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| **Curriculum Overview Year 1**  **KEY: Current Year D&T Unit**  **History Geography Art Science Reading Strategy**  History | | |
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| **Prior Learning in Early Years**  **EYFS Framework Link**  **Expressive Arts and Design (EAD)**  **Physical Development (PD)**  **Personal, Social and Emotional Development (PSED)**  **Guidance and statements below are taken from Development Matters.**  **Vocabulary**  **Throughout Early Years children should be immersed in high quality subject specific language, related to the whole DT curriculum. The most important vocabulary we expect them to hear and use is set out below.** | **Year 1 Curriculum Take Aways**  **CROSS-CURRICULAR LINKS:**  **Mechanical Components (Autumn 2): Everyday Materials, Transport Through the Ages, Dogger**  **Food & Nutrition (Spring 2): Animals Including Humans** | **Subsequent Year’s Curriculum Take Aways**  **CROSS-CURRICULAR LINKS:**  **Mechanical Components (Autumn 2): Victorian Railways (Y2)**  **Food & Nutrition (Spring 2): Animals Including Humans (Y2)** |
| **Early Years**  **Mechanical Components**  **0-3 Years**   * **Explore different materials, using all their senses to investigate them. Manipulate and play different materials.** * **Make simple models which express their ideas.** * **Manipulate and play different materials. (Autumn 2 - Week 6)**   **3-4 Years**   * **Explore different materials freely in order to develop their ideas about how to use them and what to make.** * **Develop their own ideas and decide which materials to use to express them.** * **Join different materials and explore different textures.** * **Create closed shapes with continuous lines and begin to use these shapes to represent objects.**   **Reception**   * **Return to and build on their previous learning, refining ideas and developing their ability to represent them.**   **Early Learning Goal (ELG)**   * **Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.** * **Share their creations, explaining the process they have used.** | **Year 1**  **Mechanical Components**  **Designing**   * **To use their knowledge of a wheel, chassis and axle to design a vehicle to carry a toy. (Autumn 2 - Week 1)** * **To communicate their vehicle design using pictures and drawings, with support.**   **Making**   * **To know how objects move by experimenting with construction kits. (Autumn 2 - Week 1)** * **To know how to join an axle to a chassis so wheels still move.** * **To know how to make an effective chassis with wheels using an axle with cotton reels and dowels. (Autumn 2 - Week 1)**   **Evaluating**   * **To communicate how their vehicle moves.** * **To know what is similar between their vehicle and another.** * **To be able to evaluate why their vehicle moves. (Autumn 2 - Week 2)** * **To be able to make comparisons between their vehicle and another. (Autumn 2 - Week 2)**   **Technical Knowledge**   * **To know that a wheel is circular and makes something move.** * **To know how wheels make objects move by experimenting with construction kits.** * **To know what an axle is.** * **To know that a wheel needs a hole to attach to an axle.** * **To know what a wheel, chassis and axle is. (Autumn 2 - Week 4)** * **To know the difference between fixed and freely moving axles. (Autumn 2 - Week 4)** * **To know why a wheel and axle wobbles based on hole position. (Autumn 2 - Week 2)** * **To know the purpose of a wheel. (Autumn 2 - Week 2)** | **Year 3**  **Mechanical Components**  **Designing**   * **To be able to identify differences and similarities in Egyptian Shadufs and modern designs that use pulleys and levers.** * **To know that William Armstrong was an engineer who designed the modern-day crane.** * **To use research and historical knowledge to inform designs for a Shaduf, including labelled sketches and instructions.**   **Making**   * **To know how to adapt a lever and a pulley based on load weight.** * **To know that varying the position of the fulcrum affects how a lever lifts a load.** * **To know the difference between a lever and a pulley and how they are used to create movement.** * **To know how levers and pulleys can be adapted to bear weight.**   **Evaluating**   * **To be able to identify differences and similarities in Egyptian Shadufs and their own design.** * **To use their knowledge of pulleys, levers, wheel movement and fulcrum to evaluate how well their design lifts varying loads.** * **To know how to improve efficiency of their product.**   **Technical Knowledge**   * **To know that pulleys and levers are used to lift, move and carry.** * **To know what a fulcrum is.** |
| **Vocabulary**   * attach * build * make * remove * transport * vehicle * wheel | **Vocabulary**   * **axle** * **chassis** * **circular** * **fixed** * **freely moving** * **move** * **vehicle** * **wheel** | **Vocabulary**   * **arm** * **effort** * **fulcrum** * **labelled sketch** * **lever** * **load** * **machine** * **pulley** * **shaduf** |
| **Early Years**  **Food and Nutrition**  **0-3 Years**   * **Show an increasing desire to be independent, such as wanting to feed themselves and dress or undress. (Physical Development – Gross Motor Skills)** * **Start to eat independently and learn to use a knife and fork. (Physical Development – Fine Motor Skills)**   **3-4 Years**   * **Make healthy choices about food and drink activity and toothbrushing. (Physical Development – Gross Motor Skills)**   **Reception**   * **Know and talk about the different factors that support their overall health and well-being: healthy eating. (Physical Development – Gross Motor Skills)** * **Further develop the skills they need to manage the school day successfully: mealtimes. (Physical Development – Gross Motor Skills)** * **Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools would be – knives, forks and spoons. (Physical Development – Fine Motor Skills)** * **Manage their own needs. (Personal, Social and Emotional Development – Managing Self)**   **Early Learning Goal (ELG)**   * **Use a range of small tools, such as scissors, paintbrushes, and cutlery. (Physical Development – Fine Motor Skills)** * **Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of making healthy food choices. (Personal, Social, Emotional Development – Managing Self)** | **Year 1**  **Food and Nutrition**   * **To know that food comes from plants and animals. (Spring 2 - Week 1)** * **To know that it is healthy for people to eat at least five portions of fruit and vegetables every day. (Spring 2 - Week 2)** * **To know how to mix with a spoon. (Spring 2 - Week 2)** * **To know how to hold fruit and vegetables so that they can be cut safely with a knife. (Spring 2 - Week 2)** * **To know that hands and utensils need to be washed before cooking. (Spring 2 - Week 2)** * **To be able to describe the texture and taste of food when eating it. (Spring 2 - Week 2)** * **To know which types of food make a healthy meal. (Spring 2 - Week 2)** * **To use knowledge of colour, texture and taste to sort fruits and vegetables. (Spring 2 - Week 2)** * **To know what texture means. (Spring 2 - Week 2)** * **To know which familiar foods come from plants and which come from animals. (Spring 2 - Week 2)** | **Year 2**  **Food and Nutrition**   * **To sort foods using knowledge of where they have come from (farmed, grown elsewhere or caught).