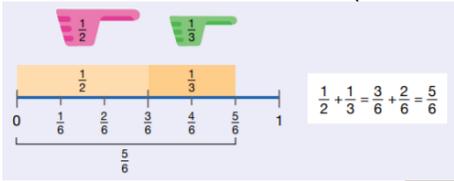
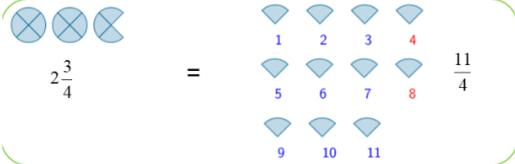
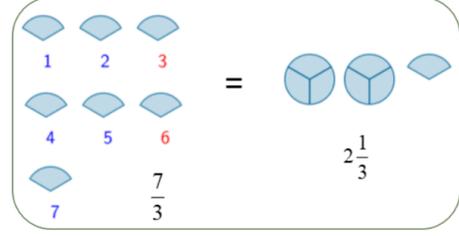


## Spring Term Overview YEAR 5 – Maths

### Spring Term Book(s)– Goodnight Mr Tom

Block 7: Fractions		Guide Time = 6 Weeks
<b>Assessment:</b>	WRMH End of block / term assessments Weekly Arithmetic Tests Termly Year 5 tests	<b>Very Important Points (VIPs):</b>  A fraction is a representation of a whole  Unit fractions is a fraction with a numerator of 1  Decimals are fractions  Adding and subtracting anything – including fractions – requires that we find the common unit (denominator)    Multiplying fractions involve taking a part of a part    The Highest Common Factor is used to calculate the simplest form.  To keep fractions equivalent whatever you x/÷ the denominator by you must x/÷ the numerator by also.
<b>Links to prior learning (sequencing) and canon book</b>	<u>Canon Book-Goodnight Mr Tom?</u> Children will have a prior knowledge of place value. Children will have an understanding of strategies for addition, subtraction, multiplication and division. Children will have embedded understanding of multiplication facts up to 12 x 12. Children will have an awareness of how to multiply and divide by 10, 100 and 1000 Children will understand terminology such as factors and multiples. Children will be able to use manipulatives to demonstrate mathematical concepts. From previous year groups they will have a knowledge of what a fraction is and how to compare, order, add and subtract with proper fractions. They will have worked with both unit fractions and non-unit fractions, focussing on denominators that are common multiples.	
<b>Links to other learning (cross fertilisation)</b>	<u>Active Maths</u> - provide additional maths questions / problems based around fractions. <u>DT</u> – Links to rationing of World War 2 when measuring ingredients Music -To create rhythm, we partition (subdivide) an amount of time (a whole bar) into “beats.” These beats are actually “unit fractions” – a fraction with 1 as its numerator, such as ¼  <u>Thematic Questions:</u> <u>The World Beyond Us:</u> How do astronauts and scientists use fractions in their exploration of space. What fraction of sun- like stars have planets?	

	<p><b>How can we compare the size of planets using fractions?</b>  <u>The World Around Us:</u> Are fractions used in the same way in different countries?          How are fractions useful in everyday life?  <u>Modern Britain:</u> How have the use of fractions changed in the last 100 years? Are they more or less frequently used?          Who first used fractions?          What would life be like if fractions didn't exist  <u>Healthy Bodies &amp; Healthy Minds:</u>          How can our understanding of fractions when applying it to our food intake?  <u>Culture –</u> How and why were fractions used during WW2?  <u>Technology in Action:</u> Other than a calculator, what other forms of technology need and use our number system? Do these forms of technology always help us?</p>	<p>Mixed numbers and improper fractions represent a proportion of more than 1 'whole'</p> <p><b>Mixed to improper</b></p> $2\frac{3}{4} = \frac{(4 \times 2) + 3}{4} = \frac{8 + 3}{4} = \frac{11}{4}$ <p>Mixed Number <span style="float: right;">Improper Fraction</span></p> 
<p><b>Links to future learning</b></p>	<p>The skills and knowledge taught in this block will be built upon from previous learning in year groups. It will developed and embedded throughout the year through other subjects such as Geography and Science.</p>	<p><b>Improper to mixed</b></p> $\frac{7}{3} = 3\frac{7}{6} = 2\frac{1}{3}$ <p>Improper Fraction <span style="margin-left: 100px;">1</span> <span style="float: right;">Mixed Number</span></p> 
<p><b>Character/Wider Development ('50 things', cultural capital, skills)</b></p>	<p>Relate and use this knowledge and understanding in real-life contexts and make these relevant and purposeful links:.</p> <p><u>Communicate in a different language –</u>  <u>Taking part in time travel –</u>  <u>Travel on a range of different transport –</u>  <u>Learn to cook a meal –</u></p>	<p>In order to add or subtract fractions the denominator must be the same. If the denominator is not the same then find the Lowest Common Denominator</p>

**Fat Questions:**

Why do fractions exist?

