**RED HALL PRIMARY SCHOOL**

**DT CURRICULUM OVERVIEW**

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|  | https://redhallprimary-darlington.co.uk/wp-content/uploads/2021/05/IMG-0284-150x150.jpg |  |
| What is the intent of our DT curriculum?Our aim is to provide our pupils with **inspiring and practical learning experiences** as well as to provide opportunities to spark curiosity. We believe that DT is an essential part of children’s education, and like Sark we believe **“Invention is the natural outcome of creative thinking”.** Our scheme of work, developed from the National Curriculum, includes structures, mechanisms, electrical systems as well as cooking and nutrition. Our lessons are incorporated, where possible, across the curriculum, making learning practical, **creative** and accessible by all pupils.The curriculum uses the children’s **imagination** to design and make products that solve real and relevant problems. It draws on other subject knowledge including maths, science, computing, and art. Pupils will learn to take risks, become resourceful and **innovative**. Through evaluating current products, children develop an understanding of daily life and how everything can be improved. Through DT lessons, children will focus on their **problem-solving skills** as well as their imagination and understanding of inventors. We focus on a unit each term, so the children **learn skills** to combine into a finished project. In Early Years we focus on exploring fine motor skill, designing, and combining materials. The children will have access to a wide range of tools and materials. This will help them explore and develop into their **potential**, the children will be encouraged to develop their own creative ideas. During KS1 and KS2, we follow The Design and Technology Association’s Projects on a Page. Our focus in KS1 is getting children used to designing, evaluating, and using technical knowledge to make products. They will explore creating mechanisms and structures as well as exploring working with textiles and cooking equipment. We focus on choosing projects that will support the **children in their own lives’ and reflect their experiences**. In Key Stage 2, DT is about **deepening** the children’s knowledge by building on their skills and understanding from KS1 and introducing the children to more complex activities such as electrical and mechanical systems. Each year we build upon the year prior and witness children become **excited** for new DT projects and more critical with their designs and evaluations.  | What experiences will the children receive?At Red Hall Primary School, we want the children to have a say in their learning. We focus on their **interests** as much as we can, as well providing **purposeful and enriching opportunities.**As a pupil at Red Hall, your child will have access to a wide range of experiences:* Termly DT projects focussing on the structures, mechanisms, textiles, and electrical systems (where applicable) as well as whole school DT days experiencing other techniques.
* Annual cookery **challenges** – Red Hall’s Food Heaven / Food Hell.
* **Real life experiences** e.g. creating products that they would use
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| By the end of their time at Red Hall, what will all of our children have?* An understanding of a range of DT techniques
* Know at least one DT skill they can achieve and enjoy
* A **sense of pride** in their achievements and the presentation of their work.
* An understanding of a range of **skills that are transferrable** to other subjects
* **Resilience**, to continuously improve and not see this as a failure.
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**Units Overview**

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|  | **Autumn 1***A Moment in Time* | **Autumn 2***Tell Me A Story* | **Spring 1***The Most Amazing Journey* | **Spring 2***We Are Family* | **Summer 1***Magic, Mystery & Mayhem* | **Summer 2***Dream BIG* |
| **Year 1** | **Cookery Week**  | Mechanisms |  |  | Structures |  |
| **Year 2** | Textiles |  |  |  | Mechanisms |
| **Year 3** | Structures |  | Mechanisms |  |  |
| **Year 4** | Textiles |  |  |  | Electrical Systems |
| **Year 5** |  | Mechanisms | Structures |  |  |
| **Year 6** | Electrical Systems |  |  |  | Textiles |

**Progression of Skills**

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|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **NC Aims** | I can:* 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;
* 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;
* explore and evaluate a range of existing products;
* evaluate their ideas and products against design criteria;
* 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; • use the basic principles of a healthy and varied diet to prepare dishes;

understand where food comes from. | I can:* 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;
* 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;
* explore and evaluate a range of existing products;
* evaluate their ideas and products against design criteria;
* 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; • use the basic principles of a healthy and varied diet to prepare dishes;

understand where food comes from. |
| **Design** | * I have my own ideas.
* I can explain what my product is for, and how it will work.
* I can verbally explain my design, draw pictures, and begin to use labels to plan.
* I can follow a simple design criterion.

  | * I can design using pictures and annotated drawings.
* I can design products following a design criterion.
* I can use my knowledge of existing products to produce ideas.
* I can choose suitable materials and explain choices depending on characteristics.
 | * I can begin to use research to develop design criteria.
* I can use annotated sketches and **begin to use cross-sectional drawings** to develop and communicate my ideas.
* When planning, I can begin to explain my choice of materials and components, including function and aesthetics.
* I can learn about some inventors/designers/ manufacturers of ground-breaking products.
 | * I can use research and my knowledge of existing products to develop the design criteria.
* I can use annotated sketches and **cross-sectional drawings** to develop and communicate my ideas.
* When planning, I can explain my choice of materials and components, including function and aesthetics.
* I can learn about some inventors/designers/ manufacturers of ground-breaking products..
 | * I can create my own design criteria.
* I can use annotated sketches, cross-sectional drawings and **begin to use exploded diagrams** to develop and communicate their ideas.
* When designing, I can explore different initial ideas before coming up with a final design; I can consider time, cost, resources, and availability of materials.
* I can begin to test out ideas using prototypes.
* I can research inventors/designers/ manufacturers of ground-breaking products.
 | * I can create my own design criteria.
* I can use annotated sketches, cross-sectional drawings and **exploded diagrams.**
* When designing, I can explore different initial ideas before coming up with a final design; I can consider time, cost, resources, and availability of materials.
* I can test out ideas using prototypes.
* I can research inventors/designers/ manufacturers of ground-breaking products.
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| **Make** | * With support, I can select tools/equipment to cut shape, join, finish and explain my choices.
* I can begin to measure, mark out, cut, and shape with support.
* I can choose suitable materials and begin to explain my choices.
 | * I can choose appropriate tools and materials.
* I can join materials/components together in different ways.
* I can measure, mark out, cut, and shape materials/components with support.
 | * I can begin to think about finishing techniques.
* I can begin to assemble, join and combine materials/components with some accuracy.
* I can begin to use a range of tools and equipment safely.
 | * I begin to apply some finishing techniques with some accuracy.
* I can independently measure, mark out, cut and shape materials/components with some accuracy.
* I can assemble, join and combine materials/components with some accuracy.
* I can use a range of tools and equipment safely.
 | * I can measure, mark out, cut and shape materials/components accurately.
* I can begin to assemble, join and combine materials/components accurately.
* I can use a range of tools and equipment safely accurately.
* I can apply finishing techniques with some accuracy.
 | * I can measure, mark out, cut and shape materials/components accurately to the nearest millimetre.
* I can assemble, join and combine materials/components accurately.
* I can measure, mark out, cut and shape materials/components accurately.
* I can use a range of tools and equipment safely and accurately.
* I can apply a range of finishing techniques accurately.
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| **Evaluate** | * I can talk about my product and begin to talk about what could make my product better.
 | * I can evaluate the effectiveness of my product thinking about the strengths and weaknesses.
 | * I can begin to use the design criteria when evaluating.
* I can begin to evaluate products considering use, materials and how well they have been made.
 | * I can use the design criteria when evaluating.
* I can evaluate products considering use, materials, how well they have been made, materials, whether they work, how they have been made, fit for purpose.
 | * I can test and evaluate the final product thinking about the appearance, fit for purpose, cost and sustainability.
 | * I can test and evaluate the final product thinking about the appearance, fit for purpose, cost and sustainability.
* I can consider the impact of the product beyond the intended user.
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| **Technical Knowledge / Male** | **Structures*** I can build a simple free-standing structure.
* I can join materials in different ways.
* I can explore ways to make product stronger, stiffer, and more stable.
* I can talk about the characteristics of materials.
 |  | **Structures*** I can build a shell structure
* I can work accurately to make cuts and holes.
* I can join materials.
* I can measure carefully to avoid mistakes.
* I can make a strong, stiff structure.
 |  | **Structures*** I can reinforce and strengthen a 3D frame.
* I can make more complex structures including a frame structure.
* I can measure accurately enough to ensure precision.
* I can make products that are strong and fit for purpose.
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| **Mechanisms*** I can use levers or sliders to make a moving picture.
* I can begin to understand that different mechanisms produce different types of movement.
 | **Mechanisms*** I can use wheels and axles.
 | **Mechanical Systems*** I can use pneumatics to create movement.
 |  | **Mechanical Systems*** I can use a [pulley](https://www.youtube.com/watch?v=yzgykJ288KM) to create movement.
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|  |  |  | **Electrical Systems*** I can use number of components in circuit including bulbs and buzzers.
* I can program a computer to control a product.
 |  | **Electrical Systems** * I can use different types of circuits in product including a motor and a switch.
* I can think of ways in which adding a circuit would improve product.
* I can program a computer to monitor changes in environment and control product.
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|  | **Textiles*** I can measure, cut and join textiles to make a product, with some support.
* I can join textiles together to make a product.
* I can carefully cut textiles to produce accurate pieces.
* I can cut out shapes that have been created by drawing around a template onto the fabric.
* I can begin to sew using a range of [basic stitches](https://www.twinkl.co.uk/resource/t-m-866-simple-sewing-stitches-display-posters) including a running stitch.
 |  | **Textiles*** I can begin to devise a template.
* I understand that a simple fabric shape can be used to make a 3D textiles project.
* I can join fabrics using a range of stitches with increasing independence e.g. running stitch, backstitch, whipstitch etc.
* My sewing skills are becoming more accurate.
* I can learn to add further decoration by adding buttons, beads, sequins etc.
 |  | **Textiles*** I can use my own template.
* I can consider seam allowance.
* I can join fabrics using a range of stitches with increasing independence e.g. running stitch, backstitch, whipstitch, blanket stitch etc.
* I can confidently make 3D products.
* I can pin and tack fabric pieces together.
* I can make products with increasing accuracy and independence.
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| **Cooking & Nutrition*** I know I need to wash my hands before touching food.
* I can begin to cut, peel and grate ingredients with support.
* I can begin to measure and weigh ingredients using measuring cups.
* I know all food comes from plants or animals.
* I understand that everyone should eat at least five portions of fruit and vegetables every day.
 | **Cooking & Nutrition*** I can follow good hygiene rules.
* I can cut, peel and grate ingredients with support.
* I can measure and weigh ingredients using measuring cups.
* I understand food can be grown like on an allotment or food can be caught like animals.
* I can name and sort foods into the five different food groups of dairy, protein, carbohydrates, fruits and vegetables and fats.
* I understand that everyone should eat at least five portions of fruit and vegetables every day and start to explain why.
 | **Cooking & Nutrition*** I can begin to understand food comes from different parts of the world.
* I can prepare and cook some dishes safely and hygienically.
* I can begin to use some of the following techniques: peeling, chopping, slicing, grating, mixing and spreading.
* With support, I can follow a recipe.
* I can begin to understand that food is processed.
* I can begin to explain how to be healthy, nutritious food and drink are needed for energy.
 | **Cooking & Nutrition*** I understand food comes from different parts of the world.
* I can prepare and cook some dishes safely and hygienically.
* I can use some of the following techniques: peeling, chopping, slicing, grating, mixing and spreading.
* With support, I can follow a recipe.
* I understand that food is processed.
* I can explain how to be healthy, nutritious food and drink are needed for energy.
 | **Cooking & Nutrition*** I understand that food can be grown, reared or caught in the UK and the wider world.
* I can begin to understand seasonality.
* I can prepare and cook savoury dishes safely and hygienically
* I can begin to use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.
* I can begin to measure food to the nearest gram and millilitre.
* I can begin to adapt a recipe by scaling ingredients up or down.
* I can begin to independently follow a recipe.
* I can adapt recipes to change appearance, taste, texture or aroma.
* I can begin to alter cooking times or temperatures.
 | **Cooking & Nutrition*** I understand that food can be grown, reared or caught in the UK, Europe and the wider world.
* I understand about seasonality of foods.
* I can prepare and cook savoury dishes safely and hygienically including, where appropriate, the use of heat source.
* I can use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading, and baking.
* I can measure food to the nearest gram and millilitre.
* I can adapt a recipe by scaling ingredients up or down.
* I can independently follow a recipe.
* I can adapt recipes to change appearance, taste, texture, or aroma.
* I can alter cooking times or temperatures.
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| **Year 1** |
| **Design Skills (to be covered throughout the year)** | **Make (to be covered throughout the year)** | **Evaluate (to be covered throughout the year)** |
| * I have my own ideas.
* I can explain what my product is for, and how it will work.
* I can verbally explain my design, draw pictures, and begin to use labels to plan.
* I can follow a simple design criterion.
 | * With support, I can select tools/equipment to cut shape, join, finish and explain my choices.
* I can begin to measure, mark out, cut, and shape with support.
* I can choose suitable materials and begin to explain my choices.
 | * I can talk about my product and begin to talk about what could make my product better.
 |
| **Autumn 1** | **Autumn 2** | **Summer 1** |
| **Cooking & Nutrition****WHOLE SCHOOL COOKERY WEEK*** I know I need to wash my hands before touching food.
* I can begin to cut, peel and grate ingredients with support.
* I can begin to measure and weigh ingredients using measuring cups.
* I know all food comes from plants or animals.
* I understand that everyone should eat at least five portions of fruit and vegetables every day.

I can design, make and evaluate a fruit and vegetable kebab for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). | **Mechanisms*** I can use levers or sliders to make a moving picture.
* I can begin to understand that different mechanisms produce different types of movement.

I can design, make, and evaluate a moving picture for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). | **Structures*** I can build a simple free-standing structure.
* I can join materials in different ways.
* I can explore ways to make product stronger, stiffer, and more stable.
* I can talk about the characteristics of materials.

I can design, make, and evaluate a slide for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). |
| **Vocabulary**fruit / vegetable names, sensory vocab – juicy, crunchy, sweet, sour, skin, slice, peel, taste | **Vocabulary**Mechanism, slider, lever, pivot, slot, join, up, down, straight, forwards, backwards, linkage, lever, bridge, guide | **Vocabulary** structure, wall, framework, weak, strong, base, edge, corner, 3D shape names |
| **Cultural Capital** | **Cultural Capital** | **Cultural Capital** |

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| **Year 2** |
| **Design Skills (to be covered throughout the year)** | **Make (to be covered throughout the year)** | **Evaluate (to be covered throughout the year)** |
| * I can design using pictures and annotated drawings.
* I can design products following a design criterion.
* I can use my knowledge of existing products to produce ideas.
* I can choose suitable materials and explain choices depending on characteristics.
 | * I can choose appropriate tools and materials.
* I can join materials/components together in different ways.
* I can measure, mark out, cut, and shape materials/components with support.
 | * I can evaluate the effectiveness of my product thinking about the strengths and weaknesses.
 |
| **Autumn 1** | **Autumn 2** | **Summer 2** |
| **Cooking & Nutrition****WHOLE SCHOOL COOKERY WEEK*** I can follow good hygiene rules.
* I can cut, peel and grate ingredients with support.
* I can measure and weigh ingredients using measuring cups.
* I understand food can be grown like on an allotment or food can be caught like animals.
* I can name and sort foods into the five different food groups of dairy, protein, carbohydrates, fruits and vegetables and fats.
* I understand that everyone should eat at least five portions of fruit and vegetables every day and start to explain why.
* I can design, make and evaluate a fruit /vegetable smoothie for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose).
 | **Textiles*** I can measure, cut and join textiles to make a product, with some support.
* I can join textiles together to make a product.
* I can carefully cut textiles to produce accurate pieces.
* I can cut out shapes that have been created by drawing around a template onto the fabric.
* I can begin to sew using a range of [basic stitches](https://www.twinkl.co.uk/resource/t-m-866-simple-sewing-stitches-display-posters) including a running stitch.

A picture containing text  Description automatically generatedI can design, make and evaluate a finger puppet for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). | **Mechanisms*** I can use wheels and axles.

I can design, make and evaluate a vehicle for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). |
| **Vocabulary**fruit / vegetable names, sensory vocab – juicy, crunchy, sweet, sour, flesh, skin, pip, seed, slice, peel, healthy diet, taste | **Vocabulary**template, mark out, join, decorate, finish, design criteria | **Vocabulary** vehicle, wheel, axle, axle holder, chassis |
| **Cultural Capital** | **Cultural Capital** | **Cultural Capital** |

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| **Year 3** |
| **Design Skills (to be covered throughout the year)** | **Make (to be covered throughout the year)** | **Evaluate (to be covered throughout the year)** |
| * I can begin to use research to develop design criteria.
* I can use annotated sketches and **begin to use cross-sectional drawings** to develop and communicate my ideas.
* When planning, I can begin to explain my choice of materials and components, including function and aesthetics.
* I can learn about some inventors/designers/ manufacturers of ground-breaking products.
 | * I can begin to think about finishing techniques.
* I can begin to assemble, join and combine materials/components with some accuracy.
* I can begin to use a range of tools and equipment safely.
 | * I can begin to use the design criteria when evaluating.

I can begin to evaluate products considering use, materials and how well they have been made. |
| **Autumn 1** | **Autumn 2** | **Spring 2** |
| **Cooking & Nutrition****WHOLE SCHOOL COOKERY WEEK*** I can begin to understand food comes from different parts of the world.
* I can prepare and cook some dishes safely and hygienically.
* I can begin to use some of the following techniques: peeling, chopping, slicing, grating, mixing and spreading.
* With support, I can follow a recipe.
* I can begin to understand that food is processed.
* I can begin to explain how to be healthy, nutritious food and drink are needed for energy.

I can design, make and evaluate wrap for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). | **Structures*** I can build a shell structure
* I can work accurately to make cuts and holes.
* I can join materials.
* I can measure carefully to avoid mistakes.
* I can make a strong, stiff structure.

I can design, make and evaluate a gift box for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). | **Mechanical Systems*** I can use pneumatics to create movement.

I can design, make and evaluate a Jack in the Box toy / mascot for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). |
| **Vocabulary**juicy, crunchy, sweet, sour, texture, taste, spicy, savoury, hygienic, | **Vocabulary**3D shape names, shell structure, length, width, capacity, scoring, tabs, net | **Vocabulary** component, fixing, tubing, syringe, plunger, pneumatic system, input, output, compression, pressure, inflate, deflate, prototype |
| **Cultural Capital** | **Cultural Capital** | **Cultural Capital** |

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| **Year 4** |
| **Design Skills (to be covered throughout the year)** | **Make (to be covered throughout the year)** | **Evaluate (to be covered throughout the year)** |
| * I can use research and my knowledge of existing products to develop the design criteria.
* I can use annotated sketches and **cross-sectional drawings** to develop and communicate my ideas.
* When planning, I can explain my choice of materials and components, including function and aesthetics.
* I can learn about some inventors/designers/ manufacturers of ground-breaking products..
 | * I begin to apply some finishing techniques with some accuracy.
* I can independently measure, mark out, cut and shape materials/components with some accuracy.
* I can assemble, join and combine materials/components with some accuracy.
* I can use a range of tools and equipment safely.
 | * I can use the design criteria when evaluating.
* I can evaluate products considering use, materials, how well they have been made, materials, whether they work, how they have been made, fit for purpose.
 |
| **Autumn 1** | **Autumn 2** | **Summer 2** |
| **Cooking & Nutrition****WHOLE SCHOOL COOKERY WEEK*** I understand food comes from different parts of the world.
* I can prepare and cook some dishes safely and hygienically.
* I can use some of the following techniques: peeling, chopping, slicing, grating, mixing and spreading.
* With support, I can follow a recipe.
* I understand that food is processed.
* I can explain how to be healthy, nutritious food and drink are needed for energy.

I can design, make and evaluate a toastie for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). | **Textiles*** I can begin to devise a template.
* I understand that a simple fabric shape can be used to make a 3D textiles project.
* I can join fabrics using a range of stitches with increasing independence e.g. running stitch, backstitch, whipstitch etc.
* My sewing skills are becoming more accurate.
* I can learn to add further decoration by adding buttons, beads, sequins etc.

I can design, make and evaluate a purse for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). | **Electrical Systems****TEACH THROUGH SCIENCE*** I can use number of components in circuit including bulbs and buzzers.
* I can program a computer to control a product.

I can design, make and evaluate a torch / night light for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). |
| **Vocabulary**juicy, crunchy, sweet, sour, texture, taste, spicy, savoury, hygienic, processed | **Vocabulary**fabric names, fastening, compartment, template, stitch, seam, seam allowance | **Vocabulary** circuit, fault, connection, switch, battery, battery holder, bulb, wire, clip, insulator, conductor |
| **Cultural Capital** | **Cultural Capital** | **Cultural Capital** |

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| **Year 5** |
| **Design Skills (to be covered throughout the year)** | **Make (to be covered throughout the year)** | **Evaluate (to be covered throughout the year)** |
| * I can create my own design criteria.
* I can use annotated sketches, cross-sectional drawings and **begin to use exploded diagrams** to develop and communicate their ideas.
* When designing, I can explore different initial ideas before coming up with a final design; I can consider time, cost, resources, and availability of materials.
* I can begin to test out ideas using prototypes.
* I can research inventors/designers/ manufacturers of ground-breaking products.
 | * I can measure, mark out, cut and shape materials/components accurately.
* I can begin to assemble, join and combine materials/components accurately.
* I can use a range of tools and equipment safely accurately.
* I can apply finishing techniques with some accuracy.
 | * I can test and evaluate the final product thinking about the appearance, fit for purpose, cost and sustainability.
 |
| **Autumn 1** | **Spring 1** | **Spring 2** |
| **Cooking & Nutrition****WHOLE SCHOOL COOKERY WEEK*** I understand that food can be grown, reared or caught in the UK and the wider world.
* I can begin to understand seasonality.
* I can prepare and cook savoury dishes safely and hygienically
* I can begin to use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.
* I can begin to measure food to the nearest gram and millilitre.
* I can begin to adapt a recipe by scaling ingredients up or down.
* I can begin to independently follow a recipe.
* I can adapt recipes to change appearance, taste, texture or aroma.
* I can begin to alter cooking times or temperatures.

I can design, make and evaluate a pizza \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). | **Mechanical Systems*** I can use a [pulley](https://www.youtube.com/watch?v=yzgykJ288KM) to create movement.

I can design, make and evaluate lifting machine for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). | **Structures*** I can reinforce and strengthen a 3D frame.
* I can make more complex structures including a frame structure.
* I can measure accurately enough to ensure precision.
* I can make products that are strong and fit for purpose.

I can design, make and evaluate tents / bird hide for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). |
| **Vocabulary**ingredients, yeast, dough, flour, fat, sugar, carbohydrate, protein, nutrients, gluten, dairy, intolerance, savoury, seasonality | **Vocabulary**frame structure, stiffen, reinforce, triangulation, stability | **Vocabulary** pulley, drive, belt, gear, rotation, axle, motor, circuit, switch, input, output, mechanical system, electrical system |
| **Cultural Capital** | **Cultural Capital** | **Cultural Capital** |

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| **Year 6** |
| **Design Skills (to be covered throughout the year)** | **Make (to be covered throughout the year)** | **Evaluate (to be covered throughout the year)** |
| * I can create my own design criteria.
* I can use annotated sketches, cross-sectional drawings and **exploded diagrams.**
* When designing, I can explore different initial ideas before coming up with a final design; I can consider time, cost, resources, and availability of materials.
* I can test out ideas using prototypes.
* I can research inventors/designers/ manufacturers of ground-breaking products.
 | * I can measure, mark out, cut and shape materials/components accurately to the nearest millimetre.
* I can assemble, join and combine materials/components accurately.
* I can measure, mark out, cut and shape materials/components accurately.
* I can use a range of tools and equipment safely and accurately.
* I can apply a range of finishing techniques accurately.
 | * I can test and evaluate the final product thinking about the appearance, fit for purpose, cost and sustainability.
* I can consider the impact of the product beyond the intended user.
 |
| **Autumn 1** | **Autumn 2** | **Summer 2** |
| **Cooking & Nutrition****WHOLE SCHOOL COOKERY WEEK*** I understand that food can be grown, reared or caught in the UK, Europe and the wider world.
* I understand about seasonality of foods.
* I can prepare and cook savoury dishes safely and hygienically including, where appropriate, the use of heat source.
* I can use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading, and baking.
* I can measure food to the nearest gram and millilitre.
* I can adapt a recipe by scaling ingredients up or down.
* I can independently follow a recipe.
* I can adapt recipes to change appearance, taste, texture, or aroma.
* I can alter cooking times or temperatures.

I can design, make and evaluate a meal (from a different culture) for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). | **Electrical Systems** **TEACH THROUGH SCIENCE*** I can use different types of circuits in product including a motor and a switch.
* I can think of ways in which adding a circuit would improve product.
* I can program a computer to monitor changes in environment and control product.

I can design, make, and evaluate a loop board game for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). | **Textiles*** I can use my own template.
* I can consider seam allowance.
* I can join fabrics using a range of stitches with increasing independence e.g. running stitch, backstitch, whipstitch, blanket stitch etc.
* I can confidently make 3D products.
* I can pin and tack fabric pieces together.
* I can make products with increasing accuracy and independence.

I can design, make and evaluate a [bag](https://www.youtube.com/watch?v=QuyIHOGj5Jc%5C) for \_\_\_\_\_\_\_\_\_\_ (user) for \_\_\_\_\_\_\_\_ (purpose). |
| **Vocabulary**ingredients, yeast, dough, flour, wholemeal, spice, herbs, fat, sugar, carbohydrate, protein, nutrients, gluten, dairy, intolerance, savoury, seasonality  | **Vocabulary**series circuit, parallel circuit, name of switches, system, control, program, component, input, output | **Vocabulary** wadding, hem, pattern pieces, pinking shears, transfer paper, seam, seam allowance |
| **Cultural Capital** | **Cultural Capital** | **Cultural Capital** |

**National Curriculum Coverage**

YEAR ONE

|  |  |  |  |
| --- | --- | --- | --- |
| Previous Knowledge | Structures  | Cookery | Mechanisms |
| In Early Years, children will have focussed on using a range of tools, experimented with form, texture and design. | During the Structures unit children will build upon their construction experience in Early Years and construct using card and paper. They will think about how to make structures stiffer and more stable. | During the Cooking unit children will peel, slice and chop fruit / vegetables to make a fruit / vegetable kebab. | During the Mechanisms unit children will make simple flaps, hinges, levers, and linkages. The children will focus on the movement of their product. |

YEAR TWO

|  |  |  |  |
| --- | --- | --- | --- |
| Previous Knowledge | Textiles  | Mechanisms | Cookery |
| In Year 1, the children made fruit kebabs and now understand sensory vocabulary. The children have also explored making structures stiffer. | During the Textiles unit children will explore different fabrics, cut and join using simple techniques and create appealing products. | During the Mechanisms unit children will make a vehicle with moving wheels focussing on vocabulary. | During the Cooking unit children will peel, slice and chop fruit / vegetables to make a fruit / vegetable smoothie. |

YEAR THREE

|  |  |  |  |
| --- | --- | --- | --- |
| Previous Knowledge | Structures | Mechanical Systems | Cookery |
| In KS1, the children explored healthy eating in cookery, making structures stiff and simple mechanisms such as levers and linkages.  | During the Structures unit children will build a shell structure, explore 3D shape nets, and construct strong, stiff structures. | During the Mechanical Systems unit children will use pneumatic mechanisms, understand how materials can be combined to allow movement and create a pneumatic product. | During the Cookery unit children will make a wrap and look at food processing. |

YEAR FOUR

|  |  |  |  |
| --- | --- | --- | --- |
| Previous Knowledge | Textiles | Cookery | Electrical Systems |
| In KS1 and Year 3, the children explored 3D shape nets to make a shell structure, explored healthy eating and food that is harvested and grown, as well as pneumatic systems. | During the Textiles unit children will make a purse focussing on gluing and stitching. The children will explore seams and seam allowances. | During the Cookery unit children will make a toastie as well as using a range of techniques safely. | During the Electrical Systems unit children will make a circuit using bulbs and buzzers. They will begin to look at insulators and conductors. |

YEAR FIVE

|  |  |  |  |
| --- | --- | --- | --- |
| Previous Knowledge | Mechanical Systems | Structures | Cookery |
| In LKS2, the children have explored shell structures, pneumatic systems and explored food that is seasonal and processed. | During the Mechanical Systems unit children will use pulleys or gears in their products. They will also apply their knowledge of electrical systems to this. They will begin to look at outputs and inputs. | During the Structures unit children will build a frame structure. The children will focus on finishing techniques and reinforcing 3D frameworks. | During the Cookery unit children will make pizzas using their knowledge of hygiene, nutrition and healthy diets. |

YEAR SIX

|  |  |  |  |
| --- | --- | --- | --- |
| Previous Knowledge | Electrical Systems | Cookery | Textiles |
| In LKS2 and Year 5, the children have explored Electrical Systems including bulbs and buzzers, they have looked at hygiene and nutrition as well as basic stitches. | During the Electrical Systems unit children will make a circuit including switches and batteries. The children will apply an electrical system to their final product. | During the Cookery unit children will make a meal using their knowledge of hygiene, nutrition and healthy diets. They will also use a heat source. | During the Textiles unit children will make a bag using simple patterned pieces and more complex stitches including a blanket stitch. The finishing techniques will be of a high quality. |