



Dorney School Design and Technology Curriculum Map

| YEAR GROUP | AUTUMN 1 | AUTUMN 2 | SPRING 1 | SPRING 2 | SUMMER 1 | SUMMER 2 |
|------------------|--|----------|---|----------|---|----------|
| Reception | <p>To explore different techniques for joining materials (Glue Stick)</p> <p>To know how to work safely and hygienically</p> <p>To use non-statutory measures (spoons, cups)</p> <p>To know how to work safely and hygienically</p> <p>To use non-statutory measures (spoons, cups)</p> <p>To use some cooking techniques</p> <p>Fruit Kebab</p> | | <p>To know how to work safely and hygienically</p> <p>To use non-statutory measures (spoons, cups)</p> <p>To use some cooking techniques (Gingerbread man)</p> <p>To use natural objects to make a piece of art</p> <p>Artist - Andy Goldsworthy</p> <p>To share creations and talk about the process</p> <p>To explore different techniques for joining materials (Glue Stick, PVA, Masking Tape, Tape, Split Pins)</p> | | <p>To know some similarities and differences between materials</p> <p>To share creations, talk about process and evaluate their work</p> <p>To adapt work where necessary</p> | |
| Year 1 | <p>ROAR Competition</p> | | <p>Moving pictures (mechanisms)</p> <p>Use tools safely to make a moving picture that incorporates a simple lever or slider. Use given techniques to practise their making skills and as a starting point for developing their own ideas; have been able to talk about how simple moving products work.</p> | | <p>Eat more fruit and vegetables (food)</p> <p>Gain an understanding of the properties, including taste, texture and appearance, of a range of fruit and vegetables and then prepared and combined ingredients into a specific product. Use basic tools safely. Recognise that it is important to eat more fruit and vegetables.</p> | |
| Year 2 | | | <p>Vehicles (mechanisms)</p> <p>Gain an understanding of how simple mechanisms relate to moving vehicles work. Make a wheeled vehicle which moves and which generally match</p> | | <p>Puppets (textiles)</p> <p>Create a puppet that works (i.e. is the right size and reflects the character) using a given technique. Stitched two pieces of fabric together and</p> | |



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| | | | their design intention. | | added features using appropriate materials and techniques. | |
| Year 3 | <p style="text-align: center;">ROAR Competition</p> <p style="text-align: center;">↓</p> | | <p style="text-align: center;">Sandwiches (food)</p> <p>Use information from an evaluation activity to select and prepare a range of sandwich ingredients for a purpose, combining the ingredients to create an appealing sandwich. Have an understanding of the 'balanced plate' model for healthy eating and will have applied this to ideas about how the sandwich contributes to a healthy diet.</p> | | <p style="text-align: center;">Moving monsters (control: mechanisms)</p> <p>Develop an understanding of simple pneumatic systems. Work as part of a team to design and make a model monster with at least one moving part controlled by a pneumatic system.</p> | |
| Year 4 | | | <p style="text-align: center;">Money: Containers (structures: textiles)</p> <p>Have a sufficient understanding and skills in working with textiles to design and make a money container that meets their design criteria. Apply decorative techniques appropriately.</p> | | <p style="text-align: center;">Storybooks (control: mechanisms)</p> <p>Use tools safely to design and make pages, incorporating levers and linkages, for a book finished to a high standard. Develop skills in making a range of simple mechanisms.</p> | |
| Year 5 | | | <p style="text-align: center;">Moving toys (control: mechanisms)</p> <p>Produce sketches and step-by-step plans and identified tools and materials. Measure, mark out and cut accurately.</p> | | <p style="text-align: center;">Bread (food)</p> <p>Use experiences of food ingredients and cooking methods to help generate ideas. Explain why they have chosen certain foods and</p> | |



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| | | | | | processes. Produce an order of work and chosen equipment appropriately. Evaluate their bread product against objective design criteria. Have a clear understanding of issues related to food safety and hygiene | |
| Year 6 | ROAR Competition | | Slippers (structures: textiles) Use information from investigating slippers to inform their own designing and making. Develop their skills in working with textiles and will have designed and made a slipper using appropriate materials and techniques. Have been able to evaluate critically both the appearance and function of the slipper against the original specifications. | | Fairground (control: electrical) Become familiar with how an electric motor behaves when connected in an electrical circuit. Generate several ideas to choose from. Harness the rotation produced by the motor to drive a moving part on a model they have made, employing belts and pulleys. Design, make, evaluate and modify their ride and linked it to computer control | |



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Spring Term

Year 1- Moving pictures (mechanisms)

In this unit, children develop an understanding of simple mechanisms through designing and making moving pictures. These can be based on characters or scenes from stories and could be designed for use in storytelling activities. Children develop their understanding of how movement can be created by investigating everyday products and making simple levers and sliders from given examples.

This unit can be adapted by using an alternative context for the children's designing and making assignment *e.g. greetings cards with moving parts, simple puppets, a class book with moving pictures related to a class topic.*

Year 2 – Vehicles (mechanisms)

This unit builds on children's experiences of joining and combining sheet and reclaimed materials and of using moving joints. They learn about wheels and axles and how to use these when making wheeled vehicles for a specific purpose. They are encouraged to develop their design ideas based on investigating vehicles in the world around them. Work in this unit also offers opportunities to use construction kits, and computer generated graphics or text to enhance their finished products, to apply basic measuring skills and to draw on knowledge of forces from science.

This unit could be adapted and based on other wheeled products *e.g. service vehicles (fire engine, tip-up truck, milk float, ambulance), carnival float, prams and buggies, wheelchairs, shopping trolleys, wheelbarrows.* The main features of the particular vehicle would be the purpose of the product.