In what ways could fractions have helped during WW2?

## OVERVIEW OF TEACHING SEQUENCE

Key Facts / Learning	Learning Focus or Key Question	Learning Outcomes (NC)	Key Words/ Vocabulary	Greater Depth/SEND	Misconceptions	Activities and Resources
<b>Weeks 4-9</b> (8 lessons) Fractions	What is a fraction?  Equivalent fractions  Fractions greater than 1  Improper fractions to mixed numbers  Mixed numbers to improper fractions  Number sequences  Comparing fractions  Ordering fractions	Compare and order fractions whose denominators are multiples of the same number.  Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths.  Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements $>1$ as a mixed number  Add and subtract fractions with the same denominator and	Fraction Non-unit fraction Unit fraction Numerator Denominator Equivalent Greater than Less than Mixed number Improper fraction Tenths Hundredths Multiples Integers Decimal number scaling	GD: Children are introduced to more complex and wider reasoning and problem-solving questions / concepts.  Children will have multi-step reasoning problems to solve, applying prior learning as well as current.  Children will need to use depth of mathematical knowledge to provide clear mathematical explanation and reasoning to problems.  SEND: Assessment and analysis of prior knowledge is	Children may think the larger the denominator the larger the fraction  When multiplying fractions by a whole number, students multiply the numerator and denominator. This is another example of a misunderstanding because students do not know WHY we only multiply the numerator by the whole number.  Children thinking that fractions' numerators and denominators can be treated as separate whole numbers.  Children fail to find a common denominator when adding or subtracting fractions unlike denominators.	Pre-teaching of key concepts to allow for students to commence tasks immediately within lessons.  DTMs to be created using the following resources and based on C Ts AFL of their class/cohort. Further cross-curricular links can be made to the 6 these during these also, for a wider context.  WRMH: <a href="https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/01/Year-5-2018-19-Spring-Term-Block-2-FINAL.pdf">https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/01/Year-5-2018-19-Spring-Term-Block-2-FINAL.pdf</a>  Third Space Learning: <a href="https://thirdspacelearning.com/">https://thirdspacelearning.com/</a>  Classroom Secrets: <a href="https://classroomsecrets.co.uk/category/maths/year-5/spring-block-2-fractions/">https://classroomsecrets.co.uk/category/maths/year-5/spring-block-2-fractions/</a>  NCETM – resources / activities for DTMs   Mastery_Assessment_Y5_High_Res.pdf

	<p>Adding and subtracting fractions</p> <p>Add fraction within 1</p> <p>Add 3 or more fractions</p> <p>Add mixed numbers</p> <p>Subtract fractions</p> <p>Subtract 2 mixed numbers</p> <p>Multiply non-unit fractions by an integer</p> <p>Multiply non-unit fractions by an integer</p> <p>Multiply mixed numbers by an integer</p> <p>Calculate fractions of quantities</p>	<p>denominators that are multiples of the same number.</p> <p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</p> <p>Read and write decimal numbers as fractions problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</p>		<p>needed. Teacher to assess and base planning and resources in a bespoke manner.</p> <p>Children will focus on fractions with same denominator.</p> <p>Children will focus on fractions with denominator within times tables then are able to work with</p> <p>Children will focus on simpler fractions</p> <p>Children may be given simpler numbers to use in their calculations.</p> <p>Children will focus and use pictorial and practical resources to support and develop their understanding, of fractions.</p> <p>Children will have access to fraction walls when comparing fractions.</p>	<p>Children may leave the denominator unchanged in fraction addition and multiplication problems.</p> <p><i>AFL to be consistently used to address misconceptions found within own classes / cohorts of children and address where applicable.</i></p>	<p>Maths Frame:  <a href="https://mathsframe.co.uk/en/resources/category/415/Y5-Fractions">https://mathsframe.co.uk/en/resources/category/415/Y5-Fractions</a></p> <p>Slides / resources saved on trust shared.</p>
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	Fractions of amounts  Using fractions as operators  Fraction problem solving					
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Context (big picture learning):

Mathematics is an important, creative discipline that helps us to understand and change the world. We want all of our children within the Pontefract Academies Trust to experience all that mathematics has to offer and to develop a sense of curiosity about the subject with a clear understanding. When they leave us we want them to continue their love of maths and use it continuously and positively in their future lives.

