



Design and Technology Medium Term Planning

Year 2



Key Concept Overview

| Key Concepts | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|--|--|--|--|--|
| <p>Design</p>  | <p>-I am beginning to design products using pictures and words based on a design criteria.</p> <p>-I use pictures, words and models to convey what I want to design.</p> | <p>-I use simple drawings and labels to record my ideas.</p> <p>-I design products that have a clear purpose based on my own design criteria.</p> | <p>-I can research similar products to develop my own design ideas.</p> <p>-I am able to develop a design through discussion and annotated sketches to add detail to my design.</p> | <p>-I generate and develop ideas using exploding diagrams and prototypes.</p> <p>-I use different ways to creatively record and present my designs to show they are fit for purpose.</p> | <p>-I can generate and develop ideas using pattern pieces and computer aided design.</p> | <p>-I generate and develop ideas using a variety of design techniques.</p> <p>-I justify my plans in a convincing way.</p> <p>-I use research and develop design criteria to design innovative functional and appealing products aimed at a specific group.</p> |
| <p>Make</p>  | <p>-I can choose appropriate resources and tools to make a product.</p> <p>-I can use a range of materials to make a product, including construction materials, textiles and ingredients.</p> | <p>-I can select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing.)</p> <p>-I use a range of materials to make a product, including construction materials, textiles and ingredients and explain why the</p> | <p>-I can choose a material for both its suitability and its appearance and explain why it has been selected.</p> <p>-I can think ahead about the order of my work, select tools needed for a given task and give reasons for my choices.</p> | <p>-I can choose and use appropriate tools from a wider range to perform practical tasks.</p> <p>-I can choose suitable materials from a wider range and explain its suitability.</p> | <p>-I use a range of appropriate tools competently.</p> <p>-I can join and combine a range of materials competently.</p> | <p>-I select and use specialist tools and equipment to perform practical tasks accurately.</p> <p>-I can select from and use a wider range of materials and components according to their functional qualities and aesthetic qualities.</p> |
| <p>Evaluate</p>  | <p>-I am beginning to explore and evaluate a range of existing products by evaluating the product against the purpose</p> <p>-I can evaluate my designs and products by saying how well they do the job they were designed for.</p> | <p>-I can explore and evaluate a range of existing products by looking at function and materials.</p> <p>-I can evaluate my ideas and products against set design criteria.</p> | <p>-I can investigate and analyse an existing product by identifying whether it is fit for purpose and how easy it is to use.</p> <p>-I can prove that my design meets some set criteria and evaluate how well it works.</p> | <p>-I can explain why certain materials were used to make existing products.</p> <p>-I can evaluate and suggest improvements for my design.</p> | <p>-I can evaluate appearance and function against original criteria.</p> <p>-I am able to justify decisions made during the design process.</p> | <p>-I can critically evaluate the quality of the design, manufacture and fitness for purpose by comparing existing products</p> <p>-I can evaluate my ideas and products against my own design criteria and consider the views of others to improve my work.</p> |
| <p>Technical Knowledge</p>  | <p>-I can explore and use simple mechanisms in my products.</p> | <p>-I can build structures, exploring how they can be made stronger, stiffer and more stable.</p> | <p>-I can apply my understanding of how to strengthen, stiffen and reinforce more complex structures.</p> | <p>-I am able to understand and use mechanical systems in my products.</p> | <p>-I can understand and use electrical systems in my products.</p> | <p>-I am able to control and model using an ICT control programme.</p> |
| <p>Cooking and nutrition</p>  | <p>I can tell you where my food comes from.</p> | <p>I can use a range of ingredients to prepare a healthy dish.</p> | <p>-I can make healthy eating choices from an understanding of a balanced diet.</p> <p>-I can use a range of ingredients to prepare a healthy dish, explain why the ingredients were chosen and the effects on the body.</p> <p>-I can use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading or kneading.</p> | <p>-I can explore a range of cooking techniques to produce a healthy balanced dish.</p> <p>-I can measure out ingredients accurately and use ratios to scale up or down a recipe.</p> <p>-I understand seasonality and know when and how a variety of ingredients are grown, reared, caught and processed.</p> | | |

DT Whole School Overview




| | Autumn | | Spring | | Summer | |
|---------------|--|--|---|---|--|---|
| Year 1 | Textiles puppets | Food & Nutrition Fruit and Vegetables. | Mechanisms Moving storybook | | Structures windmills | Mechanisms Wheels and axels |
| Year 2 | Mechanisms Fairground wheels | Structures Victorian houses | Textiles Easter pouches | | Mechanisms Moving monster | Food and nutrition Healthy wraps |
| Year 3 | Mechanical systems Pneumatic toys | | Food and nutrition Eating seasonally– vegetable tart | | Textiles Cushions | Structures Constructing a castle |
| Year 4 | Electrical systems torches | Textiles Book sleeve | Structures pavilions | Mechanical systems Slingshot chariot | Food and nutrition Adapting a recipe– biscuits *enterprise opportunity | |
| Year 5 | Food and nutrition What could be healthier? | Electrical systems Electronic Christmas cards | Digital world Monitoring device | | Structures Bridges | Mechanical systems Making a pop-up book. |
| Year 6 | Structures playground | Mechanical systems Automata toys | Digital world Navigating the world | | Food Come dine with me | Electrical systems Steady hand game |




