


TEACHING SEQUENCE



DESIGN AND TECHNOLOGY

	Autumn	Spring	Summer	Curriculum Enhancements
Nursery	<p><u>Expressive Arts and Design</u></p> <p>Make, decorate and use a “shaker pot” “Autumn Forest” role play/construct hibernation dens Christmas cards and calendars</p>	<p><u>Expressive Arts and Design</u></p> <p>Explore sense of touch and texture– Create glitter hands, glitter potions, sparkly mud play “Wizards' Workshop role play area Junk modelling – shiny robots</p>	<p><u>Expressive Arts and Design</u></p> <p>Experiment with media, materials, tools and techniques to create Easter and Mother's day art and crafts Use range of materials to draw and build Create little town using range of materials</p>	

Reception

Expressive Arts and Design

Christmas cards and gifts Experience of using basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card.

Experience of different methods of joining card and paper.

'Let's look at hats' project.

Investigating and evaluating the use of different hats. Children will then create their own hats for someone for a purpose.

Expressive Arts and Design

Experience of using construction kits to build walls, towers and frameworks.

Construction kits and assembled vehicles with moving wheels

'Fantastic Fruit' project. Preparing fruits

Expressive Arts and Design

Early experiences of working with paper and card to make simple flaps and hinges. 'Hinges and Catches' project.


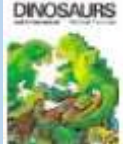

Children to explore how materials are joined together so they can still move.

Children will then design and make a special box for a purpose.



Provision

- *Outdoor construction/tools
- *Mud Kitchen
- *Outdoor- Large scale building (crates, wheels, poles, stacking crates etc)
- *Construction Mechanisms and structures Mobilo, brio builder.
- Experience of using construction kits to build walls, towers and frameworks. Craft –
- *Structures & Textiles Junk modelling using recyclable materials. *Fabric, card, paper.
- Play dough- scissors, rolling pins, cutters etc.

<p>End of phase skills:</p>	<p><u>Mechanisms</u></p> <ul style="list-style-type: none"> I can work with paper and card to make simple flaps and hinges I can use simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape I can assemble vehicles with moving wheels using construction kits I can explore moving vehicles through play I can gain some experience of designing, making and evaluating products for a specified user and purpose I can develop some cutting, joining and finishing skills with card <p><u>Structures</u></p> <ul style="list-style-type: none"> I can experience using construction kits to build walls, towers and frameworks I can experience using basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card I can experience different methods of joining card and paper <p><u>Textiles</u></p> <ul style="list-style-type: none"> I can explore and use different fabrics I can cut and join fabrics with simple techniques I can think about the user and purpose of products <p><u>Cooking and Nutrition</u></p> <ul style="list-style-type: none"> I can experience common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell I can experience cutting soft fruit and vegetables using appropriate utensils 			
<p>Year 1</p>	<p><u>Mechanisms</u> <u>Sliders and Levers (Christmas cards)</u></p> <p>I can explore levers and sliders I can experiment with creating moving parts I can design a moving Christmas card for my family</p> <p>I can make a moving Christmas Card I can evaluate my original product</p> <p><i>Vocabulary:</i> slider, pivot, guide, make, user, lever, bridge, design, evaluate, purpose</p>	<p><u>Structures</u> <u>Freestanding Structures (Playground)</u></p> <p>I can explore free standing structures I can explore joining techniques I can experiment with building structures I can design a playground free standing structure for Reception I can make and evaluate my structure</p> <p><i>Vocabulary:</i> curved, tower, square, strong, surface, corner, structure, framework, base, side, weak, edge, thicker, thinner</p>	<p><u>Food and Nutrition</u> <u>Preparing fruit & vegetables (Fruit Salad)</u></p> <p>I can explore fruits and vegetables I can investigate how to chop and peel safely I can explore why we need food and drink I can design a fruit salad for myself I can make a fruit salad I can evaluate my dish</p> <p><i>Vocabulary:</i> fruit, vegetables, chop, peel, core, flesh, pip, healthy, soft, sweet, taste</p>	  

Year 2

Textiles Templates & Joining (Puppets)

- I can explore a range of puppets and how they are made
- I can experiment with running stitch
- I can design a puppet for a child
- I can make a puppet
- I can evaluate my product

Vocabulary: *template, join, running stitch, pattern, decorate, mark out, seam, sew*

Food Preparing fruit and vegetables (Sandwiches)

- I can taste and describe a range of fruits and vegetables
- I can explore food groups using the Eat well Guide
- I can design a healthy sandwich
- I can make a healthy sandwich
- I can evaluate my dish

Vocabulary: *vegetable, fruit, crunchy, soft, hard, sour, sweet, crisp, healthy*

Mechanisms Wheels and axles (A car to carry teddy)

- I can explore a range of wheels
- I can experiment with joining wheels and axles
- I can design a car to carry a teddy
- I can make a car
- I can evaluate my product