** * **To know what proportions of different food groups make up a healthy diet.** * **To know foods relating to the Mexican culture.** * **To know how to use a knife safely to peel fruit and vegetables and to discard pips/ seeds.** * **To know how to use a grater safely.** * **To know how to use a measuring spoon to measure quantities.** * **To know the steps to take to make sure that food is prepared hygienically.** |
| **Vocabulary**   |  |  |  | | --- | --- | --- | | * chop * cut * fruit * healthy * juicy * peel | * juicy * skin * sweet * pip * rough * seed | * smooth * snack * sour * texture * taste * vegetables | | **Vocabulary**   |  |  |  | | --- | --- | --- | | * **bridge** * **chopping board** * **claw** * **cut** * **fruit** * **fork secure** | * **healthy** * **mix** * **portion prepare** * **rough** * **smooth** * **sour** | * **sweet** * **taste** * **texture** * **utensil** * **vegetables** | | **Vocabulary**   |  |  | | --- | --- | | * **caught** | * **healthy** | | * **chop** | * **measure** | | * **disinfect** | * **measuring spoon** | | * **farmed** | * **peel** | | * **farmer** | * **portion** | | * **grater** | * **salsa** | | * **guacamole** | * **skin** | |  | * **varied diet** | |

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| **Curriculum Overview Year 2** | | |
| **KEY: Current Year D&T Unit**  **History Geography Art Science Reading Strategy**  History | | |
| **Prior Year’s Curriculum Take Aways** | **Year 2 Curriculum Take Aways**  **CROSS-CURRICULAR LINKS:**  **Construction (Autumn): Great Fire of London**  **Textiles (Spring 2): Printing, Mexico**  **Food & Nutrition (Spring 2): Mexico** | **Subsequent Year’s Curriculum Take Aways** |
| **Early Years**  **Construction**  **3-4 Years**   * **Explore different materials freely in order to develop their ideas about how to use them and what to make.** * **Develop their own ideas and decide which materials to use and express them.** * **Make imaginative and complex ‘small worlds’ with blocks and construction kits, such as a city with different buildings and a park.** * **Collaborate with others to manage large items such as moving a long plank safely and carrying large hallow blocks. (Physical Development – Gross Motor Skills)** * **Talk about and explore 2D and 3D shapes using informal mathematical language: sides, corners, straight, flat, round etc’ - (Maths – Numerical Patterns)** * **Make comparisons between objects relating size, length, weight and capacity. (Maths – Numerical Patterns)** * **Combine shapes to make new ones – an arch, a bigger triangle etc. (Maths – Numerical Patterns)**   **Reception**   * **Confidently and safely use a range of large and small apparatus indoors and outdoors, alone and in a group. (Physical Development – Gross Motor Skills)** * **Develop their small motor skills so that they can use a range of tools competently, safely and confidently. (Physical Development – Fine Motor Skills)** * **Select, rotate and manipulate shapes in order to develop spatial reasoning skills. (Maths – Numerical Patterns)**   **Early Learning Goal (ELG)**   * **Share their creations, explaining the process that they have used.** | **Year 2**  **Construction**  **Designing**   * **To know that a mock-up tests a design using a different material.** * **To use a design brief to design a free-standing structure.** * **To communicate their ideas independently using drawings.**   **Making**   * **To use knowledge of 3D shapes to build simple free-standing structures.** * **To use knowledge of 2D shapes and simple nets to build free-standing structures using Polydron.** * **To know how to use scissors to cut card and paper accurately and safely.** * **To know how to layer materials as a finishing technique to make them more appealing for the intended user.** * **To know how to use a ruler to mark lines for cutting.**   **Evaluating**   * **To know that an architect designs buildings and that Sir Christopher Wren was an architect.** * **To use knowledge of materials to explain how easy or difficult they are to cut.** * **To explore different joining materials to select the most suitable for a purpose.** * **To use a design brief to evaluate and improve how stable and visually appealing a free-standing structure is.**   **Technical Knowledge**   * **To know what a free-standing structure is.** * **To know that designers use a wide range of different equipment to join materials.** * **To know what the word stable means.** | **Year 3**  **Construction**  **Designing**   * **To use research to inform knowledge of stable structures.** * **To use knowledge of construction and joining materials to test mock ups.** * **To communicate their designs using labelled sketches and ordered steps.** * **To apply their knowledge of mock-up evaluation in their designs.**   **Making**   * **To select suitable construction to create a free-standing structure.**   **Evaluating**   * **To know that Ludwig Mies Van Der Rohe was an architect and furniture designer who created simple, but stable frames for furniture.** * **To use knowledge of the Barcelona chair to investigate suitable materials to create a stable structure.** * **To use a design brief to evaluate how stable their product is, using this to suggest a design improvement.**   **Technical Knowledge**   * **To know that the shape and size of a structure’s base affects its stability.** * **To know that a buttress is placed against a wall to make a structure more stable.** * **To know how to create a hidden join.** * **To know how to score using scissors.** |
