



KSS Design and Technology Long Term Plan

Year Group	Autumn	Spring	Summer
EYFS	Creating with materials throughout the year, including joining and cutting		
1	Food: Fruit kebabs/ Food Fortnight	Freestanding Structure: Furniture for the three Bears/ Bridge for Billy Goat's Gruff	Wheels and Axles: A vehicle for a character
2	Textiles: Hand puppet	Sliders and Levers: Fairytale inspired moving card puppet	Food: Vegetable Salad
3	Levers and Linkages: Moving Cards	Textiles: Teddy Bear	Food: Chinese Inspired Food
4	Food: Greek Inspired Food	Shell Structures using Computer Aided Design (CAD): Create packaging for a Christmas gift	Electrical Systems: Torches
5	Textiles: Phone Case	Food: Pizza	Cams: Moving Toy
6	Electrical Systems: Electrical Board Game	Food: Moroccan Tagine	Frame Structures: Playground Structures

Year 1 Unit 1: Food

End Point:

To create fruit kebabs

Project Title:

Design, make and evaluate fruit kebabs for yourself for a healthy snack in a lunchbox.

Learning Journey:

1. To investigate what a healthy, balanced diet is
2. To explore different types of fruit and where they come from
3. To practice cutting fruit safely
4. To plan a fruit salad (Introduce project title and create design criteria as a class)
5. To make a fruit salad
6. To evaluate the fruit salad (Lesson 5 and 6 can be on the same day)

Images and Diagrams:



Hygiene – some key pointers

- Jewellery is removed
- Hair is tied back
- Sleeves are rolled up
- Aprons are on
- Hands are washed
- Cuts are covered with blue waterproof dressing



Skills:

- Examine a range of fruit
- Handle, smell and taste fruit
- Describe fruit through talking and drawing
- Evaluate fruit and make preferences
- Use basic food hygiene
- Use basic utensils
- Discuss healthy eating advice
- Explain where fruit is farmed and grown
- Plan, make and evaluate fruit kebab

Vocabulary:

- *fruit*
- *healthy*
- *diet*
- *nutrients*
- *kebab*
- *skewers*

Resources:

- chopping boards
- knives
- skewers
- peelers
- a range of fruit to taste

Year 1 Unit 2: Free Standing Structure

End Point:

To make a free standing structure for a character from a traditional tale.

Project Title:

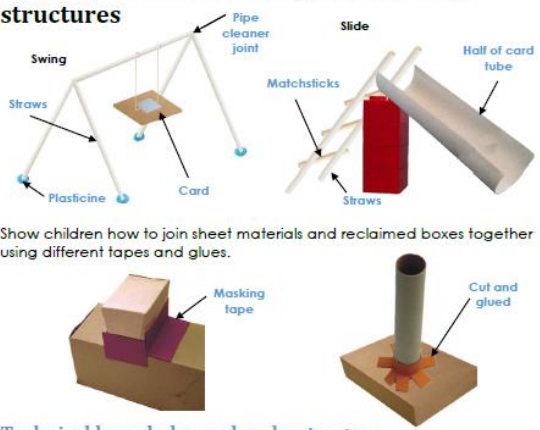

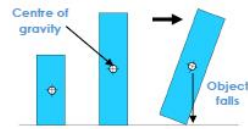
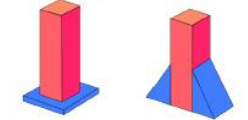
Images and Diagrams:

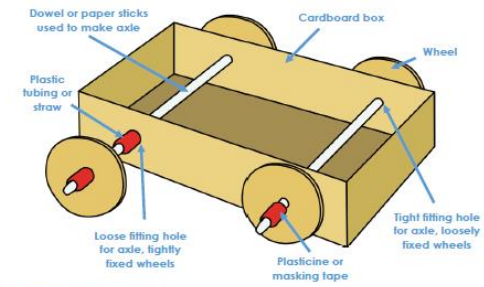

Skills:

- Communicate ideas through talking and drawings
- Select tools and explain choice of tools.

