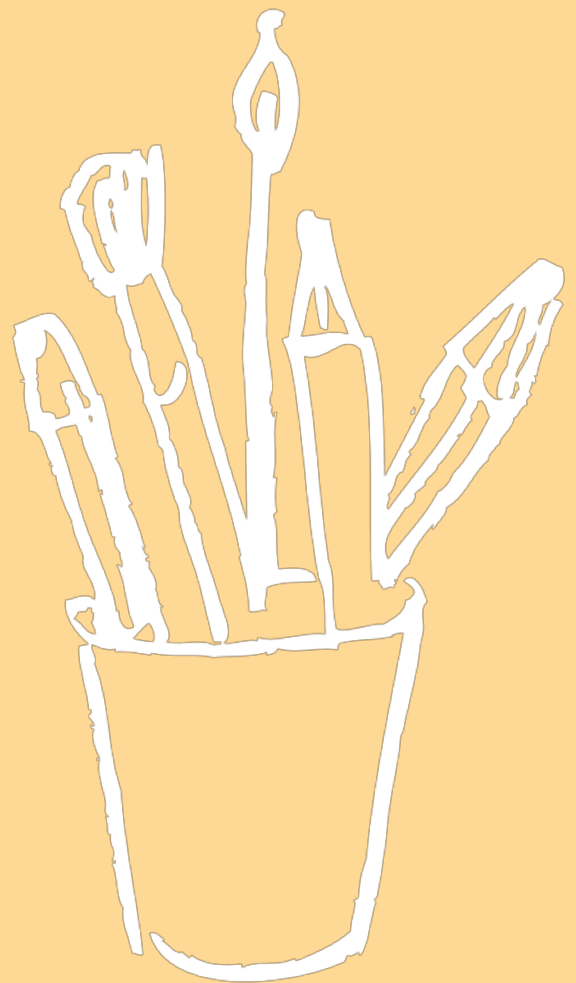




All Saints C of E Primary School

*Continuing the*  
**Design and Technology  
Journey**





Design is not just what it looks like and feels like. Design is how it works.

*Steve Jobs*



# Design and Technology

## Strands

1. Technical Knowledge
2. Designing
3. Making
4. Cooking and Nutrition
5. Evaluating

## Unit Planning Frame

### Evaluate

Look at existing products and teach / model the linked technical knowledge.



### Design

Design using the age-expected criteria to make a purposeful (KS1), functional (Y3/4) or innovative (Y5/6) product.



### Make

Make products by selecting and naming materials , resources and tools according to their characteristics (KS1) and their functional / aesthetic qualities (KS2).



### Evaluate

Evaluate their own work.

## Fine Motor Skills

To use finger gym activities.

To use one-handed tools and equipment eg making snips in paper with child's scissors.

To hold a pencil using tripod grip.

Begin to use anticlockwise movement and retrace vertical lines.

Use simple tools to effect changes to materials.

Make flowing and fluent movements with a range of writing materials.

Form some letters correctly.

<b>Playing and Exploring</b>	<b>Active Learning</b>	<b>Creative and Critical Thinking</b>
<ul style="list-style-type: none"> <li>* Finger gym</li> <li>* Threading</li> <li>* Dough area</li> <li>* Writing area</li> <li>* Cutting table</li> <li>* Construction area</li> <li>* Outdoor fine motor area</li> </ul>	<ul style="list-style-type: none"> <li>* Fine motor skills groups, table, area.</li> <li>* Letter formation activities.</li> <li>* Cutting skills groups</li> <li>* Pencil control activities.</li> </ul>	<ul style="list-style-type: none"> <li>* Creative area, children select resources and design and make.</li> <li>* Writing area , children select resources and design and make.</li> </ul>
	<ul style="list-style-type: none"> <li>* Light boards</li> </ul>	

## Creating with materials

Explore different materials freely in order to develop ideas on how to use them and what to make.

