Highcliffe St. Mark Primary School
(A Church of England Foundation School)

Design and Technology –Progression of Skills

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Making verbal plans and material choices. Developing a junk model. Use knowledge from exploration to inform design. Choose from available materials. Discuss what a good design needs.	Learn the importance of a clear design criteria. Create clearly labelled drawings. Use a template to create a design.	Generate and communicate ideas using sketching and modelling. Create a class design criteria and design a moving object in accordance to the class criteria.	Draw and label a design using 2D shapes and 3D shapes. Develop a design criteria from a design brief. Generate ideas using thumbnail sketches and exploded diagrams. Design and make a template applying a individual design criteria.	Design a structure to support weights. Draw a net to create a structure. Personalise a design. Select a shape that increase and decreases air resistance. Write a design criteria for a product articulating decisions.	Design a stable structure that is able to support weight. Create a frame structure that focuses on triangulation. Use and name a mixture of structures and mechanisms.	Create a design featuring a variety of different structures, considering effective and ineffective designs based on use. Experiment with a range of cams. Understand how linages change the direction of a force. Make things move at the same time.
Make	Improve fine motor/scissor skills with a variety of materials. Joining material in a variety of ways. Joining different material together. Describing their model and how they will put it together. Consider material choices. Use a prepared needle and wool.	Make structures from card, tape and glue. Learn how to turn 2D nets into 3D structures Follow instructions to cut and assemble a structure. Follow a design to create a model that uses levers and sliders. Adapt mechanisms to improve how they work. Cut neatly.	Make a structure according to a design criteria. Create joints and structures from paper/card and tape. Build a strong structure. Select materials according to their characteristics. Experiment with linkages adjusting width, length and thickness. Select materials to cut. Thread a needle.	Construct a range of 3D geometric shapes using nets, Create special features for individual designs. Select materials due to their functional and aesthetic characteristics. Manipulate materials to create different effects by cutting, creasing, folding and weaving. Thread needles with greater independence. Decorate fabric using applique.	Make a variety of free standing structures. Select appropriate materials to build a strong structure. Create a design in accordance with a plan. Measure, mark, cut and assemble with increasing accuracy. Make a model based on a chosen design. Incorporate fastening into a design.	Independent measure and mark wood accurately. Understand the properties of wood. Select appropriate tools and materials. Follow a design brief. Make mechanisms and structures using sliders, pivots and folds to produce movement.	Measure, mark and cut wood to create a range of structures. Use a range of materials to reinforce and add decoration. Measure, mark and check accuracy of the jetutong and dowel pieces required. Assemble component accurately to make a stable structure. Select appropriate materials based on the materials being joined and the speed at the glue need to dry.
Evaluate	Give verbal feedback on their own model and others. Check to see if their model matches their plan. Consider what they would do differently. Make predictions. Test their design and reflect on what could have been done differently.	Test and review a finished product against its intended audience. Reflect on finished product, explaining likes and dislikes.	Test the strength of a structure and identify weaknesses. Evaluate different designs. Evaluate own design against the design criteria, using feedback to modify. Identify aspects of peers work that they particularly like and why.	Evaluate own and others work based on the aesthetic of the finishes product in comparison to the initial design. Suggest modifications. Use views of others to improve designs. Test and modify the outcome suggesting improvements.	Describe the effectiveness of a design. Consider effective and ineffective designs. Evaluate final product based on: the effect of shape on speed and the accuracy of workmanship on performance. Suggest modifications for improvements.	Adapt and improve weaknesses, reinforcing if necessary.	Improve a design based on peer evaluation. Test and adapt design to improve. Evaluate the work of others and receive feedback on own work. Describe changes they would make/do if they were to do the project again.

Technical Knowledge	To know there are a range of different materials that can be used to make models. Make simple suggestion to fix their model.	To understand that the shape of materials can be changed to improve a structure. To know wheels need to be round to rotate and move, axle moves within an axle holder and a vehicle (chassis) needs to be balanced.	To know that material can be manipulate to improve strength and stiffness. To know different materials have different properties and therefore have different purposes. To know a lever is something that turns a pivot.	To understand wide and flat objects are more stable. To understand how pneumatics systems work and can be part of a mechanism.	To understand free-standing structures is one which can stand on its own. To understand the shape of a moving object will affect how it moves due to air resistance.	To understand why material selection is important based on properties. To know that mechanisms control movement. To understand how to use sliders, pivots and folds to create paper based mechanisms.	To know that a structure can be strengthened by manipulating materials. To understand that mechanism in a automata system uses cams, axles and followers. To understand that different shaped cams can produce different outputs.
Electrical systems					Design a torch, giving consideration to audience by creating a design and success criteria. Make and assemble a torch according to the design and success criteria. Test and evaluate the success of the final product. To know that an electrical circuit must be complete for electricity to flow and that a switch can be used to break the circuit.	Develop a design criteria based on findings from an investigation. Alter a products by tinkering with its configuration. Make a functional series circuit incorporating a motor. Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses. To know when there is a break in a break in a series circuit, all components turn off. To know a motorised product is one which uses a motor function.	Draw a design from three different perspectives. Generate ideas through sketches and discussions. Model ideas through prototypes. Accurate cutting, folding and assembling of a net. Make and test a circuit. Incorporate a circuit into a base. Test own and others finished products, identifying what went well and making suggestions for improvements. To know batteries contain acid and can be dangerous when leaked. To name the components of a circuit, including a buzzer.
Cooking and Nutrition		*Smoothie making Chop fruit and vegetables safely. Identify fruits and vegetables and learn how they grow. Taste and evaluate different food combinations. Describe appearance, smell and taste. Suggestion information that should be on a label. Understand the difference between fruits and vegetables.	*Healthy Wrap Slicing food safely using the bridge and claw grip. Construct a wrap that meets a design brief. Describe texture, taste and smell of fruits and vegetables. Describe information that should be on a label. Evaluate which grip was most effective.	*Savoury tart Know how to prepare a work space to cook safely. Follow a recipe. Describe the benefits of seasonal fruit and vegetables and the impact on the environment. Suggest points for improvements when making a seasonal tart.	*Biscuits Follow a baking recipe from start to finish, including preparation. Follow basic hygiene rules. Adapt a recipe to improve it to change or meet a different criteria. Evaluate a recipe considering; taste, smell, texture and appearance. Describe impact of the budget on the selection of ingredients. Suggest modifications to a recipe.	*Traditional Recipes Adapt a recipe, understanding nutritional values of a recipe when altered. Design appealing packaging to reflect the recipe. Use equipment safely, including knives, hot pans and hobs. Know how to avoid cross contamination. Identifying the nutritional differences between different products and recipes.	*Write a recipe Write a recipe explaining the key steps, methods and ingredients, draw from research that has been completed. Follow a recipe, including using the correct quantities. Adapt a recipe based on research. Work safely and hygienically independently. Taste test and core final products.

						Identify and describe health benefits of different food groups.	Evaluate health and safety in production to minimise cross contamination.