

Summer 1 OVERVIEW YEAR 4 – Maths – Decimals

Summer Term 1 Book – The Ironman – Technology in Action		
Topic(s) - Decimals		Guide Time = 2 weeks
Assessment:	White Rose Maths Hub end of block assessments End of term assessments – NFER assessments Teacher assessment judgements based on AfL	Very Important Points (VIPs): <ul style="list-style-type: none"> • A whole number isn't just the number 1. • There are 10 tenths in one whole. • There are 100 hundredths in one whole. • Within the number 4.58 the number 4 represents 4 ones, the number 5 represents 5 tenths and the number 8 represents 8 hundredths. • Two wholes, three tenths and nine hundredths is the same as 2.39. • Two decimal places mean having two columns after the decimal point e.g. 0.45. An example of one decimal place is 0.6. • Ones have a higher value than tenths and tenths have a higher value than hundredths. • A number that has 0 hundredths can be shown in two different ways e.g. 1.40 = 1.4 • Ascending means increasing and descending means decreasing. • Despite the tenths and hundredths being bigger, it doesn't always make it a larger number because ones have a higher value e.g. 3.43 > 1.99 • Rounding rule - 5, 6, 7, 8 and 9 rounds up and 1, 2, 3 and 4 rounds down. • It doesn't matter which column the number is in, the same rounding rule applies. • $0.25 = 1/4 = 25/100 =$ one quarter. • $0.5 = 2/4 = 5/10 = 50/100 =$ two quarters or one half. • $0.75 = 3/4 = 75/100 =$ three quarters.
Links to prior learning (sequencing) and canon book	Children will have completed their first decimal block during Spring 2 when they will have particularly studied tenths and hundredths. As well as this, they will have divided both 1 and 2 digits by 10 and 100. Because of this, children will understand what decimals look like and where to place a decimal point as well as different ways that hundredths and tenths could be represented. Through completing weekly skills checks and arithmetic tests, children will have already encountered adding and subtracting two decimal numbers.	
Links to other learning (cross fertilisation)	<p>In DT, the children will be designing and creating an Ironman robot. They will use their decimal knowledge to decide upon materials needed to create the robot using money.</p> <p>In Computing we will be preparing ourselves for the future by gaining computer knowledge and skills. We will also explore how decimals are used within the digital world.</p> <p>In History, children will be looking at the topic of Anglo-Saxons. They can use their money understanding to compare and contrast money from Anglo-Saxon times to today and if decimals were relevant.</p> <p>In PSHE, children will be learning about roles and responsibilities. This is an important link to the decimal topic as the children will be able to explain why we have to be responsible with money.</p> <p>In Geography, understanding decimals will be vital when using atlases to support our learning.</p>	
Links to future learning	The skills taught this half term will be applied and built upon throughout the year. Helping children to build on prior knowledge to	

	<p>use during arithmetic tests, termly tests and to prepare for the following year.</p> <p>Thematic questions:</p> <p>The world beyond us: What is the distance between different planets in our solar system? Can you round these numbers to the nearest decimal point?</p> <p>Modern Britain: How many litres of water does each appliance use within the modern household? Can you compare these decimals?</p> <p>Healthy bodies, healthy minds: What portion of your plate should contain carbohydrates, protein, dairy, fruit and vegetables and fats?</p> <p>The world around us: Which countries take up most of the world's area? Can you round each country's area (km²) to the nearest decimal point and order them?</p> <p>Culture: Do all cultures prefer the use of miles or kilometers? What is the difference between each measurement?</p> <p>Technology in action: How may the use of halves and quarters be used within technology?</p>	<p>Fat Question: The use of decimals within certain professions has transformed the industry. How may decimals have transformed the construction industry? Use evidence to support your answer.</p>
<p>Character/Wider Development ('50 things', cultural capital, skills)</p>	<p>50 Things are personal to each school.</p> <p>If you can visit a castle –Think about the distance/measurements of each wall, are they measured using decimals? Can you order the decimals?</p> <p>When swimming, swim as many lengths/widths as you can. Wherever you stop, can you round the decimal to the nearest whole number?</p> <p>When visiting the theatre, for the pantomime, can you discover half or a quarter of the ticket price?</p>	

