red sweatshirts.

4	4	4	4	4	4	4

20 children are wearing red sweatshirts.

$\frac{2}{7}$ of the children are wearing white sweatshirts.

4	4	4	4	4	4	4

8 children are wearing white sweatshirts.

$\frac{1}{4}$ of the girls have a bow in their hair.

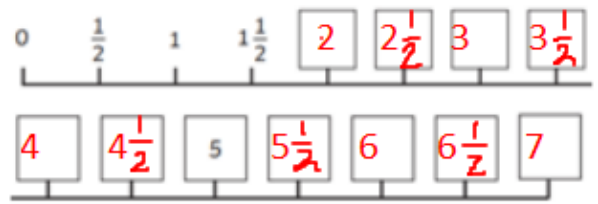
4	4	4	4

4 girls have a bow in their hair.

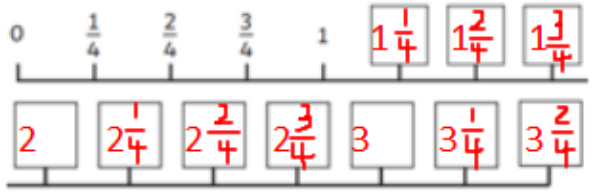
Lesson Two

Continue these number lines:

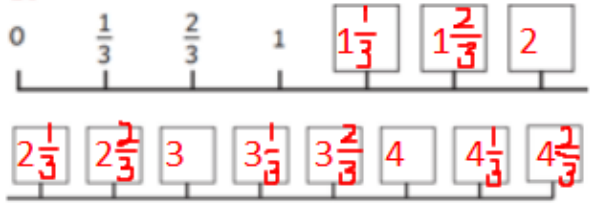
1.



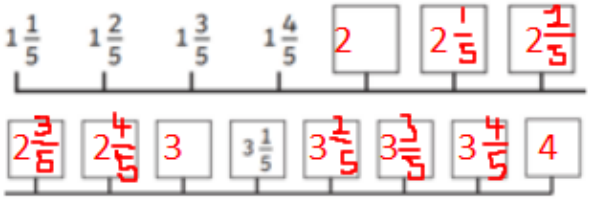
2.



3.



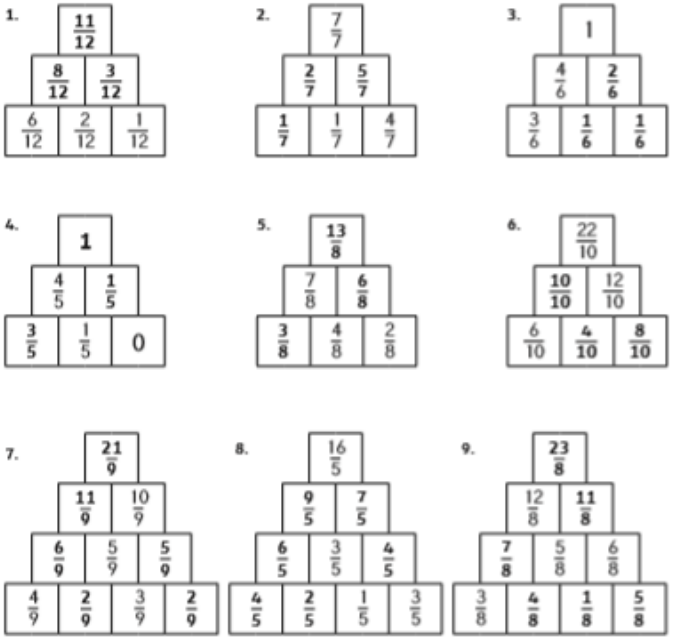
4.



5.

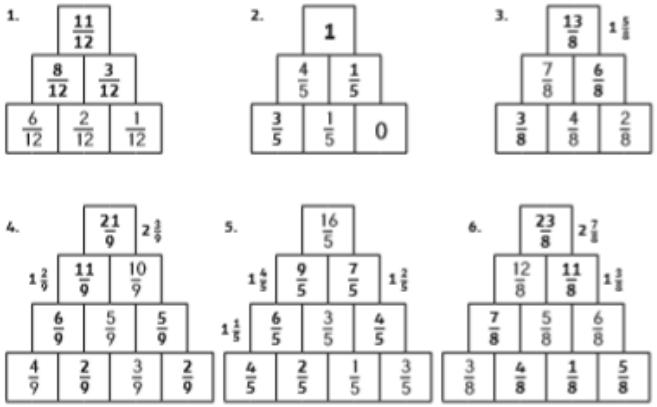
Adding and Subtracting Fractions

Each pair of blocks totals the block above them. Use addition and subtraction to fill in the missing fractions and complete the shape.

