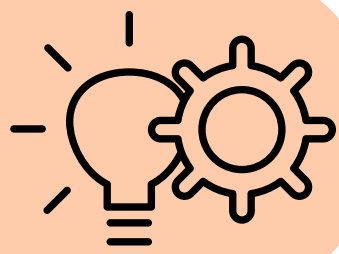
DESIGN TECHNOLOGY

AUTUMN - YEAR 1 - MECHANISMS

1. RESEARCH

Children find out how wheels and axels work through videos and looking at a range of toys that include these.

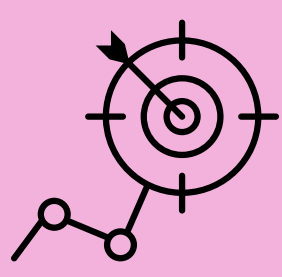


2. DESIGN

Children then think about how they could make their own toy that could include wheels and axels and draw their own designs, thinking aobut how they could contruct them.

3. MAKE

Children then try out their plans, creating their own version of a toy that moves using wheels and axels.

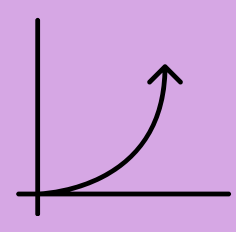


4. TEST

Children are then given time to test if their toy actually moves! Children show each other how their toy moves.

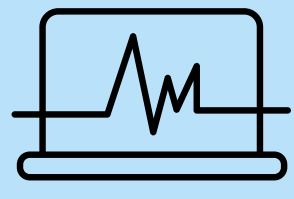
5. EVALUATE

Children evaluate whether their plan was successful or not and why/ why not.



6. PRESENT

children present their findings to the rest of the class and talk about the process.



Final outcome: A TOY CAR

Vocabulary

wheel, axel, chassis, movement

tools/ materials needed:

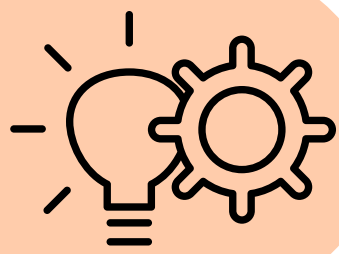
Wheels (wooden/cotton reels)
Short wooden dowel
Thin Wire
Cardboard for chassis.

DESIGN TECHNOLOGY

AUTUMN - YEAR 2 - MECHANISMS

1. RESEARCH

Children think about how pop up toys work and then find out how slides and levers help to achieve this process

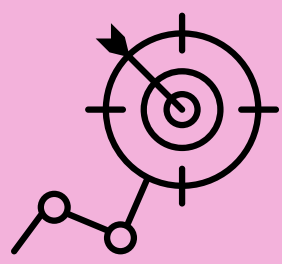


2. DESIGN

Children develop their ideas through talk and drawings and label parts. They make templates and mock ups of their ideas in card and paper or using ICT.

3. MAKE

With help children measure, cut and score with some accuracy. They learn to use hand tools safely and appropriately to make their own pop up toy.

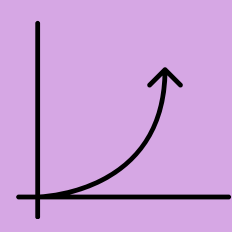


4. TEST

Children then test out their pop up toys and describe to their friends how their design works.

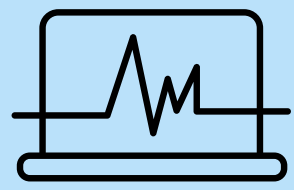
5. EVALUATE

With confidence, children talk about their ideas and designs, saying what they like and dislike about them.



6. PRESENT

Children present their findings to the rest of the class and talk about the process.



Final outcome: TWO POP UP TOYS, ONE WITH A PIVOT, ONE WITH A PULL TAB.

Vocabulary

mechanism, lever, slider, slot, guide or bridge, movement

tools/ materials needed:

Thin card in variety of colours

Christmas Images

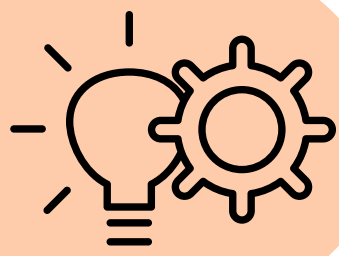
Split pins

DESIGN TECHNOLOGY

AUTUMN - YEAR 3 - MECHANISMS

1. RESEARCH

Children understand how well products have been designed, made, what materials have been used and the construction technique chosen when using levers to create movement

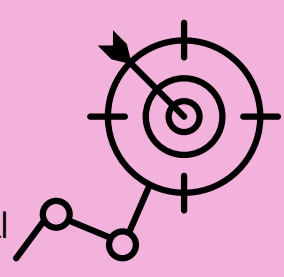


2. DESIGN

When planning their toy, children explain their choice of materials and components including function and aesthetics and start to order the main stages of making the product.