We foster a positive 'growth mind-set' attitude and we promote the fact that we believe that all children can achieve in mathematics. We teach for secure and deep understanding of mathematical concepts through manageable, bespoke steps and cross fertilize at every opportunity. VIPs (Very Important Points) are implemented in every lesson to ensure knowledge and skills are revisited and retained over time.

We use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated reasoning and problem solving activities. At our school, the majority of children will be taught the content from their year group only. They will spend time becoming true masters of content, applying and being creative with new knowledge in multiple ways.

[Folder name and link to resources: Trust shared > Primaries > Departments > KS2 > Planning Cycle B > Spring 1 > Maths > Year 5 > Block 7](#)

[Week 4 L1-4](#)

[Week 5 L5-8](#)

[Week 6 L9-13](#)

[Week 7 L14-19](#)

[Week 8 L20-24](#)

[Week 9 L25-2](#)

# Year 5 Knowledge Organiser: Fractions

## Fat Questions:

Why do fractions exist?

In what ways could fractions have helped during WW2?

When do we use fractions in day to day life?

Why do we have fractions, decimals & percentages? Do they all do the same thing?

## Key vocabulary

Fraction - Simplify

Non-unit fraction - Unit fraction

Numerator - Denominator

Equivalent - Greater than

Less than - Mixed number

Improper fraction - Tenths

Hundredths - Multiples

Integers - Decimal number

To see the full list of vocabulary, please refer to our resource walls.

## Intent

We aim to develop and progress our skills in fractions in order to equip us with the ability to solve real world problems that require a mathematical solution. With these skills, we can help to improve the world in which we live.

## VIPs (very important points)

### Equivalent Fractions

To find equivalent fractions, we multiply or divide the numerator and denominator by the same number.

$$\frac{1}{2} \xrightarrow{\times 5} \frac{5}{10} \xrightarrow{\times 10} \frac{50}{100}$$

$$\frac{50}{100} \xrightarrow{\div 10} \frac{5}{10} \xrightarrow{\div 5} \frac{1}{2}$$

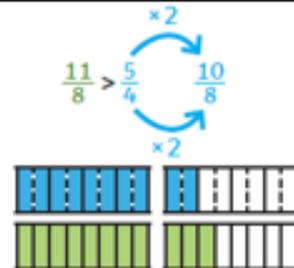
### Mixed Numbers

Mixed numbers contain a whole number and a fraction



### Compare and Order Fractions

We can compare and order fractions by using common denominators.



### Improper Fractions

An improper fraction has a numerator which is greater than or equal to the denominator

$$\frac{5}{3}$$

### Convert an Improper Fraction to a Mixed Number

$$\frac{9}{4} \quad 9 \div 4 = 2r1 \quad \frac{2}{4}$$

Divide the numerator by the denominator.

This shows you the whole number and the fraction.

### Convert a Mixed Number to an Improper Fraction

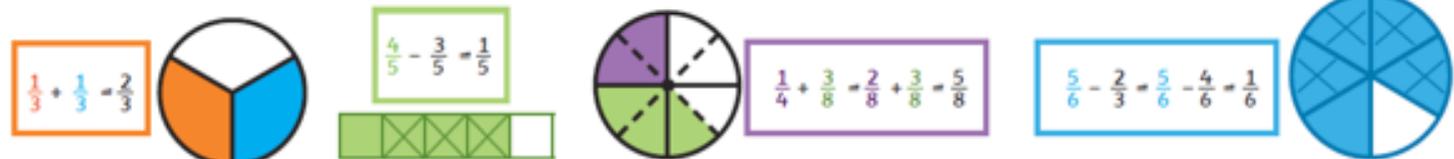
Multiply the whole by the denominator to make an improper fraction.

$$2 \frac{5}{6} = \frac{12}{6} + \frac{5}{6} = \frac{17}{6}$$

Add the fractions together.

### Adding and Subtracting Fractions

To add or subtract fractions with denominators that are multiples of the same number, we must change one fraction to have the same denominator.



### Multiply Mixed Numbers by Integers

Convert to an improper fraction and multiply the numerator by the integer.

$$2 \frac{1}{4} \times 2 = \frac{9}{4} \times 2 = \frac{18}{4} = 4 \frac{2}{4} = 4 \frac{1}{2}$$

### Multiply Unit Fractions by an Integer