Vocabulary: *vehicle, axle holder, cab, move, wheel, chassis, fixed, mechanism, axle, body,*



End of phase skills:

Understanding contexts, users and purposes

- I can work confidently within a range of contexts, such as imaginary, story based, home, school, gardens, playgrounds, local community, industry and the wider environment
- I can talk about what I am designing and making
- I can say whether my products are for myself or other users
- I can describe what my products are for
- I can say how my products will work
- I can say how I will make my products suitable for their intended users
- I can use simple design criteria to help develop my ideas

Generating, developing, modelling and communicating ideas

- I can generate ideas by drawing on my own experiences
- I can use knowledge of existing products to help come up with ideas.
- I can develop and communicate ideas by drawing and talking
- I can model ideas by exploring materials, components and construction kits and by making templates and mock ups
- I can use information and communication technology where appropriate to develop and communicate their ideas.

Planning

- I can plan by suggesting what to do next
- I can select from a range of tools and equipment, explaining their choices
- I can select from a range of materials and components according to their characteristics.

Practical skills and techniques

- I can follow procedures for safety and hygiene
- I can use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components
- I can measure, mark out, cut and shape materials and components
- I can assemble, join and combine materials and components
- I can use finishing techniques, including those from Art and design

Own ideas and products

- I can talk about my design ideas and what I am making
- I can make simple judgements about my products and ideas against design criteria
- I can suggest how my products could be improved

Existing products

- I can comment on what products are
- I can comment on who products are for
- I can comment on what products are for
- I can comment on how products work
- I can comment on how products are used
- I can comment on where products might be used
- I can comment on what material products are made from
- I can comment on what I like and dislike about products.

Making Products work

- I can comment on the simple working characteristics of materials and components
- I can talk about the movement of simple mechanisms such as levers, sliders, wheels and axles
- I can talk about how freestanding structures can be made stronger, stiffer and more stable
- I can talk about how 3D textiles product can be assembled from two identical fabric shapes

Cooking and Nutrition

- I know that all food comes from plants or animals
- I know that food has to be farmed, grown elsewhere, (e.g. home) or caught
- I can name and sort foods into the five groups on the eatwell plate
- I know that everyone should eat at least 5 portions of fruit and vegetables every day
- I know how to prepare simple dishes safely and hygienically, without using a heat source
- I know how to use techniques such as peeling, cutting and grating.

Year 3

Electrical Systems Simple Circuits and Switches (Torches)

I can evaluate a range of torches/lamps and talk about how they work
 I can experiment with a range of switches
 I can design a torch for a scout or brownie to use at night
 I can make a torch
 I can evaluate my product

Vocabulary: toggle switch, battery, bulb holder, push to break switch, push to make switch, prototype, user

Food Healthy and Varied Diet (Vegetable Frittatas)

I can explore what it means to be healthy
 I can explore where my food comes from
 I can experiment with the bridge hold, the claw grip and the fork secure chopping techniques
 I can design a vegetable frittata
 I can make a vegetable frittata
 I can evaluate my dish

Vocabulary: texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, fresh, cook, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested

Structures Shell structures including computer aided design (Banish Broken Biscuits)

I can evaluate the purpose of a shell structure
 I can explore how packaging must be appealing to the user
 I can experiment with nets
 I can design a box to banish broken biscuits
 I can use computer-aided design to make my biscuit box
 I can evaluate my shell structure

Vocabulary: shell structure, three-dimensional (3D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, scoring, shaping, tabs, adhesive, joining, assemble, accuracy, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating



Year 4

Mechanical Systems Levers and Linkages (Create a moving character)

I can explore levers and linkages
 I can experiment with how a lever and a linkage works
 I can design a moving book character for a younger child
 I can make a moving book character
 I can evaluate my product

Vocabulary: mechanism, pivot, guide, rotary, user, lever, linkage, oscillating, reciprocating

Food Healthy and Varied Diet

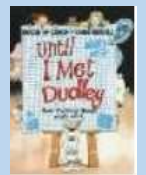
I know what it means to be healthy using the Eatwell Guide
 I can study where my meals come from
 I can design a pleasing pasta dish
 I can make my pleasing pasta using my chosen ingredients
 I can evaluate my pasta dish

Vocabulary: vegetable, fruit, crunchy, soft, hard, sour, sweet, crisp, healthy

Textiles 2D Shape to 3D product (Bendy bags)

I can investigate and evaluate textile products
 I can experiment with a range of stitches
 I can design a bendy bag for someone I know
 I can make a bendy bag
 I can evaluate my product

Vocabulary: fabric, zip, stiffening, seam, fastening, button, strength, templates, weakness, stitch



End of phase skills:

Understanding contexts, users and purposes

- I can work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider community
- I can describe the purpose of my products
- I can indicate the design features of their products that will appeal to intended users
- I can explain how particular parts of their products work.

