

# Edward Peake C of E VC Middle School



## Medium Term Plan

<b>Subject: Design Technology</b>	<b>Unit: Twisty Fish</b>	<b>Term/Duration: Rotation 4 weeks</b>	<b>Year Group: 7</b>
<b>Prior Learning:</b> <ul style="list-style-type: none"> <li>• · The difference between a thermoplastic and thermosetting plastic.</li> <li>• · Examples of plastics and their uses.</li> <li>• · How to work safely in the workshop.</li> <li>• · How to use a coping saw to cut curved and straight lines.</li> <li>• · How to use files and glass paper to smooth the edges of material</li> <li>• · How to evaluate design ideas and a finished design.</li> </ul>		<b>Key Vocabulary:</b> <ul style="list-style-type: none"> <li>• Line bending</li> <li>• Acrylic</li> <li>• Thermolastic</li> <li>• Thermosetting plastic</li> <li>• Template</li> <li>• Molecole</li> <li>• Polymer</li> <li>• Rigid</li> <li>• Degradng</li> <li>• Evaluation</li> </ul>	
<b>By the end of this unit...</b>			
<p><b><i>All pupils will be able to:</i></b></p> <p>Know the two different categories of plastic.          Mark out the shape of the twisty fish.          Know which tools and equipment are used to make the twisty fish.          Follow the stages to make the twisty fish.          Carry out a simple evaluation of your twisty fish.          Suggest a modification that could be made to the final product.</p>			
<p><b><i>Most children will have made more progress; they will be able to:</i></b></p> <p>Know the difference between thermoplastics and thermosetting plastics.          Know what the process of line bending is.          Understand what a template is used for and be able to produce a template for the twisty fish.</p>			



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Explain why the tools and equipment used to make the twisty fish are suitable.  
 Use the tools and equipment correctly and safely to make the twisty fish.  
 Carry out an evaluation of the finished twisty fish with some explanations and some subject specific terms, taking some account of other people's opinions to suggest modifications that could be made.

***Some children will have progressed further; they will be able to:***

Give examples of different types of plastic and their uses.  
 Explain the process of line bending.  
 Explain the advantages of using a template.  
 Explain what went well and how to improve for each stage of making the twisty fish.  
 Use the tools and equipment accurately to make the twisty fish.  
 Carry out a detailed evaluation using subject specific terms of the completed twisty fish that takes account of other people's opinions.  
 Explain in detail modifications that could be made to the twisty fish.

◆ **Notes:**

	<b>Learning Objectives</b>	<b>Content</b>	<b>Assessment</b>	<b>Resources /Health and Safety</b>	<b>ICT Opportunities</b>
1	<b>To develop understanding of plastics and processes.</b>	<p>Starter - Put the facts under the correct headings. Which are about thermoplastics and which are about thermosetting plastics? Use random questioning for students to feedback the answers.</p> <p>Recap the two categories of plastic, the differences between them, examples and uses of each and which</p>	<p>Highlight learning objective, must, should or could in the booklet.                      Questions on plastics</p>	<p>Year 7 Twisty fish powerpoint                      Printed work booklet                      Example twisty fish                      Card</p>	