Vocabulary:

- *Free standing structure*
- *Stable*
- *Weak*
- *Strong*

<p>Design, make and evaluate furniture for the three bears for role play.</p> <p>Learning Journey:</p> <ol style="list-style-type: none"> 1. To understanding what free standing structures are and how to make them strong 2. To explore creating free standing structures using pre made kits for a teddy to sit on (e.g. lego, wooden blocks) (Introduce project title and create design criteria as a class) 3. To explore using paper or card and tape to create a free standing structures for a teddy to sit on. 4. To plan a free standing structure for a character from a traditional tale 5. To make the free standing structure 6. To evaluate the free standing structure 	<p>Techniques for assembling freestanding structures</p>  <p>Show children how to join sheet materials and reclaimed boxes together using different tapes and glues.</p> <p>Technical knowledge and understanding</p> <p>Build walls with these different patterns. Tap away the centre brick in the bottom row of each wall in turn. What happens? Which wall is the strongest?</p>  <p>Centre of gravity</p>  <p>Object falls</p> <p>As a freestanding structure becomes taller its centre of gravity rises. Stability in a structure can generally be increased by making the base wider, making the base heavier or adding buttresses.</p> <p>Ask the children to build and explore a variety of freestanding structures through focused tasks. Use a range of construction kits.</p>  <p>Wider bases and buttresses for stability</p>	<ul style="list-style-type: none"> • Investigate freestanding structures • Explore how to make freestanding structures stronger, stiffer and more stable • Evaluate the product against the design criteria 	<p>Resources:</p> <ul style="list-style-type: none"> • Card • Card tubing • Plasticine/blue tac • Masking tape
<p>Year 1 Unit 3: Wheels and Axels</p>			
<p>End Point:</p>	<p>Images and Diagrams:</p>	<p>Skills:</p> <ul style="list-style-type: none"> • Generate ideas for vehicles 	<p>Vocabulary:</p> <ul style="list-style-type: none"> • Vehicle

<p>To create a vehicle for a book character</p> <p>Project Title: Design, make and evaluate a vehicle for _____ (user) for _____ (purpose). e.g. Design, make and evaluate a vehicle for Handa for taking her fruits and vegetables to market.</p> <p>Learning Journey:</p> <ol style="list-style-type: none"> To explore and evaluate a range of wheeled products To label the features of a wheeled product To explore moving axles To design a vehicle (Introduce project title and create design criteria as a class) To create a vehicle To evaluate a vehicle 	<p>Two different ways to fix wheels</p>  <p>Types of wheels</p>  <p>Ways to hold moving axles</p> <p>Use pairs of clothes pegs glued with PVA to the underside of a box. Check the peg holes are large enough to allow axles to move freely. Make sure they are aligned carefully so the vehicle moves in a straight line when the wheel and axle mechanism is added.</p> <p>Use card triangles with holes for the axle. Check the holes are large enough to allow the axle to move freely. Make sure opposite triangles are aligned carefully so the vehicle moves in a straight line when the wheel and axle mechanism is added.</p> <p>Use large paper/plastic straws fixed with masking tape to the underside of a box. Check straws are positioned carefully so the vehicle will move in a straight line when the wheel and axle mechanisms are added. Make sure the straw hole is large enough to allow the axle to move freely. The wheels must be fixed tightly to the axle.</p>	<ul style="list-style-type: none"> Perform practical tasks such as cutting, joining and finishing. Develop and communicate ideas through drawings. Select and use the following materials: paper, card and wood according to their characteristics. Explore and evaluate products with wheels and axles. Hold, cut and join materials safely. 	<ul style="list-style-type: none"> Axle Axle holder Chassis <p>Resources:</p> <ul style="list-style-type: none"> Card boxes Card MDF wheels Paper sticks or dowel Selection of toy vehicles
<p>Year 2 Unit 1: Textiles</p>			
<p>End Point: To create a superhero glove puppet</p> <p>Project Title:</p>	<p>Images and Diagrams:</p>	<p>Skills:</p> <ul style="list-style-type: none"> Investigate and evaluate existing products Make drawings of existing products and label them 	<p>Vocabulary:</p> <ul style="list-style-type: none"> Appliqué Embroider Glove puppet Seam

Design, make and evaluate a superhero glove puppet for yourself for imaginary role play.

Learning Journey:

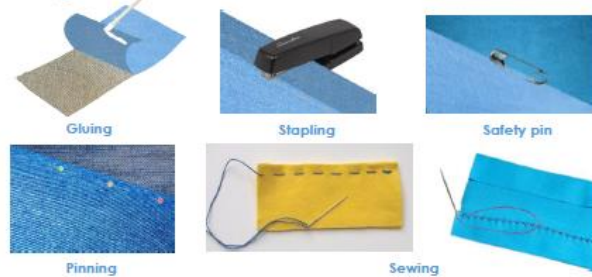
1. To investigate and evaluate glove puppets
2. To explore and evaluate joining techniques
3. To design a superhero glove puppet with a finishing technique (Introduce project title and create design criteria as a class)
4. To create a template and cut out the fabric
5. To create a superhero glove puppet with finishing techniques
6. To evaluate a superhero glove puppet

Three alternative ways of using templates and simple pattern pieces



Exploring and evaluating joining techniques

Joining fabric



Finishing techniques



- Investigate fabrics
- Investigate and create templates (If needed, children can use a teacher template)
- Explore joining techniques
- Explore finishing techniques

• Sew

Resources:

- Glove puppets
- Thread
- Needles
- Stapler
- Safety pins
- Resources for Finishing techniques e.g. fabric crayons/sequins

Year 2 Unit 2: Sliders and Levers

End Point:

Images and Diagrams:

Skills:

Vocabulary:

To make a moving character for a picture book

Project Title:

Design, make and evaluate a moving character for children to use in a children's picture book.