Opportunities to explore colour and mixing colour.

Opportunities to explore construction material , stacking, joining, balancing.

Develop their own ideas and then decide which materials/media to use to express them.

Use small world , role play and props to retell and create simple narratives.

<b>Playing and Exploring</b>	<b>Active Learning</b>	<b>Creative and Critical Thinking</b>
<ul style="list-style-type: none"> <li>* Creating area, and free choice resources.</li> <li>* Construction area with variety of materials both inside and outside.</li> <li>* Small world tables both inside and outside.</li> <li>* Dressing up area .</li> </ul>	<ul style="list-style-type: none"> <li>* Modelling of skills for painting, colour mixing, collage, drawing, junk modelling and printing.</li> <li>* Exploring media, materials, fixtures, colour mixing, tools and techniques.</li> </ul>	<ul style="list-style-type: none"> <li>* Designing and creating using skills taught or discovered independently.</li> <li>* Evaluating own or others work.</li> <li>* Improving on work / design.</li> <li>* Toys topic - design and make own toy.</li> <li>* Colour and light - mixing colours independently.</li> </ul>
	<ul style="list-style-type: none"> <li>* Doodle buddy</li> </ul>	

# Reception

## Fine Motor Skills

Use a range of tools competently, safely and confidently  
(spoons, knives, forks, pencils, scissors, paintbrushes)

Hold a pencil effectively in a tripod grip.

To learn correct letter formation.

To begin to show care and accuracy when drawing.

To reduce the size of writing.

<b>Playing and Exploring</b>	<b>Active Learning</b>	<b>Creative and Critical Thinking</b>
<ul style="list-style-type: none"><li>* Writing area</li><li>* Dough area</li><li>* Cutting table</li><li>* Outside area, equipment.</li><li>* Whiteboards, chalkboards.</li></ul>	<ul style="list-style-type: none"><li>* Fine motor skills groups.</li><li>* Model how to hold pencil.</li><li>* Pencil control sessions.</li><li>* Letter formation modelling.</li><li>* Model cutting skills.</li><li>* Model safety, carrying scissors and pencil rules.</li></ul>	<ul style="list-style-type: none"><li>* Creative area</li><li>* Writing area</li><li>* Pencil control area</li></ul>
	<ul style="list-style-type: none"><li>* Letter school</li></ul>	

# Reception

## Creating with Materials

Explore, use and refine a variety of tools, techniques and artistic effects to express their ideas and feeling.

Create with a form and function in mind.

Share their creations, explaining the process they have used.

Return to and build on previous learning, refining ideas and developing their ability to represent them.

Use props and materials to imagine, characters, worlds and wonder during role play and small world activities.

<b>Playing and Exploring</b>	<b>Active Learning</b>	<b>Creative and Critical Thinking</b>
<ul style="list-style-type: none"><li>* Creative area</li><li>* Dough area</li><li>* Construction area inside and outside.</li><li>* Small world area inside and outside.</li></ul>	<ul style="list-style-type: none"><li>* Techniques and skills modelled to children, print, joining techniques, 3d modelling, drawing, textures.</li><li>* Explain action and evaluation language structures modelled and displayed for children.</li></ul>	<ul style="list-style-type: none"><li>* Creative area challenge cards</li><li>* Design sheets, idea photos in areas.</li><li>* Encouraging evaluation of own and others work, resources, and function when creating.</li></ul>
	<ul style="list-style-type: none"><li>* Doodle buddy</li></ul>	

# Technical Knowledge

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## YEAR 1

- **Build structures exploring how they can be made stronger, stiffer and more stable.**
- **Investigate strengthening sheet materials.**
- **Investigate joinings - temporary and fixed.**

### Skills

- Join appropriately for different materials and situations (e.g. glue, tape, fabric, stitch...).
- Fold, tear, cut paper and card.
- Roll paper to create tubes.
- Curl paper.
- Use hole punch and paper fasteners.

