



Roundhill Primary School: RPS Specialist Formal Framework Design & Technology

DT Framework

Learning Profile B1

Design skills

- Make a simple collection of materials related to their ideas
- Communicate ideas through modelling, drawings and/or discussion
- Begin develop initial ideas to show purpose and functionality

Practical Making

- Use a simple tool with support i.e. pair of scissors
- Choose the best tool from a selection of two, to perform a simple task i.e. cutting or joining
- Choose the best material from a selection of two, to construct a simple product

Evaluation

- Explore a range of age-appropriate products
- Choose a product I like from a choice of two
- Begin to communicate what I like about a product
- Listen to others' opinions of my work

Technical Knowledge

- Identify common materials i.e. wood, plastic or metal in common products
- Build a functional structure
- Know the purpose of common house-hold products

Learning Profile B2

Design skills

- Generate an idea using a range of appropriate resources
- Develop an idea through talking, drawing and/or mock ups
- Design a purposeful product that is appealing for myself and/or others

Practical Making

- Use a simple tool independently i.e. pair of scissors



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- Begin to use simple tools with a consistent degree of accuracy
- Select from a range of materials and components to construct a functional product

Evaluation

- Communicate what I like about a product and why
- Describe a product referring to its key characteristics
- Considers the views of others to improve my work
- Compare my work against a simple design criterion

Technical Knowledge

- Understand how structures can be made stronger, stiffer and more stable
- Identify mechanisms such as levers, sliders, wheels and axles in common products
- Begin to describe simply how common products work e.g. hinges

Learning Profile B3

Design skills

- Design a simple functional product based on knowledge of existing products
- Follow a simple design criterion with support
- Research existing products to support the design of a simple functional product
- Begin to communicate design ideas through discussion, annotated sketches and prototypes

Practical Making

- Choose the correct tool from a range to perform a practical task
- Choose the correct construction materials and components from a wide range
- Use the correct tools and materials to successfully construct a physical product

Evaluation

- Investigate the usefulness of existing products for a particular project
- Evaluate the usefulness of existing products for a particular project
- Suggest at least one improvement to my own work with support
- Begin to review the work of my peers constructively.



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Technical Knowledge

- Explore the use of mechanisms in products e.g. levers, sliders and axles
- Describe with confidence how a simple mechanism works
- Draw a somewhat accurate, labelled representation of a simple mechanism

Learning Profile B4

Design skills

- With support, use research to develop a set design criterion, informing the design of my product aimed at particular individuals
- Follow a simple design criterion independently, to accurately design a functional product
- Confidently communicate design ideas through discussion, annotated sketches and prototypes

Practical Making

- Use the correct tools to mark and cut resistant materials e.g. wood, plastic, and metal with support
- Use the correct tools to mark and cut resistant materials e.g. wood, plastic, and metal independently
- Use the correct tools to mark and cut resistant materials e.g. wood, plastic, and metal producing a good finish
- Successfully construct a physical product that hits the design criterion accurately

Evaluation

- Identify which parts of a product allow it to work well
- Analyse which parts of a product work allow it to work well and which could be improved
- Compare existing products to their own design criteria
- Suggest at least one improvement to my own work independently
- Review the work of my peers constructively, identifying areas of improvement

Technical Knowledge

- Build a simple structure and explore how to make it stronger, stiffer and more stable
- Apply my knowledge of strengthening and more stable materials to multiple designs
- Begin to understand more complex mechanical structures within products such as gears, pulleys, cams, levers and linkages



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Learning Profile B5

Design skills

- Independently generate appropriate, working ideas based on a given problem-solving scenario
- Present my ideas, with considerable detail, verbally, through labelled sketches and models
- Identify cross-sectional and exploded diagrams and understand their purpose

Practical Making

- Produce a functional and purposeful finished product
- Choose appropriate materials based on their aesthetic qualities
- Begin to consistently produce products that are of high quality.

Evaluation

- Show application of knowledge, through describing which parts of a more complex system allows it to function
- With support, evaluate my own work against a set of design criteria and suggest improvements based on my findings
- Review the work of my peers offering practical solutions to areas of need

Technical Knowledge

- Apply knowledge of simple mechanism of a product such as axles and wheels and include them in my structure
- Begin to challenge themselves by including more complex mechanism in their design such as a series circuit
- Understand the impact of more complex mechanisms on the function of their product

Learning Profile B6

Design skills

- Generate detailed design sketches, drawings and prototypes based on understanding user needs
- Generate detailed design sketches, drawings, prototypes using research to influence design ideas
- Generate detailed design sketches, drawings, prototypes, using research to influence design ideas and explain my decision-making process based on my findings

Practical Making

- Write detailed, step by step instructions for making my product
- Follow my plans accurately and use tools correctly, paying attention to the quality of the finished product
- Uses technical knowledge to overcome unforeseen practical challenges



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Evaluation

- Evaluate my own work and carry out technical improvements to make a better product
- Monitor my product in different environments and make ongoing modifications to increase its efficiency
- Analyse the work of past and present professionals and others to develop my own product further

Technical Knowledge

- Understand how simple electrical systems in my products can enhance performance
- Begin to explore how more advanced mechanical systems used in their products enable changes in movement and force
- Begin to explore how more advanced mechanical systems can be used and powered in their product.