Autumn

Year 2

Mechanisms: Fairground Wheel

[Mechanisms: Fairground wheel - Kapow Primary](#)

| <i>Prior Learning</i> | Be able to design and make simple models. Be able to reflect by saying what they like and dislike about their product. Be able to evaluate suitability of products they make. | | | | |
|--|---|-----------------|---|--|--|
| <i>Vocabulary</i> | Axle, decorate, evaluation, ferris wheel, mechanism, stable, strong, test, waterproof, weak | | | | |
| <i>End point</i> | By the end of the unit ,the children will have designed, made and evaluated a fairground wheel. | | | | |
| Key Concept | Second order concept | Lesson Sequence | Learning Objectives | Suggested teaching sequence | Resources |
| Design Evaluate   | Significance | Lesson 1 | OO: To be able to design products that have a clear purpose based on my own design criteria. OO: To be able to explore and evaluate a range of existing products by looking at function and materials. LO: I can research fairground structures and consider how these structures work. | Hull Fair Introduction. Explore and research some fairground rides. Consider how these structures work—class discussion (evaluate) | Fairground ride images |
| Design  | Significance Written and oral expression | Lesson 2 | OO: I design products that have a clear purpose based on my own design criteria. I use simple drawings and labels to record my ideas LO: I can design a fairground wheel. | Read the city wheel letter brief. Look at objects that use a wheel mechanism. Design a wheel. Label a wheel. KS1 Y2: DT: Design a Ferris Wheel - Kapow Primary | Objects that use a wheel mechanism. Wheel design sheet. |

| Key Concept | Second order concept | Lesson Sequence | Learning Objectives | Suggested teaching sequence | Resources |
|--|---|-----------------|---|--|--|
| Design  | Responsibility Written and oral expression | Lesson 3 | OO: I design products that have a clear purpose based on my own design criteria. LO: I can design a fairground wheel and select appropriate materials. | Planning the build. Consider properties of materials. KS1, Y2, DT, Lesson 2: Planning to Build a Ferris Wheel- Kapow Primary | Planning sheet |
| Make  | Responsibility Written and oral expression | Lesson 4 | OO: I use a range of materials to make a product, including construction materials, textiles and ingredients and explain why the materials have been selected. LO: I can select appropriate materials to make my fairground wheel and give reasons for my choices. | Building the frame and wheels. Explore stability. Consider ways to strengthen materials. Remind pupils that their wheel will need to rotate so they should ensure that it is not larger than the frame. It will also need an axle. Time to create KS1, Y2, DT, Lesson 3: Building the Frame and Wheel - Kapow Primary | Planning sheet Materials to make: Cardboard Lolly sticks String Plasticine Cellotape glue |
| | | Lesson 5 | OO: I can select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] . LO: I can use a range of tools to decorate my fairground wheel. | Adding pods and decoration. Discuss the properties of the pods and how they need to rotate. Use pens, paint and glue to decorate. KS1, Y2, DT, Lesson 4: Adding pods and decoration - Kapow Primary | Planning Paint Glue Pens scissors |
| Evaluate  | Written and oral expression | Lesson 6 | OO: I can evaluate my ideas and products against set design criteria. LO: I can evaluate my fairground wheel and suggest ways for improvement. | Evaluate end product against the design. | |





End of unit assessment quiz: [Assessment Resources and Quiz D&T KS1: Fairground wheel \(kapowprimary.com\)](#)



Autumn

Year 2

Mechanisms: Moving Monster

[Mechanisms: Making a moving monster - Kapow Primary](#)