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	<p>plastic will be used for the twisty fish. Look at how the structures of the two categories of plastic differ and how this affects their properties.</p> <p>Students answer questions on plastics in their work booklets.</p> <p>Monitor students progress and give assistance as required.</p> <p>Explain and demonstrate how to use the line bender to make twists and bends in acrylic focusing on the key stages of the process and the safety of using the machine.</p> <p>Students fill in the step by step process of how to use the line bender in their work booklets focusing on using subject specific terminology.</p> <p>Monitor student progress and give assistance as required.</p> <p>Discuss why a template is used in the manufacture of a product and the advantages of using one. Model drawing the outline of the twisty fish and evaluating what is good about it and what could be improved.</p> <p>Demonstrate making a template for the twisty fish, focus on how the template can be made symmetrical.</p> <p>Students to complete the questions on templates in their work booklets. Then draw the outline of the twisty fish and evaluate what went well and what could be improved.</p> <p>Monitor student progress and give individual and/or class assistance as required.</p> <p>As students finish hand out card for them to make the template.</p>	<p>Questions on templates</p> <p>Template of fish</p>	<p>Scissors</p> <p>Glue</p> <p>Acrylic</p> <p>Sharpies</p> <p>Pillar drill</p> <p>4mm drill bit</p> <p>Coping saw</p> <p>Bench vice</p> <p>H&amp;S - see Room 5 risk assessment</p>	
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		<p>Once the template is made students draw around the template onto a piece of acrylic.                  Monitor student progress and assist as required.                  Demonstrate how to cut out the shape of the twisty fish. Focus on the positioning of the acrylic in the vice to prevent the work from snapping. Demonstrate how to mark out the position of the eye and how to drill the hole. Focus on the safety rules of using the pillar drill, emphasise the importance of wearing goggles and not distracting others when they are using the machine.                  Students take turns to drill the hole for the eye of the fish and cut around the outline of the fish shape.</p> <p>Use random questioning to recap knowledge of materials and processes.</p>			
2	<p><b>To be able to use tools and equipment to make the twisty fish.</b></p>	<p>Starter - What can you remember about thermoplastics and thermosetting plastics. Think, pair, share.</p> <p>Recap the stages of marking out the twisty fish, using the pillar drill to make the eye and cutting around the outline of the shape.                  Demonstrate how to file the edges to remove the indents and how to use wet and dry paper to make the edges smooth.                  Students work through the stages of making the twisty fish.                  Monitor student progress and give assistance as required.                  Demonstrate how to use the line bender, recapping on the key stages and how to form the twists and bends.</p>	<p>Highlight learning objective, must, should or could in the booklet.                  Completed twisty fish                  Record of production</p>	<p>Year 7 twisty fish powerpoint                  Printed work booklet                  Example twisty fish                  Line bender                  Acrylic                  Coping saw                  Flat file                  Half round file                  Wet and dry paper</p>	

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		<p>Emphasise the safety of using the machine focusing on the heated sections, use of gloves and only two people using the machine at one time. As students finish shaping their fish they bend and twist them on the line bender.</p> <p>Recap the key stages of making the twisty fish, the tools and equipment used and what was done at each stage. Discuss how you can evaluate how each stage of the making went.</p> <p>Students fill in the record of production in their work booklets.</p> <p>Monitor student progress and assist as required.</p> <p>Using random questioning recap information learnt about materials and processes and why they are suitable for the twisty fish.</p>		<p>H&amp;S - see Room 5 risk assessment</p> <p>Focus on use of coping saws, files and the line bender</p>	
3	<p><b>To be able to use tools and equipment to make the twisty fish.</b></p> <p><b>To be able to evaluate the finished twisty fish.</b></p>	<p>Starter - Using random questioning recap the stages of making the twisty fish.</p> <p>Students continue to work on their record of production and line bending their twisty fish.</p> <p>Monitor students progress and assist as required.</p> <p>Discuss why it is important to carry out an evaluation of a completed product. Explain why it is necessary to evaluate how the twisty fish has changed from the original drawing.</p> <p>Students answer the question about how their twisty fish has changed in their work booklets.</p> <p>Discuss why finding out the opinions of other people is useful when evaluating a final product. Explain and</p>	<p>Highlight learning objectives, must, should or could in the booklet.</p> <p>Completed twisty fish</p> <p>Evaluation</p>	<p>Year 7 twisty fish powerpoint</p> <p>Printed work booklet</p> <p>Line bender</p> <p>H&amp;S - see Room 5 risk assessment</p> <p>Focus on use of line bender</p>	

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		<p>model the types of responses required when giving opinions of other people's work.</p> <p>Students collect three other people's opinions of their work and give their opinion to at least two other people. Students record the responses in their work booklets.</p> <p>Discuss how what has been found out by collecting other people's opinions can be used to develop the idea further.</p> <p>In their work booklets students draw and annotate the changes they would make if they were to do their design again.</p> <p>Recap on the materials and processes used to make the twisty fish.</p> <p>Students answer the questions on materials and processes in their work booklets.</p> <p>Using random questioning students feedback one thing they have learnt while making the twisty fish.</p>			
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