Whale Hill Primary School 2020-2021 Subject Overview

Design and Technology

<table>
<tr><th>Year Group</th><th>Autumn Term</th><th>Spring Term</th><th>Summer Term</th></tr>
<tr><td>Nursery</td><td colspan="3"><u>30 hours throughout the year</u></td></tr>
<tr><td></td><td colspan="3"><u>Structures (Ongoing throughout the year)</u>
Begin to build free standing structures with a range of materials.
Begin to join materials using PVA glue and glue sticks.</td></tr>
<tr><td></td><td colspan="3"><u>Fabric</u>
<u>Weaving</u>
Children begin by developing the pushing/poking motion needed for sewing. Begin with rigid 'threads' such as pipe cleaners and straws. Progress to encouraging the children to thread the pipe cleaner back out to develop the in/out motion needed for running stitch.
 
Children begin to weave using more flexible materials.
  </td></tr>
<tr><td></td><td colspan="3"><u>Cooking and Nutrition-Exploring Food</u>
Children begin to explore new foods using touch and taste.
Children can state preferences to food.
Children will begin to spread using soft spreads and solid bases.</td></tr>
<tr><td></td><td><u>Greetings cards</u>
<u>Christmas-Structures</u>
Join materials to create a card.
e.g. join lolly sticks together using PVA to create hanging Christmas trees.
  </td><td><u>Greetings cards</u>
<u>Easter-Structures</u>
Join materials to create a card. E.g. Join egg boxes to card using PVA to create daffodils.
 
<u>Mother's Day-Structures</u>
Join materials to create a card. E.g. Join cupcake cases to card using PVA to create flowers.
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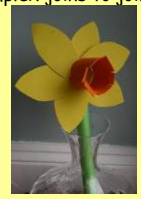
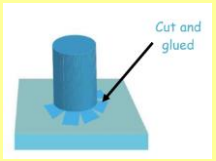
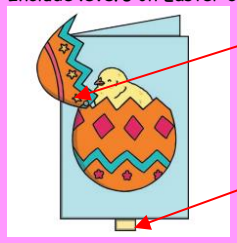
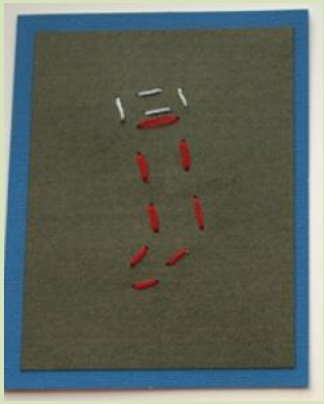
Reception	**30 hours throughout the year**		
	Mechanisms-Moving characters With support begin to incorporate moving parts into models. For example, use split pins to make body parts move. 		
	Fabric-Weaving Children learn how to weave with a range of different fabrics. Children are able to thread and use large needles independently when weaving.   Children could use this technique to create hanging decorations. 		
	Cooking and Nutrition-Exploring Food Begin to develop a food vocabulary using taste, smell, texture and feel. They start to think about the need for a variety of foods in a diet. Children will learn to spread using a variety of textures.		
	Structures Begin to build free standing structures with a range of materials. Begin to join materials using PVA glue, glue sticks, sellotape and masking tape.		
	Christmas card-Structures Join a range of materials (pomp oms, paper, card, sequins etc)using PVA and glue sticks. 	**Easter card-Mechanisms** Include split pin mechanisms within the design of the card. e.g. Use split pins to create moving wings or hatching eggs.   **Mother's day or Valentine's Day card** 	

<table>
<tr><td rowspan="4">Year 1</td><td><u>10 hours</u></td><td><u>10 hours</u></td><td><u>10 hours</u></td></tr>
<tr><td><u>Fabric</u>
Running Stich Placemats
(C.c. link-History-Victorians-sewing samplers)
• Children will learn the names of different fabrics and learn how to choose and manipulate fabrics to create different effects.
• Running stitch will be introduced.
• Children will use running stitch to sew a place mat focusing on colour , fabric type and stitch length</td><td><u>Structures</u>
Model Trains
(C.C. Link-History-George Stephenson)
Begin to build structures, joining components together to create a finished product. Children gain a basic understanding about how structures can be made stronger, stiffer and more stable.
  </td><td><u>Cooking and Nutrition</u>
Making salads
(C.C. Link-Science)
Children will learn about peeling, zesting, cutting safely and applying these skills when preparing healthy dishes. Children will learn key information about where their food comes from.
Resources available at Twinkl: Sensational Salads</td></tr>
<tr><td colspan="3"><u>In addition to 10 hours of DT-Use this time to introduce skills needed for mechanisms. Consolidate skills used in 'structures'.</u></td></tr>
<tr><td><u>Christmas cards-Mechanisms</u>
Include flaps on Christmas cards.
Modify the design below for use with snowmen etc.
  </td><td><u>Easter card-Mechanisms</u>
Include flaps on Easter cards.
 
