

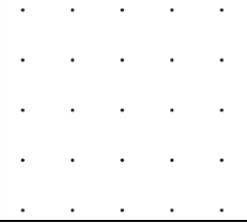
## Developing Mathematics – Primary Transition Project

Year 7 Maths – Framed in the world of Stormbreaker by Anthony Horowitz to complement Stormbreaker English Transition units.

Session	Framework Objective	Hook	Teaching Input	Do it...	Secure it...	Deepen it...	Notes/Resources
1 - St. C's	To be able to divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division.	Given an image of a breaker's yard... the children will first estimate the number of vehicles visible and then create a variety of their own calculations based on this image.	Using the McDonald's acronym (Does <b>Divide</b> , McDonalds <b>Multiply</b> , Sell <b>Subtract</b> , Cheese <b>Check</b> , Burgers <b>Bring down</b> ) children will work through a single division calculation.  Teach children to find the key facts quickly using the 'Times Tables in 10 minutes.'	The children work through 5 long division questions.	Find the missing number in the calculation.  Find and explain the mistake in someone else's work.  Division word problem which requires rounding a remainder up or down.	Using given digits, children find possible calculations.  Investigate to find the divisor.  Find missing numbers in a division calculation fulfilling different criteria.	McDonald's Acronym Poster  Times Tables in 10 Minutes You Tube Video
2 - HF	To be able to recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	Give an image of a computer screen explaining this part of the Storm breaker 'code' appearing in FDP. What do you notice?	Teach chn to recognise simple equivalent fractions and represent them as decimals and percentages. Explore % equivalent of $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{2}{5}$ $\frac{4}{5}$ and fractions with a denominator of 10 100 Use pictorial representations (e.g. bar models and hundred squares) to support understanding and show equivalence.	Children work through 4-6 questions to support the understanding of equivalent fractions, decimals and percentages. Includes half, quarters, fifths and denominators of a multiple of 10.	Identify and explain misconceptions finding equivalent FDP e.g. $\frac{1}{2} = 0.12$ or $1\% = 0.1$  Compare and order FDP using knowledge of equivalences.	Using the digits 0-9 once, complete these statements:  $\frac{\square}{6} = 100\%$ $\frac{\square}{12} = \square\%$ $\frac{6}{\square} = 0.\square$ $\frac{\square}{5} = 0.\square\square$  $\frac{1}{\square} = 33.3\%$ (to 1 dp)  Is there only one way to solve this problem? Create your own missing digits problem!  Solve a contextualised problem applying knowledge of equivalences.  Prove a statement about FDP is always/sometimes or never true. Alex says, "To convert a fraction to a percentage, you just need to put a percent sign next to the numerator."	Flip chart and activity sheets  100 squares and/or base 10 equipment
3 - St. M's	L.O: To use and simplify the notation of ratio	Tell me task - Write down all the facts you can find in the Alex Rider related visuals.	Using pictorial images of quantities children introduced to the concept of proportion and its relationship to fractions- What it is and what it isn't.  Children introduced to ratio and recognise the	Children work through 10 pictorial and word representations of quantities labelling both the ratio and the proportion. Variation will also include at least 3 simplifying ratios	Two statement questions- declaring the proportion and ratio of a pictorial and word representations of quantities. Children need to decide whether statements are true or false and explain answer.	Look at the ratio and fraction statements. Find the total value of the quantities contained in Alex's bag	Do it worksheet Secure worksheet Deepen it worksheet