3. MAKE

Children start to understand that mechanical systems such as levers and linkages create movement and use their plan to produce a final product that climbs or jumps

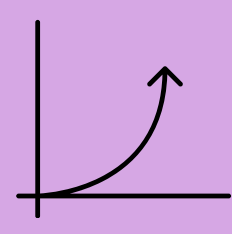


4. TEST

Children test out their toys and describe how they know it works and any adjustments they might need to make.

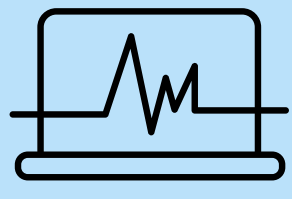
5. EVALUATE

Children start to evaluate their product against original design criteria e.g. how well it meets its intended purpose



6. PRESENT

Children present their toys to the group, using their original plans and final pieces to describe their work.



Final outcome: Something like jumps or climbs

Vocabulary:
Lever
Linkages

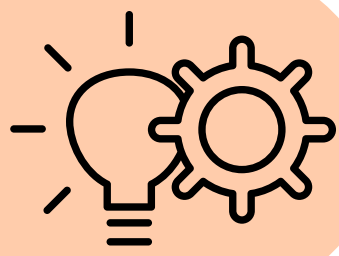
tools/ materials needed:
Strips of corrugated card
Split pins

DESIGN TECHNOLOGY

AUTUMN - YEAR 4 - MECHANISMS

1. RESEARCH

Children learn about inventors, designers and engineers who have developed ground-breaking products using electrical loops.

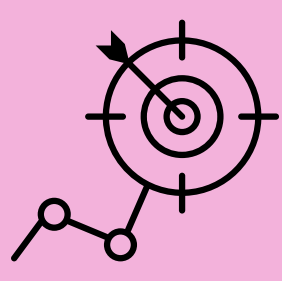


2. DESIGN

Children then generate ideas, considering the purposes for which they are designing - link with Mathematics and Science. They then confidently make labelled drawings from different views showing specific features.

3. MAKE

Children make a product which uses both electrical and mathematical components. They work accurately to measure, make cuts & make holes.

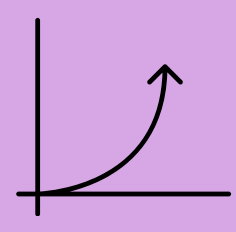


4. TEST

Children to roadtest their final products on younger children and encourage questions about their work.

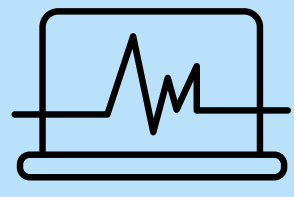
5. EVALUATE

Children evaluate their products, carrying out appropriate tests. How do you know you have been successful? What feedback have others provided?



6. PRESENT

Using grahics/ photos and words to demonstrate the design and evaluation process, children create a presentation to teach others.



Final outcome: An electrical loop game

Vocabulary:
metal wire, battery, lightbulb, circuit, buzzer, base, alligator clip

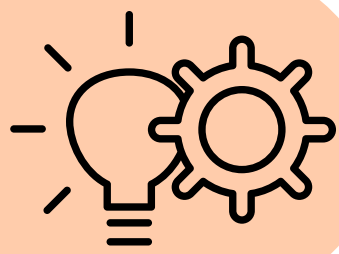
tools/ materials needed:
metal wire, battery, lightbulb, circuit, buzzer, base, alligator clip

DESIGN TECHNOLOGY

AUTUMN - YEAR 5 - MECHANISMS

1. RESEARCH

Children research how a pulley system is used to raise and lower a flag and why this is important. Why do falgs need to move?

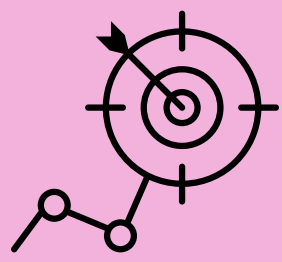


2. DESIGN

Children generate, develop, model and communicate their ideas through discussion, annotated sketches, crosssectional and exploded diagrams, prototypes, pattern pieces.

