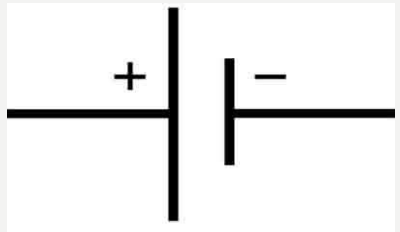
STARTER TASK: NAME THE COMPONENTS AND MATCH THEM TO THE BRITISH STANDARDS SYMBOLS

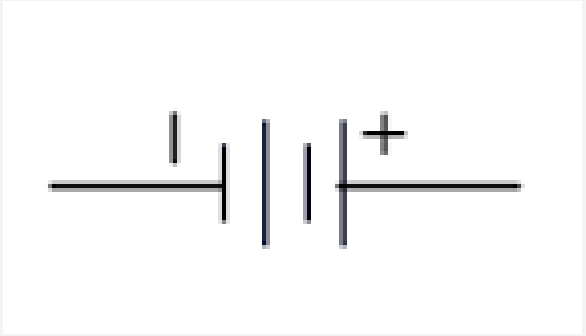
ANSWERS

Wires

Cell

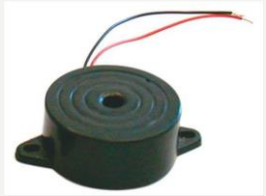


Battery

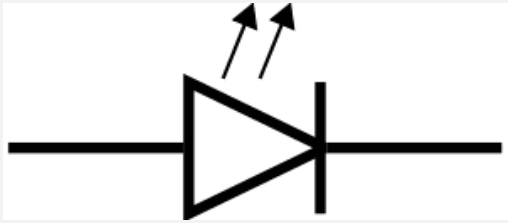


Motor

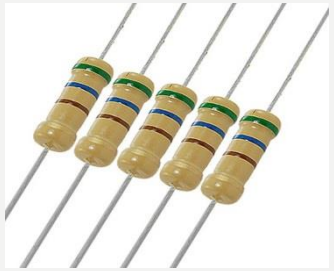
Buzzer



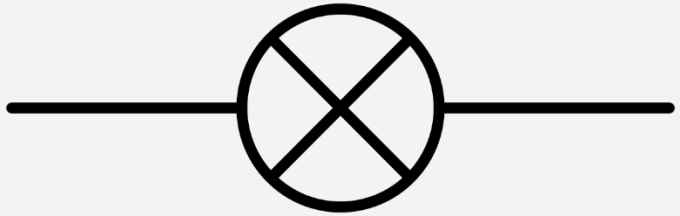
LED



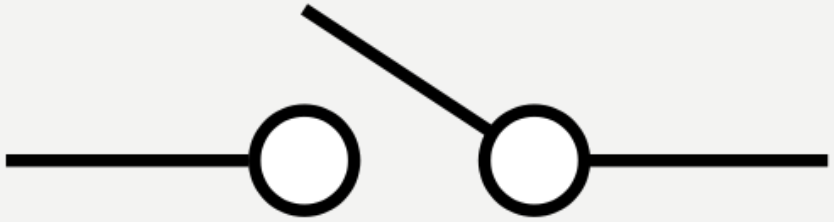
Resistor



Bulb or lamp



Switch

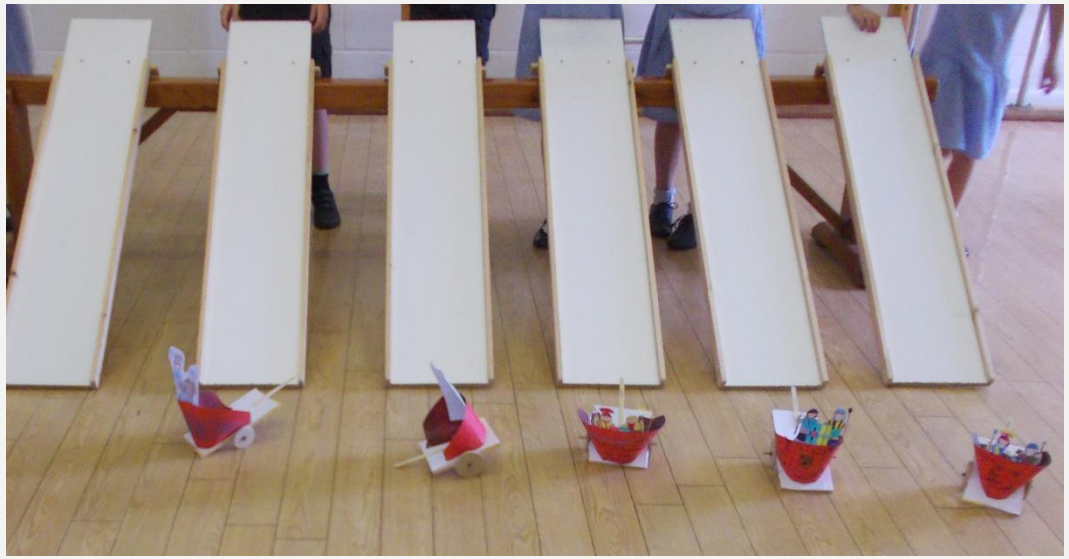


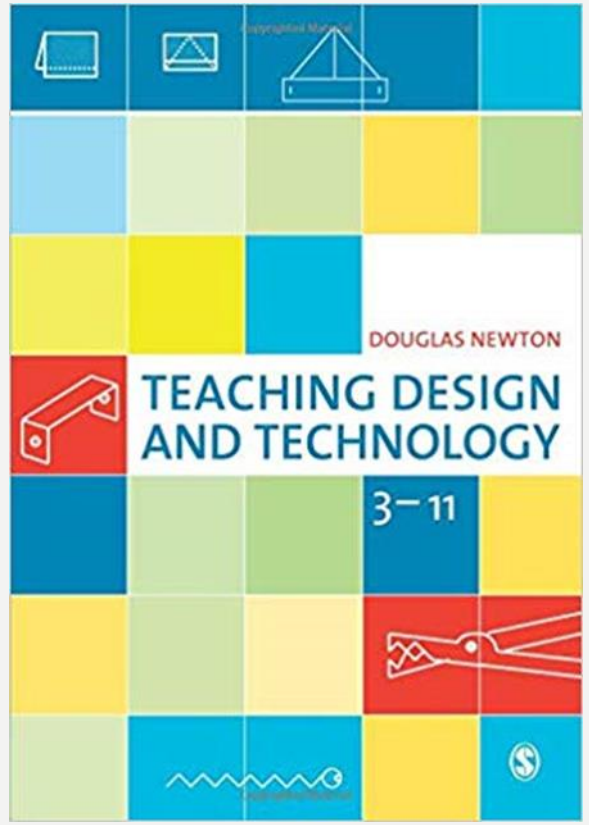
OUTCOME FROM TODAY'S SESSION

- To have practical ideas for integrating Design & Technology in the curriculum.
- To develop understanding of the process of design, make, evaluate.
- To develop understanding of the principles of nutrition, and how cooking is a life skill.
- To have a clear understanding of health & safety requirements relating to Design & Technology.
- To understand how to plan for and assess Design and Technology.

WHAT IS DESIGN TECHNOLOGY?

Design technology is the process of inventing or improving things to satisfy the practical needs and solve practical problems (Newton 2005).





WHY IS DESIGN TECHNOLOGY SO IMPORTANT?

- Encourages pupils to consider design problems.
- Pupils develop a range of practical skills.
- Children can work as part of a team to solve design problems.
- Pupils develop communication skills through designing and group work.
- Provides opportunities for children to be creative.
- It helps to provide contexts for pupils.

And so much more.

ACCORDING TO THE NATIONAL CURRICULUM…

Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

(The 2014 Primary National Curriculum in England, DfE)

ACCORDING TO THE NATIONAL CURRICULUM…

Aims

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

THE 5 AREAS TO DESIGN TECHNOLOGY

Design and Technology is still divided into five main areas:

1. Designing
2. Making
3. Evaluating
4. Technical knowledge
5. Cooking and nutrition

COOKING AND NUTRITION

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils, will also open a door to one of the great expressions of human creativity.

Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

(DfE, 2013)

RISKS ASSESSMENT

Risk assessments are vitally important when undertaking any practical tasks.

- It helps to keep the children safe.
- It also helps to keep you safe from negligence.

EXAMPLE OF RISK ASSESSMENT

CHILDREN'S SERVICES HEALTH & SAFETY

RISK ASSESSMENT FOR .....

Location / Site	Insert location and site where activity taking place
Activity / Procedure	Insert name/type of activity or procedure being assessed
Assessment date	Insert date when assessment is being carried out
Identify hazards	Record all hazards that could cause harm or injury – add appropriate detail about the type and location of hazards

TASK

Using the planning that you have been given, generate a risk assessment in pairs.

Think about:

- What are the hazards that could be involved with the task?
- What equipment are the children using?
- What measures could be put into place to lower the risk?
- Are there any specific children with needs? How could you cater for them?

ASSESSMENT

Design and Technology Progression Framework Key Stages 1 and 2

Designing	Key Stage 1	Key Stage 2
Understanding contexts, users and purposes	Across KS1 pupils should: • work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment • state what products they are designing and making • say whether their products are for themselves or other users • describe what their products are for • say how their products will work • say how they will make their products suitable for their intended users • use simple design criteria to help develop their ideas	Across KS2 pupils should: • work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment • describe the purpose of their products • indicate the design features of their products that will appeal to intended users • explain how particular parts of their products work In early KS2 pupils should also: • gather information about the needs and wants of particular individuals and groups • develop their own design criteria and use these to inform their ideas In late KS2 pupils should also: • carry out research, using surveys, interviews, questionnaires and web-based resources • identify the needs, wants, pr • *develop a simple design spe*
Generating, developing, modelling and communicating ideas	Across KS1 pupils should: • generate ideas by drawing on their own experiences • use knowledge of existing products to help come up with ideas • develop and communicate ideas by talking and drawing • model ideas by exploring	Across KS2 pupils should: • share and clarify ideas throu • model their ideas using prot • use annotated sketches, cr communicate their ideas • use computer-aided design In early KS2 pupils should als • generate realistic ideas, focu

Chris Quigley

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		Milestone 1	Milestone 2	Milestone 3
To master practical skills	Food	• Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients.	• Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately. • Follow a recipe. • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).	• Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures.

ASSESSING TASK – YEAR 6 CHILDREN

Your task:

Using the assessment sheet, where would you assess the pupil's work that you have?

Are they developing, secure or exceeding within that unit of work? What are your justifications for your assessment? Can you identify their next steps which could have meant that they achieved exceeding?

DT Autumn 2
Key Skill: To design innovative and appealing products.

Developing	Secure	Exceeding
Solo: 	Solo: 	Solo: 
Understanding	**Applying/Analysing**	**Evaluating/Creating**
• Organise their thoughts • Plan effectively • Select relevant information • Apply & transfer knowledge and understanding into different contexts • Categorise information • Make connections • Use information in different ways • Can describe and define	• Compare and contrast • Explain cause and effect • Make assumptions • Analyse and infer • Classify, giving reasons • Recognise differences • Group ideas, prioritising them in lists • Test for ideas, applying prior knowledge	• Make predictions based on knowledge and understanding • Modify and improve ideas, reflecting on own learning • Make generalisations based on a range of evidence • Use existing K & U to be able to imagine and create new theories/hypothesis • Evaluate, justifying opinions, making judgements based on evidence (Prove / disprove)
	• Use research and develop design criteria to inform the design of innovative, functional, appealing product or groups.	

TASK 1 – BUILDING A ROMAN CHARIOT (LOWER KS2)

National Curriculum Links

Make – select from and use a wider range of tools and equipment to perform practical tasks (for example cutting, shaping, joining, and finishing) accurately.

Technical knowledge – apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

TASK 2– MAKING A FRUIT SALAD (KS1)

National curriculum links

Cooking and nutrition

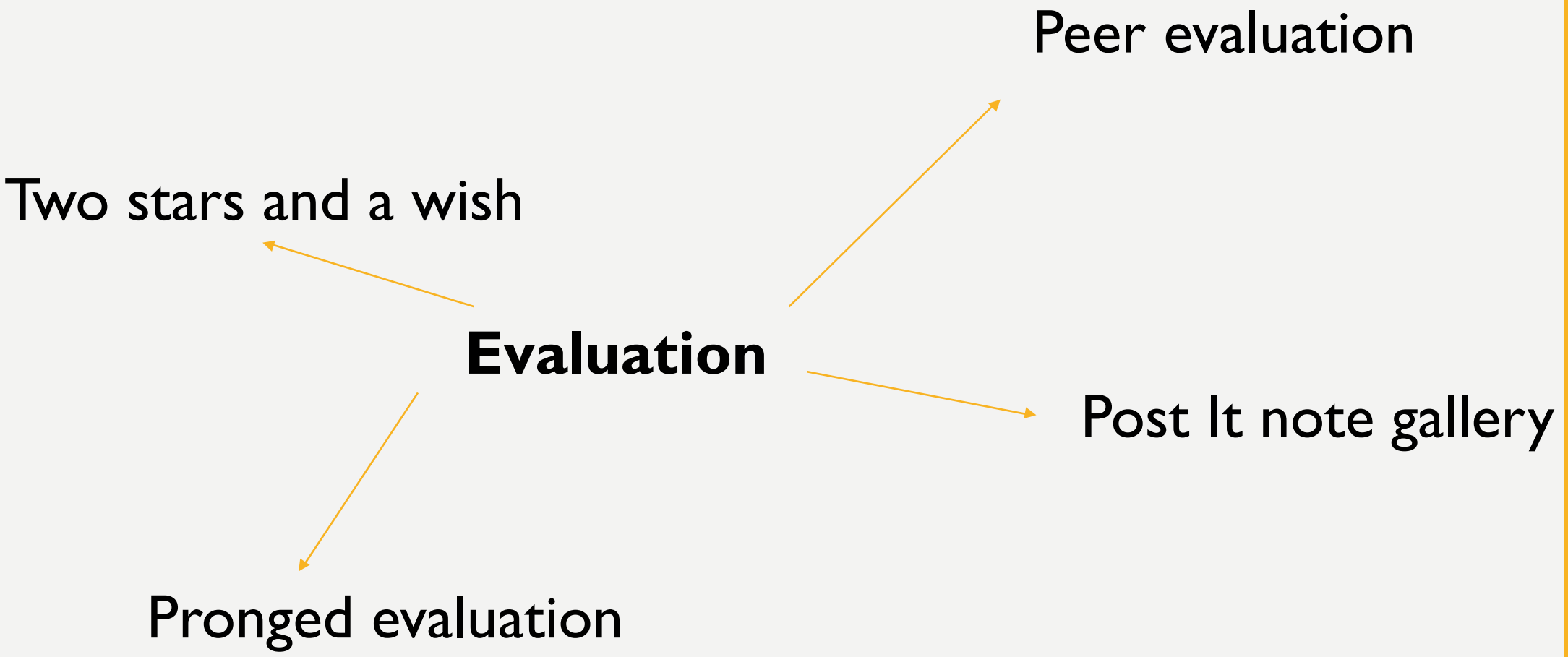
- Use the basic principles of a healthy and varied diet to prepare dishes.

- Understand where food comes from.

For each task:

Working in pairs you need to plan a unit of work to get to the end product (use the sugar paper).
Then you need to write a risk assessment for that unit of work.
Then make the product.

FINAL TASK


Peer evaluation
Two stars and a wish
Evaluation
Post It note gallery
Pronged evaluation

HELPFUL RESOURCES

- https://www.data.org.uk/ The Design and Technology association.
- Join your local Dt cluster.
- https://www.gov.uk/government/publications/national-curriculum-in-england-design-and-technology-programmes-of-study