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
Decimals (Weeks 1-2)	To make wholes. To write decimals. To compare decimals. To order decimals. To round decimals. To understand halves and quarters.	Compare numbers with the same number of decimal places up to two decimal places. Round decimals with one decimal place to the nearest whole number. Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$. Understand the effect of dividing a one or two digit number by 10 or 100.	Tenths. Hundredths. Place value. Whole. Decimal. Bar model. Hundred. Square. Ones. Partitioning. Bigger. Smaller. Compare. Number line. Interval. Ascending. Descending.	GD: Children to complete challenges linked to reasoning and problem solving showing clear understanding. Clearly showing their methods with written feedback on why and how they have got to an answer. Provide opportunities to investigate new areas in depth. Ensure they manage their own learning using learning tools independently and recognising they need these learning tools independently.	Children think that: 0.10 is larger than 0.2 because 10 is more than 2. Hundredths are larger than tenths because hundreds are bigger than one hundreds. $\frac{1}{4}$ equals 1.4 $\frac{1}{2}$ equals 1.2 $\frac{3}{4}$ equals 3.4 3.0 is a different number to 3. When rounding to one decimal place you look at the tenths column rather than the hundredths column. $\frac{1}{4}$ is larger than $\frac{1}{2}$ because 4 is bigger than 2.	<ul style="list-style-type: none"> - Decimals knowledge organiser. - Classroom secrets linked to the NC objective. - White Rose Maths Premium Resources - https://resources.whiterosemaths.com/resources/year-4/summer-block-1-decimals/ - Third Space Resources - Maths Frame - NCETM <p>Recapping key concepts and ensuring children are revisiting prior learning is essential. WRMH Flashback 4 is a useful support for children at the beginning of sessions, allowing misconceptions to be addressed and opportunities to build in retention activities.</p> <p>See Trust shared for Notebooks and resources to support your teaching.</p> <p>Deepen the moment: These are based on teacher's assessment for learning of their class/cohort. Further cross-curricular links can and should be made to the 6 themes, for a wider context, which develop children's wider development / character.</p> <p>Examples of deepen the moments:</p>

		<p>Identifying the value of the digits in the answer as ones, tenths and hundredths.</p>		<p>Model complex ideas to help encourage deeper thinking.</p> <p>Teaching peers in class.</p> <p>SEND: Allow time to recap and go through previous learning.</p> <p>Using a range of pre-teaching activities will support children's understanding of key concepts.</p> <p>Pictorial and physical manipulatives could be used to further support children's understanding of decimals, securing their decimal place value knowledge e.g. use of base ten or bar modelling.</p>		<ul style="list-style-type: none"> • If I add $0.5 + 0.5 = 0.10$. Explain the mistake using your place value knowledge. • $0.2 = 0.20$ but we do not need the second zero as it is just a place holder. Tell me a scenario where this is not true. • $0.03 + 0.07 = 1$ whole. Using a part whole model, show the mistake that has been made. • Three bead strings are 0.84m long altogether. Would four bead strings be longer or shorter than a metre? Explain how you know. • When representing the number 2.2 on a place value chart, I would put 2 counters in the ones column and two counters in the hundredths column. Do you agree? Explain your answer. • If I exchange 3 lots of ten tenths into ones on a place value grid I will have 3 ones which is equal to 300 hundredths. Prove it. <p>Always. Sometimes. Never.</p> <ul style="list-style-type: none"> • When dividing a number by 10, 100 or a 1000 I simply remove the zeros from the number. For example: 90 divided by 10 equals 9. Explain your answer. • Rosie is ordering some numbers in ascending order: $0.09 < 0.99 < 10.01 < 1.35 < 9.09$ Can you explain her mistake?
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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. As they grow throughout primary education, we want them to feel a sense of pride and achievement within this core subject: a subject that will impact their daily lives.

A key aspect of this will be the positive attitude we have and will pass onto the children, as they learn important mathematical concepts during their mathematics learning journey. We include VIPs (Very Important Points) to help children know their learning outcomes and retain and repeat important this knowledge over time.