## YEAR 2

- **Explore and use mechanisms such as levers, sliders, wheels and axels in their product.**

### Skills

- Create hinges.
- Simple pop ups.
- Vehicles with free running wheels in construction kits.
- Using a range of materials to create models with wheels and axels using tubes, dowel and cotton reels.

## YEAR 3

- **Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.**

### Skills

- Create shell or frame structures and strengthen frames with diagonal struts.
- Make structures more stable by giving them a wide base.
- Join materials using appropriate methods.
- Create nets.
- Build frameworks using a range of materials, wood, card etc.



**P.S.H.E.****LANGUAGE****MATHEMATICS****RESOURCE**

- Use equipment safely.

Structures  
Stronger  
Stiffer  
Stable  
Strengthening  
Joinings  
Glue  
Tape  
Fabric  
Stitch  
Fold  
Tear  
Cut

Comparative  
language.  
Measures.  
Fractions.  
Geometry.

See objectives

- Use equipment safely.

Mechanisms  
Levers  
Sliders  
Wheels  
Axels  
Product  
Hinge  
Pop-ups  
Construction kits  
Materials

Comparative  
language.  
Measures.  
Fractions.  
Geometry.  
Angle.

See objectives

- Differentiate between the terms, 'risk', 'danger' and 'hazard'.
- Know school rules about health and safety, basic emergency aid procedures, where and how to get help.

Complex  
Structures  
Shell  
Frame  
Diagonal  
Struts  
Base  
Nets

Comparative  
language.  
Measures.  
Fractions.  
Geometry.  
Angle.

See objectives

# Technical Knowledge

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## YEAR 4

- **Understand and use mechanical systems in their products such as gears, pulleys, cams, levers and linkages.**

### Skills

- Use lolly sticks / card to make levers and linkages.
- Use linkages to make movement larger or more varied.
- Use and explore complex pop ups.
- Use a cam to make an up-down mechanism.

## YEAR 5

- **Understand and use electrical systems in their products such as series circuits incorporating switches, bulbs buzzers and motors.**

### Skills

- Incorporate a circuit with a bulb or buzzer into a model.
- Incorporate a motor and a switch into a model.

## YEAR 6

- **Apply their understanding of computing to program, monitor and control their products.**

### Skills

- Control using an ICT program.
- Model ideas using a computer program.
- Monitor using a computer program or equipment.

**P.S.H.E.****LANGUAGE****MATHEMATICS****RESOURCE**

- Differentiate between the terms, 'risk', 'danger' and 'hazard'.
- Know school rules about health and safety, basic emergency aid procedures, where and how to get help.

Mechanical  
Systems  
Gears  
Pulleys  
Cams  
Levers  
Linkages

Comparative  
language.  
Measures.  
Fractions.  
Geometry.

See objectives

- Differentiate between the terms, 'risk', 'danger' and 'hazard'.
- Have an awareness of the dangers of electricity.
- Know school rules about health and safety, basic emergency aid procedures, where and how to get help.

Electrical systems  
Products  
Series circuits  
Incorporating  
Switches  
Bulbs  
Buzzers  
Motors

Comparative  
language.  
Measures.  
Fractions.  
Geometry.  
Angle.

See objectives

Program  
Monitor  
Control

Comparative  
language.  
Measures.  
Fractions.  
Geometry.  
Angle.

See objectives

# Designing

---

## YEAR 1

- **Design purposeful products for themselves.**
- **Generate, develop, model and communicate their ideas through talking, drawing, templates and mock ups.**

### Skills

- Explain what they are making and which materials they are using.
- Use pictures and words to convey what they want to make.
- Describe their models and drawings of ideas and intentions.
- Select and name tools needed to work the materials.

## YEAR 2

- **Design purposeful, functional and appealing products for other users based on design criteria.**
- **Generate, develop, model and communicate their ideas through talking, drawing, templates, mock ups and with appropriate ICT.**

### Skills

- Select materials from a limited range that will meet the design criteria.
- Select appropriate technique explaining first, next and last.
- Explore ideas by re-arranging materials.
- Use pictures and words to convey what they want to design and make.
- Discuss their work as it progresses.
- Add notes to drawings to help explanations.

## YEAR 3

- **Develop design criteria to inform the design of functional and appealing products that are fit for purpose, aimed at a particular group or individual.**
- **Generate, develop, model and communicate ideas through discussion, annotated sketches and prototypes.**

### Skills

- Investigate similar products to give starting points for a design.
- Draw and sketch products.
- Plan a sequence of actions to make the product.
- Record the plan by drawing (labelled sketches) or writing.

**P.S.H.E.**

**LANGUAGE**

**MATHEMATICS**

**RESOURCE**

- Use equipment safely.

**Hypothesis**  
**Explanation**  
Mock up  
Names of tools  
Plan  
Explain  
Model

Comparative  
language.  
Measures.  
Fractions.  
Geometry.

See objectives and  
technical  
knowledge.

- Use equipment safely.

**Hypothesis**  
**Explanation**  
Design criteria  
Model  
Label  
Compare  
Sketch

Comparative  
language.  
Measures.  
Fractions.  
Geometry.  
Angle.

See objectives and  
technical  
knowledge.

- Differentiate between the terms, 'risk', 'danger' and 'hazard'.
- Know school rules about health and safety, basic emergency aid procedures, where and how to get help.

**Hypothesis**  
**Explanation**  
Design criteria  
Purpose  
Appealing  
Function  
Generate  
Annotate  
Prototype

Comparative  
language.  
Measures.  
Fractions.  
Geometry.  
Angle.

See objectives and  
technical  
knowledge.

# Designing

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## YEAR 4

- **Develop design criteria to inform the design of functional and appealing products that are fit for purpose, aimed at a particular group or individual.**
- **Generate, develop, model and communicate ideas through discussion, annotated sketches and prototypes.**

### Skills

- Plan a sequence of actions to make a product.
- Develop more than one design or adaptation of an initial design.
- Add notes to drawings to help explanations.

## YEAR 5

- **Use research and develop design criteria to inform the design of innovative and appealing products that are fit for purpose. Aimed at a particular individual or group.**

### Skills

- Investigate products/images to collect ideas.
- Sketch/model alternative ideas.
- Designs are in depth.
- Plan a sequence of work using a storyboard.
- Make prototypes.
- Draw plans which could be read or followed by someone else.

## YEAR 6

- **Use research to develop design criteria to inform the design of innovative and appealing products aimed at a particular individual or group.**

### Skills

- Generate, develop, model and communicate ideas through discussion, ICT presentation and program.
- Generate designs using computer programs.
- Use found information to inform ideas and discussions.
- Draw plans which could be read and followed by someone else.
- Give a report using correct technical vocabulary.

**P.S.H.E.****LANGUAGE****MATHEMATICS****RESOURCE**

- Use equipment safely.
- Know school rules about health and safety, basic emergency aid procedures, where and how to get help.

**Hypothesis**  
**Explanation**  
 Purpose  
 Appealing  
 Function  
 Generate  
 Annotate  
 Prototype  
 Adaptation

Comparative language.  
 Measures.  
 Fractions.  
 Geometry.

See objectives and technical knowledge.

- Use equipment safely.
- Know school rules about health and safety, basic emergency aid procedures, where and how to get help.

**Hypothesis**  
**Explanation**  
 Design criteria  
 Innovate  
 Alternative  
 Prototype  
 Appealing  
 Purpose

Comparative language.  
 Measures.  
 Fractions.  
 Geometry.  
 Angle.

See objectives and technical knowledge.

- Differentiate between the terms, 'risk', 'danger' and 'hazard'.
- Know school rules about health and safety, basic emergency aid procedures, where and how to get help.

**Hypothesis**  
**Explanation**  
 Research  
 Inform  
 Innovative  
 Appealing  
 Generate  
 Communicate  
 Program

Comparative language.  
 Measures.  
 Fractions.  
 Geometry.  
 Angle.

See objectives and technical knowledge.

# Making

---

## KEY STAGE 1

- Select from a range of tools and equipment to perform practical tasks such as:
  - Cutting
  - Shaping
  - Joining
  - Finishing
- Select from and use a wide range of materials and components, including (see below) according to their characteristics.
  - Construction materials
  - Textiles
  - Ingredients

## KEY STAGE 2

- Select from a wider range of tools and equipment to perform practical tasks such as:
  - Cutting
  - Shaping
  - Joining
  - Finishing
- Select from and use a wide range of materials and components, including (see below) according to their functional properties and aesthetic qualities.
  - Construction materials
  - Textiles
  - Ingredients



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**P.S.H.E.****LANGUAGE****MATHEMATICS****RESOURCE**

- Use equipment safely.

**Hypothesis  
Explanation**  
(See technical vocabulary)

Comparative  
language.  
Measures.  
Fractions.  
Geometry.

See objectives and  
technical  
knowledge.

- Differentiate between the terms, 'risk', 'danger' and 'hazard'.
- Know school rules about health and safety, basic emergency aid procedures, where and how to get help.

**Hypothesis  
Explanation**  
(See technical vocabulary)

Comparative  
language.  
Measures.  
Fractions.  
Geometry.  
Angle.

See objectives and  
technical  
knowledge.

# Cooking and Nutrition

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## YEAR 1

- **Use the basic principles of a healthy and varied diet to prepare dishes.**

### Skills

- Follow instructions.
- Develop sensory vocabulary.
- Join and combine a range of ingredients (e.g. snack foods).
- Make healthy eating choices.
- Cut, peel, grate.

## YEAR 2

- **Understand where food comes from.**

### Skills

- Analyse where favourite foods are from.
- Know about the sources of fresh vegetables and fish etc (preferably at source or supermarket).
- Make fresh favourite foods (e.g. bread, pizza, vegetable soup etc).
- Work safely and hygienically.
- Measure and weigh food items using non-statutory measures (spoons/cups etc).

## YEARS 3 & 4

- **Understand and apply principles of nutrition and health.**
- **Y3 - UK Y4 - other country.**

### Skills

- Prepare and cook a variety of predominantly savoury dishes.
- Use a range of cooking techniques.
- Make healthy eating choices from an understanding of a balanced diet.
- Work safely and independently with more independence.
- Measure and weigh ingredients appropriately.

## YEARS 5 & 6

- **Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.**

### Skills

- Understand how local food producers work.
- Know the difference between organic and non-organic foods.
- Design seasonal menus.

**P.S.H.E.****LANGUAGE****MATHEMATICS****RESOURCE**

- Know the importance of and how to maintain personal hygiene.
- Know what constitutes a healthy lifestyle including the benefits of physical activity, rest, healthy eating and dental health.

**Sequencing**  
Sensory vocabulary  
Name procedures  
Name different foods

Comparative language.  
Measures.  
Fractions.  
Geometry.

See objectives and technical knowledge.

- Know what constitutes a healthy lifestyle including the benefits of physical activity, rest, healthy eating and dental health.
- Know how some diseases are spread and can be controlled and the responsibilities they have for their own health and that of others.

**Sequencing**  
Sensory vocabulary  
Name procedures  
Name different foods  
Hygiene  
Measure

Comparative language.  
Measures.  
Fractions.  
Geometry.

See objectives and technical knowledge.

- Know that bacteria and viruses can affect health and that following simple routines can reduce their spread.
- To think about the lives of people living in other places, and people with different values and customs.
- Know school rules about health and safety, basic emergency aid procedures, where and how to get help.

**Sequencing**  
Name techniques  
Name different foods  
Hygiene  
Measure  
Nutrition

Comparative language.  
Measures.  
Fractions.  
Geometry.

See objectives and technical knowledge.

- Know that bacteria and viruses can affect health and that following simple routines can reduce their spread.
- Know school rules about health and safety, basic emergency aid procedures, where and how to get help.

**Sequencing**  
Name techniques  
Name different foods, sources and processes.  
Hygiene  
Measure  
Nutrition  
Organic  
Seasonal

Comparative language.  
Measures.  
Fractions.  
Geometry.

See objectives and technical knowledge.

# Evaluating

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## YEAR 1

- **Explore and being to evaluate existing products and their own products.**

### Skills

- Say what they like and do not like about products and attempt to say why.
- Talk about their designs as they develop and identify good and bad points.

## YEAR 2

- **Explore and evaluate existing products and their ideas/products against design criteria.**

### Skills

- Talk about their ideas and the changes made during the production process.
- Discuss how closely their finished product meets the design criteria.

## YEAR 3

- **Evaluate their ideas and products against their own design criteria.**
- **Consider the views of other to improve their work.**

### Skills

- Decide which design idea to develop.
- Identify the good and bad points of a design.
- Consider and explain how a finished product or prototype could be improved.

## YEAR 4

- **Investigate and analyse a range of existing products, using their evaluations to create their own design criteria.**

### Skills

- Discuss how well the finished product meets the design criteria and how well it meets the needs of the user.
- Create design criteria to inform their decisions about ways to proceed.

**P.S.H.E.**

**LANGUAGE**

**MATHEMATICS**

**RESOURCE**

- Think about themselves, to learn from their experiences, to recognise and celebrate their strengths and set simple but challenging goals.

**Evaluation**  
(See technical vocabulary)

Comparative language.  
Measures.  
Fractions.  
Geometry.

See objectives and technical knowledge.

- Think about themselves, to learn from their experiences, to recognise and celebrate their strengths and set simple but challenging goals.

**Evaluation**  
(See technical vocabulary)

Comparative language.  
Measures.  
Fractions.  
Geometry.

See objectives and technical knowledge.

- To reflect on and celebrate their achievements, identify their strengths, areas for improvement, set high aspirations and goals.

**Evaluation**  
(See technical vocabulary)

Comparative language.  
Measures.  
Fractions.  
Geometry.

See objectives and technical knowledge.

- To reflect on and celebrate their achievements, identify their strengths, areas for improvement, set high aspirations and goals.

**Evaluation**  
(See technical vocabulary)

Comparative language.  
Measures.  
Fractions.  
Geometry.

See objectives and technical knowledge.

# Evaluating

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## YEAR 5

- **Understand how key events in design and technology have helped shape the world.**

### Skills

- Recognise through research of key events in design and technology that innovation is making life easier (e.g. wheel, engine etc).
- Know how design and technology solves problems.
- Create criteria based on solving a problem and then refining it as what happens as the world changes.
- Create own criteria to solve long standing problem.

## YEAR 6

- **Understand how individuals in design and technology have helped shape the world.**

### Skills

- Research an individual
- - Use ICT to evaluate a product that has helped shape the world.

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**P.S.H.E.****LANGUAGE****MATHEMATICS****RESOURCE**

- Think about themselves, to learn from their experiences, to recognise and celebrate their strengths and set simple but challenging goals.

**Evaluation**  
(See technical vocabulary)

Comparative language.  
Measures.  
Fractions.  
Geometry.

See objectives and technical knowledge.

- Think about themselves, to learn from their experiences, to recognise and celebrate their strengths and set simple but challenging goals.

**Evaluation**  
(See technical vocabulary)

Comparative language.  
Measures.  
Fractions.  
Geometry.

See objectives and technical knowledge.













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