3. MAKE

Children to use their knowledge and carefully constructed plan to create a pulley system that will allow them to raise and lower a flag.

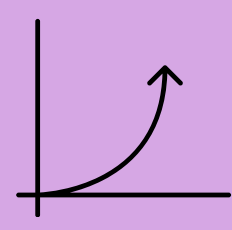


4. TEST

Children to test and analyse the systems they have created.

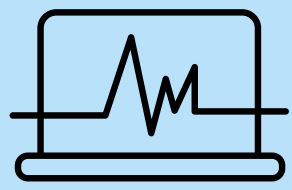
5. EVALUATE

Children to to evaluate their product and plans personally and seek evaluation from others. What worked well? What didn't?



6. PRESENT

Children to write a summary of the process they have been through and present this to the rest of the class.



Final outcome: A flag that uses a pulley system

Vocabulary:

gear
pulley

tools/ materials needed:

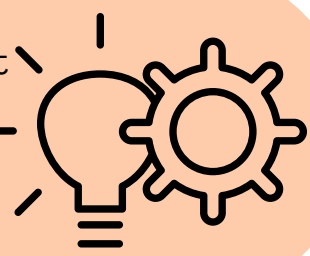
Wooden dowel
Child appropriate saws for cutting dowel lengths
Clips for pulley system.
Plasticine and thick card for base.
Foam card for gears
Sewing pins for gears

DESIGN TECHNOLOGY

AUTUMN - YEAR 6 - MECHANISMS

1. RESEARCH

Children to research how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose, with a focus on products that use cams.

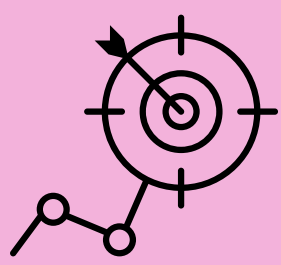


2. DESIGN

Children to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces.

3. MAKE

Children confidently select appropriate tools, materials, components and techniques and use them in order to make a product that uses cams successfully.

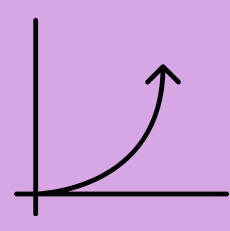


4. TEST

Children to test the success of their cam use and demonstrate when they make modifications as they go along.

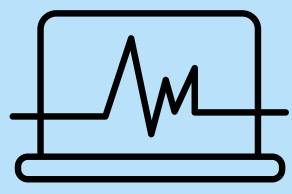
5. EVALUATE

Children evaluate against their original criteria and suggest ways that their product could be improved. Children record their evaluations using drawings with labels.



6. PRESENT

Children to present their evaluations to parents, explaining the whole process and how they could refine and market their product.



Final outcome: a toy with a cam mechanism

Vocabulary:
cams, strength, structure, prototype

tools/ materials needed:

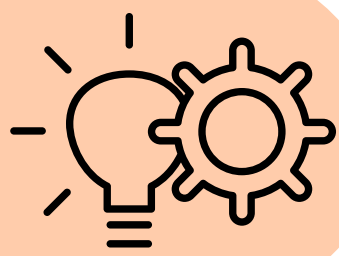
- Variety of cams
- Wooden dowel rods
- Child appropriate saws for cutting dowel lengths
- Solid shoeboxes (or similar) for main structure
- Wire for prototype

DESIGN TECHNOLOGY

SPRING - YEAR 1 - TEXTILES

1. RESEARCH

Children research the importance of recycling and using fabrics more than once. Can things be used again and made into different things?

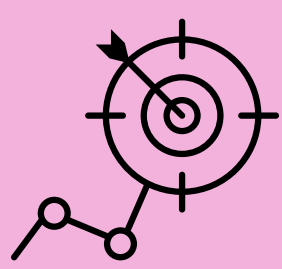


2. DESIGN

Children begin to develop their ideas through talk and drawings. They make templates and mock ups of different types of bunting in card and paper

3. MAKE

Children assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape.

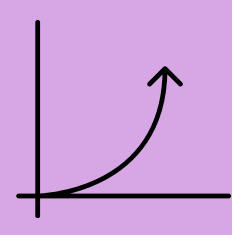


4. TEST

Children to look at what they have made and answer the question - does this look like our plan? Can we use this as bunting?

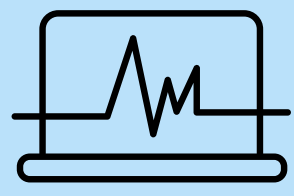
5. EVALUATE

Children to evaluate their product by discussing how well it works in relation to the purpose



6. PRESENT

Children to decide where to hang their bunting, giving reasons for their choices.