<u>Mother's Day or Valentine's Day card-Structures</u>
Use more complex joins to join materials.
 
  </td><td></td></tr>
<tr><td rowspan="2">Year 2</td><td><u>10 hours</u></td><td><u>10 hours</u></td><td><u>10 hours</u></td></tr>
<tr><td><u>Cooking and Nutrition</u>
Making dips
(C.C. Link-Science)
Develop understanding of good food hygiene rules and using kitchen equipment to prepare food safely.</td><td><u>Mechanisms</u>
Pop up Pictures-Traditional Tales
(C.C. Link-English-Fairy Tales)
Develop children's understanding of mechanisms including levers and sliders.</td><td><u>Fabric</u>
Number Bunting
(C.C link-Computing)
Children will use a graphics program to create a design and template for their</td></tr>
</table>

	Develops children's understanding of the Eatwell plate. Resources available at Twinkl: Dips and Dippers	 Resources available at Twinkl: Moving Pictures	number flag. Working with felt, children will use a simple running stitch to join the front and back of their flag together. Using techniques such as sewing, stapling and gluing, children will decorate their felt flag using numbers on one side and the corresponding quantity on the other (This could be done by gluing on buttons or pomponms).  Resources available at Twinkl: Fabric Bunting
	<u>In addition to 10 hours of DT-Use this time to introduce/consolidate skills needed for mechanisms.</u>		
	<u>Christmas cards-Mechanisms</u> Include **levers** on Christmas card designs.  https://www.youtube.com/watch?v=4NiU6l1u8dc https://www.youtube.com/watch?v=qyKUw2FJJr4	**<u>Easter cards-Mechanisms</u>** Include **levers** on Easter card designs.  Split pin mechanism **<u>not</u>** attached to pull lever. Pull lever moves chick up and down. **<u>Mother's Day or Valentine's day card-Mechanisms</u>** Include **sliders** on mother's day cards. 	
Year 3	**<u>10 hours</u>**	**<u>10 hours</u>**	**<u>10 hours</u>**
	<u>Fabric</u> **Christmas Decorations** Children are able to join fabrics using a range of stitches with increasing independence. They learn how to add further decoration	**<u>Structures</u>** **Gas mask boxes** (C.C. Link-History-WW2-The Home Front) Shell Structures-Develop children's understanding of shell structures and how they can be strengthened and stiffened.	**<u>Cooking and Nutrition</u>** **Home grown cooking-Super Soup** (C.c link-History-What was life like on the home front?)

	to their work using buttons. Children will use an overcast stitch to make their own 3D Christmas decorations. 		Children learn where and how a variety of ingredients are grown. Children learn how to plant seeds and care for their plants. They will learn how to cook with the ingredients they are growing; following recipes and using different kitchen equipment. Resources available at Twinkl: Edible Garden
	<u>In addition to 10 hours of DT-Use this time to introduce skills needed for mechanisms and consolidate fabric skills.</u>		
	<u>Christmas cards-Fabric</u> Consolidate running stitch technique to create hand sewn greetings cards.  https://www.triumphantlearning.com/hand-stitched-cards/	**<u>Easter card-Mechanisms</u>** Use more complex pull levers on some Easter cards. (Beginning to introduce the basic concept of a linkage mechanism)  https://www.youtube.com/watch?v=dqu3D3ftbFM	
Year 4	**<u>10 hours</u>**	**<u>10 hours</u>**	**<u>10 hours</u>**

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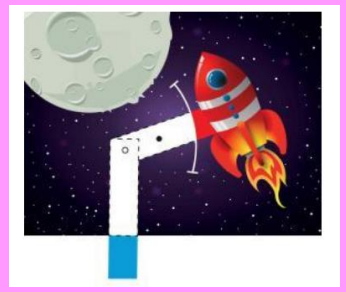
<tr>
<td rowspan="3"></td>
<td><u>Mechanisms</u>
Levers and linkages

Develop children's understanding of mechanical systems to make different types of lever and linkage mechanisms to create movement.
  </td>
<td><u>Electrical Systems</u>
Torches
(C.c. Link-History-The Blitz)
(C.C. Link-Science)
Children enhance their knowledge and understanding of electrical systems. Children develop understanding about series and parallel circuits and different types of switches. Children will make a battery-operated light which will be controlled by a homemade switch. Children will decide upon the design criteria for the light by considering who will use it, where it will be used and what for.
Resources available at Twinkl: Battery Operated Torches

<u>Structures</u>
Shell Structures-Further develop understanding of shell structures to create a casing for their torch</td>
<td>Cooking and Nutrition
Seasonal Cooking
(C.c link-Geography-Climate)

