Design Technology Progression of Skills

OUR VISION FOR TREWIRGIE INFANTS'SCHOOL

'We care, we help, we succeed'

OUR MISSION:

- To inspire children to engage in learning, and be valued members of a caring, supportive, and successful school.
- For all our children to develop life- long learning skills; to be independent and creative thinkers and to be socially confident.
- To enable children to be successful through a curriculum that captures their interests, stimulates their ideas, encourages inquisitiveness and critical thinking and meets their needs.

At Trewirgie Infants' and Nursery School, our children have opportunities to use their imaginations and be inspired to design and make products that solve real and relevant problems that they want to create. We believe that Design & Technology should be about supporting pupils to take risks, becoming innovative and creative citizens for the world in which they live. Through the evaluation of Design and Technology we want to inspire children to understand the impact of design and technology and its essential contribution that creativity brings to the evolving world around them. We ensure that all children learn about Design & Technology through a variety of projects that are woven through our creative cross curricular learning. Through the development of skills children can design appealing products for themselves and evaluate existing products and discuss improvements to their designs and products.

"Creativity is intelligence having fun" Albert Einstein

Curriculum statement

INTENT (curriculum design, coverage and appropriateness)	**IMPLEMENTATION** (curriculum delivery, teaching and assessment)	**IMPACT** (attainment and progress)
We want all our children to develop the creative, technical and practical expertise needed to participate in an increasingly technological world. At Trewirgie Infants', our children will be given the knowledge they need to learn about being creative, designing, developing skills and evaluating their products and the work of others. Our broad and balanced curriculum is designed to develop knowledge, understanding and skills that are progressive as well as being transferable life skills. All children will complete a series of projects, building on prior skills and knowledge that progress across from EYFS to Year 2.	To ensure that high quality Design & Technology is taking place throughout the whole school we implement a curriculum which is progressive from EYFS through to Year 2. The Curriculum lead and subject leader regularly monitors planning and classroom delivery to ensure that topics remain engaging and exciting to the children. Each Design & Technology lesson is planned through termly topics with a focus on knowledge, understanding and skills. This progression of skills document ensures that knowledge, understanding and skills are progressive throughout our school. As a school we use Pupil conferencing to assess the children's knowledge, skills and enjoyment of what they have learnt through their topics and check it is purposeful learning. Photos will be taken throughout the process and used for evidence.	Children can discuss and record what they would like to find out about their topic. At the end of the topic this is reviewed and the children reflect on the progress they have made. They will be able to talk about their design and technology projects and use subject specific language to discuss what they have learnt. Each child will feel inspired and curious about Design & Technology and want to find out more about it in their world feeling confident to follow their own lines of enquiry. Our children will be able to explain how to take risks safely using appropriate tools so they can be independent, resourceful designers using their own initiative. This will be evidenced through their progress in knowledge and skills from the beginning of a topic to the end.

Design: Developing, planning and communicating ideas.

National Curriculum aim:

To design purposeful. Functional, appealing products for themselves and others based on design criteria

To generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups.

EYFS	YEAR 1	YEAR 2
** I can explain my own knowledge and understanding. * I can ask appropriate questions of others. * I can use talk to organise, sequence and clarify thinking and ideas. * I can link statements and stick to a main theme or intention. *I can explain how some technology works by exploring parts by pressing, lifting, twisting to say how it works. ELG • I can use what I know about media and materials in original ways, thinking about uses and purposes. I can represent my own ideas through design technology.	*I can use my own experience to help generate ideas. *I can suggest ideas & explain how I am going to do it. *I can identify a target audience for my product. *I can create prototypes of my ideas using chosen manipulatives. *I can develop and improve my design ideas using existing product research.	*I can generate ideas by drawing my own and other people's experiences. *I can develop my design ideas through discussion, observation, drawing and modelling manipulatives. *I can identify a real purpose for a product I intend to design and make. *I can identify and follow simple design criteria. *I can make simple drawings and label parts.