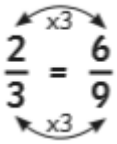


Extra Challenge:

Can you give the fractions as **improper fractions** and as **mixed numbers**? (Look **at Lesson Three** for more information.)

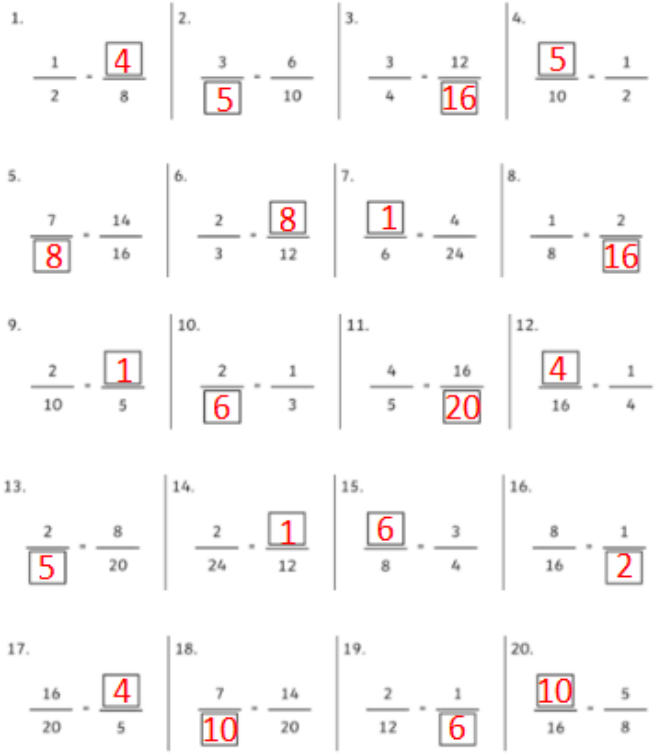


Equivalent Fractions



Multiplying the numerator and denominator by the same amount each time to find equivalent fractions.

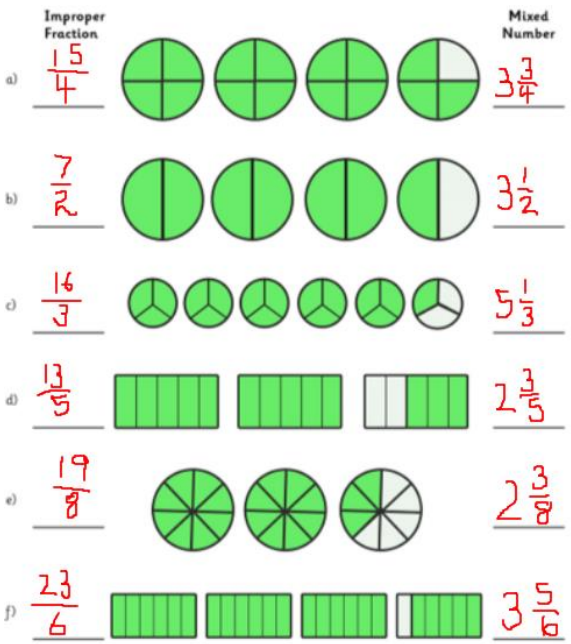
Look at Comparing fractions for further information.



Lesson Three -Improper Fractions and Mixed Numbers

https://www.bbc.co.uk/bitesize/articles/z4ypscw

Write the improper fractions and mixed numbers represented by the shapes below.



