

Springdale Primary DT policy

Written by B.Cowen (July 2021)

Shared with governors: ______

Springdale Primary school - Design & Technology Policy

1. Vision statement:

Design and Technology is a fulfilling and inspiring, practical and creative subject. At Springdale Primary school children are given opportunities to use their imagination to design and make products to solve real and relevant problems within a variety of contexts, considering their own and other's needs, requirements and values. Originality and innovation is promoted, and children are able to work collaboratively to design, produce and evaluate finished products.

2. Key principles of DT

At Springdale Primary school, D&T teaching will incorporate six key principles:

- User who the products are for.
- Purpose what is the product designed to do.
- Functionality how the product will work.
- Design decisions the opportunities children have to make.
- Innovation children are given the opportunity to think originally.
- Authenticity how believable or real the products are.

3.Teaching

Each unit will include the following structure:

<u>Prior learning –</u>

Before starting a new unit children will be given opportunities to explore existing products and evaluate them. The children:

- Discuss the intended audiences/users of products and what the products are for.
- Discuss the purpose of products and what it is designed to do.
- Complete investigate and evaluative activities (IEAs) to explore existing products and what makes them work well.

<u>Design</u> -

In this part of the process children will be given opportunities to:

- generate ideas based on simple design criteria and their own experiences, explaining what they could make.
- They develop, model and communicate their ideas through drawings, sketches, prototypes and mock-ups.
- Complete focused tasks (FTs) that the teacher has provided for them to demonstrate the techniques that they will need to use to make their products.

Make -

In this part of the design process, children are given opportunities to explore the key criteria for making their own products. During this process children:

- Plan by suggesting what to do next.
- Select and use tools they will use to complete the tasks, explaining their choices.
- Use simple finishing techniques suitable for the product they are creating.

<u>Evaluating –</u>

During this process children:

- Explore a range of existing and everyday products that use the techniques/skills in this unit.
- Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.

Technical Knowledge and understanding-

During this process children:

- Explore and use techniques needed to complete the tasks in this subject area.
- Understand the different terminology appropriate to this area.
- Know and use technical vocabulary relevant to the project.

4. Cooking and nutrition:

As part of their work with food, pupils will be taught to cook and apply the principles of nutrition and healthy eating. They will be taught to:

Key stage 1:

- use the basic principles of a balanced diet to prepare dishes.
- · understand where food comes from.

Key stage 2:

- understand and apply the principles of a healthy and varied diet.
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.
- Understand seasonality and know where and how a variety of food ingredients are grown, reared, caught or processed.

Outside agencies can come into school and teach these units. Also, some year groups will make use of the facilities in school including the kitchen area, with some activities overseen or led by the school cook. It is the role of the class teacher to ensure all of the objectives above are covered in these sessions.

5.Planning:

All of the unit plans and objectives are derived from the project on a page overview document. Project on a page overview plans are available to all year groups and are found in the DT folder in the shared area. All units are documented on an overview from year 1 to year 6. Staff then use this overview to plan sequences of lessons for each unit. Progression between year groups is discussed by class teachers so that activities are age appropriate and children are suitably challenged. All of this information is set out in the progression of skills document, which shows progression between year groups and key stages. All lesson sequences are uploaded to power point or SMART notebook files that are added to the shared area in school to teach from. Lessons can be taught either as individual weekly lessons or as part of a DT week with planning timetables adapted where appropriate.

6.Cross-curricular links:

Design and Technology is a subject that lends itself to cross-curricular links. Possible Science links have been added to the subject overview so that class teachers can link topics appropriately. Links with other curriculum areas such as ICT, English and Art are promoted. Possible subject link ideas are included on the project on a page resource sheets.

7. Assessment, recording and reporting:

Each class are provided with an A3 DT folder and all evidence for units and activities are found in these folders. In this folder, teachers can provide examples of the design, make and evaluate process. The folders are subsectioned under headings 'prior learning', 'design', 'make', 'evaluate', 'technical knowledge and understanding'. Evidence can include:

- · Photos of the children during activities.
- Examples of prior research and independent evaluative activities (IEAs).
- · Any evidence of Focused Tasks eg prototypes, sketches, diagrams.
- · Pictures of children's final completed pieces of work.
- · Completed evaluation booklets.
- · Key vocabulary for the unit.

Teachers will gather evidence on what pupils know, understand and can do in Design and Technology by observing them at work, listening to and discussing processes with them. Target sheets are filled in as a best fit for children working above, at and below the expected standard in each class. At the end of the year teachers report to parents (as part of the curriculum overview) on how well their child has achieved, what he or she does well and where appropriate what is needed to bring further improvement.

