

Year: 5

Term: SPRING 1

Learning  
Challenge  
question

How can I create a watermill system?

**MTP**

	Maths	English			Science			
					Working Scientifically			
		Reading	Writing	Speaking & Listening	Observing over time	Pattern seeking/ Fair testing	Classification and identification	Research
Prior Learning	<u>Year 4:</u> recall multiplication and division facts for multiplication tables up to $12 \times 12$	<u>Year 4:</u> VIPERS  <u>Year 4:</u> Skimming and scanning, discussions,	<u>Year 4:</u> Debating  <u>Year 4:</u> Wishing story -	Listen and respond, debate, viewpoint, balanced argument			Magnetic forces-attract and repel  Volcanic activity-linked to forces	

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	<p>use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers</p> <p>recognise and use factor pairs and commutativity in mental calculations</p> <p>multiply two-digit and three-digit numbers by a one-digit number using formal written layout</p> <p>solve problems involving multiplying and adding, including using the distributive</p>	<p>analysing, root words, prefixes and suffixes</p>	<p>figurative language</p> <p><b><u>Year 4:</u></b> Narrative including speech</p>				<p>Creating fair tests changing one variable only</p>	
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	<p>law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects</p> <p><b><u>Year 4:</u></b></p> <p>recognise and show, using diagrams, families of common equivalent fractions</p> <p>count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10</p>							
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	<p>solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number</p> <p>add and subtract fractions with the same denominator</p> <p>recognise and write decimal equivalents of any number of tenths or hundreds</p> <p>recognise and write decimal equivalents to <math>\frac{1}{4}</math> , <math>\frac{1}{2}</math> , <math>\frac{3}{4}</math></p>							
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find the effect of  
dividing a one- or  
two-digit number by  
10 and 100,  
identifying the value  
of the digits in the  
answer as ones,  
tenths and  
hundredths

round decimals with 1  
decimal place to the  
nearest whole  
number

compare numbers  
with the same  
number of decimal  
places up to 2  
decimal places

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	solve simple measure and money problems involving fractions and decimals to 2 decimal places							
<b>Pre &amp; post assessments</b>	Pre-Unit Multiplication and Division :Week 1 Fractions : Week 4		<b>Cold write -</b> Newspaper report after watching The Guardian 3 little pigs video  <b>Cold write -</b> write own finding story, using a picture stimulus  <b>Hot write -</b> newspaper report - choose				Week 1- What do we already know about forces?  Concept cartoon	

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			a different fairytale to report on  <b>Hot write</b> - write a finding story based on 'kidnapped'					
	Post Unit  Multiplication and Division : Week 1  Fractions: Week 7						Week 7- What do we understand about forces? Linked to the units work and trip to MOSI	
<b>Unit assessment</b>	White Rose end of unit assessments.	Unseen comprehension or Qs every Friday, using a	Short burst writing  English skills	Class debate - the 3 little pigs				

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		similar text from the week.						
1	<p>Pre-unit assessment: Multiplication &amp; Division.</p> <p>LQ: How can I multiply 2-digits by 1-digit?</p> <p>LQ: How can I multiply 3-digits by 1-digit?</p>	<p><b>The Rider (Poem)</b></p> <p>LQ: How do I verbally answer vocabulary, inference and explanation questions?</p> <p>LQ: How do I answer vocabulary, inference and explanation questions?</p> <p><b>Book Talk</b></p>	<p>Cold write - What is a finding story?</p> <p>What actions can we create for 'Kidnapped'?</p> <p>How do the main characters in the story feel?</p> <p>- Drama lesson</p> <p>- hot seating</p> <p>How do the main characters in the story feel?</p> <p>- feelings graph</p>				What do I know about forces?	



