The D.T Curriculum

Curriculum Intent Statement – D.T.

The Design and Technology curriculum at Kirkby Woodhouse is an inspiring, rigorous and practical subject which will prepare our children for tomorrow's rapidly changing world.

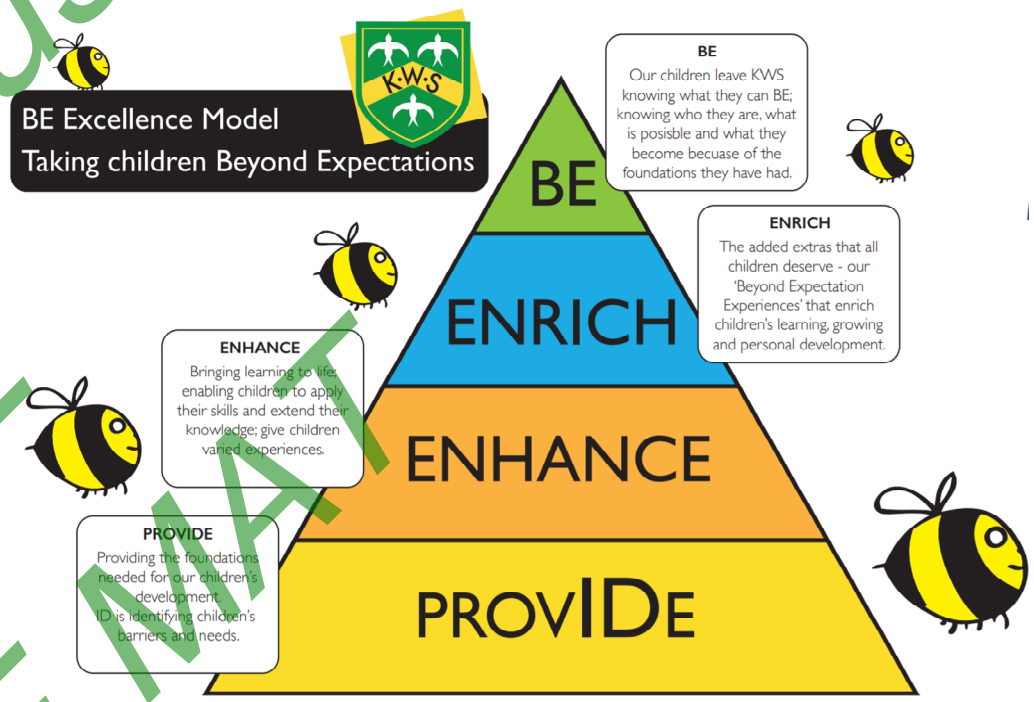
Design Technology will provide our children with exciting opportunities to be independent and use their creativity and imagination, to design and make products that solve real and relevant problems; both as individuals and as part of a team.

Our Design Technology curriculum enriches learning experiences through the study of inspirational designers, chefs, engineers and architects and key events in the world of Design Technology, encouraging and enabling the children to strive towards excellence and be the very best they can be.

By enhancing learning experiences with the evaluation of past and present Design Technology, the children will develop a critical understanding of its impact on daily life and the wider world.

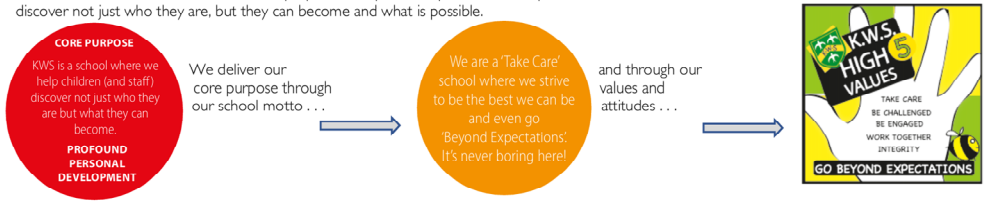
Children will acquire a broad range of subject knowledge and we aim to, wherever possible, draw in disciplines such as mathematics, science, engineering, computing and art. Design Technology will provide children with the platform to take risks, become resourceful, innovative, enterprising and capable individuals develop who can make an essential contribution to the creativity, culture, wealth and well-being of the nation.

Through self-regulation and self- evaluation, children will be aspirational. They will be equipped with the knowledge and skills to achieve well, attain high, shine and go beyond expectations within Kirkby Woodhouse and into the wider world.



Our current curriculum intent

At the heart of our curriculum is our core purpose - the profound personal development of our children, which is about enabling our children to discover not just who they are, but they can become and what is possible.



To enable our children to learn and discover how these shape us as people and to enable our children to develop academically and personally, we provide our children with . . .

A community of opportunity and ambition **A community of participation**

. . . 'Beyond Expectation' opportunities and experiences in and out of the classroom that enrich children's learning to enable them to develop, grow and progress academically and personally regardless of their background, needs or academic ability; to learn about themselves, each other and the world around them; to learn about who they are, what they become and what is possible; to encourage them to be the best they can be (we like to say, be the best you can be, not the best in the world, but the best version of you); to prepare them for their future.

So, in short, our curriculum intent always comes back to our children – what do our children need to be the best they can be and to see what is possible; what do our children deserve so they can be the best they can be and see what is possible; how are we going to do this . .

Design Technology Toolkit – Whole School

	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products	Cooking and nutrition	Mechanisms and Construction
F1	• Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them. (PSED) • Choose the right resources to carry out their own plan. (PD) • Explore how things work. (UTW) • Explore different materials freely, in order to develop their ideas about how to use them and what to make. (EAD) • Develop their own ideas and then decide which materials to use to express them. (EAD)	Use large-muscle movements to wave flags and streamers, paint and make marks. (PD) Use one-handed tools and equipment, for example, making snips in paper with scissors. (PD) Make imaginatively and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. (EAD) Create closed shapes with continuous lines ,and begin to use these shapes to represent objects. (EAD)		See planning for experiences given	See planning for experiences given
F2	• Explore, use and refine a variety of artistic effects to express their ideas and feelings. (EAD) • Create collaboratively, sharing ideas, resources and skills. (EAD	Progress towards a more fluent style of moving, with developing control and grace. (PD) Develop their small motor skills so that they can use a range of tools competently, safely and confidently. (PD) Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. (PD) **Use a range of small tools, including scissors, paintbrushes and cutlery. (ELG)** **Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design texture, form and function. (ELG)**	• Return to and build on their previous learning, refining ideas and developing their ability to represent them. (EAD) • **Share their creations, explain the process they have used. (ELG)**	See planning for experiences given	See planning for experiences given
Year 1	• Can you think of some ideas on your own? • Can you explain what you want to do? • Can you use pictures and words when planning?	• Can you explain what you are making? • Can you choose which tools you are using?	• Can you describe how something works? • Can you talk about the work you have done? • Can you talk about work other children have done?	• Can you cut food safely? • Can you describe the texture of foods? • Do you wash your hands and make sure that surfaces are clean? • Can you think of interesting ways of decorating food you have made, eg, cakes?	• Can you make a product which moves? • Can you cut materials using scissors? • Can you describe the materials using different words? • Can you say why you have chosen moving parts?
Year 2	• Can you think of ideas and plan what to do next? • Can you choose the best tools and materials? Can you give a reason why these are best? • Can you describe your design by using pictures, diagrams, models and words?	Can you join things (materials/ components) together in different ways?	• Can you explain what went well with your work? • If you did it again, can you explain what you would improve?	• Can you describe the properties of the ingredients you are using? • Can you explain what it means to be hygienic? • Are you hygienic in the kitchen?	• Can you join materials together as part of a moving product? • Can you add some kind of design to your product?

Design Technology Toolkit – Whole School

	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products	Cooking and nutrition	Mechanisms and Construction
Year 3	• Can you show that your design meets a range of requirements? • Can you put together a step-by-step plan which shows the order and also what equipment and tools you need? • Can you describe your design using an accurately labelled sketch and words?	• Can you use equipment and tools accurately?	• Can you explain what you changed which made your design even better?	• Can you choose the right ingredients for a product? • Can you use equipment safely? • Can you make sure that your product looks attractive? • Can you describe how your combined ingredients come together? • Can you set out to grow plants such as cress and herbs from seed with the intention of using them for your food product?	• Do you select the most appropriate tools and techniques to use for a given task? • Can you make a product which uses both electrical and mechanical components? • Can you use a simple circuit? • Can you use a number of components?
Year 4	• Have you thought of how you will check if your design is successful? • Can you begin to explain how you can improve your original design? • Can you evaluate your product, thinking of both appearance and the way it works? • Do you take time to consider how you could have made your idea better?	• Can you tell if your finished product is going to be good quality? • Are you conscience of the need to produce something that will be liked by others? • Can you show a good level of expertise when using a range of tools and equipment? • Do you work at your product even though your original idea might not have worked?	• I can suggest some improvements and say what was good and not so good about my original design. • I can evaluate my product, thinking of both appearance and the way it works. • I can take time to consider how I could have made my idea better	• Do you know what to do to be hygienic and safe? • Have you thought what you can do to present your product in an interesting way?	• Can you add things to your circuits? • How have you altered your product after checking it? • Are you confident about trying out new and different ideas?
Year 5	• Can you come up with a range of ideas after you have collected information? • Do you take a user's view into account when designing? • Can you produce a detailed step-by-step plan? • Can you suggest some alternative plans and say what the good points and drawbacks are about each?	• Can you explain why your finished product is going to be of good quality? • Can you explain how your product will appeal to the audience? • Can you use a range of tools and equipment expertly? • Do you persevere through different stages of the making process?	• Do you keep checking that your design is the best it can be? • Do you check whether anything could be improved? • Can you evaluate appearance and function against the original criteria?	• Can you describe what you do to be both hygienic and safe? • How have you presented your product well	• Can you incorporate a switch into your product? • Can you refine your product after testing it? • Can you incorporate hydraulics and pneumatics?
Year 6	• Can you use a range of information to inform your design? • Can you use market research to inform plans? • Can you work within constraints? • Can you follow and refine your plan if necessary? • Can you justify your plan to someone else? • Do you consider culture and society in your designs?	• Can you use tools and materials precisely? • Do you change the way you are working if needed?	• How well do you test and evaluate your final product? • Is it fit for purpose? • What would improve it? • Would different resources have improved your product? • Would you need more or different information to make it even better? • Does your product meet all design criteria? • Did you consider the use of the product when selecting materials	• Can you explain how your product should be stored with reasons? • Can you set out to grow your own products with a view to making a salad, taking account of time required to grow different foods	• Can you use different kinds of circuit in your product? • Can you think of ways in which adding a circuit would improve your product?

Skills Progression Document

D.T Learning Ladder – Nursery

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
• Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them. (PSED) • Choose the right resources to carry out their own plan. (PD) • Explore how things work. (UTW) • Explore different materials freely, in order to develop their ideas about how to use them and what to make. (EAD) • Develop their own ideas and then decide which materials to use to express them. (EAD)	Use large-muscle movements to wave flags and streamers, paint and make marks. (PD) Use one-handed tools and equipment, for example, making snips in paper with scissors. (PD) Make imaginatively and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. (EAD) Create closed shapes with continuous lines ,and begin to use these shapes to represent objects. (EAD)	

Areas of study

Cooking and nutrition

Making bread and soup
Gruffalo crumble and ice cream
Fruit salad
Astronaut food

Mechanisms and construction

Building using construction equipment
Lighthouses
Chinese lanterns
Salt dough dinosaurs
Collages

Topic Specific Vocabulary	Topic Specific Vocabulary
Preparing Fruit & Vegetables: Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, crisp, sour hard, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging	Mechanism, lever, slider, slot, pivot, guide/bridge, masking tape, fastener, pull/push, down, straight, work, design, evaluate, purpose

Skills Progression Document

D.T Learning Ladder – Reception

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
• Explore, use and refine a variety of artistic effects to express their ideas and feelings. (EAD) • Create collaboratively, sharing ideas, resources and skills. (EAD)	Progress towards a more fluent style of moving, with developing control and grace. (PD) Develop their small motor skills so that they can use a range of tools competently, safely and confidently. (PD) Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. (PD) **Use a range of small tools, including scissors, paintbrushes and cutlery. (ELG)** **Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design texture, form and function. (ELG)**	• Return to and build on their previous learning, refining ideas and developing their ability to represent them. (EAD) • **Share their creations, explain the process they have used. (ELG)**

Areas of study

Cooking and nutrition
Pancakes, Cakes, Baked Beans, Fruit Salad, Honey Biscuits, Birthday Cake

Mechanisms and construction
Spilt pin people
Box/Junk model car/bridges/houses/transport
Dough table, salt dough fossils
Cutting skills / Collage
Can we make Red Riding Hood's coat waterproof? Summer Crown

Topic Specific Vocabulary	Topic Specific Vocabulary
Preparing Fruit & Vegetables: Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, crisp, sour hard, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging	Mechanism, lever, slider, slot, pivot, guide/bridge, masking tape, fastener, pull/push, down, straight, work, design, evaluate, purpose

Skills Progression Document

National Curriculum Requirements of DT at Key Stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts, (for example the home and school, gardens and playgrounds, the local community, industry and the wider environment).

When designing and making, pupils should be taught to:

Design

- 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

Make

- select from and use a range of tools and equipment to perform practical tasks, (or 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

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms, (for example levers, sliders, wheels and axles), in their products.

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.

Pupils should be taught to:

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Skills Progression Document

D.T Learning Ladder – Year One

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
• Can you think of some ideas on your own? • Can you explain what you want to do? • Can you use pictures and words when planning?	• Can you explain what you are making? • Can you choose which tools you are using?	• Can you describe how something works? • Can you talk about the work you have done? • Can you talk about work other children have done?

Areas of study

Cooking and nutrition

- cut food safely
- describe the texture of foods
- wash your hands and make sure that surfaces are clean
- think of interesting ways of decorating food you have made, eg, cakes

Mechanisms and construction

- make a product which moves
- cut materials using scissors
- describe the materials using different words
- say why you have chosen moving parts

Topic Specific Vocabulary	Topic Specific Vocabulary
Preparing Fruit & Vegetables: Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, crisp, sour hard, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging	Mechanism, lever, slider, slot, pivot, guide/bridge, masking tape, fastener, pull/push, down, straight, work, design, evaluate, purpose

Skills Progression Document

D.T Learning Ladder – Year Two

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
• Can you think of ideas and plan what to do next? • Can you choose the best tools and materials? Can you give a reason why these are best? • Can you describe your design by using pictures, diagrams, models and words?	• Can you join things (materials/ components) together in different ways?	• Can you explain what went well with your work? • If you did it again, can you explain what you would improve?

Areas of study

Cooking and nutrition

- describe the properties of the ingredients you are using
- explain what it means to be hygienic
- weigh ingredients to use in a recipe
- describe the ingredients used when making a dish or cake

Mechanisms and construction

- join materials together as part of a moving product
- add some design to your product
- make a model stronger and more stable
- use wheels and axles, when appropriate to do so

Topic Specific Vocabulary	Topic Specific Vocabulary
Preparing Fruit & Vegetables: Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, crisp, sour hard, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging	Wheel, axel, fixed, free, design, make, cutting, joining, hacksaw, vice, dowel, body, cab, shaping

Skills Progression Document

National Curriculum Requirements of DT at Key Stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts, for example, the home, school, leisure, culture, enterprise, industry and the wider environment.

When designing and making, pupils should be taught to:

Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make

- select from and use a wider range of tools and equipment to perform practical tasks, such as cutting, shaping, joining and finishing, accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products, (for example as gears, pulleys, cams, levers and linkages)
- understand and use electrical systems in their products, (for example series circuits incorporating switches, bulbs, buzzers and motors)
- apply their understanding of computing to programme, monitor and control their products.

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.

Pupils should be taught to:

- 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 ingredients are grown, reared, caught and processed.

Skills Progression Document

D.T Learning Ladder – Year Three

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
• Can you show that your design meets a range of requirements? • Can you put together a step-by-step plan which shows the order and also what equipment and tools you need? • Can you describe your design using an accurately labelled sketch and words?	• Can you use equipment and tools accurately?	• Can you explain what you changed which made your design even better

Areas of study

Cooking and nutrition

- choose the right ingredients for a product
- use equipment safely
- make sure that your product looks attractive
- describe how your combined ingredients come together
- weigh out ingredients and follow a given recipe to create a dish
- talk about which food is healthy and which food is not

Electrical and mechanical components and construction

- select the most appropriate tools and techniques to use for a given task
- know how to strengthen a product by stiffening a given part or reinforce a part of the structure

Topic Specific Vocabulary	Topic Specific Vocabulary
Healthy & Varied Diet: Texture, taste, appearance, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested	Loose/fixed pivot, system, input, process

Skills Progression Document

D.T Learning Ladder – Year Four

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
• Have you thought of how you will check if your design is successful? • Can you begin to explain how you can improve your original design? • Can you evaluate your product, thinking of both appearance and the way it works? • Do you take time to consider how you could have made your idea better?	• Can you tell if your finished product is going to be good quality? • Are you conscience of the need to produce something that will be liked by others? • Can you show a good level of expertise when using a range of tools and equipment? • Do you work at your product even though your original idea might not have worked?	• I can suggest some improvements and say what was good and not so good about my original design. • I can evaluate my product, thinking of both appearance and the way it works. • I can take time to consider how I could have made my idea better

Areas of study

Cooking and nutrition

- know what to do to be hygienic and safe
- present your product in an interesting way
- bring a creative element to the food product being designed

Electrical and mechanical components and construction

- add things to your circuit
- Are you confident about trying out new and different ideas?
- link scientific knowledge by using lights, switches or buzzers
- use electrical systems to enhance the quality of the product

Topic Specific Vocabulary	Topic Specific Vocabulary
Healthy & Varied Diet: Texture, taste, appearance, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested	Loose pivot, fixed pivot, system, input, process, output, linear, rotary, reciprocating, innovative, appealing, linkage, oscillating

Skills Progression Document

D.T Learning Ladder – Year Five

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
• Can you come up with a range of ideas after you have collected information? • Do you take a user's view into account when designing? • Can you produce a detailed step-by-step plan? • Can you suggest some alternative plans and say what the good points and drawbacks are about each?	• Can you explain why your finished product is going to be of good quality? • Can you explain how your product will appeal to the audience? • Can you use a range of tools and equipment expertly? • Do you persevere through different stages of the making process?	• Do you keep checking that your design is the best it can be? • Do you check whether anything could be improved? • Can you evaluate appearance and function against the original criteria?

Areas of study

Cooking and nutrition
- describe what you do to be both hygienic and safe
- present your product well

Electrical and mechanical components and construction
- incorporate a switch into your product
- refine your product after testing it
- links scientific knowledge to design by using pulleys or gears

Topic Specific Vocabulary	Topic Specific Vocabulary
Ingredients, yeast, dough, wholemeal, unleavened, baking soda, spice, herbs, carbohydrate, sugar, fat, protein, vitamins, nutrients, gluten	Pulley, gear, driver, follower, rotation, motor, belt, spindle, motor, circuit, switch, ratio, transmit, annotated drawings, exploded diagrams, functionality

Skills Progression Document

D.T Learning Ladder – Year Six

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
• Can you use a range of information to inform your design? • Can you use market research to inform plans? • Can you work within constraints? • Can you follow and refine your plan if necessary? • Can you justify your plan to someone else? • Do you consider culture and society in your designs?	• Can you use tools and materials precisely? • Do you change the way you are working if needed?	• How well do you test and evaluate your final product? • Is it fit for purpose? • What would improve it? • Would different resources have improved your product? • Would you need more or different information to make it even better? • Does your product meet all design criteria? • Did you consider the use of the product when selecting materials?

Areas of study

Cooking and nutrition
- explain how your product should be stored with reasons
- work within a budget to create a meal
- understand the difference between a savoury and sweet dish

Electrical and mechanical components and construction
- use different kinds of circuit in your product
- think of ways in which adding a circuit would improve your product
- use electrical systems correctly and accurately to enhance a given product
- know which IT product would further enhance a specific product
- use knowledge to improve a made product by strengthening, stiffening or reinforcing

Topic Specific Vocabulary	Topic Specific Vocabulary
Ingredients, yeast, dough, wholemeal, unleavened, baking soda, spice, herbs, carbohydrate, sugar, fat, protein, vitamins, nutrients, gluten	Pulley, gear, driver, follower, rotation, motor, belt, spindle, motor, circuit, switch, ratio, transmit, annotated drawings, exploded diagrams, functionality