Children learn where, when and how a variety of ingredients are grown, reared, caught and processed Understand that food is grown, reared and caught in the UK, Europe and the wider world.
Children will sample some seasonal food before designing their own balanced seasonal meal. They will learn how to cook with the seasonal ingredients following their own recipes and using a wide range of preparation and cooking techniques.
Resources available at Twinkl: Super Seasonal Cooking</td>
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<tr>
<td colspan="3"><u>In addition to 10 hours of DT-Use this time to consolidate skills learned in 'mechanisms'.</u></td>
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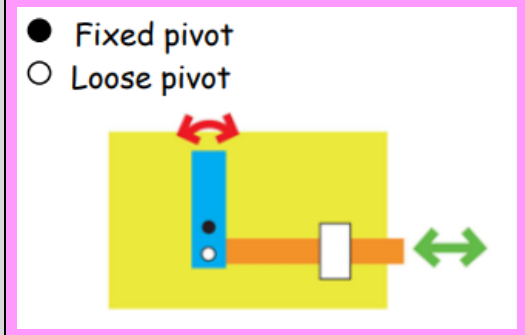
<tr>
<td colspan="2"><u>Mechanisms-Christmas Cards, Easter card, Mother's Day/Valentine's Day cards</u>
Use linkage mechanisms on all cards to create a moving part.
 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<td></td>
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<tr>
<td>Year 5</td>
<td><u>10 hours</u></td>
<td><u>10 hours</u></td>
<td><u>10 hours</u></td>
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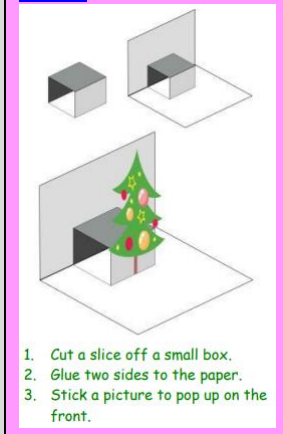
<tr><td></td><td><u>Fabric</u>
Phone Cases
(C.C. link-ICT)
Children will research different types of fabric phone cases. Children will write their own design criteria for a fabric phone case. They will design products with the user in mind thinking about aesthetics and functionality. Children will learn how to make a paper template and how to sew a backstitch and blanket stitch.
Children will decorate their design using applique, buttons, sequins and beads.
Resources available at Twinkl: Felt Phone Cases</td><td><u>Structures</u>
Viking Houses
(C.c. Link-History-Vikings)
Frame Structures (Using straws)-Build innovative, functional, appealing, structures that are fit for purpose. Evidence how products can be made stronger and more stable.
Use finishing techniques to strengthen and improve the appearance of their models.</td><td><u>Mechanisms</u>
Mechanical Toys
Further develop children's understanding of mechanical systems. Children will learn to control movement with a cam mechanism. (Use CAD 2d design as the moving part)

<u>Computing</u>
CAD (Computer Aided Design)
Work with Outwood Academy Normanby to use CAD to create a 2d 'toy'.</td></tr>
<tr><td></td><td colspan="3"><u>In addition to 10 hours of DT-Use this time to consolidate skills learned in 'fabric' and develop new skills for 'mechanisms'.</u></td></tr>
<tr><td></td><td><u>Christmas Cards-Mechanisms</u>
Include pop up mechanisms on some greetings cards.
http://pblproject.com/page.aspx?pageid=Holiday-STEM
 

  </td><td><u>Easter, Mother's Day/Valentine's Day cards-Fabric</u>
Enhance technique used in Year 3 to create hand sewn greetings cards using <u>back stitch</u>.
https://www.triumphantlearning.com/hand-stitched-cards/
 
 
  </td><td></td></tr>
<tr><td></td><td><u>10 hours</u></td><td><u>10 hours</u></td><td><u>10 hours</u></td></tr>
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Year 6	**Structures** **Mayan Temple** (C.C. Link-History-Who were The Mayan's?) *Frame structures (Using wood)*-Develop children's understanding of more complex frame structures and how they can be strengthened and reinforced. Demonstrate confidently how to reinforce and strengthen a 3D framework.	**Computing** **Programming Robots** (C.c. link-ICT) Children program a robot. They will research how robots move along different types of materials and use this knowledge to create obstacles squares. Children will use appropriate joining methods to make a mat for the robot. The mat may contain obstacles for the robot to navigate. Resources available at Twinkl: Programming Adventures	**Cooking and Nutrition** **Master Chef-Food from Around the world** (C.c. link-Geography-Is our planet sustainable?) Children learn where in the world a variety of ingredients flourish. They will then build on their understanding of the Eatwell plate, placing different ingredients into the correct food groups. This will develop a deeper understanding that although food can be extremely varied, it still comes under the same basic food groups. Children will then have the chance to learn some basic and advanced cooking techniques, they will apply these skills when making some traditional dishes from different countries. Resources available at Twinkl: Global Food
	In addition to 10 hours of DT-Use this time to consolidate skills learned in 'fabric' throughout school and to introduce new skills.		
	Christmas Card, Easter card, Mother's Day/Valentine's Day-Fabric Use **blanket stitch** to applique designs on greetings cards. Use tie dye techniques to create own fabric designs to use blanket stitch to applique onto.