Mistakes and misconceptions are a key part of the successes during their learning journey, as these moments help to show resilience, perseverance and commitment to learning mathematical concepts. At our school, the majority of children will be taught the content from their year group only. All children will have the opportunity to progress, build on prior knowledge, and have access to reasoning and problem solving questions. These questions help to secure and deepen their thinking and learning with mathematics. Another key factor is cross fertilization at every opportunity. As a whole, the children will spend their time learning, applying and mastering key skills that they will need throughout their life. In year 4, they will build on their mathematical knowledge, which they can take forward with them as they move into year 5 and beyond.

Year 4 Knowledge Organiser: Decimals

VIP's

- A whole number isn't just the number 1.
- There are 10 tenths in one whole.
- There are 100 hundredths in one whole.
- Within the number 4.58 the number 4 represents 4 ones, the number 5 represents 5 tenths and the number 8 represents 8 hundredths.
- Two wholes, three tenths and nine hundredths is the same as 2.39.
- Two decimal places mean having two columns after the decimal point e.g. 0.45. An example of one decimal place is 0.6.
- Ones have a higher value than tenths and tenths have a higher value than hundredths.
- A number that has 0 hundredths can be shown in two different ways e.g. 1.40 = 1.4
- Ascending means increasing and descending means decreasing.
- Despite the tenths and hundredths being bigger, it doesn't always make it a larger number because ones have a higher value e.g. 3.43 > 1.99
- Rounding rule - 5, 6, 7, 8 and 9 rounds up and 1, 2, 3 and 4 rounds down.
- It doesn't matter which column the number is in, the same rounding rule applies.
- $0.25 = \frac{1}{4} = \frac{25}{100}$ = one quarter.
- $0.5 = \frac{2}{4} = \frac{5}{10} = \frac{50}{100}$ = two quarters or one half.
- $0.75 = \frac{3}{4} = \frac{75}{100}$ = three quarters.

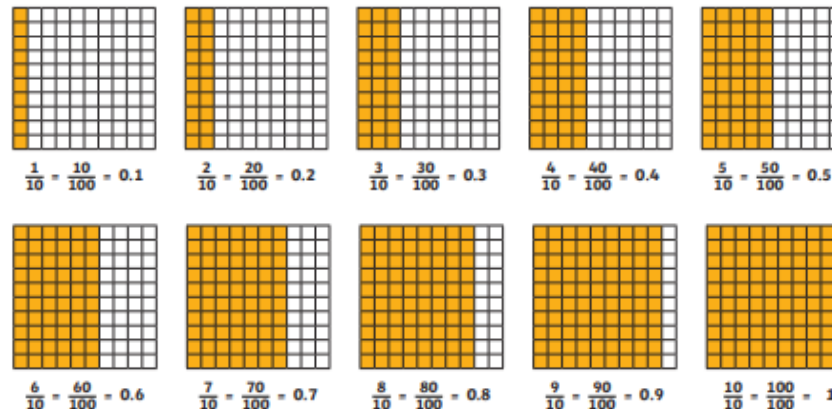
Fat Question

The use of decimals within certain professions has transformed the industry. How may decimals have transformed the construction industry? Use evidence to support your answer.

Intent

To build on children's understanding of decimals. Children will be confident to write and make wholes using decimals, compare, order, and round decimals as well as being confident enough to explain the use of quarters and half's. We will also greatly encourage our pupils to thrive to be life-long learners through providing numerous wider curriculum opportunities.

Tenth and Hundredth Decimal Equivalents



Key vocabulary

Tenths, hundredths, place value, whole, decimal, bar model, hundred square, ones, partitioning, bigger, smaller, compare, number line, interval, ascending, descending.

Fraction and Decimal Equivalents

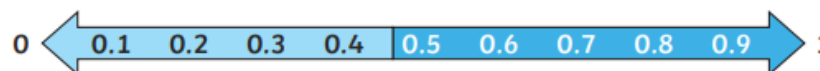
$$\frac{1}{2} = 0.5$$

$$\frac{1}{4} = 0.25$$

$$\frac{3}{4} = 0.75$$

$$\frac{1}{10} = 0.1$$

Rounding Decimals



If the tenths digit is
1, 2, 3 or 4, we round **down** to
the nearest whole number.

If the tenths digit is
5, 6, 7, 8 or 9, we round **up** to
the nearest whole number.