| |  |  | | --- | --- | | **Vocabulary**   * **arch** * **build** * **bigger** * **heavy** * **height** * **high** * **light** * **little** | * **low** * **measure** * **straight** * **tall** * **tower** * **weight** | | **Vocabulary**   |  |  | | --- | --- | | * **architect** * **construction** * **double-sided tape** * **evaluation** * **free-standing structure** * **glitter glue** * **glue stick** * **joining materials** * **masking tape** * **mock-up** | * **net** * **paper clips** * **parcel tape** * **PVA glue** * **ruler** * **scissors** * **Sellotape** * **split pins** * **stable** * **staples** | | **Vocabulary**   * **base** * **buttress** * **hidden join** * **labelled sketch** * **score** * **stability** |
| **Year 1**  **Food and Nutrition**   * **To know that food comes from plants and animals. (Spring 2 - Week 1)** * **To know that it is healthy for people to eat at least five portions of fruit and vegetables every day. (Spring 2 - Week 2)** * **To know how to mix with a spoon. (Spring 2 - Week 2)** * **To know how to hold fruit and vegetables so that they can be cut safely with a knife. (Spring 2 - Week 2)** * **To know that hands and utensils need to be washed before cooking. (Spring 2 - Week 2)** * **To be able to describe the texture and taste of food when eating it. (Spring 2 - Week 2)** * **To know which types of food make a healthy meal. (Spring 2 - Week 2)** * **To use knowledge of colour, texture and taste to sort fruits and vegetables. (Spring 2 - Week 2)** * **To know what texture means. (Spring 2 - Week 2)** * **To know which familiar foods come from plants and which come from animals. (Spring 2 - Week 2)** | **Year 2**  **Food and Nutrition**   * **To sort foods using knowledge of where they have come from (farmed, grown elsewhere or caught).** * **To know what proportions of different food groups make up a healthy diet.** * **To know foods relating to the Mexican culture.** * **To know how to use a knife safely to peel fruit and vegetables and to discard pips/ seeds.** * **To know how to use a grater safely.** * **To know how to use a measuring spoon to measure quantities.** * **To know the steps to take to make sure that food is prepared hygienically.** |  |
| **Vocabulary**   |  |  |  | | --- | --- | --- | | * **bridge** * **chopping board** * **claw** * **cut** * **fruit** * **fork secure** | * **healthy** * **mix** * **portion prepare** * **rough** * **smooth** * **sour** | * **sweet** * **taste** * **texture** * **utensil** * **vegetables** | | **Vocabulary**   |  |  | | --- | --- | | * **caught** | * **healthy** | | * **chop** | * **measure** | | * **disinfect** | * **measuring spoon** | | * **farmed** | * **peel** | | * **farmer** | * **portion** | | * **grater** | * **salsa** | | * **guacamole** | * **skin** | |  | * **varied diet** | | **Vocabulary**   * **baking** * **benching** * **dough** * **fermentation** * **gluten** * **kneading** * **leavening** * **proofing** * **yeast** |
| **Early Years**  **Textiles**  **3-4 Years**   * **Explore different materials freely in order to develop their ideas about how to use them and what to make.** * **Develop their own ideas and decide which materials to use to express them.** * **Join different materials and explore different textures.**   **Reception**   * **Create collaboratively sharing ideas, resources and skills.**   **Early Learning Goal (ELG)**   * **Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.** | **Year 2**  **Textiles**  **Design**   * **To use a mock-ups to determine the best material for a lining.** * **To use appropriate vocabulary when planning and designing a textile product.** * **To communicate their ideas independently using drawings and a simple drawing app.**   **Making**   * **To know the purpose of a template and how to draw around it on a textile.** * **To know how to use pins to secure material and templates.** * **To know how to use scissors to cut templates and fabric accurately and safely.**   **Evaluating**   * **To use a design brief to evaluate how well joined and visually appealing their product is.** * **To use their knowledge of different materials to evaluate which are best to print on.**   **Technical Knowledge**   * **To know what a textile is.** * **To know the purpose of a lining and which materials and joining can be used.** * **To know how to sew using overstitch.** * **To select a chosen fabric based on its properties.** | **Year 4**  **Textiles**  **Designing**   * **To know that Ozwald Boateng is a British designer who mainly designs tailored clothing.** * **To use their knowledge of back stitch and running stitch to annotate sketches to record differences in technique.** * **To know how to apply knowledge of techniques to a design brief.** * **To use knowledge of sewing techniques to create annotated sketches for a design brief.**   **Making**   * **To know how fabric can be cut in different ways to prevent fraying and to create different aesthetic results.** * **To know how to create a prototype and apply these to hems.** * **To apply mathematical knowledge of measurement ratios to create a template that is to scale.** * **To know how to use pins to join materials before stitching.**   **Evaluating**   * **To use knowledge of back stitch, catch stitch and running stitch to identify strengths and limitations of these as joining techniques.** * **To use subject specific language to compare and contrast their design with their peers.**   **Technical Knowledge**   * **To know how to thread a needle.** * **To sew using back stitch, running stitch and catch stitch.** * **To know that a hem should be hidden.** * **To know different ways of folding material (e.g., knife pleat and gathers).** |
| **Vocabulary**   * **cut** * **design** * **hard** * **materials** * **rough** * **select** * **smooth** * **soft** * **texture** | **Vocabulary**   * **designer** * **fabric** * **join** * **lining** * **needles** * **overstitch** * **pins** * **template** * **thread** | **Vocabulary**   * **annotated sketches** * **back stitch** * **catch stitch** * **fray** * **gathering** * **hem** * **knife pleat** * **running stitch** * **seam** |

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| **Curriculum Overview Year 3**  **KEY: Current Year D&T Unit**  **History Geography Art Science Reading Strategy**  History | | | | |
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| **Prior Year’s Curriculum Take Aways** | **Year 3 Curriculum Take Aways**  **CROSS-CURRICULAR LINKS:**  **Construction (Autumn 2): Iron Age**  **Electrical Systems (Spring 1): Light, History of Coalmining**  **Mechanical Components (Summer 1): Ancient Egyptians, Forces & Magnets**  **Food & Nutrition (Summer 2): Ancient Egyptians** | **Subsequent Year’s Curriculum Take Aways**  **CROSS-CURRICULAR LINKS:**  **Electrical Systems (Spring 1): Electricity (Y4)**  **Mechanical Components (Summer 2): Forces (Y5)** | | |