Year 3- Sandwiches (food)

Children learn basic food preparation techniques and ways of combining components to create simple food products for a particular purpose. They develop their designing skills by using their own experiences and evaluating existing products to develop ideas. Through discussion, they develop criteria for their design proposals and suggest ways to proceed. They develop their making skills by learning to combine components according to taste, appearance or texture to create a product that contributes to a healthy diet. Through this activity children develop an awareness of health and safety and learn that the quality of the product depends on how well it is made and presented.

This unit can be adapted by using an alternative context for the children's designing and making assignment *e.g. snacks, pizza toppings.*

Year 4 – Money: Containers (structures: textiles)

In this unit children learn how textiles containers *e.g. purses, wallets and belt bags* are designed for different purposes and different users. They design patterns/templates, and join and reinforce fabrics. Children develop their designing skills when evaluating products and use this information to generate their own ideas and identify design criteria. They communicate their early ideas through modelling with paper or inexpensive fabric, and use decorative techniques *e.g. dyeing and embroidery.*

This unit could be adapted to focus on bags for different purposes *e.g. pencil cases, simple bags, insulated bags for cold drinks, or water-proof bags for swimwear.*



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Year 5 – Moving toys (control: mechanisms)

Children learn about controlling movement with a cam mechanism as part of a simple toy. The purpose of the toy is negotiated with the children. They develop their designing skills by using information sources to generate ideas and formulate an understanding of how cam mechanisms can be used to produce movement. They extend their making skills by developing techniques in cutting, shaping and joining to combine components and by selecting tools and equipment to measure and cut accurately. Through these activities they gain an understanding of the working characteristics of the materials and components and how they can be combined to create more useful properties. They consider both functional and decorative attributes in a finished product.

This unit can be adapted by using an alternative context for the design and make assignment *e.g. a vehicle or moving display*.

Year 6 – Slippers (structures: textiles)

Children learn about controlling movement with a cam mechanism as part of a simple toy. The purpose of the toy is negotiated with the children. They develop their designing skills by using information sources to generate ideas and formulate an understanding of how cam mechanisms can be used to produce movement. They extend their making skills by developing techniques in cutting, shaping and joining to combine components and by selecting tools and equipment to measure and cut accurately. Through these activities they gain an understanding of the working characteristics of the materials and components and how they can be combined to create more useful properties. They consider both functional and decorative attributes in a finished product.

This unit can be adapted by using an alternative context for the design and make assignment *e.g. a vehicle or moving display*.



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Summer Term

Year 1- Eat more fruit and vegetables (food)

This unit develops children's understanding of designing and making with food and the importance of healthy eating. They make choices based on the properties of different fruit and vegetables in order to design and make a product for a particular occasion or target group to encourage them to eat more fruit and vegetables.

Children investigate and taste different foods and develop vocabulary to describe the appearance, taste, smell and texture. This activity provides opportunities for children to apply hygienic practices and to use basic tools and equipment effectively and safely.

This unit can be adapted by changing the types of fruit or vegetables, or changing the target group, or focusing on a particular product *e.g. salads, soups, fruit jelly, fruit yoghurt, fruit drinks, fruit or vegetable kebabs.*

Year 2 – Puppets (textiles)

This unit involves children making a textile product by marking out, cutting and joining pieces of fabric. Children look at a selection of hand puppets and base their design on their investigations into how the puppets have been made and who they have been designed for. This unit provides a context for work in literacy and offers an opportunity for children to make up their own play or to retell a familiar story using their puppets.

This unit could be adapted by focusing on another simple textile product *e.g. a protective bag that can be made from a limited number of pieces.*

Year 3- Moving monsters (control: mechanisms)

This unit helps to develop children's understanding of control through investigating simple pneumatic systems and designing and making a model of a monster that has moving parts controlled by pneumatics. This could be linked to stories or poems, or another purpose. A good context is toys to amuse children who are ill in bed. The designing and making assignment requires children to develop skills in working as part of a team.

The techniques used in this unit could be used in another context where something needs to be controlled by moving backwards and forwards or up and down *e.g. a tip-up truck, a jack-in-the-box, moving scenery for a puppet theatre.*

Year 4 – Storybooks (control: mechanisms)

This unit develops the popular activity of making greetings cards and the moving picture made in key stage 1. Children research the content of the book and design and make a book that is finished to a high standard, with pages that incorporate moving parts, including linkages and levers.

Children gain an understanding of linkage-type mechanisms through investigating a range of products *e.g. books or greetings cards.* Through focused practical tasks, children develop further skills and understanding relating to the construction and assembly of a range of simple mechanisms that can be incorporated into a book with moving parts. The children develop their ability to work in groups as they make decisions about the book and share out tasks.

This unit can be adapted by using an alternative context for the children's designing and making assignment *e.g. a puppet, a display, a poster or a greetings card with moving parts.* It may not be appropriate to repeat the same context as Unit 1A 'Moving pictures'.



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Year 5 – Bread (food)

This unit provides an opportunity to develop children's understanding of, and skills in, working with food through a range of activities related to bread products. They gain knowledge and understanding from investigating existing products and exploring the functions and properties of ingredients. They then draw on this knowledge when designing and making their own bread products. They use a range of skills and techniques using basic food tools and equipment and taking account of appropriate safety and hygiene issues.

This unit can be adapted by focusing on an alternative type of baked food product *e.g. biscuits, cakes, pizza or snack bars*. There may be opportunities for working with industry on this project *e.g. a visit to a bakery, inviting a food expert to work in the classroom*.

Year 6 – Fairground (control: electrical)

This unit enables children to gain understanding of an important mechanism, using belts and pulleys, and to learn more about control using electricity and an electric motor. Children can then be introduced to computer control. The focus of the unit is to design and make a model of a fairground ride but it could be adapted to suit any product in which an electric motor produces rotating movement.