Mixed Number Improper fraction

$4\frac{1}{7} = \frac{29}{7}$

$5\frac{1}{7} = \frac{36}{7}$

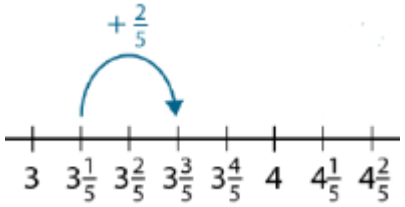
$6\frac{1}{7} = \frac{43}{7}$

$7\frac{6}{7} = \frac{55}{7}$

Addition of Mixed Numbers

Explanation:

$3\frac{1}{5} + \frac{2}{5} = 3\frac{3}{5}$



Solve these calculation:

1) $2\frac{1}{7} + 3\frac{3}{7} = 5\frac{4}{7}$ 2) $1\frac{2}{7} + \frac{4}{7} = 1\frac{6}{7}$

3) $\frac{2}{9} + 4\frac{3}{9} = 4\frac{5}{9}$ 4) $3\frac{1}{8} + \frac{3}{8} = 3\frac{4}{8}$ or $3\frac{1}{2}$

5) $\frac{1}{4} + \frac{3}{4} = \frac{4}{4}$ or 1

6) $\frac{2}{10} + \frac{4}{10} + \frac{3}{10} = \frac{9}{10}$

Super Challenge:

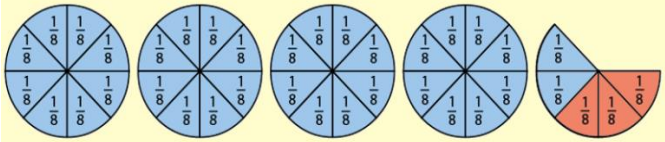
7) $\frac{2}{4} + \frac{3}{4} = \boxed{\frac{5}{4}}$ or $\boxed{1\frac{1}{4}}$

8) $\frac{2}{3} + \frac{3}{3} + \frac{2}{3} = \boxed{\frac{7}{3}}$ or $\boxed{2\frac{1}{3}}$

Subtraction of Mixed Numbers

Explanation:

$4\frac{5}{8} - \frac{3}{8} = \boxed{4\ 2/8}$



Solve these calculation:

1) $1\frac{2}{8} - 1 = \frac{2}{8}$ 6) $7\frac{4}{9} - 2 - 3\frac{1}{9} =$ 2 3/9

2) $3\frac{4}{5} - \frac{2}{5} = 3\frac{2}{5}$ 7) $8 - 1\frac{2}{10} - 3\frac{3}{10} = 3\frac{5}{10}$

3) $6\frac{2}{7} - 3 = 3\frac{2}{7}$ 8) $5\frac{2}{4} - ? = 2\frac{1}{4}$ $3\frac{1}{4}$

4) $4\frac{5}{11} - 1\frac{2}{11} = 3\frac{3}{11}$ 9) $7\frac{5}{12} - ? = 3\frac{2}{12}$ $4\frac{3}{12}$

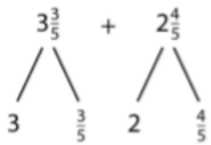
5) $3\frac{2}{8} - 1\frac{1}{8} = 2\frac{1}{8}$ 10) $? = 4\frac{2}{6} - 1\frac{1}{6} - \frac{2}{6}$ $2\frac{5}{6}$

Extra Challenges - Adding Improper Fractions and Mixed Numbers

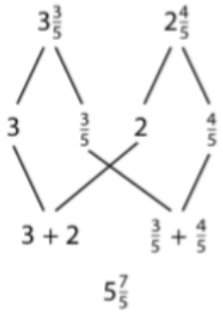
Teaching:

$$3\tfrac{3}{5} + 2\tfrac{4}{5}$$

1)

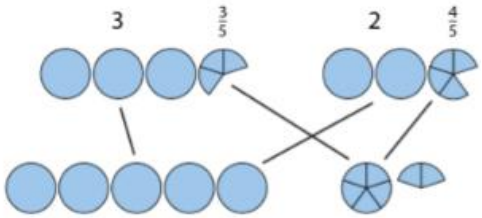


2)



3)

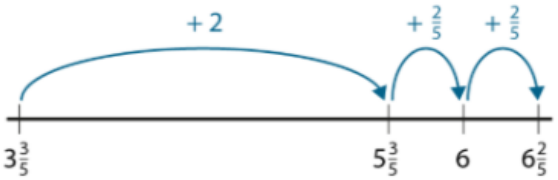
- *Final conversion needed:* $5\frac{7}{5} = 6\frac{2}{5}$