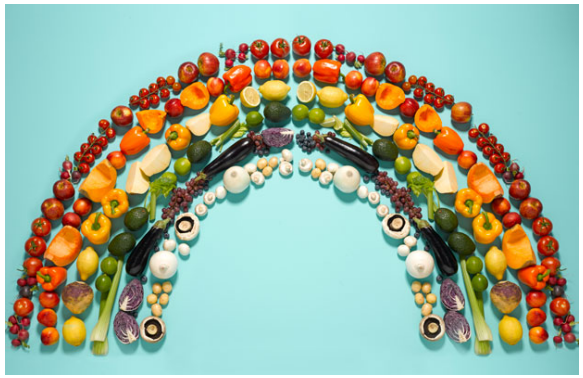
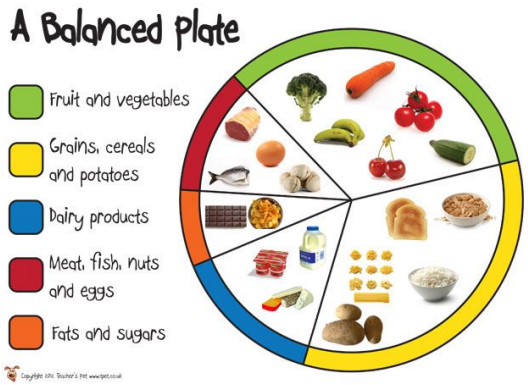
Make-(Working with tools, equipment to make quality products including food) National Curriculum aim: To select from and use a range of tools and equipment to perform practical tasks To select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.		
EYFS	**YEAR 1**	**YEAR 2**
I can manipulate materials to achieve a planned effect. *I can purposely construct something using a variety of resources. *I can use simple tools and techniques competently & appropriately. *I can select appropriate resources ELG • I can use what I know about media and materials in original ways, thinking about uses and purposes.	*I can with help measure, mark out, cut and shape a range of materials. *I can use tools e.g. scissors and punch a hole safely. *I can assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. *I can select and use appropriate processes and tools for fruit and vegetables. I can follow safe procedures for food safety and hygiene. I can use simple finishing techniques to improve the appearance of my product.	*I can begin to select tools and materials; use technical vocab' to name and describe them. *I can measure, cut and score with some accuracy. *I can use hand tools safely and appropriately. *I can assemble, join and combine materials in order to make a product. *I can cut, shape and join fabric to make a simple garment, using basic sewing techniques. *I can follow safe procedures for food safety and hygiene. *I can choose and use appropriate finishing techniques.

Evaluate-(Evaluating processes and products)

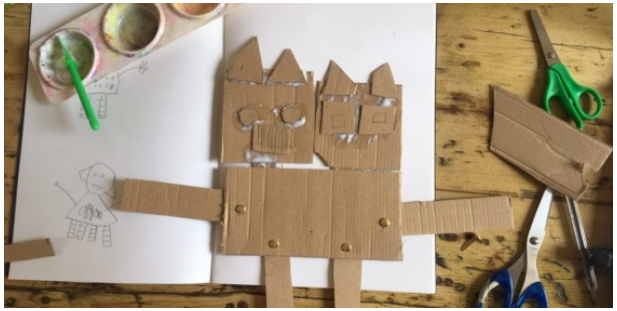
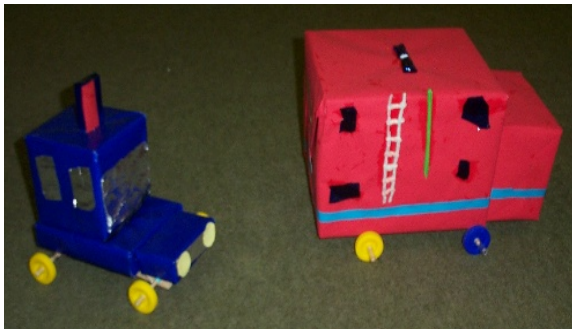
National Curriculum aim:
To explore and evaluate a range of existing products
To evaluate their ideas and products against a design criteria

EYFS	YEAR 1	YEAR 2
*I can adapt my work where necessary. *I can explain my own knowledge and understanding of what I have made to evaluate it.	*I can talk about my ideas and products, saying what I like and dislike about them. *I can evaluate my product against simple design criteria. *I can evaluate my product by answering questions about what I have made and how I have gone about it.	*I can evaluate my products as they are developed, identifying strengths and possible changes I might make. *I can evaluate my product by discussing how well it works linking to its purpose. *I can identify strengths and possible changes I might need to make.