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2	<p>LQ: How can I multiply 4-digits by 1-digit?</p> <p>LQ: How can I use the area model to multiply 2-digits by 2-digits?</p> <p>LQ: How can I multiply 2-digits by 2-digits?</p> <p>LQ: How can I multiply 3-digits by 2-digits?</p>	<p><b>Stanley's Diary from Holes (Diary)</b></p> <p>LQ: How do I explore and understand new vocabulary?</p> <p>LQ: How do I verbally answer retrieval, prediction and sequencing questions?</p> <p>LQ: How do I answer retrieval, prediction and sequencing questions?</p>	<p>Short burst activity - diary entry as either Cindy or Ron</p> <p>What features make up a good finding tale?</p> <p>How do inverted commas show direct speech?</p> <p>How can we box up Kidnapped?</p>			<p>What is gravity?</p> <p>Explore what gravity is through computer simulation and practical investigations</p>		
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		<b>Unseen comprehension</b>						
		<b>Book Talk</b>						
<b>3</b>	<p>LQ: How can I multiply 4-digits by 2-digits?</p> <p>LQ: How can I divide 2-digits by 1-digit?</p> <p>LQ: How can I divide 3-digits by 1-digit?</p> <p>LQ: How can I divide 4-digits by 1-digit?</p>	<p><b>Father (Fiction Extract)</b></p> <p>LQ: How do I explore and understand new vocabulary?</p> <p>LQ: How do I verbally answer inference, explanation and prediction questions?</p> <p>LQ: How do I answer</p>	<p>Planning ideas - flashbacks, possible local hiding places, setting descriptions, character ideas - lots of shared ideas and collaborative learning</p> <p>How will a storyboard help me to plan my ideas?</p>				<p>What is friction?</p> <p>Explore different types of friction and what these are?</p>	

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		inference, explanation and prediction questions?  <b>Unseen comprehension</b>  <b>Book Talk</b>	Short burst writing - How can we hook the reader in with an exciting opening paragraph?  Hot Write & Editing lessons					
<b>4</b>	LQ: How can I divide with remainders?  Post-unit assessment: Multiplication & Division.  Pre-unit assessment: Fractions.	<b>The Three Little Pigs (Newspaper)</b>  LQ: How do I explore and understand new vocabulary?  LQ: How do I verbally answer	Cold write - Use Guardian video as hook. Children write their own newspaper report based on this. <a href="https://www.yout">https://www.yout</a>			How do I investigate friction?		

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	LQ: What is a fraction?	retrieval, explanation and sequencing questions?  LQ: How do I answer retrieval, explanation and sequencing questions?  <b>Unseen comprehension</b>  <b>Book Talk</b>	<a href="https://www.youtube.com/watch?v=vDGrfhJH1P4">ube.com/watch?v=vDGrfhJH1P4</a>  What features make up a newspaper report? (Look at WAGOLL alongside lots of real examples)  Drama - rewatch Guardian video - class debate set up like a court room (over 2 lessons)					
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5	<p>LQ: What are equivalent fractions?</p> <p>LQ: How do I convert improper fractions to mixed numbers?</p> <p>LQ: How do I convert mixed numbers to improper fractions?</p> <p>LQ: How do I complete number sequences involving fractions?</p>	<p><b>The captain's daughter (Poem)</b></p> <p>LQ: How do I explore and understand new vocabulary?</p> <p>LQ: How do I verbally answer vocabulary, inference and explanation questions?</p> <p>LQ: How do I answer vocabulary, inference and explanation questions?</p>	<p>Short burst writing - creating exciting headlines and an opening with bias</p> <p>What are active and passive verbs?</p> <p>Why are witnesses an important part of a newspaper report?</p> <p>Which fairytale story or character could we write a</p>			<p>Observe what happens to tin foil boats of different shapes.</p>	<p>What is water resistance?</p>	
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		<b>Unseen comprehension</b>	newspaper report about?					
		<b>Book Talk</b>						
<b>6</b>	<p>LQ: How do I compare fractions less than 1?</p> <p>LQ: How do I order fractions less than 1?</p> <p>LQ: How do I compare fractions greater than 1?</p> <p>LQ: How do I order fractions greater than 1?</p>	<p><b>Mikael Saves The Day (Newspaper)</b></p> <p>LQ: How do I explore and understand new vocabulary?</p> <p>LQ: How do I verbally answer retrieval, prediction and explanation questions?</p>	<p>What will my plan look like for my newspaper report?</p> <p>Hot write x 3 and editing sessions</p>			Create their own parachute investigation changing only one variable so the test is reliable.	What is air resistance?	