| Prior Learning | Be able to design and make simple models. Be able to reflect by saying what they like and dislike about their product. Be able to evaluate suitability of products they make. | | | | |
|---|---|-----------------|---|--|-----------------------------------|
| Vocabulary | Evaluations, input, lever, linear motion, linkage, mechanical, mechanism, motion, oscillating motion, output, pivot, reciprocating motion, rotary motion, survey | | | | |
| End point | Children will design, make and evaluate a moving monster. | | | | |
| Key Concept | Second order concept | Lesson Sequence | Learning Objectives | Suggested teaching sequence | Resources |
| Design Evaluate   | Significance Cause and Consequence | Lesson 1 | OO: I design products that have a clear purpose based on my own design criteria. LO: I can explain what the function of a lever is. | Recap prior learning on mechanisms. Explain that children are going to make a 'moving monster'. Children to explore a range of toys to identify a range of mechanisms. KS1, Y1, DT, Lesson 1: Pivots, levers and linkages - Kapow Primary | Range of toys |
| Make  | Cause and consequence | Lesson 2 | OO: I design products that have a clear purpose based on my own design criteria. LO: I can explore linkage systems and understand their functions. | Making linkages. Children to experiment making different linkage systems. KS1, Y1, DT, Lesson 2: Making linkages - Kapow Primary | Cardboard Paper fasteners |
| Design  | Written and oral expression | Lesson 3 | OO: I design products that have a clear purpose based on my own design criteria. LO: I can design a moving monster. | Design your moving monster. Encourage children to use their planning sheets KS1, Y1, DT, Lesson 3: Designing my monster - Kapow Primary | Planning sheet Pens pencils |

| Key Concept | Second order concept | Lesson Sequence | Learning Objectives | Suggested teaching sequence | Resources |
|--|-----------------------------|-----------------|--|---|---|
| Make  | Responsibility | Lesson 4 | OO: I use a range of materials to make a product, including construction materials, textiles and ingredients and explain why the materials have been selected. LO: I can make a moving monster. | Lesson 4: KS1, Y1, DT, Lesson 4: Making my monster - Kapow Primary Making and decorating the moving monster. | Cardboard Split pins Pens Pencils Paint |
| Evaluate  | Written and oral expression | Lesson 5 | OO: I can evaluate my ideas and products against set design criteria. LO: I can evaluate my fairground wheel and suggest ways for improvement. | Evaluate end product against the design. | |



End of unit assessment quiz: [Assessment Resources and Quiz D&T KS1: Moving Monsters \(kapowprimary.com\)](#)



Spring

Year 2

Textiles: Pouches

[Textiles: Pouches - Kapow Primary](#)

| Prior Learning | Be able to design and make simple textiles creations Be able to reflect by saying what they like and dislike about their product. Be able to evaluate suitability of products they make. | | | | |
|--|--|-----------------|--|--|-------------------------------|
| Vocabulary | Accurate, fabric, knot, pouch, running-stitch, sew, shape, stencil, template, thimble | | | | |
| End point | Children will design, make and evaluate a pouch. | | | | |
| Key Concept | Second order concept | Lesson Sequence | Learning Objectives | Suggested teaching sequence | Resources |
| Make  | Responsibility | Lesson 1 | OO: I design products that have a clear purpose based on my own design criteria. LO: I can demonstrate basic sewing skills. | Recap prior learning. Explore a range of fabrics. Children to discuss needle safety. Thread a needle. Practice running stitch. KS1, Y2, DT, Lesson 1: Running stitch- Kapow Primary | Range of fabric s |
| Design  | Written and oral expression | Lesson 2 | OO: I design products that have a clear purpose based on my own design criteria. LO: I can create a template for my textiles pouch. | Recap prior learning on Textiles—Puppets in year 1 Explain to children that they will be making a pouch. Discuss different materials for sewing. Children to design a template for their pouch. KS1, Y2, DT, Lesson 1: Using a template to cut out fabric- Kapow Primary | Materials Fabrics Paper |





| Key Concept | Second order concept | Lesson Sequence | Learning Objectives | Suggested teaching sequence | Resources |
|--|-----------------------------|-----------------------|---|---|--|
| Make  | Responsibility | Lesson 3 and lesson 4 | OO: I use a range of materials to make a product, including construction materials, textiles and ingredients and explain why the materials have been selected. LO: I can make and decorate a textiles pouch. | Lesson 3 KS1, Y2, DT, Lesson 3: Making a pouch- Kapow Primary Lesson 4 KS1, Y2, DT, Lesson 4: Decorating a pouch - Kapow Primary Making and decorating the pouch—focus on detail of stitching. Take photos for evidence. | Material Fabric Needle Thread Cotton |
| Evaluate  | Written and oral expression | Lesson 5 | OO: I can evaluate my ideas and products against set design criteria. LO: I can evaluate my pouch and stitching and suggest ways for improvement. | Evaluate end product against the design. | |



End of unit assessment quiz: [Assessment Resources and Quiz D&T KS1: Pouches \(kapowprimary.com\)](#)