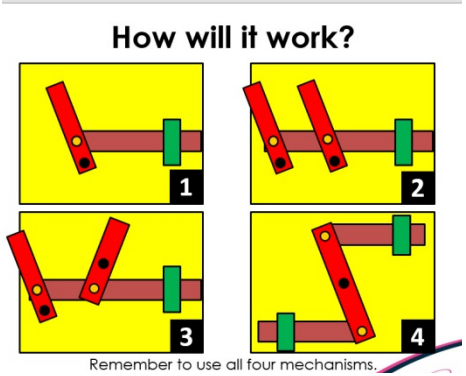
	EYFS	YEAR 1	YEAR 2
FOOD	Teddy Bears Picnic-(Autumn Term) Children to taste and explore heathy food choices and design a picnic menu	Fruit and Vegetable Smoothie(SummerTerm) Children learn to identify fruits and vegetables and then design and make a smoothie	A Balanced Diet-Create a healthy Wrap (SummerTerm) Children explore what makes a balanced diet and taste test combination of different food groups before designing and making a wrap.
MECHANISMS	Gingerbread People – (Autumn Term) Children select appropriate tools and materials and use talk to clarify ideas for a design.	Moving Storybook :Sliders-(Autumn Term) Children to explore levers and sliders to make a moving story book. Wheels & Axles-Create a Post Van for the Jolly Postman(Spring Term) Children experiment with mechanisms and troubleshoot why some wheels don't rotate, before designing and building a moving vehicle.	Moving Monsters-Create a moving sea creatures (Summer Term) Children analyse existing levers and linkage systems to identify components that they can use to plan, design and develop a mechanical monster. Ferris Wheels-New attraction in Redruth Town or Trevithick day(Spring Term) Children explore existing mechanisms in order to design, test and make their own big wheel style ride.
STRUCTURES	Use split pins to join two materials together allowing the parts to move. - Moving Gingerbread people (Autumn term) - Windmills for sand castles (Summer Term)	Windmills-Create a Windmill for grinding porridge oats. (Autumn Term) Children design and create their own structure and functioning windmill.	Chairs-Design & make a Wishing Chair(Spring Term) Children experiment with different shapes and manipulate materials to explore and evaluate a range of structural properties. They apply this knowledge to their own design, make and test task.
TEXTILES	Boats – create a boat that can hold as many animals as possible (linked to Mr Gumpy's Outing text) Spring Term Children design, make, test and evaluate a boat that will hold passengers and stay afloat. They will select appropriate materials and tools independently.	Puppets-(Summer Term) Children learn the different ways they can join fabrics together through the creation of a puppet.	Pouches-Create a pouch for Hansel or Gretel (Autumn Term) Children design and make their own wallet, learning to use running stitch to join two pieces of fabric together.

EYFS	YEAR 1-Food	YEAR 2-Food
Technical knowledge • I understand the need for variety in my diet. • I can make healthy choices.	**Technical knowledge** • I can describe and group fruits by texture and taste. • I know the different between a fruit and vegetable 	**Technical knowledge** • I know what makes a balanced diet. • I can find the nutritional information on packaging. • I can identify the five main food groups. 