| **Year 2**  **Construction**  **Designing**   * **To know that a mock-up tests a design using a different material.** * **To use a design brief to design a free-standing structure.** * **To communicate their ideas independently using drawings.**   **Making**   * **To use knowledge of 3D shapes to build simple free-standing structures.** * **To use knowledge of 2D shapes and simple nets to build free-standing structures using Polydron.** * **To know how to use scissors to cut card and paper accurately and safely.** * **To know how to layer materials as a finishing technique to make them more appealing for the intended user.** * **To know how to use a ruler to mark lines for cutting.**   **Evaluating**   * **To know that an architect designs buildings and that Sir Christopher Wren was an architect.** * **To use knowledge of materials to explain how easy or difficult they are to cut.** * **To explore different joining materials to select the most suitable for a purpose.** * **To use a design brief to evaluate and improve how stable and visually appealing a free-standing structure is.**   **Technical Knowledge**   * **To know what a free-standing structure is.** * **To know that designers use a wide range of different equipment to join materials.** * **To know what the word stable means.** | **Year 3**  **Construction**  **Designing**   * **To use research to inform knowledge of stable structures.** * **To use knowledge of construction and joining materials to test mock ups.** * **To communicate their designs using labelled sketches and ordered steps.** * **To apply their knowledge of mock-up evaluation in their designs.**   **Making**   * **To select suitable construction to create a free-standing structure.**   **Evaluating**   * **To know that Ludwig Mies Van Der Rohe was an architect and furniture designer who created simple, but stable frames for furniture.** * **To use knowledge of the Barcelona chair to investigate suitable materials to create a stable structure.** * **To use a design brief to evaluate how stable their product is, using this to suggest a design improvement.**   **Technical Knowledge**   * **To know that the shape and size of a structure’s base affects its stability.** * **To know that a buttress is placed against a wall to make a structure more stable.** * **To know how to create a hidden join.** * **To know how to score using scissors.** | **Year 4**  **Construction and CAD**  **Designing**   * **To know that Robert Gair designed the folding carton.** * **To know how to apply knowledge of techniques to a design brief.**   **Making**   * **To draw joining flaps accurately so that they can’t be seen on the finished product.** * **To use scissors to score joining flaps.** * **To use IT knowledge to create the net using CAD and evaluate the positions of where best to join the shell structure.**   **Evaluating**   * **To use knowledge of the nets and joins to evaluate the strengths and limitations of existing packaging.** * **To use subject specific language to compare and contrast their design with their peers.**   **Technical Knowledge**   * **To know that a shell structure has a solid outer layer which is flat or curved and it is hollow on the inside.** * **To know where flaps can be drawn onto nets to join them to create a shell structure.** * **To know how to use CAD to model and explain ideas.** * **To know how to strengthen a structure using corrugating, laminating and ribbing.** | | |
| **Year 4**  **Construction**  **Designing**   * **To use knowledge of reinforcing techniques to annotate sketches for a frame structure.** * **To know what diagonal braces and butt joints are and use this knowledge to create protypes.** * **To know how to apply knowledge of techniques to a design brief.**   **Making**   * **To use a saw to cut wood safely.** * **To measure wood accurately.** * **To know how to, and explain, how a frame can be made stable and supported.**   **Evaluating**   * **To use subject specific language to compare and contrast their design with their peers.**   **Technical Knowledge**   * **To know how a frame can be supported and made stable.** * **To know how to strengthen a frame using gussets and diagonal braces.** | | |
| **Vocabulary**   |  |  | | --- | --- | | * **architect** * **construction** * **design brief** * **double-sided tape** * **evaluation** * **free-standing structure** * **glitter glue** * **glue stick** * **joining materials** * **masking tape** * **mock-up** | * **net** * **paper clips** * **parcel tape** * **PVA glue** * **ruler** * **scissors** * **Sellotape** * **split pins** * **stable** * **staples** | | **Vocabulary**   * **base** * **buttress** * **hidden join** * **labelled sketch** * **score** * **stability** | **Vocabulary- Construction**   * **3-D** * **corrugating** * **deconstruct** * **dome structure** * **flaps** * **joining tabs** * **laminating** * **net** * **reinforce** * **ribbing** * **scoring**   **shell structure** | **Vocabulary- CAD**   * **CAD** * **Copy** * **dimensions** * **gridlines** * **locking** * **paste** * **software** * **zoom** | **Vocabulary- Construction**   * **annotated sketch** * **bench hook** * **butt joint** * **diagonal brace** * **frame** * **groove** * **gusset** * **prototype**   **sawing** |
|  |  |  | | |
| **Vocabulary**   |  |  | | --- | --- | | * **caught** | * **healthy** | | * **chop** | * **measure** | | * **disinfect** | * **measuring spoon** | | * **farmed** | * **peel** | | * **farmer** | * **portion** | | * **grater** | * **salsa** | | * **guacamole** | * **skin** | |  | * **varied diet** | | **Vocabulary**   * **baking** * **benching** * **dough** * **fermentation** * **gluten** * **kneading** * **leavening** * **proofing** * **yeast** | **Vocabulary**   * **barn laid** * **cage-reared** * **cross-contamination** * **dice** * **free-range** * **imported/importation** * **local produce** * **nutritional content (nutrients)** * **processed** * **seasonality** * **slice** * **sustainable** | | |