8. Health and safety

The class teacher is responsible for the safety of themselves, teaching assistant and the children in class. Children should:

- Listen carefully and follow instructions.
- wear appropriate safety equipment where necessary.
- be supervised by an adult when using equipment such as glue guns.
- Only move around the room when necessary.
- · collect and return tools and equipment safely.

9. The role of the Design and Technology Subject leader

The DT subject leader is responsible for:

- The development and monitoring of the DT curriculum (see Subject Leader folder for photographic evidence).
- Up-dating the School's policy and Scheme of work where needed.
- Overseeing and managing any changes in the curriculum and resources.
- Supporting class teachers with planning if requested.
- Ordering and allocating resources.
- Ensuring health and safety guidelines are acknowledged and adhered to.

10. Resources:

The safe storage of materials and equipment together with ease of access for class teachers is important. All resources for units are found in labelled drawers in the DT cupboard. Where appropriate teachers can make the most of recyclable resources such as cardboard to help to keep the cost of resources reasonable.

11.Appendices

11.1 Project on a page resource example:

1. Year Groups

Years 3/4

2. Aspect of D&T

Mechanical systems

Focus

Levers and linkages

4. What could children design,

make and evaluate?
story book poster class
greetings card information book storyboard other - specify

7. Links to topics/themes

Festivals and Celebrations Favourite Books science-based topic

5. Intended users

themselves younger children older children teenagers parents grandparents visitor to school friends other - specify

8. Possible contexts

home school leisure culture other - specify

6. Purpose of products

celebration event information educational other - specify

9. Project title

Design, make and evaluate a _____ (product) for ____ (user) for ____ (purpose).

To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 10, 12 and 14.

11. Related learning in other

16. Possible

books and other products with lever and linkage

lever and linkage teaching aids

card strips, card rectangles, paper, masking tape, paper asteners, paper binders stick glue

left/right handed scissors, cutting mats, card drill, finishing media and

17. Kev vocabulary

mechanism, lever, linkage, pivot, slot, bridge, guide

system, input, process.

linear, rotary, oscillating, reciprocating

rototype, design criteria

innovative, appealing, design brief

3. Key learning in design and technology

Prior learning

- Explored and used mechanisms such as flaps, sliders and levers.

 Gained experience of basic cutting, joining and finishing techniques with paper and card.

- Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user.
- Use annotated sketches and prototypes to develop, model and communicate ideas.

- Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.
- Select from and use finishing techniques suitable for the product they are creating.

- Investigate and analyse books and, where available, other products with lever and linkage
- Evaluate their own products and ideas against criteria and user needs, as they design and make.

Technical knowledge and understanding

- Understand and use lever and linkage mechanisms.
- Distinguish between fixed and loose pivots.

 Know and use technical vocabulary relevant to the project.

10. Investigative and Evaluative Activities (IEAs)

- Children investigate, analyse and evaluate books and, where available, other products which have a range of lever and linkage mechanisms.
- Use questions to develop children's understanding e.g. Who might it be for? What is its purpose? What do you think will move? How will you make it move? What part moved and how did it move? How do you think the mechanism works? What materials have been used? How effective do you think it is and why? What dise could move?

Model how to pick leaves and not take too much. Discuss sustainability of the outdoor area and how to keep it for future groups.

- Demonstrate a range of lever and linkage mechanisms to the children using prepared t Use questions to develop children's understanding e.g. Which card strip is the lever? Which card strip is acting as the linkage? Which part of the system is the input and which part the output? What does the type of movement regird you of? Which are the fived players and which are the loose players?
- Demonstrate the correct and accurate use of measuring, marking out, cutting, joining and finishing skills and techniques
- Children should develop their knowledge and skills by replicating one or more of the teaching aids

13. Related learning in other

subjects

- Mathematics use the vocabulary of position, direction and movement. Use a ruler to measure to the nearest cm, half cm or mm.

 Spoken language ask relevant questions to extend knowledge and understanding. Build their technical vocabulary.
- Art and design use colour, pattern, line,

18. Key competencies

problem-solving teamwork negotiation consumer awareness organisation motivation persuasion leadership perseverance other - specify

19. Health and safety

Pupils should be taught to work safely, using tools, requipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.