Children will have the opportunity to taste a range of foods and decide on foods that would be suitable for an event like a picnic. They will use tools confidently to make sandwiches, fruit kebabs and biscuits for the picnic. They will have the opportunity to design and make their own gingerbread person, thinking about foods that would help them to create its features.	**Lesson 1: Q; Is a tomato a fruit or vegetable?** Builds on: Intent: L.O: To identify the difference between fruits and vegetables. Implementation: See detailed Kapow planning Future learning: **Lesson 2: Q; Do all things grow in the same way?** Builds on: Intent: L.O: To understand where fruits and vegetables grow. Implementation: See detailed Kapow planning Future learning: **Lesson 3: Q; What's your favourite thing to eat?** Builds on: Intent: L.O: To investigate tastes and textures. Implementation: See detailed Kapow planning Future learning: **Lesson 4: Q;** Builds on: Intent: L.O: To make a delicious smoothie. Implementation: See detailed Kapow planning Future learning:	**Lesson 1: Q; What's your dream meal?** Builds on: Yr 1-Food groups Intent: L.O: To know what makes a balanced meal. Implementation: See detailed Kapow planning Future learning: **Lesson 2: Q; What's your favourite taste? (sweet, salty, spicy, strong, mild)** Builds on: Yr1-Investigating tastes and textures Intent: L.O: To taste test food combinations. Implementation: See detailed Kapow planning Future learning: **Lesson 3: Q; Where do we get our energy from?** Builds on: Yr1-Smoothie making Intent: L.O: To design a healthy wrap. Implementation: See detailed Kapow planning Future learning: **Lesson 4: Q; What is the weirdest thing you've ever eaten? (Kidz v Food Clip?)** Builds on: Lesson 1- Balanced healthy meal Intent: L.O: To make and taste evaluate a healthy wrap. Implementation: See detailed Kapow planning Future learning

EYFS -Joining using split pins	YEAR 1-Mechanisms-Wheels& Axles	YEAR 2-Mechanisms-Ferris Wheel
Technical knowledge • I can handle tools and materials safely. • I can use simple tools to effect changes in materials. • I explore a range of materials, tools and techniques. • I can construct with a purpose in mind using a range of resources. • I can select tools and techniques in order to assemble and join materials. 	**Technical knowledge** • I understand that levers and sliders are mechanisms that make things move. • I can identify whether a mechanism is a lever or slider and determine the movement it makes. • I can use the vocab: up, down, left, right, vertical and horizontal to describe movement. • I can identify how a mechanism moves forward. • I know that a wheel needs to be attached to an axle to move. 	**Technical knowledge** • I know that a mechanism is a collection of moving parts working together in a machine. • I know that mechanisms have inputs and outputs. • I can identify a mechanism in everyday objects. • I know that levers turn on a pivot. • I can describe 'linkage' as a system of levers connected by pivots. • I can explain how axels help wheels to move. • I can explore wheels as mechanisms. 

Children will learn how to join materials together in different ways, exploring how some ways of joining allow the parts to move. They will apply this knowledge in order to create products with moving parts throughout the year, linked to the Talk for Writing texts.	**Lesson 1: Q; How do things move?** Intent: L.O: To investigate how wheels move on a vehicle. Implementation: See detailed Kapow planning Future learning: **Lesson 2: Q; What is a chassis?** Builds on: Intent: L.O: To explore how to fix and attach wheels to a vehicle. Implementation: See detailed Kapow planning Future learning: **Lesson 3: Q; If you were a postman, what would your van look like?** Builds on: Intent: L.O: To design a new postal service van. Implementation: See detailed Kapow planning Future learning: **Lesson 4: Q; How will we know if our designs are successful?** Builds on: Intent: L.O: To build and test my design. Implementation: See detailed Kapow planning Future learning:	**Lesson 1: Q; What is your favourite fairground ride?** Builds on: EYFS & Yr1-Recap on how wheels move. Intent: L.O: To explore wheel mechanisms and design a wheel. Implementation: See detailed Kapow planning Future learning: Lesson 2 **Lesson 2: Q; What can we remember about materials from science to help us today?** Builds on: Yr1-How wheels and axels work Intent: L.O: To select appropriate materials for my wheel. Implementation: See detailed Kapow planning Future learning: **Lesson 3: Q; How are we going to make our wheels stable?** Builds on: Intent: L.O: To build and test a moving wheel. Implementation: See detailed Kapow planning Future learning: **Lesson 4: Q;** Builds on: Yr1-Making a moving vehicle Intent: L.O: To make and evaluate a structure with a rotating wheel. Implementation: See detailed Kapow planning Future learning:

EYFS	YEAR 1-Mechanisms-Moving Story Books	YEAR 2-Mechanisms-Moving Monsters
Technical knowledge	**Technical knowledge** • I understand that levers and sliders are mechanisms that make things move. • I can identify whether a mechanism is a lever or slider and determine the movement it makes. • I can use the vocab: up, down, left, right, vertical and horizontal to describe movement.  	**Technical knowledge** • I know that a mechanism is a collection of moving parts working together in a machine. • I know that mechanisms have inputs and outputs. • I can identify a mechanism in everyday objects. • I know that levers turn on a pivot. • I can describe 'linkage' as a system of levers connected by pivots. 

	Lesson 1: Q; Can you show me a natural lever in your body? (*Bent* arm levers are identified by the way the joint and muscles attached to the bone.) Builds on: Intent: **L.O: To understand how mechanisms move using sliders.** Implementation: See detailed Kapow planning Future learning: **Lesson 2: Q; If you could make a moving picture, what would it look like?** Builds on: Intent: **L.O: To design and plan my story book.** Implementation: See detailed Kapow planning Future learning: **Lesson 3: Q; What will we need to succeed today?** Builds on: Intent: L.O: To construct my chosen design. Implementation: See detailed Kapow planning Future learning: **Lesson 4: Q; Who can we share our moving books with?** Builds on: Intent: L.O: To test and evaluate my design with a reception child.(Target audience) Implementation: See detailed Kapow planning Future learning:	**Lesson 1: Q; How many different types of movements can you show me?** Builds on: To understand how mechanisms move using sliders. Intent: L.O: To know that mechanisms can move using pivots and linkage systems. Implementation: See detailed Kapow planning Future learning: Lesson 2-Moving monster **Lesson 2: Q; What does a sea monster look like and can you show me how it moves?** Builds on: Yr1-Creating a moving book using a slider. Intent: L.O: To design a moving sea monster. Implementation: See detailed Kapow planning Future learning: **Lesson 3: Q; Can we make human linkage systems in groups?** Builds on: Intent: L.O: To make my own linkages using card for levers and split pins for pivots. Implementation: See detailed Kapow planning Future learning: **Lesson 4: Q; What do we want from our sea monsters?** Builds on: Intent: L.O: To construct and assemble a moving sea monster Implementation: See detailed Kapow planning Future learning:

EYFS-Boats	YEAR 1-Structures-Windmills	YEAR 2-Structures-Chair
Technical knowledge • I can handle tools and materials safely. • I can use simple tools to effect changes in materials. • I explore a range of materials, tools and techniques. • I can construct with a purpose in mind using a range of resources. • I can select tools and techniques in order to assemble and join materials. 	**Technical knowledge** • I can describe the purpose of different structures. • I can turn a 2D net into 3D structures. • I can change the shape of materials to improve the strength and stiffness of structures. • I know that cylinders are strong structures used for stability in windmills and lighthouses. • I can explain how a blades on a wind turbine uses wind to turn to work. • I can identify how axels are used in structures and mechanisms to make parts move in a circle. 	**Technical knowledge** • I can identify man-made and natural structures. • I can identify structures that are stable and unstable. • I understand that structures with a flat, wide base is more stable. • I know that the shape of a structure affects its strength. • I can use the vocabulary: strength, stiffness and stability. • I can manipulate materials to improve strength and stiffness of structures. • I can build a strong and stiff structure by folding paper. 