Final outcome: Fabric bunting

Vocabulary:
recycled, running stitch, cotton, stiches strength, template

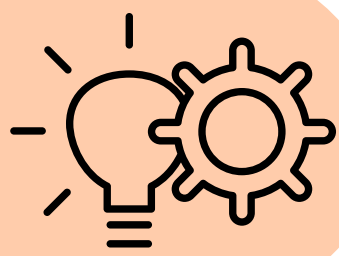
tools/ materials needed:
Cotton fabric
Embroidery thread/cotton reels
Embroidery needles

DESIGN TECHNOLOGY

SPRING - YEAR 2 - TEXTILES

1. RESEARCH

Chidlren research patterns and a range of materials. How could they use materials in a different way to make a new product?

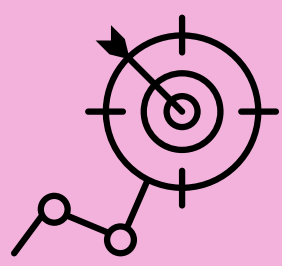


2. DESIGN

Children to design a weave using strips of plasctic bag and a recycled bottle. What patterns and designs can they create?

3. MAKE

Children cut plastic bags into thin strips. Starting at the base, children weave in and out of the bottles, pulling the fabric taught to create a pot shape.

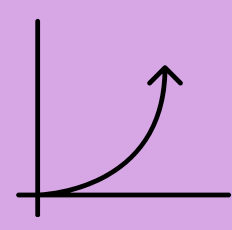


4. TEST

Children to test their newly made pot - can it be used for its new purpose?

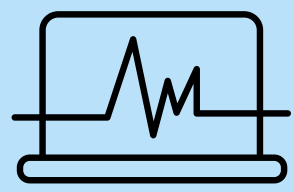
5. EVALUATE

Children to evaluate their products as they are developed, identifying strengths and possible changes they might make.



6. PRESENT

Children to hold their own party and present all of their new weaved pots as pieces to use to hold different items.



Final outcome: Plastic bag weaved pot

Vocabulary:
weft, warp, tension, loom

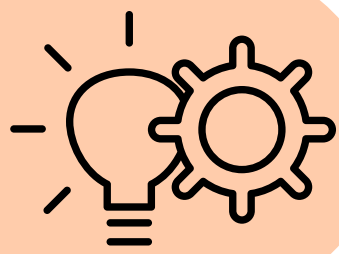
tools/ materials needed:
Plastic bottles (one per child)
Plastic bags
scissors

DESIGN TECHNOLOGY

SPRING - YEAR 3 - TEXTILES

1. RESEARCH

Chidlren to research and understand how to identify a target group for what they intend to design and make based on a design criteria - who would buy fabric decorations?

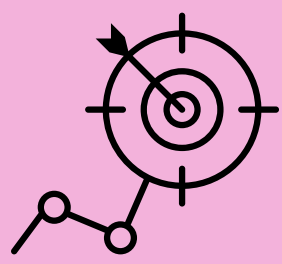


2. DESIGN

Children to Identify a purpose for what they intend to design and make - can we sell these to make money for our school?

3. MAKE

Children cut, shape and join fabric to make a simple fabric decoration and use basic sewing techniques. Children choose and use appropriate finishing techniques based on their own ideas.

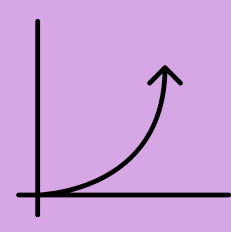


4. TEST

Children to test the strength of their stitching - will this be secure enough for the final product?

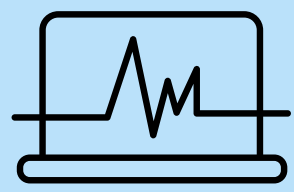
5. EVALUATE

With confidence, children talk about their ideas, saying what they like and dislike about them.



6. PRESENT

Children to hold their own stall after school to try and sell their products to parents.



Final outcome: A fabric bird decoration

Vocabulary:
recycled, stiches, strength, template blanket stitch, running stitch, wool

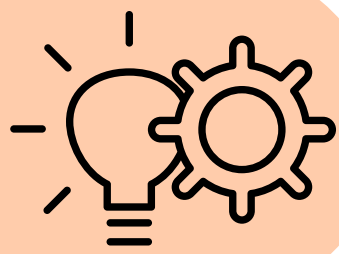
tools/ materials needed:
Felted wool (jumpers/blanket), Fabric scraps Old buttons and beads, Decorative cotton fabric Embroidery needles, Embroidery thread.