Generating, developing, modelling and communicating ideas

- I can share and clarify ideas through discussion
- I can model my ideas using prototypes and pattern pieces
- I can use annotated sketches, cross sectional drawings and exploded diagrams to develop and communicate their ideas
- I can use computer-aided design to develop and communicate their ideas

Planning

- I can select tools and equipment suitable for the task
- I can explain my choice of tools and equipment in relation to the skills and techniques they will be using
- I can select materials and components suitable for the task
- I can explain my choice of materials and components according to functional properties and aesthetic qualities.

Practical skills and techniques

- I can follow procedures for safety and hygiene
- I can use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components
- I can measure, mark out, cut and shape materials and components with some accuracy
- I can assemble, join and combine materials and components with some accuracy
- I can apply a range of finishing techniques, including those from Art & Design with some accuracy

Cooking and Nutrition

- I know that food is grown (such as tomatoes, wheat and potatoes) reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world
- I know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically, including where appropriate the use of a heat source
- I know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking
- I know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the eat well plate
- I know that to be active and healthy, food and drink are needed to provide energy for the body.

Own ideas and products

- I can identify the strengths and areas for development in their ideas and products
- I can consider the views of others, including intended users to improve their work
- I can refer to their design criteria as they design and make
- I can use my design criteria to evaluate their completed products.

Existing products

- I can comment on how well products have been designed I can comment on how well products have been made
- I can comment on why materials have been chosen
- I can comment on what methods of construction have been used.
- I can comment on how well products work
- I can comment on how well products achieve their purposes
- I can comment on how well products meet their needs and wants.

Making Products work

- I can comment on how to use learning from Science to help design and make products that work
- I can comment on how to use learning from Mathematics to help design and make products that work
- I know that materials have both functional and aesthetic qualities
- I know that materials can be combined and mixed to create more useful characteristics
- I know that mechanical and electrical systems have an input, process and output
- I know the correct technical vocabulary for the projects they are undertaking

Cycle B
Textiles

Combining different fabric shapes
(Mobile phone carrier)

- I can investigate a range of fabric products
- I can experiment using back stitch, blanket stitch and chain stitch
- I can design a phone carrier for a young person
- I can make a phone carrier
- I can evaluate my product

Vocabulary: seam, hem, reinforce, fastenings, seam allowance, template, design decisions, wadding, pinking shears, pattern pieces

Cycle B
Mechanical Systems

Pulleys or Gears (Create a fairground ride)

- I know how gears work
- I know how pulleys work
- I can design a fairground ride for a new theme park in Whiston
- I can make a fairground ride based on my design
- I can evaluate my fairground ride

Vocabulary: pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor

Cycle B
Food

Celebrating Culture and seasonality
(Pizza)

- I can use first hand and secondary sources to carry out relevant research into existing products to include personal/cultural preferences
- I can carry out sensory evaluations of a variety of existing food products and ingredients
- I can design a pizza
- I can make a pizza
- I can evaluate my dish

Vocabulary: ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs



End of phase skills:

Understanding contexts, users and purposes

- I can work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider community
- I can describe the purpose of my products
- I can indicate the design features of their products that will appeal to intended users
- I can explain how particular parts of their products work.

Generating, developing, modelling and communicating ideas

- I can carry out research, using surveys, interviews, questionnaires and web based resources
- I can identify the needs, wants, preferences and values of particular individuals and groups
- I can generate innovative ideas, drawing on research

Planning

- I can select tools and equipment suitable for the task
- I can explain my choice of tools and equipment in relation to the skills and techniques they will be using
- I can select materials and components suitable for the task
- I can explain my choice of materials and components according to functional properties and aesthetic qualities.
- I can produce appropriate lists of tools, equipment and materials that they need
- I can formulate step by step plans as a guide to making

Practical skills and techniques

- I can accurately measure, mark out, cut and shape materials and components
- I can accurately assemble, join and combine materials and components
- I can accurately apply a range of finishing techniques, including those from Art & Design with some accuracy

Cooking and Nutrition

- I know that a recipe can be adapted by adding or substituting one or more ingredients
- I know that seasons may affect the food available
- I know food is processed into ingredients that can be eaten or used in cooking
- I know that recipes can be adapted to change the appearance, texture, taste and aroma
- I know that different food and drink contain different substances
- nutrients, water and fibre, that are needed for health.

Own ideas and products

- I can critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make
- I can evaluate my ideas and products against my original design specification.

Existing products

- I can comment on how much products cost to make
- I can talk about how innovative products are
- I can talk about how sustainable the materials in products are
- I can talk about what impact products have beyond their intended purpose

Making Products work

- I know how mechanical systems such as cams or pulleys or gears create movement.
- I know how more complex electrical circuits and components can be used to create functional products
- I know how to program a computer to monitor changes in the environment and control their products
- I know how to reinforce and strengthen a 3D framework
- I know that a 3D textiles product can be made from a combination of fabric shapes
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