Learning Journey:

1. To look at books and toys with sliders and levers
2. To explore sliders and make a prototype
3. To explore levers and make a prototype
4. To design a moving character (To introduce project title and create design criteria as a class)
5. To make a moving character
6. To evaluate the moving character

Teaching aids to demonstrate sliders and levers

K51 - Simple slider **K51 - Simple lever**

Guide/bridge on back of picture Paper fastener pivot

Sliders move from side to side and up and down

Use a single hole punch to make a hole then cut a slot

Tape or staple car onto card strip

Slicker fixers on back of card A card strip could be used instead of cutting slots to allow movement

Masking tape Rabbit moves up and down

Levers can be used with or without a slot

Paper fastener

A card strip is used as a lever. The fish and boat are glued to the lever which is used as a handle.

- Explore and evaluate a range of books with moving parts.
- Develop and communicate ideas through drawings.
- Select and use tools, explaining choices.
- Explore cutting, folding and joining techniques.
- Evaluate the product against the design criteria.

- *Mechanism*
- *Lever*
- *Slider*
- *Slot*
- *Guide or bridge*
- *Pivot*

Resources:

- split pins
- card
- masking tape

Year 2 Unit 3: Food

End Point:

To make a vegetable salad

Learning Journey:

1. To investigate the 'Eat well Guide'
2. To explore different types of vegetables and where they come from
3. To practice cutting vegetables safely
4. To plan a vegetable salad (Introduce project title and create design criteria as a class)
5. To make a vegetable salad
6. To evaluate the fruit salad (Lesson 5 and 6 can be on the same day)

Images and Diagrams:



Hygiene – some key pointers

- Jewellery is removed
- Hair is tied back
- Sleeves are rolled up
- Aprons are on
- Hands are washed
- Cuts are covered with blue waterproof dressing



Skills:

- Examine a range of vegetables
- Handle, smell and taste vegetables
- Describe vegetables through talking and drawing
- Evaluate vegetables and make preferences
- Use basic food hygiene
- Use basic utensils
- Discuss healthy eating advice and the 'Eat well Guide'
- Explain where vegetables are farmed and grown
- Plan, make and evaluate a vegetable salad

Vocabulary:

- vegetable
- healthy
- diet
- nutrients

Resources:

- chopping boards
- knives
- bowls
- graters
- scissors
- peelers

Year 3 Unit 1: Levers and Linkages

End Point:

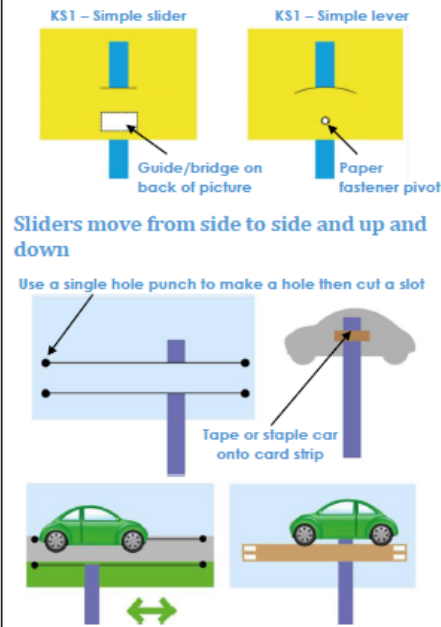
To make a Christmas card with a moving part which uses a lever and a linkage.

Product Title:

Design, make and evaluate a card with a moving part for your family to celebrate Christmas.

Learning Journey:

1. To look at cards or books with moving parts
2. To understand what a slider and lever is and make a prototype (Revision from Year 2)
3. To understand what a lever and linkage is and make a prototype
4. To design a Christmas card with a moving part which uses a lever and linkage (Introduce the Project title and create design criteria as a class)
5. To make the Christmas card with a moving part

Images and Diagrams:**Teaching aids to demonstrate sliders and levers****Skills:**

- Investigate, analyse and evaluate books or products with a range of lever and linkage mechanisms
- Use measuring, marking out, cutting, joining and finishing skills and techniques.
- Discuss the purpose of products
- Plan and annotate sketches and prototypes to model ideas
- Evaluate a final product against the design criteria
- Use appropriate resources to cut and stick.

