Spring 2 Year 3

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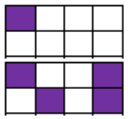
| **Links to prior learning/ objectives** | **Resources** | **Vocabulary:** |
|---|---|---|
| Children will have had experience looking at multiplication facts- especially 2,5,10s.<br>Multiplication and division strategies taught in year 2 (focussed around 2/5/10 maybe 3 facts)<br>Children will have learnt about fractions, focusing on ½, ¼, 2/4, ¾ and 1/3, understanding what they represent.<br>Children will have found fractions of amounts and started to compare fractions. | Counting stick, number line, physical fractions, fraction wall, bar models,<br><br>**Mastery:**<br>(where to find some resources)<br>• Teaching for Mastery<br>• White Rose **New and old documents**<br>• Mastery maths stickers<br>• Nrich (curriculum mapping) | Tenths, divide, ascending, descending, increase, decrease, equal.<br>Recognise, find, name, write, fractions, numerator, denominator, shapes, quantities, length, half, quarter, three-quarter, third, unit fractions, non-unit fractions, order, compare, discrete,<br>equivalence, numerator, denominator |

## Objectives and Teaching

| **Barriers to ARE (misconceptions)**<br>**Week 1** | Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominator.<br><br>• To know what a fraction is.<br>• To understand what a fraction is.<br>• To know the difference between a unit and non-unit fraction.<br>• To develop the skill of using unit and non-unit fractions.<br>• To understand how to recognise unit and non-unit fractions. |
|---|---|
| Children may not understand what a fraction is. They may not know that the larger the denominator the smaller the fraction.<br>Children may struggle to apply their knowledge of fractions of a range of objects/ lengths and shapes.<br>Children may not have a secure understanding of multiplication and division.<br>Children may not recognise what the equivalence means and that two fractions can be the same.<br>Children may not recognise what the numerator and denominator represent. | |

| **Fluency** | **Reasoning** | **Problem Solving** |
|---|---|---|
| | | |

Complete the sentences to describe the images.



☐ out of ☐ equal parts are shaded.

☐/☐ of the shape is shaded.

Shade $\frac{1}{5}$ of the circle.  Shade $\frac{3}{5}$ of the circle 

Circle $\frac{1}{5}$ of the beanbags. 

Circle $\frac{3}{5}$ of the beanbags. 

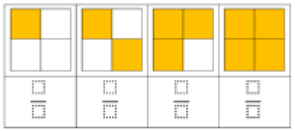
What's the same and what's different about $\frac{1}{5}$ and $\frac{3}{5}$?

Complete the sentences.

A unit fraction always has a numerator of _____
A non-unit fraction has a numerator that is _____ than _____
An example of a unit fraction is _____
An example of a non-unit fraction is _____

Can you draw a unit fraction and a non-unit fraction with the same denominator?

Complete the missing information.



1 whole is the same as ☐/☐

Complete the sentences to describe the apples.

☐/☐ of the apples are red. ☐/☐ of the apples are green.

☐/☐ and ☐/☐ make one whole.

Use 8 double sided counters.
Drop the counters on to the table, what fraction of the counters are red? What fraction of the counters are yellow?
What fraction represents the whole of the counters?
Complete part whole models to show your findings.
What fraction will always stay the same in your part whole models?

## True or False?

$\frac{1}{3}$ of this shape is shaded.

Ted says,

I have one pizza cut into 6 equal pieces. I have eaten $\frac{6}{6}$ of the pizza.

Does Ted have any pizza left?
Explain your answer.

## Complete the sentence

When a fraction is equal to a whole, the numerator and the denominator are _____

Use pictures to prove your answer.

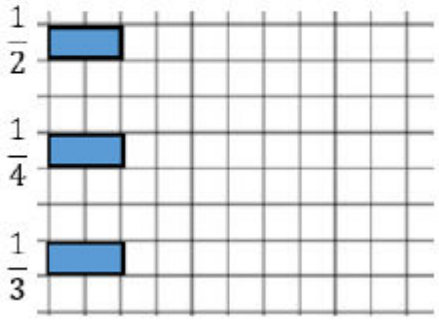
Sort the fractions into the table.

| | Fractions equal to one whole | Fractions less than one whole |
|---|---|---|
| Unit fractions | | |
| Non-unit fractions | | |

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

Are there any boxes in the table empty? Why?

Here are four fractions of four different bars.
Can you draw the whole bar for each?




| | |
|---|---|
| **Week 2** | Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. |

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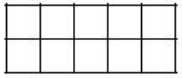
| | |
|---|---|
| Children may struggle to apply their understanding of multiplying and dividing by 10.<br>Children may struggle to understand what a fraction represents. | • To know how to count in hundredths.<br>• To understand how to count in hundredths.<br>• To understand the link between division and tenths.<br>• To understand the link between division and hundredths. |

## Fluency

If the frame represents 1 whole, what does each box represent?
Use counters to represent:

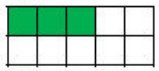


- One tenth
- Two tenths
- Three tenths
- One tenth less than eight tenths

The counting stick is worth 1 whole. Label each part of the counting stick.

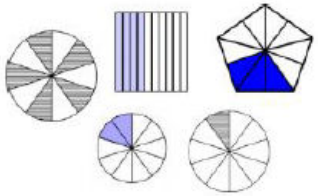
Identify what fraction of each shape is shaded. Give your answer in words and as a fraction.

E.g.



Three tenths

$\frac{3}{10}$

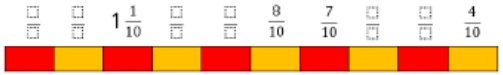


Continue the pattern in the table and answer the questions.

- What comes between $\frac{4}{10}$ and $\frac{6}{10}$?
- What is one more than $\frac{10}{10}$?
- If I start at $\frac{8}{10}$ and count back $\frac{4}{10}$, where will I stop?

| Representation | Words | Fraction |
|---|---|---|
| | One tenth | $\frac{1}{10}$ |
| | | |
| | | |

Continue counting in tenths.
Label each part of the counting stick.




## Reasoning

### Odd One Out

Which is the odd one out?
Explain your answer.

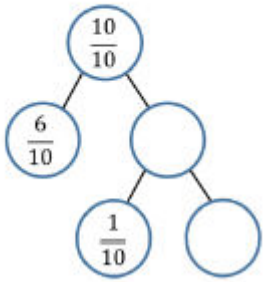
Jason is counting in tenths.

Seven tenths, eight tenths, nine tenths, ten tenths, one eleventh, two elevenths, three elevenths...

Can you spot his mistake?

## Problem Solving

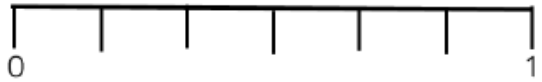
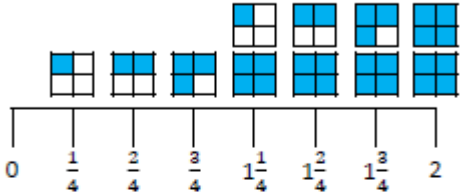
Fill in the missing values.
Explain how you got your answers.




Tania says five tenths is $\frac{2}{10}$ smaller than seven tenths, but $\frac{2}{10}$ larger than three tenths.

Do you agree?

Explain why.

| | | |
|---|---|---|
| Complete the number line.<br>  <br><br>The number line has been split into equal parts.<br>Can you label each part correctly?<br>  <br> | Eva has drawn a number line.<br>  <br><br>Mike says it is incorrect.<br>Do you agree with Mike?<br>Explain why.<br>Use a drawing to explain your thoughts. | Alex and Joanne are counting up and down in thirds.<br>Alex starts at $5\frac{1}{3}$ and counts backwards.<br>Joanne starts at $3\frac{1}{3}$ and counts forwards.<br>What fraction will they get to at the same time? |
| **Week 3**<br>Same as above | Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.<br>• To know how to find a fraction of a discrete set of objects.<br>• To develop the skill of finding a fraction of a discrete set of objects.<br>• To know how to identify a fraction of a discrete set of objects.<br>• To develop the skill of identify a fraction of a discrete set of objects. | |
| **Fluency** | **Reasoning** | **Problem Solving** |

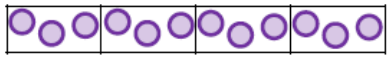
Find $\frac{1}{5}$ of Joe's marbles.

I have divided the marbles into ☐ equal groups.

There are ☐ marbles in each group.

$\frac{1}{5}$ of Joe's marbles is ☐ marbles.

Sam has used a bar model and counters to find $\frac{1}{4}$ of 12



Use Sam's method to calculate:

$\frac{1}{6}$ of 12 $\frac{1}{3}$ of 12 $\frac{1}{3}$ of 18 $\frac{1}{9}$ of 18

Faye uses a bar model and place value counters to find one quarter of 84

Use Faye's method to find:

$\frac{1}{3}$ of 36 $\frac{1}{3}$ of 45 $\frac{1}{5}$ of 65

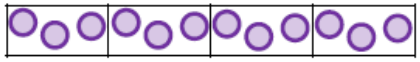
Find $\frac{2}{5}$ of Joe's marbles.

I have divided the marbles into ☐ equal groups.

There are ☐ marbles in each group.

$\frac{2}{5}$ of Joe's marbles is ☐ marbles.

Sam has used a bar model and counters to find $\frac{3}{4}$ of 12



Use Sam's method to calculate:

$\frac{5}{6}$ of 12 $\frac{2}{3}$ of 12 $\frac{2}{3}$ of 18 $\frac{7}{9}$ of 18

## Fill in the Blanks

$\frac{1}{3}$ of 60 = $\frac{1}{4}$ of ☐

$\frac{1}{☐}$ of 50 = $\frac{1}{5}$ of 25

Kayleigh has 12 chocolates.

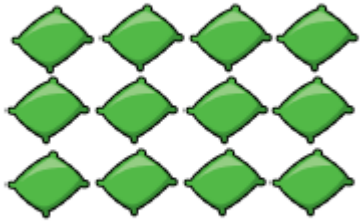
On Friday, she ate $\frac{1}{4}$ of her chocolates and gave one to her mum.

On Saturday, she ate $\frac{1}{2}$ of her remaining chocolates, and gave one to her brother.

On Sunday, she ate $\frac{1}{3}$ of her remaining chocolates.

How many chocolates does Kayleigh have left?

This is $\frac{3}{4}$ of a set of beanbags.



How many were in the whole set?

| | | |
|---|---|---|
| Kieron has £3 and 50 p<br>He wants to give half of his money to his brother.<br>How much would his brother receive?<br>  <br>A bag of sweets weighed 2 kg and 400 g<br>There are 4 children going to the cinema,<br>each receives $\frac{1}{4}$ of the bag.<br>What weight of sweets will each child receive?<br>  <br><br>Find $\frac{2}{3}$ of 1 hour.<br>Use the clock face to help you.<br>  <br>1 hour = ☐ minutes<br>$\frac{1}{3}$ of ☐ minutes = ☐<br>$\frac{2}{3}$ of ☐ minutes = ☐ | | Rajesh has £28<br>On Friday, he spent $\frac{1}{4}$ of his money.<br>On Saturday, he spent $\frac{2}{3}$ of his remaining money and gave £2 to his sister.<br>On Sunday, he spent $\frac{3}{5}$ of his remaining money.<br>How much money does Rajesh have left?<br>What fraction of his original amount is this? |
| **Week 4**<br>Same as previous weeks.<br>Children may struggle to apply their understanding to a problem/ context.<br>Children may mix up what the skills/ fraction understanding. | Solve problems that involve all the above. (fractions) | |
| **Fluency** | **Reasoning** | **Problem Solving** |

| | | |
|---|---|---|
| | | Chris makes 3 rugby shirts.<br>  <br>Each rugby shirt uses 250 cm of material.<br><br>He has a 10 metre roll of material.<br><br>How much material is left after making the 3 shirts?<br><br>What fraction of the original roll is left over? |
| **Week 5** | | |
| **Fluency** | **Reasoning** | **Problem Solving** |