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		LQ: How do I answer retrieval, prediction and explanation questions?						
7	<p>LQ: How do I add and subtract fractions with the same denominator?</p> <p>LQ: How do I add fractions with different denominators??</p> <p>LQ: How do I add 3 or more fractions?</p> <p>Post Unit Assessment</p>	<p><b>Banksy 'A Work of Art' (Fiction)</b></p> <p>Lesson 1 - introduce text and vocabulary</p> <p>Lesson 2 - VIP</p> <p>Lesson 3 - ERS</p> <p><b>Unseen comprehension</b></p> <p><b>Book Talk</b></p>	<p>Publish writing - Send to Didsbury post?</p> <p>Poetry - creative writing opportunity</p>			Mad Science Week		

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End of unit assessment		<p>The children will read texts confidently and answer VIPERS questions independently.</p> <p>They will justify their ideas by giving details from the text and personal experiences.</p>						What do I understand about forces?
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	Geography	History	DT	Art	Computing	PSHE
Prior Learning			Made box structures in Year 3- Cutting/Joining/ Fixing  Paper engineering in Year 2- Cutting/Joining/ Levers		We Are Architects  We are Toy Designers (Year 4)	Living in the wider world  Year 4: Rights of the child; Looking after Money; Sustainability.
Pre & post assessments			Label a watermill system and explain how it works.		What is computer aided design?	Why do we have rules? - baseline assessment, what can pupils

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						remember from LKS2 learning?  Recap: What is the law?  What rules and laws exist to keep us safe? - what can pupils remember?
			Label a watermill system and explain how it works. Compare with pre learning assessment			
Unit assessment			Spoken evaluation on seesaw of their finished watermill systems			Living in the wider world

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1			Pre-unit assessment- Label a watermill system and explain how it works.  Hook - junk model		What is an architect?	LQ: How would you organise society if you were stranded on a desert island?
2		Why and when were watermills used and how effective were they?	How does a water wheel work? How does a watermill system work?		How can we use Tinkercad for Computer aided design?	LQ: Is your society a democracy or a dictatorship? What do these words mean?
3			How do I create a functional water wheel?		How can I explore the features of Tinkercad?	LQ: How is a law made?

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4	Where were watermills used?		How do I create a functional watermill system prototype?		Can I use tinkercad to design a watermill?	*World Religion Day LQ: How can I represent World Religion Day?
5	History and development of hydropower		How do I design a watermill taking account of how the gears work?		How can I improve my watermill design using software features of Tinker cad?	LQ: How could I change rules and laws? LQ: How do laws affect our lives everyday?
6	Watermill Making Week		How can I make a watermill that incorporates gears and works well?		Can I use Tinkercad to design a gear mechanism?	Children's Mental Health Week lesson

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7	Mad Science Week- water		How do I evaluate my original ideas against my finished design?  End of unit assessment- label a watermill system and explain how it works.		How can I evaluate my Tinkercad mill design?	LQ: How can you use enterprise to promote sustainability or Fairtrade?
End of Unit assessment	Children will have an understanding where watermills are/were in the UK and how this links to water sources	Children will have an understanding of how watermills have been used and developed over time	How do I evaluate my original ideas against my finished design?  End of unit assessment- label a watermill system and explain how it works.		How well can children:understand the work of architects, designers and engineers working in 3d Develop familiarity with a simple CAD (computer aided design)tool. Develop spatial awareness by exploring and experimenting with a 3D virtual environment and develop greater aesthetic awareness?	Can children explain how laws are made and enforced, and how they help society today?  Can children explain what a democracy and dictatorship is?

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						Can children explain what sustainability means and what fairtrade is?
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	<b>Music</b>	<b>RE</b>	<b>PE</b>		<b>Languages</b>
			Games	Dance / Gymnastics	
<b>Prior Learning</b>	Year 4 - Composition Notation	Year 4 - Why is Jesus Inspiring to some people?	Year 4 - Basketball	AUT 1 Y5 - Balances, push/pull partner work and creating sequences. Use of	Year 4 and 5 (AUT) - Colours and body parts in Spanish

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				equipment to apply new skills.	
<b>Pre &amp; post assessments</b>	Discussion - what do we already know?	Week 1:What do you already know about Jesus?	Children to play a game of Basketball and see how many rules/ tactics they can remember from previous year.	Pre-unit - discussion around mirroring and contrasting. Example of moves they already know to show this	Spanish colours Items of clothing
	End of unit performance	Week 7: How did Jesus teach Christians to love and forgive?	Week 6 - Children will play in an intra school Basketball competition.	Post-unit - performance of routines to showcase what they now know	Fashion show with voice over in Spanish
<b>Unit assessment</b>	Performance		<ul style="list-style-type: none"> <li>. Warm up</li> <li>. Reflect and recognise success</li> <li>. Competition</li> <li>. Understanding the effects of exercise on the body</li> </ul>	<u>Key skills to assess throughout:</u> Mirroring and contrasting with a partner	Primary Languages Network - Puzzle It Out Assessment