Summer

Year 2

Structures: Victorian Houses

| <p>Prior Learning</p> <p>Be able to design and make simple models</p> <p>Be able to reflect by saying what they like and dislike about their product.</p> | | | | | |
|--|---|-----------------|--|--|----------------------|
| <p>Vocabulary</p> <p>Function, man-made, mould, natural, stable, stiff, strong, structure, test, weak</p> | | | | | |
| <p>End point</p> <p>By the end of the unit, children will design, make and evaluate a Victorian house structure.</p> | | | | | |
| Key Concept | Second order concept | Lesson Sequence | Learning Objectives | Suggested teaching sequence | Resources |
| <p>Technical Knowledge Evaluate</p>   | <p>Cause and Consequence</p> <p>Similarity and Difference</p> <p>Significance</p> | <p>Lesson 1</p> | <p>OO: I can build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>LO: I can identify shapes which increase stability.</p> | <p>Recap prior learning on structures</p> <p>Lesson 1 KS1, Y2, DT, Lesson 1: Exploring stability- Kapow Primary</p> <p>Exploring stability.</p> <p>Children are to create a variety of shapes to test their stability.</p> | <p>Play dough</p> |
| <p>Technical Knowledge</p>  | <p>Cause and Consequence</p> <p>Similarity and Difference</p> <p>Significance</p> | <p>Lesson 2</p> | <p>OO: I can build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>LO: I can describe how a structure can be made stronger.</p> | <p>Exploring strength.</p> <p>Children will test the strength of a range of paper structures and discuss their findings.</p> <p>KS1, Y2, DT, Lesson 2: Strengthening materials- Kapow Primary</p> | <p>Paper weights</p> |
| <p>Design</p>  | <p>Written and oral expression</p> | <p>Lesson 3</p> | <p>OO: I use simple drawings and labels to record my ideas.</p> <p>LO: I can design a Victorian building.</p> | <p>Explore Victorian building.</p> <p>Look at structure, decoration and design.</p> <p>Children to design and label their own building.</p> | |

| Key Concept | Second order concept | Lesson Sequence | Learning Objectives | Suggested teaching sequence | Resources |
|--|-----------------------------|-----------------|---|--|-----------------|
| <p>Make</p>  | Responsibility | Lesson 4 | <p>OO: I can select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] .</p> <p>LO: I can make a Victorian building.</p> | Children to make their Victorian building using their planning design. | Planning design |
| <p>Evaluate</p>  | Written and oral expression | Lesson 5 | <p>OO: I can evaluate my ideas and products against set design criteria.</p> <p>LO: I can evaluate my Victorian house structure and suggest ways for improvement.</p> | Evaluate end product against the design. | |
| <p>End of unit assessment quiz: Assessment Resources and Quiz D&T KS1: Baby Bear's Chair (kapowprimary.com)</p> | | | | | |

Summer

Year 2


Food and nutrition: A balanced diet


[Food: A balanced diet - Kapow Primary](#)

Prior Learning Be able to name fruit and vegetables..

Vocabulary Alternative, diet, balanced diet, evaluation, expensive, healthy, ingredients, nutrients, packaging, refrigerator, sugar, substitute.

End point The children will make a healthy wrap.

| Key Concept | Second order concept | Lesson Sequence | Learning Objectives | Suggested teaching sequence | Resources |
|--|-----------------------------|-----------------|---|--|---------------------------------------|
| Cooking and Nutrition  | Similarity and Difference | Lesson 1 | OO: I can explore and evaluate a range of existing products by looking at function and materials. LO: I can research the sugar content in a range of foods and drinks. | Recap prior knowledge of Food and nutrition Lesson 1: KS1, Y1, DT, Lesson 1: Food Categories, Hidden Sugar- Kapow Primary Hidden sugars and taste testing. Children will be exploring the hidden sugars in our food. Children to taste test a range of drinks. | Food packaging Range of drinks |
| | Written and Oral expression | Lesson 2 | OO: I use simple drawings and labels to record my ideas LO: I can design a healthy wrap. | Lesson 2: KS1, Y2, Design Tech, Lesson: Food Combinations Test- Kapow Primary Children are to receive a design brief to create a healthy wrap. Children must begin to consider allergies before designing. Children could also conduct some taste tests. | Food samples |
| | Written and Oral expression | Lesson 3 | OO: I use simple drawings and labels to record my ideas LO: I can design a healthy wrap. | Lesson 3: KS1 Y2, Design & Tech, Lesson 3: Designing Food Wraps - Kapow Primary Children should now have a range of designs. They must now evaluate and create their final design. | Food samples |

| Key Concept | Second order concept | Lesson Sequence | Learning Objectives | Suggested teaching sequence | Resources |
|---|----------------------|-----------------|--|--|---------------------------------|
| <p>Cooking and Nutrition</p>  | Responsibility | Lesson 4 | <p>OO: I can use a range of ingredients to prepare a healthy dish.</p> <p>LO: I can make a healthy wrap.</p> | <p>Lesson 4 KS1, Y2, Design Tech, Lesson: Make Wraps and Evaluate - Kapow Primary</p> <p>Make the wrap.</p> <p>Taste the wrap.</p> <p>Evaluate against their final design.</p> | Ingredients to make their wraps |