Vocabulary:

- *Mechanism*
- *Lever*
- *Linkage*
- *Loose pivot*
- *Fixed pivot*

Resources:

- Card
- Split pins
- Masking tape
- Scissors
- Ruler
- glue

6. To peer evaluate the Christmas card

Slicky fixers on back of card




Masking tape

A card strip could be used instead of cutting slots to allow movement




Rabbit moves up and down



Levers can be used with or without a slot



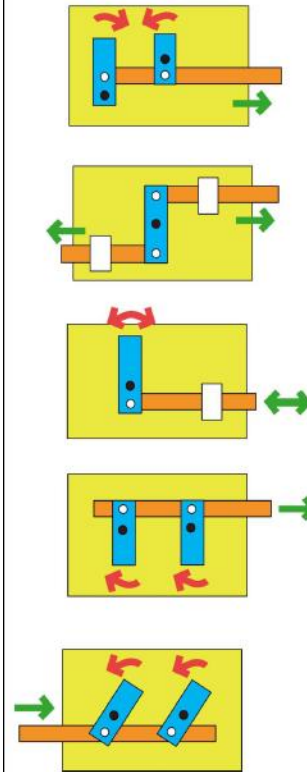
Paper fastener



A card strip is used as a lever. The fish and boat are glued to the lever which is used as a handle.

Teaching aids to demonstrate levers and linkages

- fixed pivot
- loose pivot



When you push the card strip (input movement), the two levers move (output movement).

Y3 Unit 2: Textiles

End Point:

To create a teddy bear using sewing techniques

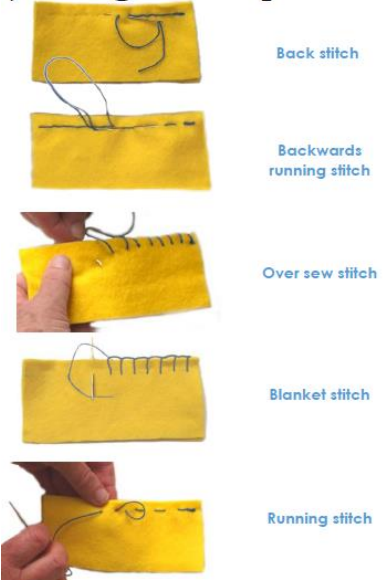
Images and Diagrams:

Skills:

- Investigate a range of textiles products

Vocabulary:

- *Finishing technique*
- *Template*

<p>Project Title: Design, make and evaluate a teddy bear for yourself to play with.</p> <p>Learning Journey:</p> <ol style="list-style-type: none"> 1. To investigate teddy bears 2. To explore sewing techniques 3. To design a teddy bear (Introduce project title and create design criteria as a class) 4. To make a teddy bear (2 lessons) 5. To evaluate my teddy bear 	<p>Teaching aids – joining techniques</p>  <p>Back stitch</p> <p>Backwards running stitch</p> <p>Over sew stitch</p> <p>Blanket stitch</p> <p>Running stitch</p>	<ul style="list-style-type: none"> • Produce annotated sketches • Select and use a range of appropriate tools for cutting, joining and finishing • Fix two pieces of fabric together • Create a template • Plan the main stages of making using a flowchart or storyboard 	<ul style="list-style-type: none"> • <i>Stitch</i> • <i>Seam</i> • <i>Appliqué</i> • <i>Aesthetics</i> <p>Resources:</p> <ul style="list-style-type: none"> • Felt • Needles • Thread • Scissors • Paper for templates
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Cutting out techniques



Ensure template is secured to fabric to allow for accuracy. Double sided tape can be used instead of pins to do this.



Place pattern pieces carefully to avoid wastage.

Year 3 Unit 3: Food

End Point:

To create Chinese spring rolls and wontons

Project Title:

Design, make and evaluate Chinese spring rolls and wontons for yourself for a class party.

Learning Journey:

1. To investigate different carbohydrates, fruit and veg and protein sources linked to 'The Eatwell Guide'

Images and Diagrams:



Cutting using the bridge technique



Cutting using the claw technique

Skills:



- Use annotated sketches and ICT to develop and communicate ideas (e.g. online recipes)
- Plan the main stages of a recipe including the ingredients, utensils and equipment
- Carry out sensory evaluations of a variety of ingredients
- Link healthy foods to the 'Eatwell Guide'
- Gather information about existing products by

Vocabulary:

- *Utensil*
- *Texture*
- *Taste*
- *Bridge and claw technique*

Resources:

- Knives
- Chopping board
- Wontons
- Spring rolls
- Baking parchment
- Ingredients to make wontons and spring rolls

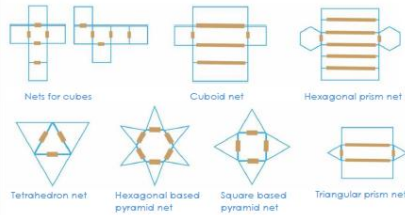
<ol style="list-style-type: none"> 2. To practice cutting safely using the bridge and claw techniques 3. To investigate Chinese spring rolls and wontons (introduce project title and create design criteria as a class) 4. To plan spring rolls and wontons 5. To make spring rolls and wontons 6. To evaluate the spring rolls and wontons (Lesson 5 and 6 can be on the same day) 	 <p>Chinese Spring Rolls and Wontons:</p> 	<p>visiting the local supermarket or using the internet</p> <ul style="list-style-type: none"> • Find out how the variety of ingredients are grown and harvested • Use the bridge and claw technique for cutting • Discuss basic food hygiene practises when handling food 	<ul style="list-style-type: none"> • Variety of vegetables to practise cutting
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Year 4 Unit 1: Shell Structures with Computer Aided Design (CAD)

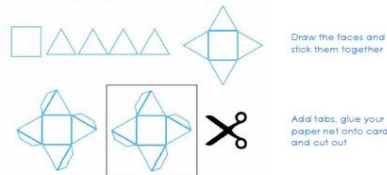
<p>End Point: To create Christmas gift box</p> <p>Project Title: Design, make and evaluate a gift box for a family member for Christmas.</p> <p>Learning Journey:</p>	<p>Images and Diagrams:</p>	<p>Skills:</p> <ul style="list-style-type: none"> • Investigate and evaluate a range of shell structures • Use Microsoft word to create shell structures • Develop ideas through the analysis of existing shell structures • Use Computer Aided Design (CAD) to model and communicate ideas 	<p>Vocabulary:</p> <ul style="list-style-type: none"> • <i>Computer Aided Design (CAD)</i> • <i>Shell Structure</i> • <i>Edge</i> • <i>Face</i> • <i>Vertex</i> • <i>Font</i> • <i>Net</i> • <i>Cuboid</i> • <i>Prism</i>
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1. To investigate and evaluate a range of shell structures
2. To make shell structure prototypes and evaluate them
3. To design a shell structure using CAD (introduce project title and create design criteria as a class)
4. To create a shell structure using CAD (Can be two lessons)
5. To evaluate a shell structure

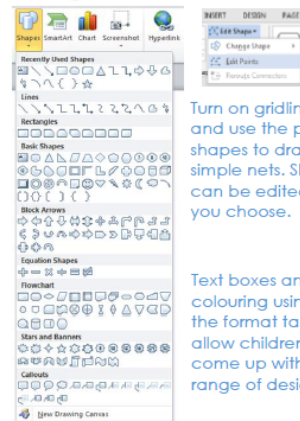
Assemble and evaluate 3-D shapes using standard sized card squares, rectangles, equilateral triangles, isosceles triangles and hexagons, joined with masking tape.



Creating the net for the product you are designing and making without using computer aided design:



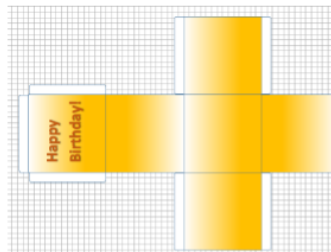
Using Microsoft Word



Turn on gridlines and use the pre-set shapes to draw simple nets. Shapes can be edited if you choose.

Text boxes and colouring using the format tab will allow children to come up with a range of designs.

Microsoft Word has many features that allow children to draw and manipulate accurate shapes, import or paste in graphics and print the final designs without having to use dedicated CAD software.



- Plan the order of the main stages of making
- Explain choice of materials according to functional qualities and aesthetic qualities

Resources:

- Microsoft Word
- Card
- Scissors
- A range of shell structures

Year 4 Unit 2: Food

End Point:

To create a vegetarian gyros

Project Title:

Images and Diagrams:

Skills:

- Use annotated sketches and ICT to develop and communicate ideas (e.g. online recipes)

Vocabulary:

- Appearance
- Texture
- Sensory evaluation
- Processed Food

Design, make and evaluate a vegetarian gyros for yourself for your lunchbox.

Learning Journey:

1. To taste and evaluate greek ingredients (e.g. olive, feta, cucumber, red onion and tzatsiki) and identify where they belong in the 'Eatwell Guide'
2. To practice cutting skills
3. To plan a greek gyros (introduce project title and create design criteria as a class)
4. To make a greek gyros
5. To evaluate a greek gyros (Lesson 5 and 6 can be on the same day)



Vegetarian Gyros:



- Plan the main stages of a recipe including the ingredients, utensils and equipment
- Carry out sensory evaluations of a variety of ingredients
- Link healthy foods to the 'Eatwell Guide'
- Gather information about existing products using the internet
- Select ingredients based on their sensory characteristics
- Find out how the variety of ingredients are grown, harvested and processed
- Use the bridge and claw technique for cutting
- Discuss basic food hygiene practises when handling food

Resources:

- Chopping boards
- Knives
- Graters
- Ingredients for cutting practice
- Ingredients for Gyros
- Ingredients for tasting

End Point:

Images and Diagrams:

Skills:

Vocabulary:

- *Circuit*

To create a torch using an electrical system

Project Title:

Design, make and evaluate a table lamp for a child's bedroom so they can read before bedtime.

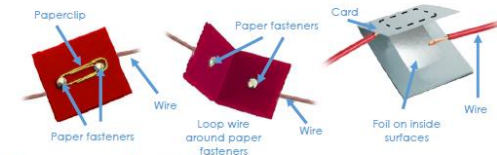
Learning Journey:

1. To research products with a switch (torches, table lamps, head torch, reading nightlight, camping light, kettle, electric whisk, light boxes)
2. To investigate creating a circuit by creating a switch using classroom materials (e.g. paper clip, split pins)
3. To plan a desk lamp design using exploded diagrams (Introduce project title and create design criteria as a class)
4. To order the main stages of making a desk lamp
5. To make a desk lamp design

Making secure connections



Handmade switches



Commercial switches



Examples of KS2 table lamps:



- Gather information about needs and wants and develop a design criteria to match this
- Generate, develop, model and communicate realistic ideas through annotated sketches, cross sectional and exploded diagrams
- Investigate a range of battery powered products
- Order the main stages of making
- Demonstrate how to find a fault in a simple circuit and correct it
- To understand the dangers of electricity

- Conductor
- Insulator
- Prototype
- System
- Switch

Resources:

- Bulbs
- Wires
- Switch
- Card
- Paper
- Paper clips
- Split pins

6. To evaluate a desk lamp design

Year 5 Unit 1: Textiles

End Point:

To create a phone case

Project Title:

Design, make and evaluate a phone case for a parent or carer to protect their phone

Learning Journey:

1. To research and evaluate existing textiles products with fasteners (phone cases, bags, protective cases for laptops etc)
2. To practise sewing techniques (Including tacking) and embroidery techniques
3. To design and carry out a questionnaire to gather information for the design criteria (Introduce project title and create design criteria as a class)
4. To design a phone case using a working drawing and create a step-by-step guide

Images and Diagrams:



Appliqué



Embroidery

Teaching aids – fasteners

Children may want to use a fastener which should be appropriate for the purpose for the product.



Zip

Velcro

Clasp



Toggles

Ties

Buttons

Press studs

Skills:

- Generate ideas by carrying out research including surveys, interviews and questionnaires
- Create a template for a phone case
- Produce a step-by-step plan with list of equipment
- Compare the final design product to the original design specification
- Test the product and critically evaluate the design.
- Children investigate and analyse the properties of materials
- Develop skills of threading needles and joining textiles using a range of stitches
- Learn how to finish off a row of stitches
- Create a working drawing which is used throughout the making of the phone case

Vocabulary:

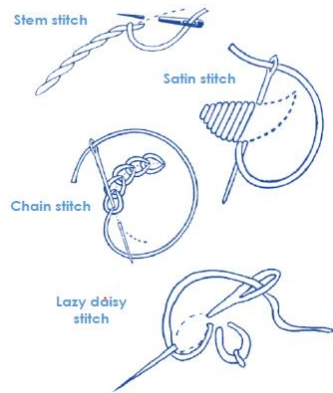
- *Pattern or template*
- *Seam allowance*
- *Tacking*
- *Working drawing*

Resources:

- Needles
- Thread
- Safety pins
- Felt
- Range of fasteners
- Range of textiles products to evaluate

5. To make a phone case
6. To evaluate a phone case

Stitches



Year 5 Unit 2: Food

End Point:

To create a pizza

Project Title:

Design, make and evaluate a pizza for children for a party.

Learning Journey:

1. To taste and evaluate pizza
2. To explore complimentary pizza toppings and evaluate them
3. Practise safe cutting techniques
4. To plan a pizza (Introduce project title and create design criteria as a class)
5. To make a pizza

Images and Diagrams:

Possible techniques that children could use



Mixing to combine ingredients if making savoury muffins or scones



Rubbing in to mix fat and flour if making a yeast-based product



Kneading a bread dough



Cutting using the bridge technique



Cutting using the claw technique

Skills:

- Have knowledge and understanding of hygiene, nutrition, healthy eating and a varied diet
- Use appropriate equipment and utensils to measure out, prepare and combine ingredients
- Use annotated sketches and ICT to develop and communicate ideas
- Write a step-by-step recipe, including a list of ingredients, equipment and utensils
- Carry out sensory evaluations relevant to products and ingredients

Vocabulary:

- *Finishing*
- *Knead*
- *Dough*
- *Claw and bridge technique*

Resources:

- Knives
- Chopping boards
- Mixing bowls
- Scales
-

6. To evaluate a pizza (Lesson 5 and 6 can be on the same day)		and record evaluations in tables, graphs or charts	<ul style="list-style-type: none"> • Demonstrate how to measure out, knead and mix ingredients to a dough
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Year 5 Unit 3: Cams

<p>End Point: To create a moving toy</p> <p>Project Title: To design, make and evaluate a moving toy for younger children for entertainment.</p> <p>Learning Journey:</p> <ol style="list-style-type: none"> 1. To research toys using cams and create a questionnaire for reception children to answer about moving toys 2. To create a prototype moving toy using card 3. To plan a moving toy (using exploded views, drawings from different viewpoints and a step by step guide) (Introduce project title and create design criteria as a class) 4. To create a moving toy 5. To create a moving toy 	<p>Images and Diagrams:</p> <p>Making teaching aids to demonstrate cams</p> <p>Types of movement</p> <p>Types of cams</p>	<p>Skills:</p> <ul style="list-style-type: none"> • Generate ideas by carrying out research using surveys, interviews and web based resources • Create designs using annotated exploded drawings and drawings from different views • Formulate step by step plans • Compare the final product with the design criteria • Test the product with the intended user • Understand that mechanical systems have an input, process and an output • Understand how cams can be used to produce different types of movement and change the direction of movement 	<p>Vocabulary:</p> <ul style="list-style-type: none"> • <i>Rotary motion</i> • <i>Oscillating motion</i> • <i>Reciprocating motion</i> • <i>Cam</i> • <i>Lever</i> • <i>Slider</i> • <i>Guide</i> • <i>Spacer</i> <p>Resources:</p> <ul style="list-style-type: none"> • Cams • Drills • Clamps • Card • Dowling
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6. To evaluate a moving toy and test the product with a reception child

Year 6 Unit 1:Electrical Systems

End Point:

Design and make an electrical board game

Project Title:

Design, make and evaluate an electrical board game for yourself for entertainment

Learning Journey:

1. To research famous inventors related to electrical board games e.g. Thomas Edison
2. To evaluate board games that use electrical circuits
3. To design an electrical board game (Introduce project title and create design criteria as a class)
4. To create an electrical board game (Can take up to two lessons)
5. To evaluate and test an electrical board game

Images and Diagrams:

Switches and sensors

Latching switch

Push-to-make switch
When you push, the electricity flows through the circuit, but when you release if the circuit is broken and the switch is off.

Push-to-break switch
The switch is off while the button is pushed, but returns to its 'on' position when button is released.

Reed switch
Activated by a magnet which closes the contacts.

Tilt switch
When tilted a ball bearing bridges the contacts inside, completing the circuit.

Interface control box

Micro-switch

Light-dependent resistor (LDR)

Standalone control box

Example control program

```

graph TD
    Start([Start]) --> IsInput1{Is Input 1 on}
    IsInput1 -- No --> IsInput1
    IsInput1 -- Yes --> TurnOutput1[Turn Output 1 on]
    TurnOutput1 --> Delay[Delay 8]
    Delay --> TurnOutput2[Turn Output 1 off]
    TurnOutput2 --> IsInput1
  
```

Micro-switch – a switch that can operate as push-to-break switch or a push-to-make switch.

Push-to-break switch – a switch turned off by pressing it.

Push-to-make switch – a switch turned on by pressing it.

Reed switch – a switch operated by a magnet.

Tilt switch – a switch that works when tilted at an angle.

Toggle switch – a switch operated when a lever is pressed.

Light dependent resistor (LDR) – a sensor that operates when light is shined on it.

Skills:

- Measuring, marking out, cutting and joining skills.
- Practise methods of making secure connections
- Draw on Science knowledge by exploring a range of electrical systems
- Avoid making short circuits
- Explore ideas through annotated sketches, pictorial representations or circuit diagrams and explain how the circuit works
- Produce detailed step by step plans and list of tools equipment and materials needed
- Create a flowchart to produce a series of instructions
- Critically evaluate the final product and test them on the user.

Vocabulary:

- modelling
- open switch
- closed switch
- normally open
- normally closed
- computer control input
- output devices
- input devices

Resources:

- circuits
- buzzers
- switches
- batteries
- bulbs
- bulb holders

- Children need to learn how to write a sequence of instructions where a decision is made e.g. when a switch is pressed a buzzer is activated.
- They use a 'control language' or create a flowchart to produce a series of instructions.
- Children's computing knowledge and skills need to focus on using input and output devices connected to a standalone box or interface box.
- They use their learning in computing to control and monitor products they have designed and made e.g. alarm system.

Year 6 Unit 2: Food

End Point:

To make a vegetable tagine (Moroccan dish)

Project Title:

Design, make and evaluate a Moroccan tagine for friends to come over for dinner

Learning Journey:

1. To explore Moroccan food culture and chefs (e.g. Najat Kaanache)
2. To taste and evaluate a variety of vegetables
3. To practise safe cutting, boiling and frying techniques
4. To plan a Moroccan tagine (Introduce project title and create design criteria as a class)
5. To make a Moroccan tagine
6. To evaluate a Moroccan tagine (Lesson 5 and 6)

Images and Diagrams:



Cutting using the bridge technique



Cutting using the claw technique

Moroccan Tagine



Skills:

- Have knowledge and understanding of hygiene, nutrition, healthy eating and a varied diet
- Use appropriate equipment and utensils to measure out, prepare and combine ingredients
- Use annotated sketches and ICT to develop and communicate ideas
- Write a step-by-step recipe, including a list of ingredients, equipment and utensils
- Carry out sensory evaluations relevant to products and ingredients and record evaluations in tables, graphs or charts
- Demonstrate how to measure out ingredients
- Evaluate the final product linking back to the design brief

Vocabulary:

- *Food culture*
- *Tagine*
- *Morocco*
- *Claw and bridge technique*

Resources:

- Hot plates
- Sauce pans
- Frying pans
- Chopping boards
- Knives
- Variety of tagine vegetables
- scales

can be on the same day)

- Understand seasonality
- Consider taste, texture and smell when planning
- Research key chefs

Year 6 Unit 3: Frame Structures

End Point:

To create a playground model

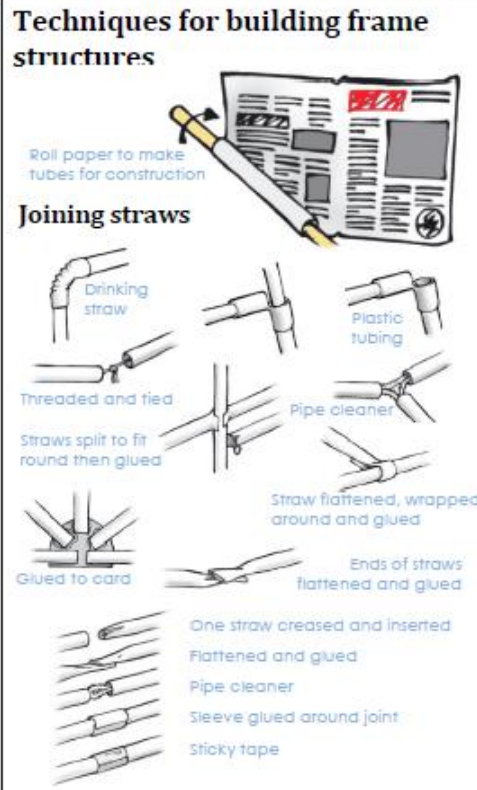
Project Title:

Design, make and evaluate an adventure playground model for children to use for recreation

Learning Journey:

1. To research existing adventure playgrounds (Could be a local walk or researching playground designers)
2. To explore techniques for building frame structures
3. To conduct research into existing products by questionnaire (Introduce project title and create design criteria as a class)
4. To plan an adventure playground model and step by step instructions

Images and Diagrams:



Skills:

- Investigate and evaluate a range of existing frame structures
- Carry out research into user needs of existing products
- Create step by step instructions and a list of resources needed
- Use tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks
- Use finishing and decorative techniques suitable for the product
- Use paper straws for creating a free standing structure
- Explore how to reinforce structures to make them stronger

Vocabulary:

- Card
- Paper straws
- Pipe cleaners
- Masking tape
- Modelling
- Diagonal
- Horizontal
- Vertical
- Frame structure

	<p>5. To create an adventure playground model</p> <p>6. To evaluate an adventure playground model</p>			
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