14. Design, Make and Evaluate Assignment (DMEA)

- Develop a design brief with the children within a context which is authentic and meaningful.
- Discuss with children the purpose of the products they will be designing and making and who the products will be for. Ask the children to generate a range of ideas, encouraging creative responses. Agree on design criteria that can be used to guide the development and evaluation of the children's products.
- Ask the children to consider the main stages in making before assembling high quality products, drawing on the knowledge, understanding and skills learnt through IEAs and FTs.
- Evaluate the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed.

15. Related learning in other

- Spoken language ask relevant questions to extend knowledge and understanding. Build technical vocabulary. Consider and evaluate different viewpoints.

 Computing digital graphics and text could be incorporated into final products as the background or moving parts.



11.2 DT whole school overview:

Year group	Autumn	Spring	Summer	
POAP resources Science links				
Y1	Recyclable sculptures POAP freestanding structures	Moving pictures	Food - Making a sandwich	
	(Geography) Possible science link: materials	POAP — Mechanisms sliders and levers	POAP – preparing fruit and vegetables	
Y2	Creating a moving vehicle to solve a problem for a story character.	Food Edible Garden.	Textiles - Making puppets.	
	(POAP — Mechanisms - Wheels and axles) Possible science link: materials.	POAP - Healthy and varied diet Y3/4 Science: healthy eating	POAP – Templates and joining.	
Y3	Food - Bread making (Warburtons) POAP — Healthy and varied diet	Create a mechanical device to move rocks (a landslide). (POAP pneumatics)	Structures – Make a catapult (POAP - shell structures	
	,	Possible science link: forces, rocks.		
Y4	Police car project. Light rooms in a Haunted house if Autumn 1. Crumble	Food- making quesadillas	English unit: Explorer/Rainforests. Moving books (South America)	
	Lighting Christmas tree decorations if Autumn 2. (POAP simple programming and control)	History Link — Ancient Maya. POAP — Healthy and varied diet	(POAP - mechanisms: levers and linkages)	
\/F	Science link: electricity History - Blists Hill fairground	Sewing/Textiles –	Food Making biscuits	
Y5	attractions	Making purses or computer aided	rood — Making discuits	
	(POAP — Cams Y5/6) Science link: Forces	design. POAP — Combining different fabric shapes	POAP - celebrating culture and seasonality	
Y6	Making a flashing lighthouse POAP - Programming/monitoring and	WW2 Theme.	Food - Greek salad/Pizza making	
	control – Add a switch or sensor Science link: electricity.	POAP — mechanisms- pulleys or gears	POAP - celebrating culture and seasonality	