DESIGN TECHNOLOGY

SPRING - YEAR 4 - TEXTILES

1. RESEARCH

Chidlren to research different designers and artists that have created pieces of art using textiles. What methods did they use? What materials create different looks?

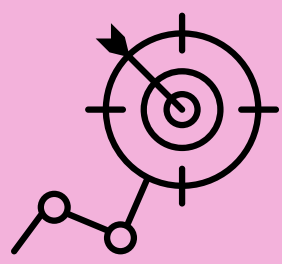


2. DESIGN

Children to develop a clear idea of what has to be done, planning how to use materials, equipment and processes to create a complete picture.

3. MAKE

Children demonstrate how to measure, tape or pin, cut and join fabric with some accuracy to create a range of styles within one piece.

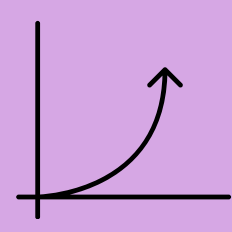


4. TEST

Children to test the strength of their stitching - will this be secure enough for the final product?

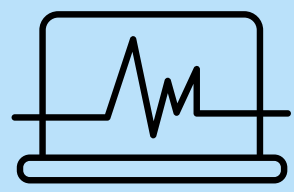
5. EVALUATE

Chidlren to describe how other peoples work (artists/ designers) have influneced their won work.



6. PRESENT

Children to create their own gallery of fabric pieces to show the rest of the school.



Final outcome: A fabric flower garden

Vocabulary:

blanket stitch, running stitch, chain stitch backstitch, embellish, applique, surface design, 3D, relief, embellishment

tools/ materials needed:

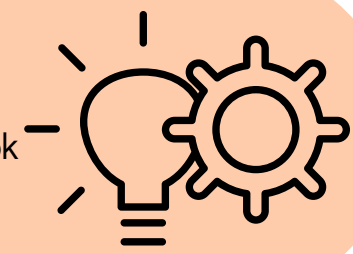
woollen blanket squares, bondaweb, cotton in variety of colours, embroidery needles, embroidery threads

DESIGN TECHNOLOGY

SPRING - YEAR 5 - TEXTILES

1. RESEARCH

Chidlren to research different typs of bags. Which is the most practical? Which ones look the best? Which are the easiest to make?

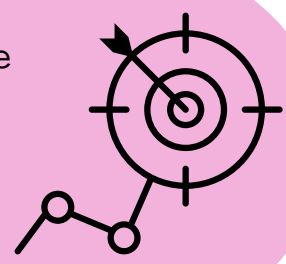


2. DESIGN

When planning, children can explain their choice of materials and components according to function and aesthetic. How can they make the best bag?

3. MAKE

Children experiment with a range of stiches to decide which stich has the greatest strength. Children cut two sides of a bag from cotton (no bigger than a4) and do a hemming stich along both tops, attaching handles. With right sides together, stitch around the remaining three sides.

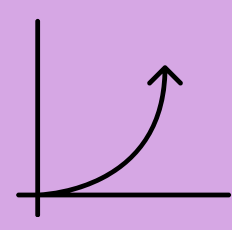


4. TEST

Children to test the strength of their stitching and the functionality of their bag - can you carry different items in it?

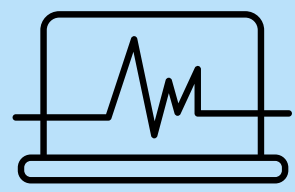
5. EVALUATE

Chidlren to evaluate their product personally and seek evaluation from others. Who had made the best bag and why? How do you know?



6. PRESENT

Children to descibe and give feedback to each other on the success of their product - what needs to be thought of next time?



Final outcome: A fabric bag

Vocabulary:

recycled, stiches, strength, template, surface design, embellishment

tools/ materials needed:

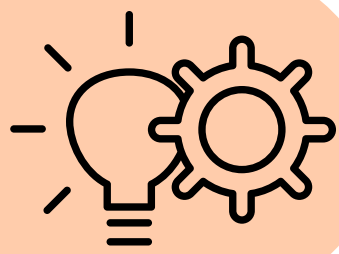
Old cotton duvets
Fabric for stitching samples
Embroidery thread
Embroidery needles

DESIGN TECHNOLOGY

SPRING - YEAR 6 - TEXTILES

1. RESEARCH

Chidlren to research different typs of slippers. How are they made? Are their different slippers for different purposes?