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				Synchronisation with others Moving safely around apparatus Giving effective feedback Acting on feedback given	
<b>1</b>	Lesson 1: "Shosholoza" a capella  Sing a traditional African song unaccompanied	No Lesson ( Training Day).	The children are to familiarise themselves with the Basketball dribbling at speeds and keeping the ball under control. LQ: How do you dribble a Basketball and keep it under control?	(INSET DAY)	What are the names of items of clothes?
<b>2</b>	Lesson 2: Playing "Shosholoza"  Use tuned percussion to play a chord progression	LQ: What did Jesus teach about forgiveness?	Children are going to further explore the triple threat position. Performing this skill every time they receive the ball and making the right decision (pass, dribble or	LQ: How do I hold balances on different numbers of points of contact?	How will I talk about what I am wearing?



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			shoot). LQ: When you receive the ball what are the three things you can do? When would you do these things?		
<b>3</b>	Lesson 3: Playing "Shosholoza"  Use tuned percussion to play a chord progression - consolidate	LQ: Why can forgiveness be difficult?	The children are to develop a further understanding on how to send and receive a ball, whilst moving towards a Basket. Progression, introduce defenders for the group to get past (3v1). LQ: What should the ball carrier have at all times during a game?	LQ: How do I contrast my partner's moves so that we work at different levels and in different pathways?	How will I describe the colours of what I'm wearing?
<b>4</b>	Lesson 4: The "Shosholoza" show  Use vocals or tuned percussion to perform a piece of music as	LQ: What did Jesus teach about justice and fairness?	Children are to further explore keeping possession of the Basketball playing games of 3v1 and 2v1. Children	LQ: How do I perform a sequence, mirroring a partner's symmetrical and asymmetrical shapes?	How will I describe what I'm wearing using adjectives?

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	an ensemble		are to create spaces in order to receive passes. LQ: What shapes do we make when keeping possession of the ball?		
<b>5</b>	Lesson 5: Drumming away to Africa  Play call and response rhythms using percussion instruments	LQ: What did Jesus teach about generosity and greed?	Children are going to develop their shooting skills increasing intensity of opponent pressure throughout. Also, the children will change the angle of their shot to make it more realistic. LQ: When shooting from an angle what can you aim for?	LQ: How do I synchronise moves with a partner?  *What is the difference between matching and contrasting?  *Focusing on movement around the apparatus today	How will I describe a fancy dress outfit?
<b>6</b>	Lesson 6: Eight-beat breaks  Create an eight beat break to play within a	LQ: How does the WWJD movement help	The children will move into 7v7 games and further develop rules from an attacking/ defensive	LQ: How do I work with a group to demonstrate fluent routines involving mirroring and contrasts?	Plan and prepare for fashion show

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	performance	Christians make moral decisions?	perspective. LQ: Name 3 rules whilst attacking and defending?		
<b>7</b>	Revisit any aspects of the lessons above that need consolidation. Make some videos of the children demonstrating the skills, to put on tapestry or seesaw	Assessment activity: How did Jesus teach Christians to love and forgive?		LQ: How do I perform elements of unison and canon in a group routine?  LQ: How do I give effective feedback?	Fashion show - filming and voice over - using iMovies
<b>End of Unit Assessment</b>	Children can:  Sing using the correct pronunciation with increasing confidence  Play a chord with two notes, remaining in time  Maintain their part in a performance with	Can children explain how Christians follow the teachings of Jesus?  What key teachings do they need to follow?	All children should have a good understanding of how to play the game and be able to demonstrate. In addition, they should be able to list enhanced rules when attacking and defending.	Can children mirror and contrast moves with a partner? Can they synchronise moves with others? Can they move safely around apparatus? Can they give effective	Fashion show project

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accuracy

Play the more  
complicated rhythms in  
time and with rests

Create an eight beat  
break and play this in  
the correct place

feedback and act on  
feedback given?