11.3 DT targets by year group:

EYFS	Year 1	Year 2	Year 3	
D1. I can select appropriate resources D2. I can use language of designing and making (join, build, shape, longer, shorter, heavier etc.). M3. I can elect tools & techniques to shape, assemble and join. M4. I can build / construct with a wide range of objects. E5. I can dismantle, examine, and talk about existing objects/structures. E6. I can look at similarities and differences between existing objects / materials / tools. TK7. I can practise stirring, mixing, pouring, blending. TK8. I can begin to understand some food preparation tools, techniques and processes. F7. I can begin to understand some food preparation tools, techniques and processes. F10. I can begin to understand that eating well contributes to good health.	D1.1 can design a product for myself following design criteria. D2.1 can use pictures and words to plan, begin to use models. M3.1 can select tools/equipment to cut, shape, join, finish and explain choices. M4.1 can measure, mark out, cut and shape, with support. E5.1 can talk about existing products considering: use, materials, how they work, audience, where they might be used. E6.1 can begin to talk about what could make product better. TK7.1 can begin to measure and join materials, with some support. TK8.1 can begin to use levers or slides. F9.1 can wash hands & clean surfaces. F10.1 can cut, peel and grate safely with support.	D1. I can design products for myself and others following design criteria. D2 I can describe design using pictures, words, models, diagrams, and begin to use ICT. M3. I can describe which tools I'm using and why. M4. I can measure, mark out, cut and shape materials and components, with support. E5. I can talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion. E6. I can talk about what I would do differently if I were to do it again and why. TK7. I can join materials in different ways. TK8. I can begin to understand how to use wheels and axles. F9. I can explain hygiene and keep a hygienic kitchen. F10. I can cut, peel and grate with increasing confidence.	Tear 3 D1. I can follow a given design criteria and show the design meets a range of requirements. D2. I can make a prototype and describe design using a labelled sketch and words. M3. I can select suitable tools/equipment, explain choices; begin to use them accurately purpose. M4. I can begin to measure, mark out, cut and shape materials/components with some accuracy. E5. I can begin to evaluate existing products, consideringshow well they have been made, fit for purpose. E6. I can use design criteria to evaluate finished product TK7. I work accurately to make cuts and holes to join materials. TK8. I can use pneumatics to create movement. F9. I can proyen and cook some dishes safely and hygienically. F10. I can grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, and spreading.	
Target key	Year 4	Year 5	Year 6	
D = Design M = Make	D1. I can begin to create own design criteria and show my design is fit for purpose and meets a range of requirements. D2. I can make a prototype and include an accurately labelled annotated sketch of my design. M3. I can select suitable tools and equipment, explain choices in relation to required techniques and use accurately. M4. I can measure, mark out, cut and shape	D1. I can create my own design criteria. D2. I can model and refine design ideas by making prototypes and using pattern pieces. M3. I can use selected tools/equipment with good level of precision. M4. I can mainly accurately measure, mark out, cut and shape materials/components.	D1. I can create own design criteria and specification. D2. I can independently model and refine design ideas by making prototypes and using pattern pieces. M3. I can use selected tools and equipment precisely. M4. I can accurately measure, mark out, cut and shape materials/components. E5. I can complete thorough evaluations of existing products	
E = Evaluate	materials/components with some accuracy. E5. I can evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose.	E5. I can evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose. E6. I can evaluate ideas and finished product against	considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose. E6. I can test and evaluate final product; explain what would improve it and the effect different resources may have had.	
TK = Technical Knowledge and understanding	E6. I can use criteria to evaluate product and say what I would change to make design better. TK7. I can measure carefully to avoid mistakes. TK8. I can use levers, slides and linkages to create movement	specification, considering purpose and appearance. TK7. I can select materials carefully, considering intended use of product and appearance. TK8. I can begin to use cams to create movement.	TK7. I can select materials carefully, considering intended use of the product, the aesthetics and functionality. TK8. I can use pulleys and gears to create movement. F9. I can prepare and cook a variety of savoury dishes safely	
F = Food	F9. I can prepare and cook some dishes safely and hygienically. F10. I can use some of the following techniques: peeling,	F9. I can prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source. F10. I can use range of techniques such as peeling, chopping,	and hygienically including, where appropriate, the use of heat source. F10. I can use a range of techniques confidently such as	

11.4 DT target sheet example:

DT targets are marked off by the class teacher. Targets for the previous year and subsequent year are presented so that the class teacher can support children working above, at or below the expected standard.

Year 2 Targets					
Year 1	Year 2	Year 3			
D1. I can design a product for myself following design criteria. D2. I can use pictures and words to plan, begin to use models. M3. I can select tools/equipment to cut, shape, join, finish and explain choices. M4. I can measure, mark out, cut and shape, with support. E5. I can talk about existing products considering: use, materials, how they work, audience, where they might be used. E6. I can begin to talk about what could make product better. TK7. I can begin to measure and join materials, with some support. TK8. I can begin to use levers or slides. F9. I can wash hands & clean surfaces. F10. I can cut, peel and grate safely with support.	D1. I can design products for myself and others following design criteria. D2 I can describe design using pictures, words, models, diagrams, and begin to use ICT. M3. I can describe which tools I'm using and why. M4. I can measure, mark out, cut and shape materials and components, with support. E5. I can talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion. E6. I can talk about what I would do differently if I were to do it again and why. TK7. I can join materials in different ways. TK8. I can begin to understand how to use wheels and axles. F9. I can explain hygiene and keep a hygienic kitchen. F10. I can cut, peel and grate with increasing confidence.	D1. I can follow a given design criteria and show the design meets a range of requirements. D2. I can make a prototype and describe design using a labelled sketch and words. M3. I can select suitable tools/equipment, explain choices; begin to use them accurately purpose. M4. I can begin to measure, mark out, cut and shape materials/components with some accuracy. E5. I can begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose. E6. I can use design criteria to evaluate finished product TK7. I work accurately to make cuts and holes to join materials. TK8. I can use pneumatics to create movement. F9. I can prepare and cook some dishes safely and hygienically. F10. I can grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, and spreading.			