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			<p>differences between ratio and proportion.</p> <p>Children presented with concept that ratios can be scaled up and down (Simplified)</p>				
4 - St. C's	To be able to express missing number problems algebraically.	<p>When they bought Alex's gadgets, they bought a Game Boy which cost £42 and 4 cartridges which cost £14 each. They also bought 2 yoyos. The total bill was £104. How much did a yoyo cost?</p> <p>The children will be asked to find the cost of a yoyo and explain how they found the answer.</p> <p>They will then be asked to write out an algebraic equation for the problem.</p>	<p>Given an Alex Ryder based grid image, the children will work together to use the information they have been given to find the information that they don't know.</p> <p>They will also try to write these as algebraic equations.</p> <p>i.e. If <math>3y = 15</math>, <math>y = ?</math></p>	The children will solve a second Alex Ryder grid problem independently, recording as many problems as they can algebraically. ÷	The children will be given an Alex Ryder grid problem where the answers have been worked out and all of the information is presented to them. However, there will be an error within the answers and the children will need to identify the error.	The children will create their own 4 by 4 grid puzzle – identifying the minimum information that they can provide in order for someone else to be able to solve their problem.	<p>Incorrect grid puzzle sheet</p> <p>4 by 4 blank puzzle grid sheet</p>
5 - St. M's	Using formula to calculate the volume of cuboids	Tell me what you can see - Darius Sayles Jellyfish tanks – children write down all the facts they can work out from the visuals of the jellyfish tanks	Using visuals children learn how to find volume of a cuboid by counting number of cubes and then relate this to discovering the formula for finding the volume of a cuboid $L \times W \times H$ . Work through four examples of including variation what it is and isn't.	Children work through 6 questions with variation, asking them to apply formula for finding the volume of a cuboid including some missing number questions, word problems and picture representations.	Two statement questions - declaring methods for solving and finding the volume of a cuboid. Children need to decide whether statements are true or false and explain answer.	Finding the volume of composite shapes made up of cuboids.	<p>Do it worksheet</p> <p>Secure worksheet</p> <p>Deepen it worksheet</p>
6 - HF	To be able to draw 2-D shapes using given dimensions and angles	Show a picture of a triangular ramp/jump. Alex is escaping on his bike over the ramp/jump. How would you measure the angle of the jump? Draw out that chn would need to use a protractor.	Teach/review how to use a protractor to measure and draw angles accurately. Teach chn to apply this is draw 2D shapes using given dimensions and angles.	Children to work through questions drawing 2D shapes using given dimensions and angles.	<p>Find and explain the mistake in the drawing of a shape/angle.</p> <p>Draw a given shape accurately on squared paper to work out the missing length. Measure the size of angles A and B.</p>	<p>Join dots on the grid to make a quadrilateral that has 3 acute angles.</p> 	<p>Rulers</p> <p>Protractors</p> <p>Squared paper</p>
7 - St. C's	To be able to predict missing co-ordinates using properties of shape.	The children will look at a map (with just one plane) of the area in which Alex has undertaken his SAS	<p>Children will be given lines with mid-way points.</p> <p>They will be given the</p>	Children will complete the missing co-ordinates when given the name of the shape.	Alex thinks that the trail he needs to run creates a rectangle. Is he correct?	Given information about symmetry and a starting point, children will complete triangles to meet	Co-ordinate grid worksheets

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		<p>training.</p> <p>2 checkpoints (with co-ordinates) will be provided. The children will be told that the other 3 checkpoint allows them to create a pentagon.</p> <p>What are the coordinates for the other checkpoints?</p>	<p>coordinates for the beginning and end of Alex's route and should work out the coordinates for the mid-way point.</p> <p>Go through one as a class and then complete the next one in pairs.</p>		<p>Children will complete the co-ordinates of a shape given the properties and some co-ordinates.</p>	<p>specific criteria.</p>	
8 - St. M's	Calculate and interpret the mean as an average	<p>Children break down into groups to do the Alex Rider physical challenge of how many tricep dips they can do on their chairs in a minute, They collect the data on their group or pair table, Data collected in on whole class data table. Tell me what you can see activity. Eliciting idea of what is the average result in their groups and in the whole class.(central or typical result..)</p>	<p>Introduce the idea that there are different ways of finding the average or typical result- mode, mean, median.</p> <p>Show with a simple table of 5 terms how Calculating the mean of a set of data is to share the data equally. Mathematically that is what is happening. Create formula <math>M=T/Q</math></p> <p>Work through four examples of finding the mean average using the formula</p>	<p>Children work through 6 questions with variation of context, objects, money, time asking them to apply formula for finding the mean average including, word problems and picture representations.</p>	<p>Two statement questions-declaring methods for solving and finding the mean average of a set of data. Children need to decide whether statements are true or false and explain answer.</p>	<p>Working out reverse mean problems to work out frequency or value of missing terms.</p>	<p>Group data table for tricep curls Do it worksheet Secure worksheet Deepen it worksheet</p>