| **Early Years**  **Electrical Components**  **3-4 Years**   * **Talk about what they see, using a wide vocabulary. (Understanding The World – The Natural World)** * **Explore how things work. (Understanding The World – The Natural World)** * **Explore and talk about different forces they can feel. (Understanding The World – The Natural World)** * **Talk about the differences between materials and changes they notice. (Understanding The World – The Natural World)**   **Early Learning Goal (ELG)**   * **Understand some important processes and changes in the world around them.** | **Year 3**  **Electrical Components**  **Design**   * **To use scientific knowledge of circuits to design a working model mining helmet including a labelled sketches and ordered steps.** * **To know how safety features need to be considered in the design of electrical products.** * **To know that advancements in technology influence design over time.**   **Making**   * **To use scientific knowledge to make simple electrical systems.**   **Evaluating**   * **To know how some key designs of engineers in design and technology have helped shape the world.** * **To use a design brief to evaluate how effective their product is, using this to suggest a design improvement.** * **To know an electrical system can be altered to improve efficiency and apply this to their own design.** * **To know what a design flaw is and how it might be resolved.**   **Technical Knowledge**   * **To know that electrical systems are used in the design of some products.** * **To know that electrical systems have an input, process and output.** * **To know that electrical circuits and components can be used to create functional products.** | **Year 6**  **Electrical Components**  **Designing**   * **To know how to draw diagrams to scale when designing a product.** * **To use previous learning and historical context to inform designs for a functional product with an electrical product.** * **To use previous learning and historical context to inform designs for a functional product with an electrical product.**   **Evaluating**   * **To know that Tim Berners-Lee changed everyday life with the invention of the World Wide Web.** * **To know that developments in D&T have helped shape the world.** * **To use knowledge of electrical systems to evaluate and improve the design and functionality of electrical circuits.**   **Technical Knowledge**   * **To know how to use a computer control program to enable an electrical product to work automatically in response to changes in the environment.** * **To apply knowledge of electrical systems to design a circuit within a product for a purpose and intended user.** | | |
| **Vocabulary**   |  |  | | --- | --- | | * **change** * **bright** * **dark** * **dull** * **light** * **listen** | * **look** * **on** * **off** * **switch** * **torch** | | **Vocabulary**   * **battery** * **bulb** * **circuit** * **components** * **electrical current** * **flame resistant** * **flaw** * **light** * **switch** * **wire** | **Vocabulary – Electrical Components**   * **bulb** * **buzzer** * **cell** * **circuit** * **components** * **drawn to scale** * **functionality** * **series circuit** * **switch** * **wires** | | |
| **Year 1**  **Mechanical Components**  **Designing**   * **To use their knowledge of a wheel, chassis and axle to design a vehicle to carry a toy. (Autumn 2 - Week 1)** * **To communicate their vehicle design using pictures and drawings, with support.**   **Making**   * **To know how objects move by experimenting with construction kits. (Autumn 2 - Week 1)** * **To know how to join an axle to a chassis so wheels still move.** * **To know how to make an effective chassis with wheels using an axle with cotton reels and dowels. (Autumn 2 - Week 1)**   **Evaluating**   * **To communicate how their vehicle moves.** * **To know what is similar between their vehicle and another.** * **To be able to evaluate why their vehicle moves. (Autumn 2 - Week 2)** * **To be able to make comparisons between their vehicle and another. (Autumn 2 - Week 2)**   **Technical Knowledge**   * **To know that a wheel is circular and makes something move.** * **To know how wheels make objects move by experimenting with construction kits.** * **To know what an axle is.** * **To know that a wheel needs a hole to attach to an axle.** * **To know what a wheel, chassis and axle is. (Autumn 2 - Week 4)** * **To know the difference between fixed and freely moving axles. (Autumn 2 - Week 4)** * **To know why a wheel and axle wobbles based on hole position. (Autumn 2 - Week 2)** * **To know the purpose of a wheel. (Autumn 2 - Week 2)** | **Year 3**  **Mechanical Components**  **Designing**   * **To be able to identify differences and similarities in Egyptian Shadufs and modern designs that use pulleys and levers.** * **To know that William Armstrong was an engineer who designed the modern-day crane.** * **To use research and historical knowledge to inform designs for a Shaduf, including labelled sketches and instructions.**   **Making**   * **To know how to adapt a lever and a pulley based on load weight.** * **To know that varying the position of the fulcrum affects how a lever lifts a load.** * **To know the difference between a lever and a pulley and how they are used to create movement.** * **To know how levers and pulleys can be adapted to bear weight.**   **Evaluating**   * **To be able to identify differences and similarities in Egyptian Shadufs and their own design.** * **To use their knowledge of pulleys, levers, wheel movement and fulcrum to evaluate how well their design lifts varying loads.** * **To know how to improve efficiency of their product.**   **Technical Knowledge**   * **To know that pulleys and levers are used to lift, move and carry.** * **To know what a fulcrum is.** | **Year 5**  **Mechanical Components**  **Designing**   * **To know that James Dyson is a designer and engineer who designs household products.** * **To know how to use a survey to research intended users’ wants and needs to inform the design process.** * **To know how exploded diagrams can demonstrate the separate parts of a design and how they fit together.** * **To know how prototypes can be used to test mechanical components in an initial design.**   **Making**   * **To know that changing the length of rope on a fixed pulley affects the number of turns of the wheel needed to lift a load.** * **To know how meshing gears at right angles can alter movement.** * **To use knowledge of gears to create a functional product with mechanical components for an intended user.**   **Evaluating**   * **To use knowledge of gears to analyse and evaluate mechanical components in everyday objects.** * **To use their knowledge of gears to evaluate their own and their peers’ designs.**   **Technical Knowledge**   * **To know that fixed pulleys lift a load using a wheel, axle and rope.** * **To know the mechanical differences between fixed, moveable and compound pulleys.** * **To know that a gear is a rotating part of a machine that creates movement.** * **To know how to calculate simple gear ratios.** * **To know that gear ratio affects the rotational speed and direction of gears in a gear train.** * **To know that coaxial gears are gears on the same axle.** | | |
