Wildground Federation – Design and Technology Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
N 2-3yrs	Explore different materials using all their senses. Manipulate and play with different materials eg playdough, chippings, slime, gloop, shaving foam.		Consider what to do with different materials using their imagination. Explore pouring and scooping with different tools eg. cups, ladles, spoons, sieves.		Make simple models which sometimes express their ideas. Explore how to manipulate fruit using their hands and spoons.	
N 3-4yrs	Explore using one handed tools such as loop scissors, plastic knives and spoons. Mix a range of ingredients to make substances, eg playdough, mudcakes using a range of tools.		Use one handed tools such as scissors to create changes in materials eg. cut/tear. Share the changes they have made. Work with an adult to follow a simple recipe – use simple measures – teaspoon, tablespoon and cup		Explore more materials and resources eg. sellotape and glue to make own models. Decide in advance what to make and choose own materials and tools, showing independence with one handed tools. Use simple measures independently when mixing ingredients.	
Year R	Explore a range of different materials such as clay Talk about the strength of the different materials Explore different tools such as clay tools, scissors etc. Using clay create their own Diva lamp for Diwali. Select tools and ingredients to make bread. Articulate how to make bread and then make using appropriate measures independently.		Using tools/knife correctly and safely when making a fruit kebab Explore different ways of joining materials together- which materials joined well? Which materials did not join as well? Explore and use a range of tools to prepare fruit eg knives, peelers.		Choosing specific materials and using this material to create their own Handa's surprise basket Brief plan of how they will make their own- what materials will they use? How will they join it together to create the basket? Reflect on work (Handa's surprise basket) - what would they change/what would they keep the same. Create and follow own instructions to make a fruit kebab using appropriate cutting tools.	
Prior learning	Explore different materials and explore different textures.		Make simple models which express their ideas Use their imagination as they consider what they can do with different materials		Explore different materials freely, to develop their ideas about how to use them and what to make. Make simple models which express their ideas	
Future learning	Use techniques such as rolling, cutting, moulding and carving.(Year 2- spring 2) Include lines and textures. (Year 2- Spring 2)		Demonstrate a range of different joining techniques such gluing, hinges and a running stitch. Year 1 (Spring 1, Spring 2) Cut, peel and grate ingredients. (Year 1- Spring 1)		Explore objects and designs to identify likes and dislikes of design. Suggest improvements to designs. Design products that have a clear purpose and an intended user	

KS1						
Year 1 Milestone 1 Basic		**To master practical - Textiles** *Designing and making a blanket for Sir Edmund.* ~ Repeat a pattern using different materials to print. ~ Describe which material you found was best for printing and why. ~ Reproduce a blanket for Sir Edmund Hillary, using a running stitch to join materials. Dye or decorate a fabric. ~ Recognise a range of different embellishments can be added for decoration ~ Follow instructions to complete a simple running stitch.	**To master practical skills - Food** *Exploring food from around the world.* ~ Identifying healthy ingredients to create a spring roll. ~ Follow instructions to make a healthy spring roll. ~ Name and list utensils that will be needed to cut, peel	**To master practical skills - Mechanisms** *Moving Vehicles* ~ Show confidence using levers, wheels and winding mechanisms. ~ In order to relate how vehicles move and reproduce your own working model.		
Prior Learning		During the Reception year, the children will plan and make a shopping basket that can carry objects such as fruit. They will also research baskets and be able to effectively draw a plan and 'join' materials using tools.				

Future Learning		Through the practical skills of textiles and materials, the children will increase their technical ability to measure accurately and build on a range of stitches. ***(Year 2 - Spring 1)***	Through the practical skills of Food Technology, the children gain a further understanding into the origins of healthy fruit and vegetables. They will also build on their ability to follow progressively complicated instructions. ***(Year 2 - Autumn 2)***	Through the practical skills of mechanisms, the children will move on to upper KS2 where they will look to make moving carnival floats and create a cam model frame etc. ***(Year 5 – Summer 1 and 2)***		
Year 2 Milestone 1 Advanced to Deep		**To master practical skills - Food Technology and Design** *Choose a healthy smoothie for a soldier in the Crimean War.* ~ Explore pre-existing products, predicting and demonstrating an understanding of the origin of the fruits and vegetables. ~ In order to effectively design and prepare a healthy smoothie using fruit and vegetables from a set of instructions, whilst being able to select which utensils to use and measure with accurately.	**To master practical skills - Textiles and materials** *The story-telling puppet.* ~ Construct a puppet using accurate measurement in cm. ~ Discover and demonstrate a range of cutting and joining techniques. ~ Assemble a puppet after testing a variety of sewing stitches and explain which stitch is the best.	**To master practical skills - Construction** *Making a lighthouse* ~ Construct a sturdy lighthouse after predicting the effectiveness of a lighthouse design. ~ Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. ~ Modify initial designs and justify what materials have been used and why.		
Prior Learning		The children will have explored food from around the world and made a spring roll. They should have explored	The children will have made a small blanket and explored using the running stitch and the word embellishments.	The children will have completed junk modelling concepts in Year R using different joining techniques and will be able to build on their mechanisms knowledge from making a moving vehicle in Year 1.		

		basic cutting and peeling skills. ***(Year 1 – Spring 1)***	***(Year 1 – Autumn 2)***	***(Reception and Year 1 – Spring 2)***	
Future Learning		Through the practical skills of Food Technology, the children will make healthy wraps in year 4 This will allow the children to improve their vocabulary (such as hygiene etc). They will increase their knowledge of combining ingredients ***(Year 4 – Autumn 1)***	Through the practical skills of sewing and textiles, the children will make an endangered animal with seam allowance. They will build on their stitching skills and knowledge and improve their trial and error and designing techniques. ***(Year 3 – Summer 2)***	Through the practical skills of construction, the children will explore shelter building in year 3. This will allow them to build on previous skills on a larger scale and debug their own mistakes. ***(Year 3 – Spring 1)***	
KS2					
<u>Year 3</u> Milestone 2 Basic	**Moving Monsters Mechanics** Pneumatic Systems ~ Describe the forces used in levers and pulleys and apply this knowledge when creating their toy.		**Outdoor Learning and Shelter Building Structures** ~ To learn about structures, understand that they can fail under heavy loads. ~ Debug and redesign using the techniques for reinforcing and strengthening structures. Children to be shown the strength of tubes as a construction material and textiles as a suitable cover for a framework. ~ The main outcome of this unit will be the design and construction of a model framework-type shelter.		**To master practical skills – Sewing and Textiles** Making stuffed animal cushions Textiles and joining materials Understand the need for a seam allowance. Join textiles with appropriate stitching and embellishments. Select the most appropriate techniques to decorate textiles

Prior Learning	The children will build on their previous knowledge of making, joining materials and making choices based on the aesthetic value of different products. ***(Year 1/2 – Spring 2***)		The children will have completed junk modelling concepts in Year R using different joining techniques and will be able to build on their mechanisms knowledge from making a moving vehicle in Year 1 and constructing a lighthouse in Year 2. ***(Year 2 – Spring 2)***			The children will have made a small blanket and explored using the running stitch and the word embellishments and then extended on this by using several different stitches and accurate measurements to make a puppet. ***(Year 1 Autumn 2 + Year 2 Spring 1)***
Future Learning	The children will build on this when they study Forces in Year 5 Science and CAMS in Year 5) ***(Year 5 – Summer1)***		Through the practical skills of construction and mechanisms the children will go on to learn about different levers and linkages to make a pop up poster/ book front cover based around a volcano. ***(Year 4 – Autumn 2)***			Through the practical skills of sewing and textiles, the children will design and make a money container. ***(Year 4 – Summer 2)***
Year 4 Milestone 2 Advanced to Deep	**To master practical skills – Food Technology.** *'Come Dine With Me!'* ~ Children will explore the elements needed to design and construct their own packaging and produce a healthy wrap with a specific audience in mind.	**To master practical skills – Construction Mechanics** *DT paper project – Volcanic lever Pop-up poster* ~ Examine, modify and produce a leaver after studying a variety of pulleys and levers in order to understand				**To master practical skills - Textiles** Designing and Making a money container ~ Select the most appropriate techniques to decorate textiles. ~ Evaluate different types of stitches for decoration and justify their choice

	~ To accomplish this they will analyse a variety of packaging in order to design a suitable product. ~ They will survey the class for likes and dislikes and use the information to produce a healthy wrap. ~ Discuss and purpose and the use of different techniques of preparation for their wrap: grating, thinly slice, dice etc ~ Finally undertaking a parent questionnaire for suitable feedback on their overall product packaging and wrap.	their effectiveness and the best designs. ~ Select suitable materials including card, cardboard, split pins, other small embellishments if needed to make a pop-up book after testing mechanisms and then illustrate them. ~ Appraise the effectiveness of their pop-up mechanisms and propose changes. ~ Finally justifying their choice of materials and joins to show their working pop up.				~ Evaluate a range of designs and justify final choice.
Prior Learning	The children will have explored food from around the world.They should have explored basic cutting and peeling skills and know some basic hygiene rules as well as understanding how to control temperature using an oven. ***(Year 1 – Spring 1 + Year 2 – Autumn 2)***	Through the practical skills of construction, the children will explore shelter building in year 3. This will allow them to build on previous skills on a larger scale and debug their own mistakes. ***(Year 3 – Spring 1)***				The children will have made a small blanket and explored using the running stitch and the word embellishments. Then extended on this by using several different stitches and accurate measurements to make a puppet and a stuffed animal with specific seam allowance. ***(Year 1 Autumn 2 + Year 2 Spring 1 + Year 3 Summer 2))***
Future Learning	Through the practical skills of Food Technology, the children	Through the practical skills of construction, the children will explore				Through the practical skills of sewing and textiles, the children will

	will move on to make a Greek Salad concentrating on new ingredients, the idea of scaling recipes and measuring the ingredients accurately whilst following an instruction. ***(Year 5 – Autumn 2)***	mechanics and cam models and start to use Crumble to introduce electronic learning and the vocab such as chassis, axel and debug. ***(Year 5 Summer 1 and 2)***				design, make and follow instructions to make a reversible cape. ***(Year 5 – Autumn 2)***
Year 5 Milestone 3 Basic		**To master practical skills - Food Technology** *Baking and boiling* *Design and make a hot meal* *Design and make a new flavoured bread.* ~ Describe hygiene rules for keeping the work area clean. ~ Describe the correct storage of meat and vegetables, cheese ~ Follow instructions for ingredients accurately and safely. ~ Measure accurately ingredients *Bread making* control the temperature of the oven if/when baking.			**To master practical skills – Materials and Mechanics (Cam Models)** *Design, make and evaluate cam model* ~ Follow instructions to create a cam model frame ~ Follow instructions to create a cam model frame. ~ Design moving parts to own specifications ~ Recite safety instructions before cutting using the saw or using the sand paper. ~ Describe why a saw and sandpaper is used. ~ Follow instructions to make an axel to go into a plastic take away tub, drill holes in tub for axel	**To master practical skills – Electricals and Electronics (Crumble)** *Design, make and evaluate a Carnival float design* ~ Design moving parts to own specifications. ~ Decide on the type of motion they would like in their model. ~ Name the chassis, axel, motor, circuit, on the models. ~ Reproduce code to get the float to move. – debug any errors.

Prior Learning		The children will have explored food from around the world, made a spring roll, a healthy smoothie, designed, and evaluated packaging and the ingredients for a healthy wrap. They should have explored basic cutting and peeling skills and know some basic hygiene rules. ***(Year 4 – Autumn 1)***			Year 4 have explored moving mechanical levers in pop ups. This unit will build on previous learning from year 1 and moving vehicles in year 1. ***(Year 1 – Spring 2 + Year 4 – Autumn 2)***
Future Learning		Through the practical skills of Food Technology, the children will continue their learning in year 6 making seasonal vegetarian burgers and bread rolls with extra emphasis on seasonality and how ingredients are grown, reared, caught and processed. ***(Year 6 – Spring 2)***			Through the practical skills of electronics and CAD CAM the children will build on their learning by making their own lamps and lanterns and fair ground rides. Adding the new skills of annotated sketches, cross-sectional and exploded diagrams, proto-types (***Year 6 – Autumn 1 and Summer 1)***

Year 6 Milestone 3 Advanced to Deep	**To master practical skills - Electrics and Electronics** *Lamps and Lanterns* ~ Compare different lantern designs through time and how the design has changed, depending on its purpose. ~ Generate, develop, model and communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, proto-types, pattern pieces and CAD. ~ Assemble a circuit to produce a light in a lantern and be able to explain how it works. ~ Evaluate the effectiveness of their lantern and puppet designs.		**To master practical skills - Food Technology** *Create, design, evaluate and recommend seasonal vegetarian burgers and bread rolls.* ~ Understand and apply the principles of a healthy and varied diet. ~ Prepare and cook a variety of predominately savoury dishes, using a range of cooking techniques. ~ Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.	**To master practical skills - Construction and Mechanics** *Fairground Rides* ~ Construct two different prototypes for a fairground ride. ~ Compare fairground ride. (Decoration, movement) with those in commercial use. ~ Select from and use a wider range of materials and components, including construction, materials and aesthetic qualities. ~ Understand and use electrical systems in their products, incorporating switches, bulbs, buzzers and motors. ~ Investigate and programme the crumble kit to move the fairground ride forward, backward and/or pause ~ Evaluate the effectiveness of the ride. ~ Modify the mechanism when the product does not work effectively.	**To master practical skills – Materials and Textiles** *Hand Puppets* ~ Design and construct a moving hand puppet that is based on Mayan culture. ~ Investigate different stitches that could be used in their puppet and assess their usefulness. ~ Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals. ~ Show precision in techniques in sewing. ~ Prefect a range of stitching techniques.

Prior Learning	The children will have started to use crumble and electronics through their float designs in Year 5.		The children will have made a variety of food throughout the previous years including healthy smoothies and wraps, flat breads and a Greek salad.	Through the practical skills of mechanisms and electronics, the children will have made cam models and carnival designs, moving vehicles and pop ups.	Through the practical skills of sewing and textiles, the children will have previously made blankets, various embellishments, stuffed animals and a money container.
Future Learning	**KS3 – Year 7 curriculum**		**KS3 – Year 7 curriculum**	**KS3 – Year 7 curriculum**	**KS3 – Year 7 curriculum**