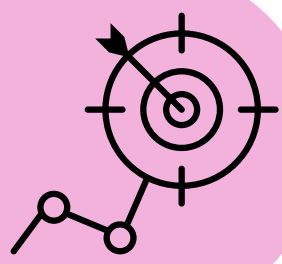


2. DESIGN

When planning, children can explain their choice of materials and components according to function and aesthetic. How can they make a great pair of slippers that look good and can be worn inside?

3. MAKE

Children to make a prototype and test it What did they learn from the prototype? How can they transfer this to making the real thing? Children will know how to reinforce and strengthen a 3D framework.

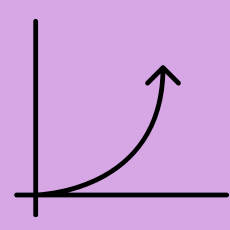


4. TEST

Children to test the strength of their stitching and the functionality of their slippers - can you test them on different surfaces?

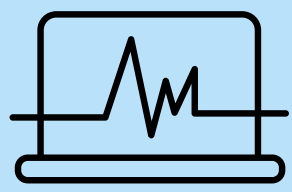
5. EVALUATE

Children to evaluate against their original criteria and suggest ways that their product could be improved.



6. PRESENT

Children to use ICT to present the steps of their process and what they have learned by completing this.



Final outcome: A pair of slippers

Vocabulary:

running stitch, back stitch, over stitch, upper, sole rigid, secure, prototype

tools/ materials needed:

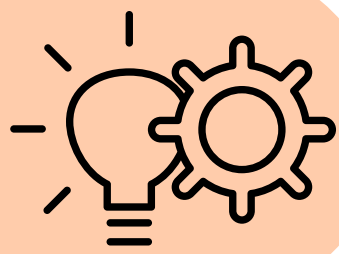
Woollen blankets for sole of slipper
Stiff card for insert
Second-hand buttons/beads for embellishment
Thick fabric for upper

DESIGN TECHNOLOGY

SUMMER - YEAR 1 - FOOD AND HYGIENE

1. RESEARCH

Chidlren to understand how to name and sort foods into the five groups in 'The Eat well plate'

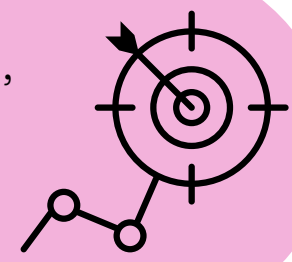


2. DESIGN

Children to decide what fruits they woud like to include in their own fruit salads. Through discussion and models, children to draw their fruit salad and label the fruits.

3. MAKE

Children to make their own fruit salad, focusing on cutting, peeling and grating.

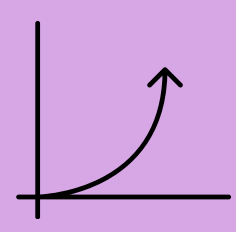


4. TEST

Children to try the different fruit salads and discuss what they can taste.

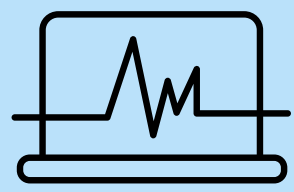
5. EVALUATE

Children to describe each of the fruit salads and state which ones they liked and why.



6. PRESENT

Children to hold a class picnic and enjoy sharinng their fruit salads with each other.



Final outcome: A fruit salad

Vocabulary:

prepare, cut , evaluate, healthy

tools/ materials needed:

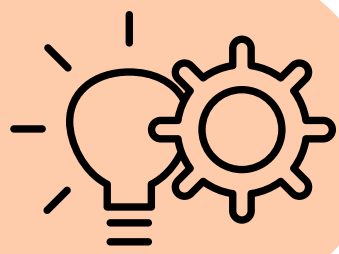
knives
wooden skewers
fruit
chopping boards

DESIGN TECHNOLOGY

SUMMER - YEAR 2 - FOOD AND HYGIENE

1. RESEARCH

Chidlren to understand that everyone should eat at least five portions of fruit and vegetables every day.

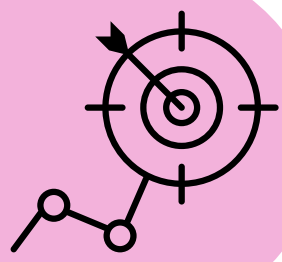


2. DESIGN

Children to decide what they could add to a salad to make it healthy. Would there be just vegetables? What else could be added (dressings etc)

3. MAKE

Children to make their own salad, focusing on cutting, peeling and grating and combining ingredients together to make one dish.

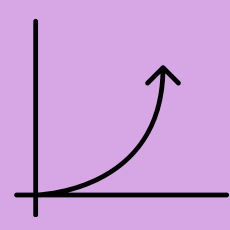


4. TEST

Children to try the different salads and discuss what they can taste. Children to distinguish between what is a fruit and what is a vegetable.

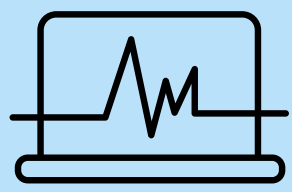
5. EVALUATE

Children to describe each of the salads and state which ones they liked and why.



6. PRESENT

Children to hold a class picnic and enjoy sharinng their salads with each other.



Final outcome: A fresh healthy salad

Vocabulary:

prepare, cut , evaluate, healthy

tools/ materials needed:

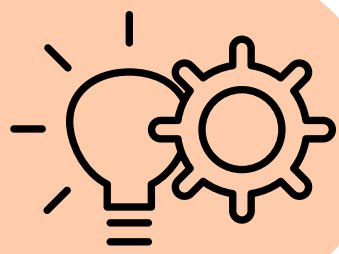
knives
bowls
fruit and vegetables
chopping boards

DESIGN TECHNOLOGY

SUMMER - YEAR 3 - FOOD AND HYGIENE

1. RESEARCH

Chidlren to know that to be active and healthy, food and drink are needed to provide energy for the body.

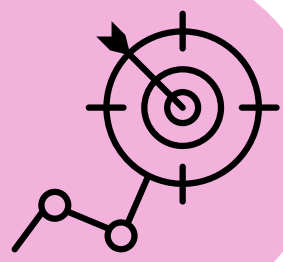


2. DESIGN

Children to decide what they could add to a sandwich to make it healthy. What fillings would you choose? How would you know these are a healthy choice?

3. MAKE

Children to make their healthy sandwich, focusing on peeling, chopping, slicing, grating, mixing, spreading,

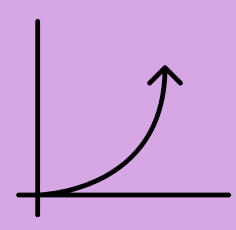


4. TEST

Children to try the different sandwiches - which is the healthiest? How do you know? Which one would keep you full until dinner time? Why?

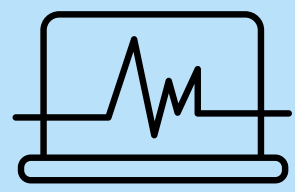
5. EVALUATE

Children to describe that to be active and healthy, food and drink are needed to provide energy for the body and how their sandwich can help with this.



6. PRESENT

Children to draw their own sandwich and where it would fit on a healthy lunch placte.



Final outcome: A healthy sandwich

Vocabulary:

prepare, cut , evaluate, healthy, balanced

tools/ materials needed:

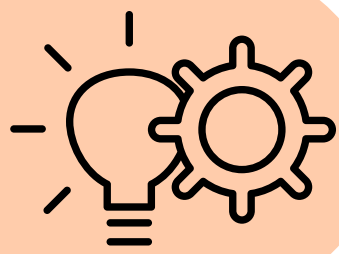
knives and plates
butter
range of healthy sandwich fillings
chopping boards

DESIGN TECHNOLOGY

SUMMER - YEAR 4 - FOOD AND HYGIENE

1. RESEARCH

Chidlren to understand 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.

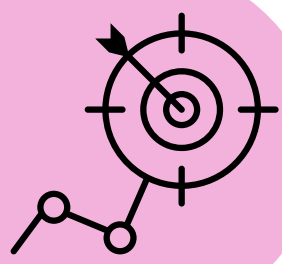


2. DESIGN

Children to decide how they could make a healthy drink . What mkes a drink healthy? How do you know? Children to design an ingredients list for a healthy drink

3. MAKE

Children to make their healthy drink, focusing on preparing the ingredients and deciding how to mix them together.

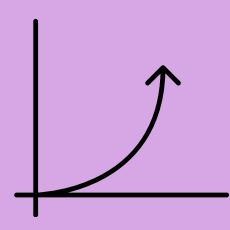


4. TEST

Children to try the different drinks. Do they all taste nice? Are they all healthy?

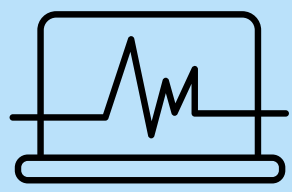
5. EVALUATE

Children to describe that even though something is healthy, it might not taste great. Children to evaluate their finished products for taste as well as nurtitional value



6. PRESENT

Children to present the fiirndings and hold a class debate.



Final outcome: A range of healthy drinks

Vocabulary:

prepare, cut , evaluate, healthy, survey, flavour, balanced

tools/ materials needed:

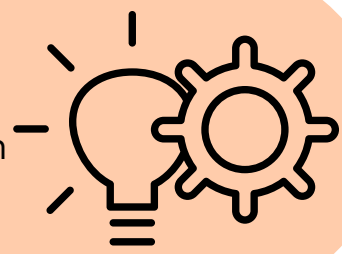
fruit and vegetables
chopping boards
blenders
whisks
cups

DESIGN TECHNOLOGY

SUMMER - YEAR 5 - FOOD AND HYGIENE

1. RESEARCH

Chidlren to understand how food is processed into ingredients that can be eaten or used in cooking. Children to describe what happens to their food at home.

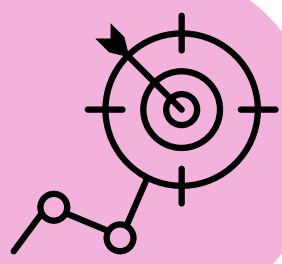


2. DESIGN

Children to decide how they could make a healthy smoothie . What mkes it healthy? How do you know? Children to design an ingredients list for a healthy drink using a range of labels from smoothies already on the market.

3. MAKE

Children to make their smoothie focusing on preparing the ingredients and including at least one super food ingredient.

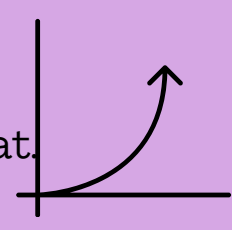


4. TEST

Children to try the different drinks. Do they all taste nice? Are they all healthy?

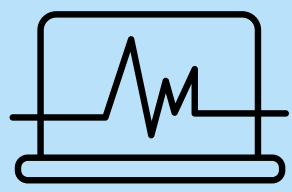
5. EVALUATE

Children to describe that even though something is healthy, it might not taste great. Children to evaluate their finished products for taste as well as nurtitional value



6. PRESENT

Children to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.



Final outcome: A healthy smoothie

Vocabulary:

prepare, cut , evaluate, healthy, adapt, blend, balanced

tools/ materials needed:

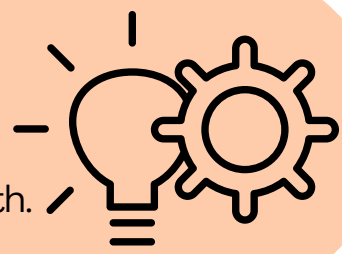
fruit and vegetables
chopping boards
blenders
whisks
cups

DESIGN TECHNOLOGY

SUMMER - YEAR 6 - FOOD AND HYGIENE

1. RESEARCH

Chidlren to know different food and drinks contain different substances – nutrients, water and fibre – that are needed for health.

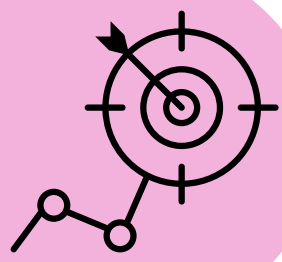


2. DESIGN

Children to decide how they could make a balanced healthy picninc meal. What could they include on a plate? Think about prep time, ingredients etc. Children to design the plate and create a list of ingredients.

3. MAKE

Children to make their healthy picnic plate from scratch, using a range of teachniques to make the plate edible and eye catching.

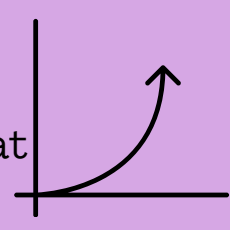


4. TEST

Children to try each others plate options.

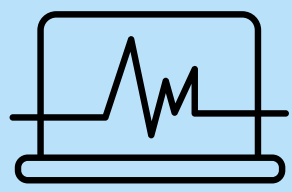
5. EVALUATE

Children to decide who has the healthiest plate and why, Is it the same as the one that looks the best?



6. PRESENT

Children to hold a class discussion about the importance of a balanced diet and why all plates should include healthy foods.



Final outcome: A balanced picnic meal

Vocabulary:

prepare, cut , evaluate, healthy, adapt, carbohydrates, proteins, fats, balanced, Fruit and Vegetables

tools/ materials needed:

range of healthy food choices
chopping boards
knives
cups
plates