| **Vocabulary**   * **axle** * **cab** * **chassis** * **fixed** * **freely moving** * **vehicle** * **wheel** | **Vocabulary**   * **arm** * **effort** * **fulcrum** * **labelled sketch** * **lever** * **load** * **machine** * **pulley** * **shaduf** * **wheel** | **Vocabulary**   * **coaxial gears** * **compound pulley** * **direction** * **exploded diagram** * **fixed pulley** * **gear** * **mechanical component** * **moveable pulley** * **prototype** * **ratio** * **speed** * **teeth** * **turning force** | | |
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| **Curriculum Overview Year 4** | | | | |
| **KEY: Current Year D&T Unit**  **History Geography Art Science Reading Strategy**  History | | | | |
| **Prior Year’s Curriculum Take Aways** | **Year 4 Curriculum Take Aways**  **CROSS-CURRICULAR LINKS:**  **Construction (Autumn 1): Vikings (Autumn)**  **Textiles (Summer 1): Mayans (summer 1)**  **Construction (Summer 2): Living Things and Their Habitats (Summer 2)** | | | **Subsequent Year’s Take Aways** |
| **Year 3**  **Construction**  **Designing**   * **To use research to inform knowledge of stable structures.** * **To use knowledge of construction and joining materials to test mock ups.** * **To communicate their designs using labelled sketches and ordered steps.** * **To apply their knowledge of mock-up evaluation in their designs.**   **Making**   * **To select suitable construction to create a free-standing structure.**   **Evaluating**   * **To know that Ludwig Mies Van Der Rohe was an architect and furniture designer who created simple, but stable frames for furniture.** * **To use knowledge of the Barcelona chair to investigate suitable materials to create a stable structure.** * **To use a design brief to evaluate how stable their product is, using this to suggest a design improvement.**   **Technical Knowledge**   * **To know that the shape and size of a structure’s base affects its stability.** * **To know that a buttress is placed against a wall to make a structure more stable.** * **To know how to create a hidden join.** * **To know how to score using scissors.** | **Year 4**  **Construction and CAD**  **Designing**   * **To know that Robert Gair designed the folding carton.** * **To know how to apply knowledge of techniques to a design brief.**   **Making**   * **To draw joining flaps accurately so that they can’t be seen on the finished product.** * **To use scissors to score joining flaps.** * **To use IT knowledge to create the net using CAD and evaluate the positions of where best to join the shell structure.**   **Evaluating**   * **To use knowledge of the nets and joins to evaluate the strengths and limitations of existing packaging.** * **To use subject specific language to compare and contrast their design with their peers.**   **Technical Knowledge**   * **To know that a shell structure has a solid outer layer which is flat or curved and it is hollow on the inside.** * **To know where flaps can be drawn onto nets to join them to create a shell structure.** * **To know how to use CAD to model and explain ideas.** * **To know how to strengthen a structure using corrugating, laminating and ribbing.** | | | **Year 7**  **Construction and CAD**  **Designing**   * **To use CAD to create joining elements of conduction.** * **To generate prototypes of finger joints.**   **Making**   * **To make products that incorporate different types of wood and joints.** * **To use bench drills and electric sanders.**   **Evaluating**   * **To use testing as the basis of evaluation.** * **To evaluate at different points in the design process, providing reasons for issues relating to efficiency and testing further to overcome these.**   **Technical Knowledge**   * **To understand how to join using the correct form of joint (butt joint, finger joint etc).** |
| **Year 4**  **Construction**  **Designing**   * **To use knowledge of reinforcing techniques to annotate sketches for a frame structure.** * **To know what diagonal braces and butt joints are and use this knowledge to create protypes.** * **To know how to apply knowledge of techniques to a design brief.**   **Making**   * **To use a saw to cut wood safely.** * **To measure wood accurately.** * **To know how to, and explain, how a frame can be made stable and supported.**   **Evaluating**   * **To use subject specific language to compare and contrast their design with their peers.**   **Technical Knowledge**   * **To know how a frame can be supported and made stable.** * **To know how to strengthen a frame using gussets and diagonal braces.** | | |
| **Vocabulary**   * **base** * **buttress** * **hidden join** * **labelled sketch** * **score** * **stability** | **Vocabulary- Construction**   * **3-D** * **corrugating** * **deconstruct** * **dome structure** * **flaps** * **joining tabs** * **laminating** * **net** * **reinforce** * **ribbing** * **scoring** * **shell structure** | **Vocabulary- CAD**   * **CAD** * **Copy** * **dimensions** * **gridlines** * **locking** * **paste** * **software** * **zoom** | **Vocabulary- Construction**   * **annotated sketch** * **bench hook** * **butt joint** * **diagonal brace** * **frame** * **groove** * **gusset** * **prototype** * **sawing** | **Vocabulary**   * **vertical** * **horizontal** * **CAD** * **industry** * **machines** * **manufactured wood** |
| **Year 2**  **Textiles**  **Design**   * **To use a mock-ups to determine the best material for a lining.** * **To use appropriate vocabulary when planning and designing a textile product.** * **To communicate their ideas independently using drawings and a simple drawing app.**   **Making**   * **To know the purpose of a template and how to draw around it on a textile.** * **To know how to use pins to secure material and templates.** * **To know how to use scissors to cut templates and fabric accurately and safely.**   **Evaluating**   * **To use a design brief to evaluate how well joined and visually appealing their product is.** * **To use their knowledge of different materials to evaluate which are best to print on.**   **Technical Knowledge**   * **To know what a textile is.** * **To know the purpose of a lining and which materials and joining can be used.** * **To know how to sew using overstitch.** * **To select a chosen fabric based on its properties.** | **Year 4**  **Textiles**  **Designing**   * **To know that Ozwald Boateng is a British designer who mainly designs tailored clothing.** * **To use their knowledge of back stitch and running stitch to annotate sketches to record differences in technique.** * **To know how to apply knowledge of techniques to a design brief.** * **To use knowledge of sewing techniques to create annotated sketches for a design brief.**   **Making**   * **To know how fabric can be cut in different ways to prevent fraying and to create different aesthetic results.** * **To know how to create a prototype and apply these to hems.** * **To apply mathematical knowledge of measurement ratios to create a template that is to scale.** * **To know how to use pins to join materials before stitching.**   **Evaluating**   * **To use knowledge of back stitch, catch stitch and running stitch to identify strengths and limitations of these as joining techniques.** * **To use subject specific language to compare and contrast their design with their peers.**   **Technical Knowledge**   * **To know how to thread a needle.** * **To sew using back stitch, running stitch and catch stitch.** * **To know that a hem should be hidden.** * **To know different ways of folding material (e.g., knife pleat and gathers).** | | | **Year 7**  **Textiles**  **Designing**   * **To gather information about a user’s wants and needs.** * **To create annotated sketches of sewing techniques for a textile creation.** * **To generate prototypes of knife pleats, hems and gathers.**   **Making**   * **To use pins to join materials before stitching.** * **To use templates to create a range of textiles.** * **To use measurement ratios to create a template that is to scale.** * **To experiment with different ways of cutting fabric for aesthetic reasons and to prevent fraying.** * **To experiment with and select different ways of gathering material as a finishing technique.**   **Evaluating**   * **To compare clothing and accessories sewn in different ways.** * **To evaluate a range of stitches and state which are fit for purpose.**   **Technical Knowledge**   * **To understand how tie-dye can create colour and pattern.** * **To understand the purpose of a drawstring.** * **To use a sewing machine to join material.** * **To apply knowledge of gathers to a drawstring.** * **To use folding of material (e.g. hems and pleats) as a finishing technique.** |
| **Vocabulary**   * **designer** * **fabric** * **join** * **lining** * **needles** * **overstitch** * **pins** * **template** * **thread** | **Vocabulary**   * **annotated sketches** * **back stitch** * **catch stitch** * **fray** * **gathering** * **hem** * **knife pleat** * **running stitch** * **seam** | | | **Vocabulary**   * **templates** * **batch production** |

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| **Curriculum Overview Year 5**  **KEY: Current Year D&T Unit**  **History Geography Art Science Reading Strategy**  History | | |
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| **Prior Year’s Curriculum Take Aways**  **CROSS-CURRICULAR LINKS:**  **Mechanical Components (Spring 1): Forces (Y3)** | **Year 5 Curriculum Take Aways**  **CROSS-CURRICULAR LINKS:**  **Mechanisms (Spring): Earth & Space (Spring 1), Forces (Spring 2)** | **Subsequent Year’s Curriculum Take Aways** |
| **Year 3**  **Mechanical Components**  **Designing**   * **To be able to identify differences and similarities in Egyptian Shadufs and modern designs that use pulleys and levers.** * **To know that William Armstrong was an engineer who designed the modern-day crane.** * **To use research and historical knowledge to inform designs for a Shaduf, including labelled sketches and instructions.**   **Making**   * **To know how to adapt a lever and a pulley based on load weight.** * **To know that varying the position of the fulcrum affects how a lever lifts a load.** * **To know the difference between a lever and a pulley and how they are used to create movement.** * **To know how levers and pulleys can be adapted to bear weight.**   **Evaluating**   * **To be able to identify differences and similarities in Egyptian Shadufs and their own design.** * **To use their knowledge of pulleys, levers, wheel movement and fulcrum to evaluate how well their design lifts varying loads.** * **To know how to improve efficiency of their product.**   **Technical Knowledge**   * **To know that pulleys and levers are used to lift, move and carry.** * **To know what a fulcrum is.** | **Year 5**  **Mechanical Components**  **Designing**   * **To know that James Dyson is a designer and engineer who designs household products.** * **To know how to use a survey to research intended users’ wants and needs to inform the design process.** * **To know how exploded diagrams can demonstrate the separate parts of a design and how they fit together.** * **To know how prototypes can be used to test mechanical components in an initial design.**   **Making**   * **To know that changing the length of rope on a fixed pulley affects the number of turns of the wheel needed to lift a load.** * **To know how meshing gears at right angles can alter movement.** * **To use knowledge of gears to create a functional product with mechanical components for an intended user.**   **Evaluating**   * **To use knowledge of gears to analyse and evaluate mechanical components in everyday objects.** * **To use their knowledge of gears to evaluate their own and their peers’ designs.**   **Technical Knowledge**   * **To know that fixed pulleys lift a load using a wheel, axle and rope.** * **To know the mechanical differences between fixed, moveable and compound pulleys.** * **To know that a gear is a rotating part of a machine that creates movement.** * **To know how to calculate simple gear ratios.** * **To know that gear ratio affects the rotational speed and direction of gears in a gear train.** * **To know that coaxial gears are gears on the same axle.** | **Year 7**  **Mechanical Components**  **Designing**   * **To use previous learning and scientific context to inform designs for a functional product that includes different mechanical components.** * **To follow a design brief and use this to inform research on product design.** * **To use exploded diagrams to demonstrate each movement of the mechanical component.**   **Making**   * **To make gear trains of different lengths that are used to create movement in different products.**   **Evaluating**   * **To use testing as the basis of evaluation.** * **To evaluate at different points in the design process, providing reasons for issues relating to efficiency and testing further to overcome these.**   **Technical Knoweldge**   * **To recognise that forces affect linkages.** * **To understand the different motions that cams can make.** |
| **Vocabulary**   * **arm** * **effort** * **fulcrum** * **labelled sketch** * **lever** * **load** * **machine** * **pulley** * **shaduf** * **wheel** | **Vocabulary**   * **coaxial gears** * **compound pulley** * **direction** * **exploded diagram** * **fixed pulley** * **gear** * **mechanical component** * **moveable pulley** * **prototype** * **ratio** * **speed** * **teeth** * **turning force** | **Vocabulary**   * **linear movement** * **oscillating movement** * **reciprocating movement** * **rotary movement** |

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| **Curriculum Overview Year 6**  **KEY: Current Year D&T Unit**  **History Geography Art Science Reading Strategy**  History | | | |
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| **Prior Year’s Curriculum Take Aways**  **CROSS-CURRICULAR LINKS:**  **Electrical Systems (Spring 1): Electricity (Y4), History of Coalmining (Y3)**  **Food & Nutrition (Summer 2): Seasons & Weather (Y1)** | **Year 6 Curriculum Take Aways**  **CROSS-CURRICULAR LINKS:**  **Electrical Systems (Spring): Electricity (Spring 1), Battle of Britain (Spring)**  **Food & Nutrition (Summer 2): South America (Summer)** | | **Subsequent Year’s Curriculum Content** |
|  | **Year 6**  **Food and Nutrition**   * **To know that food is grown, reared and caught in the UK, Europe and the wider world.** * **To know that the seasons affect food availability, and this is called seasonality.** * **To know that Rachel Green is a farmer and chef focussed on seasonality.** * **To use knowledge of a healthy and varied diet to plan and evaluate meals for different lifestyles.** * **To know that different varieties of the same type of food can vary in terms of cost, convenience, nutritional value and taste.** * **To know the difference between cage-reared and free-range eggs.** * **To use knowledge of cooking, nutrition and seasonality to adapt recipes for different lifestyles and diets.** * **To know how to accurately scale a recipe up or down.** * **To know what cross-contamination is, and how to maintain a high level of hygiene when preparing raw and cooked food to prevent this.** * **To know how to remove bones from cooked fish so it is safe to eat.** * **To know how to use a heat source safely to prepare savoury dishes.** * **To know how to use a knife safely to peel, chop, dice and slice fresh ingredients for a savoury dish.** | | **Year 7**  **Food and Nutrition**   * **To understand and apply the principles of nutrition and health** * **To cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet** * **To become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes** * **To combine ingredients; adapting and using their own recipes** * **To understand the source, seasonality and characteristics of a broad range of ingredients.** |
| **Vocabulary**   * **baking** * **benching** * **dough** * **fermentation** * **gluten** * **kneading** * **leavening** * **proofing** * **yeast** | **Vocabulary**   * **barn laid** * **cage-reared** * **cross-contamination** * **dice** * **free-range** * **imported/importation** * **local produce** * **nutritional content (nutrients)** * **processed** * **seasonality** * **slice** * **sustainable** | | **Vocabulary**   * **adaptation** * **affordability** * **critique** * **nutrition** * **palate** * **preparation** * **technique** * **texture** * **variety** |
| **Year 3**  **Electrical Components**  **Design**   * **To use scientific knowledge of circuits to design a working model mining helmet including a labelled sketches and ordered steps.** * **To know how safety features need to be considered in the design of electrical products.** * **To know that advancements in technology influence design over time.**   **Making**   * **To use scientific knowledge to make simple electrical systems.**   **Evaluating**   * **To know how some key designs of engineers in design and technology have helped shape the world.** * **To use a design brief to evaluate how effective their product is, using this to suggest a design improvement.** * **To know an electrical system can be altered to improve efficiency and apply this to their own design.** * **To know what a design flaw is and how it might be resolved.**   **Technical Knowledge**   * **To know that electrical systems are used in the design of some products.** * **To know that electrical systems have an input, process and output.** * **To know that electrical circuits and components can be used to create functional products.** | **Year 6**  **Electrical Components**  **Designing**   * **To know how to draw diagrams to scale when designing a product.** * **To use previous learning and historical context to inform designs for a functional product with an electrical product.** * **To use previous learning and historical context to inform designs for a functional product with an electrical product.**   **Evaluating**   * **To know that Tim Berners-Lee changed everyday life with the invention of the World Wide Web.** * **To know that developments in D&T have helped shape the world.** * **To use knowledge of electrical systems to evaluate and improve the design and functionality of electrical circuits.**   **Technical Knowledge**   * **To know how to use a computer control program to enable an electrical product to work automatically in response to changes in the environment.** * **To apply knowledge of electrical systems to design a circuit within a product for a purpose and intended user.** | | **Year 7**  **Electrical Components**  **Design**   * **To use research and exploration, such as the study of different cultures, to identify and understand user needs** * **To identify and solve their own design problems and understand how to reformulate problems given to them** * **To develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations** * **To use a variety of approaches [for example, biomimicry and user-centred design],** * **To generate creative ideas and avoid stereotypical responses** * **To generate creative ideas and avoid stereotypical responses** * **To develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools**   **Make**   * **To select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture** * **To select from and use a wider, more complex range of materials and components, taking into account their properties.** |
| **Vocabulary**   * **battery** * **bulb** * **circuit** * **components** * **electrical current** * **flame resistant** * **flaw** * **light** * **switch** * **wire** | **Vocabulary – Electrical Components**   * **bulb** * **buzzer** * **cell** * **circuit** * **components** * **drawn to scale** * **functionality** * **series circuit** * **switch** * **wires** | **Vocabulary –CAM**   * **CAM** * **coding** * **input** * **output** | **Vocabulary**   * **biomimicry** * **communicate** * **complexity** * **functionality** * **generate** * **innovate** * **scenario** * **troubleshoot** * **user-friendly** |