11.5 Progression in skills:

EYFS	Y1	Y2	End of KS	Y3	Y4	Y5	Y6
			expectations				
*Select appropriate resources *Use gestures, talking and arrangements of materials and components to show design * Use contexts set by the teacher and myself *Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)	* have own ideas * explain what I want to do *explain what my product is for, and how it will work * use pictures and words to plan, begin to use models. * design a product for myself following design criteria *research similar existing products	* have own ideas and plan what to do next * explain what I want to do and describe how I may do it * explain purpose of product, how it will work and how it will be suitable for the user * describe design using pictures, words, models, diagrams, begin to use ICT * design products for myself and others following design criteria * choose best tools and materials, and explain choices * use knowledge of existing products to produce ideas	*Design purposeful, functional, appealing products for themselves and other users based on design criteria *Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	*begin to research others' needs * show design meets a range of requirements * describe purpose of product * follow a given design criteria * have at least one idea about how to create product * create a plan which shows order, equipment and tools *include an annotated sketch * make design decisions *explain how product will work * make a prototype * begin to use computers to show design	* use research for design ideas * show design meets a range of requirements and is fit for purpose *begin to create own design criteria *have at least one idea about how to create product and suggest improvements for design. * produce a plan and explain it to others *describe design using an accurately labelled sketch and words *sug how realistic plan is. *make and explain design decisions considering availability of resources *explain how product will work * make a prototype *begin to use computers to show design.	*use internet and questionnaires for research and design ideas *take a user's view into account when designing * begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose *Create own design criteria * have a range of ideas *produce a logical, realistic plan and explain it to others. *use cross-sectional planning and annotated sketches * make design decisions considering time and resources. *clearly explain how parts of product will work. *model and refine design ideas by making prototypes and using pattern pieces. *use computer-aided designs	* draw on market research to inform design * use research of user's individual needs, wants, requirements for design * identify features of design that will appeal to the intended user * create own design criteria and specification * come up with innovative design ideas *follow and refine a logical plan. *use annotated sketches, cross-sectional planning and exploded diagrams * make design decisions, considering, resources and cost * clearly explain how parts of design will work, and how they are fit for purpose * independently model and refine design ideas by making prototypes and using pattern pieces * use computer-aided designs
*Construct with a purpose, using a variety of resources *Use simple tools and techniques *Build / construct with a wide range of objects *Select tools & techniques to shape, assemble and join *Replicates structures with materials / components *Discuss how to make an activity safe and hygienic *Record experiences by drawing, writing, voice recording *Understand different media can be combined for a purpose	*explain what I'm making and why *consider what I need to do next *select tools/equipment to cut, shape, join, finish and explain choices *measure, mark out, cut and shape, with support *choose suitable materials and explain choices *try to use finishing techniques to make product look good *work in a safe and hygienic manner.	*explain what I am making and why it fits the purpose *make suggestions as to what I need to do next. *join materials/components together in different ways *measure, mark out, cut and shape materials and components, with support. *describe which tools I'm using and why *choose suitable materials and explain choices depending on characteristics. *use finishing techniques to make product look good *work safely and hygienically	*Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] *Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	*select suitable tools/equipment, explain choices; begin to use them accurately *select appropriate materials, fit for purpose. *work through plan in order *consider how good product will be *begin to measure, mark out, cut and shape materials/components with some accuracy *begin to assemble, join and combine materials and combine materials and components with some accuracy *begin to apply a range of finishing techniques with some accuracy	* select suitable tools and equipment, explain choices in relation to required techniques and use accurately *select appropriate materials, fit for purpose; explain choices * work through plan in order. * realise if product is going to be good quality * measure, mark out, cut and shape materials/components with some accuracy *assemble, join and combine materials and components with some accuracy *apply a range of finishing techniques with some accuracy	* use selected tools/equipment with good level of precision * produce suitable lists of tools, equipment/materials needed *select appropriate materials, fit for purpose; explain choices, considering functionality * create and follow a detailed step-by-step plan * explain how product will appeal to an audience * mainly accurately measure, mark out, cut and shape materials/components *mainly accurately assemble, join and combine materials/components * mainly accurately apply a range of finishing techniques * use techniques that involve a small number of steps *begin to be resourceful with practical problems	* use selected tools and equipment precisely *produce suitable lists of tools, equipment, materials needed, considering constraints *select appropriate materials, fit for purpose, explain choices, considering functionality and aesthetics *create, follow, and adapt detailed step-by-step plans *explain how product will appeal to audience; make changes to improve quality *accurately measure, mark out, cut and shape materials/components *doccurately assemble, join and combine materials/components * accurately asply a range of finishing techniques * use techniques that involve a number of steps * be resourceful with practical problems