- *Final conversion needed:* $5\frac{7}{5} = 6\frac{2}{5}$

Or:

$3\frac{3}{5} + 2\frac{4}{5} =$



Adding Improper Fractions and Mixed Numbers

$1\frac{1}{3} + 3\frac{1}{3}$ $4\frac{2}{3}$	$4\frac{1}{4} + 5\frac{1}{4}$ $9\frac{2}{4}$	$5\frac{1}{5} + 2\frac{1}{5}$ $7\frac{2}{5}$
$4\frac{5}{8} + 1\frac{4}{8}$ $5\frac{9}{8}$ or $6\frac{1}{8}$	$3\frac{1}{2} + 2\frac{1}{2}$ $5\frac{2}{2}$ or 6	$2\frac{1}{4} + 3\frac{2}{4}$ $5\frac{3}{4}$
$2\frac{1}{5} + 1\frac{1}{5}$ $3\frac{2}{5}$	$2\frac{3}{8} + 5\frac{5}{8}$ $7\frac{8}{8}$ or 8	$1\frac{2}{5} + 2\frac{4}{5}$ $3\frac{6}{5}$ or $4\frac{1}{5}$
$1\frac{4}{8} + 1\frac{5}{8}$ $2\frac{9}{8}$ or $3\frac{1}{8}$	$3\frac{4}{6} + 2\frac{1}{6}$ $5\frac{5}{6}$	$4\frac{1}{8} + 3\frac{1}{8}$ $7\frac{2}{8}$ or $7\frac{1}{4}$

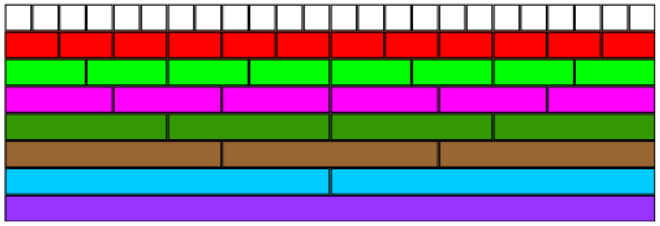
Super Challenge:

Converting and Subtracting Mixed Number Fractions:

$3\frac{2}{6} - \frac{11}{6}$ $\frac{9}{6}$ $1\frac{3}{6}$ or $1\frac{1}{2}$	$\frac{23}{4} - 5\frac{2}{4}$ $\frac{1}{4}$	$\frac{15}{3} - 2\frac{2}{3}$ $\frac{7}{3}$ or $1\frac{1}{3}$
$\frac{16}{5} - 2\frac{2}{5}$ $\frac{4}{5}$	$\frac{45}{5} - 6\frac{3}{5}$ $\frac{12}{5}$ $2\frac{2}{5}$	$4\frac{3}{4} - \frac{13}{4}$ $\frac{6}{4}$ or $1\frac{1}{2}$
$\frac{27}{5} - 4\frac{4}{5}$ $\frac{3}{5}$	$2\frac{5}{8} - \frac{17}{8}$ $\frac{4}{8}$ or $\frac{1}{2}$	$\frac{26}{11} - 1\frac{6}{11}$ $\frac{9}{11}$

Fraction Wall

https://nrich.maths.org/4519



Using the image above, I can find 12 as:
1 blue (1/2)
2 dark greens (2/4)
3 pinks (3/6)
4 light greens (4/8)
6 reds (6/12)
12 whites (12/24)
So I can also say that: 1/2=2/4=3/6=4/8=6/12=12/24

From the picture, I can find 1/3 as:
1 brown (1/3)
2 pinks (2/6)
4 reds (4/12)
8 whites (8/24)

So I can also say that: 1/3=2/6=4/12=8/24

Again, using the image of the fraction wall, I can find 3/4 as:
3 dark greens (3/4)
6 light greens (6/8)
9 reds (9/12)
18 whites (18/24)

So again I can say that: 3/4=6/8=9/12=18/24

The rule for working out equivalent fractions is to multiply the numerator and the denominator with the same whole number.