Children will explore and test materials and structures to evaluate which are able to float. Children will use their knowledge and understanding to help them to design and make a boat that will float in the water tray and hold a number of passengers. They will evaluate their work, adapting it where necessary and explaining what they have changed and why.	**Lesson 1: Q; What can you see?(Turbine pics)** Builds on: Intent: L.O: To make a design criteria and a design template. Implementation: See detailed Kapow planning scheme. Future learning: **Lesson 2: Q; What makes a structure strong?** Builds on: Intent: L.O: To construct a strong & stable structure. Implementation: See detailed Kapow planning scheme. Future learning: **Lesson 3: Q; What energy source fuels a windmill or wind turbine?** Builds on: Intent: L.O: To create blades on a windmill and test they rotate on an axis. Implementation: See detailed Kapow planning scheme. Future learning: **Lesson 4: Q; What top tips would you give to create another windmill?** Builds on: Intent: L.O: To evaluate and adapt our designs. Implementation: See detailed Kapow planning scheme. Future learning:	**Lesson 1: Q; What do we know about structures?** Builds on: Yr1-Creating strong & stable structures. Intent: L.O: To investigate and compare the stability of 3D shapes. Implementation: See detailed Kapow planning scheme. Future learning: **Lesson 2: Q; What are the features of a good chair?** Builds on: Intent: L.O: To explore ways of making paper strong. Implementation: See detailed Kapow planning scheme. Future learning: Lesson 3-Making a chair **Lesson 3: Q; What is our design criteria?** Builds on: Yr1 &Yr2-Building structures and exploring how they can be made; strong, stiff and stable. Intent: L.O: To make a chair structure using design. Implementation: See detailed Kapow planning scheme. Future learning: **Lesson 4: Q;** Builds on: Yr1- To evaluate and adapt our designs. Intent: L.O: To adapt and improve my chair through testing. Implementation: See detailed Kapow planning scheme. Future learning:

EYFS- Textiles - Clothing	YEAR 1-Textiles-Puppets	YEAR 2-Textiles-Pouches
Technical knowledge • I can handle tools and materials safely. • I can use simple tools to effect changes in materials. • I explore a range of materials, tools and techniques. • I can construct with a purpose in mind using a range of resources. • I can select tools and techniques in order to assemble and join materials. I can manipulate materials to create a planned effect. 	**Technical knowledge** • I can join fabrics together in different ways: pinning, stapling and gluing. 	**Technical knowledge** • I can join items together using glue or stitching. • I can identify the best technique for the task. • I can thread a needle. • I can use a running stitch that is evenly spaced and neat to join fabric. 

Children will explore a range of textiles and materials, looking at uses, purposes and suitability for purpose. They will think about clothing for a purpose and select materials that can be used to create clothing to wear on a trip to the moon (linked to Whatever Next? text). They will experiment with ways in which these materials can be joined securely.	**Lesson 1: Q; How are our toys and clothes held together without falling apart?** Builds on: Intent: L.O: To explore how fabrics are joined in different ways. Implementation: See detailed Kapow planning scheme. Future learning: **Lesson 2: Q; What does your favourite story book character look like?**(Link to characterization) Builds on: Intent: L.O: To use a template to create my own puppet design. Implementation: See detailed Kapow planning scheme. Future learning: **Lesson 3: Q; What are the different ways of joining materials together?**(properties of materials) Builds on: Intent: L.O: To join my puppet fabric together using a chosen technique. Implementation: See detailed Kapow planning scheme. Future learning: **Lesson 4: Q; What did we learn from making our puppets?** Builds on: Intent: L.O: To evaluate my puppet against a given design criteria. Implementation: See detailed Kapow planning scheme. Future learning:	**Lesson 1: Q; Can you spot something that has been sewn together in our room?** Builds on: Yr 1- How fabrics are joined in different ways. Intent: L.O: To sew a running stitch. Implementation: See detailed Kapow planning scheme. Future learning: **Lesson 2: Q; What could we create for Hansel & Gretel to carry their pebbles?** Builds on: Yr 1-Using a given design template. Intent: L.O: To design a magic pouch to carry something in. Implementation: See detailed Kapow planning scheme. Future learning: **Lesson 3: Q; How do we want our stitching to look?** (Look at good/bad examples of running stitch) Builds on: Intent: L.O: To make a pouch using running stitch to join fabric. Implementation: See detailed Kapow planning scheme. Future learning: **Lesson 4: Q; What could we use to embellish our pouches?** (Explain finishing techniques) Builds on: yr1-Gluing, sticking fixing techniques Intent: L.O: To evaluate and test pouch for its purpose. Implementation: See detailed Kapow planning scheme. Future learning: