|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| DESIGN | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Structures** | • Learning the | • Generating and | • Designing a castle | • Designing a stable | • Designing a stable | • Designing a |  |
|  | importance of a | communicating | with key features | pavilion structure | structure that is | playground |  |
|  | clear design criteria | ideas using | to appeal to a | that is aesthetically | able to support | featuring a variety |  |
|  | • Including individual | sketching and | specific person/ | pleasing and | weight | of different |  |
|  | modelling | purpose | selecting materials |  | structures, |  |
|  | preferences and |  |  | to create a desired | • Creating frame | giving careful |  |
|  | requirements in a | • Learning about | • Drawing and | effect | structure | consideration |  |
|  | design | different types of | labelling a castle |  | with focus on | to how the |  |
|  |  | structures, found | design using 2D | • Building frame | triangulation | structures will be |  |
|  |  | in the natural world | shapes, labelling: | structures |  | used, considering |  |
|  |  | and in everyday | - the 3D shapes | designed to |  | effective and |  |
|  |  | objects | that will create the | support weight |  | ineffective designs |  |
|  |  |  | features - materials |  |  |  |  |
|  |  |  | need and colours |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **Mechanisms** | • Explaining how to | • Creating a class | • Designing a toy | • Designing a shape | • Designing a pop- | • After |  |
|  | adapt mechanisms, | design criteria for a | which uses a | that reduces air | up book which | experimenting with |  |
|  | using bridges or | moving monster | pneumatic system | resistance | uses a mixture of | a range of cams, |  |
|  | guides to control | • Designing a moving | • Developing design | • Drawing a net to | structures and | creating a design |  |
|  | the movement | mechanisms | for an automata |  |
|  |  | monster for a | criteria from a | create a structure |  | toy based on a |  |
|  | • Designing a moving | specific audience in | design brief | from | • Naming each | choice of cam to |  |
|  | story book for a | accordance with a | • Generating ideas | • Choosing shapes | mechanism, | create a desired |  |
|  | given audience | design criteria | input and output | movement |  |
|  |  |  | using thumbnail | that increase or | accurately |  |  |
|  | • Designing a vehicle | • Selecting a suitable | sketches and | decrease speed |  | • Understanding |  |
|  | that includes | linkage system | exploded diagrams | as a result of air | • Storyboarding | how linkages |  |
|  | wheels, axles and | to produce the | • Learning that | resistance | ideas for a book | change the |  |
|  | axle holders, which | desired motions | • Personalising a |  | direction of a force |  |
|  | will allow the |  | different types of |  |  |  |
|  | wheels to move | • Designing a wheel | drawings are used | design |  | • Making things |  |
|  | • Creating clearly | • Selecting | in design to explain |  |  | move at the same |  |
|  | ideas clearly |  |  | time |  |
|  | labelled drawings | appropriate |  |  |  |  |  |
|  | which illustrate | materials based on |  |  |  |  |  |
|  | movement | their properties |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

**Make**

**Evaluation**

**Technical**

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| DESIGN | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Electrical** | • N/A | • N/A | • Designing a game | • Designing a | • Designing an | • Designing a |  |
| **Systems** |  |  | that works using | torch, giving | electronic | steady hand |  |
|  |  | static electricity, | consideration to | greetings card with | game - identifying |  |
|  |  |  |  |
|  |  |  | including the | the target audience | a simple electrical | and naming the |  |
|  |  |  | instructions for | and creating both | control circuit | components |  |
|  |  |  | playing the game | design and success | • Creating a labelled | required |  |
|  |  |  |  | criteria focusing |  |  |
|  |  |  | • Identifying a design | on features of | design showing | • Drawing a |  |
|  |  |  | criteria and a target | individual design | positive and | design from |  |
|  |  |  | audience | ideas | negative parts in | three different |  |
|  |  |  |  |  | relation to the LED | perspectives |  |
|  |  |  |  |  | and the battery | • Generating ideas |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  | through sketching |  |
|  |  |  |  |  |  | and discussion |  |
|  |  |  |  |  |  | • Modelling ideas |  |
|  |  |  |  |  |  | through prototypes |  |
|  |  |  |  |  |  |  |  |
| **Cooking and** | • N/A | • Designing a healthy | • Creating a healthy | • Designing a biscuit | • Adapting a | • Writing a recipe, |  |
| **Nutrition** |  | wrap based on a | and nutritious | within a given | traditional recipe, | explaining the key |  |
|  | food combination | recipe for a | budget, drawing | understanding | steps, method and |  |
|  |  |  |
|  |  | which work well | savoury tart | upon previous | that the nutritional | ingredients |  |
|  |  | together | using seasonal | taste testing | value of a recipe | • Including facts |  |
|  |  |  | ingredients, |  | alters if you |  |
|  |  |  | considering the |  | remove, substitute | and drawings |  |
|  |  |  | taste, texture, smell |  | or add additional | from research |  |
|  |  |  | and appearance of |  | ingredients | undertaken |  |
|  |  |  | the dish |  | • Writing an |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  | amended method |  |  |
|  |  |  |  |  | for a recipe to |  |  |
|  |  |  |  |  | incorporate the |  |  |
|  |  |  |  |  | relevant changes to |  |  |
|  |  |  |  |  | ingredients |  |  |
|  |  |  |  |  | • Designing |  |  |
|  |  |  |  |  | appealing |  |  |
|  |  |  |  |  | packaging to |  |  |
|  |  |  |  |  | reflect a recipe |  |  |
|  |  |  |  |  |  |  |  |

**Make**

**Evaluation**

**Technical**

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| DESIGN | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Textiles** | • Using a template to | • Designing a pouch | • Designing and | • Writing design | • Designing a stuffed | • Designing a |  |
|  | create a design for |  | making a template | criteria for | toy considering the | waistcoat in |  |
|  | a puppet |  | from an existing | a product, | main component | accordance to |  |
|  |  |  | cushion and | articulating | shapes required | specification linked |  |
|  |  |  | applying individual | decisions made | and creating | to set of design |  |
|  |  |  | design criteria | • Designing a | an appropriate | criteria to fit a |  |
|  |  |  |  | template | specific theme |  |
|  |  |  |  | personalised Book |  |  |  |
|  |  |  |  | sleeve | • Considering | • Annotating designs |  |
|  |  |  |  |  | proportions |  |  |
|  |  |  |  |  | of individual |  |  |
|  |  |  |  |  | components |  |  |
|  |  |  |  |  |  |  |  |

**Make**

**Evaluation**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Make | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Structures** | • Making stable | • Making a structure | • Constructing | • Creating a range | • Making a range of | • Building a range |  |
|  | structures from | according to design | a range of 3D | of different shaped | different shaped | of play apparatus |  |
|  | card, tape and glue | criteria | geometric shapes | frame structures | beam bridges | structures drawing |  |
|  | • Following | • Creating joints and | using nets | • Making a variety | • Using triangles | upon new and |  |
|  |  |
|  |  | prior knowledge of |  |
|  | instructions to | structures from | • Creating special | of free standing | to create truss | structures |  |
|  | cut and assemble | paper/card and | features for | frame structures | bridges that span a |  |  |
|  | the supporting | tape | individual designs | of different shapes | given distance and | • Measuring, marking |  |
|  |  |
|  | structure of a |  | • Making facades | and sizes | supports a load | and cutting wood |  |
|  | windmill |  |  |  | to create a range of |  |
|  | • Making functioning |  | from a range of | • Selecting | • Building a wooden | structures |  |
|  |  | recycled materials | appropriate | bridge structure |  |  |
|  | turbines and |  |  | materials to build | • Independently | • Using a range |  |
|  | axles which are |  |  | a strong structure | of materials to |  |
|  |  |  |  |
|  | assembled into a |  |  | and for the | measuring and | reinforce and add |  |
|  | main supporting |  |  | cladding | marking wood | decoration to |  |
|  | structure |  |  | • Reinforcing corners | accurately | structures |  |
|  |  |  |  | • Selecting |  |  |
|  |  |  |  | to strengthen a |  |  |
|  |  |  |  | structure | appropriate tools |  |  |
|  |  |  |  | • Creating a design | and equipment for |  |  |
|  |  |  |  | particular tasks |  |  |
|  |  |  |  | in accordance with | • Using the correct |  |  |
|  |  |  |  | a plan |  |  |
|  |  |  |  | • Learning to create | techniques to saws |  |  |
|  |  |  |  | safely |  |  |
|  |  |  |  | different textural | • Identifying where |  |  |
|  |  |  |  | effects with |  |  |
|  |  |  |  | materials | a structure needs |  |  |
|  |  |  |  |  | reinforcement and |  |  |
|  |  |  |  |  | using card corners |  |  |
|  |  |  |  |  | for support |  |  |
|  |  |  |  |  |  |  |  |

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| Make | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Mechanisms** | • Following a design | • Making linkages | • Creating a | • Measuring, | • Following a design | • Measuring, marking |  |
|  | to create moving | using card for | pneumatic system | marking, cutting | brief to make a pop | and checking the |  |
|  | models that use | levers and split pins | to create a desired | and assembling | up book, neatly | accuracy of the |  |
|  | levers and sliders | for pivots | motion | with increasing | and with focus on | jelutong and dowel |  |
|  |  |
|  | • Adapting | • Experimenting with | • Building secure | accuracy | accuracy | pieces required |  |
|  |  |  |  |  |
|  | mechanisms | linkages adjusting | housing for a | • Making a model | • Making | • Measuring, marking |  |
|  |  | the widths, lengths | pneumatic system | based on a chosen | mechanisms and/ | and cutting |  |
|  |  |  |
|  |  | and thicknesses of | • Using syringes | design | or structures using | components |  |
|  |  | card used |  | sliders, pivots and | accurately using a |  |
|  |  |  | and balloons to |  | folds to produce | ruler and scissors |  |
|  |  | • Cutting and | create different |  | movement | • Assembling |  |
|  |  | assembling | types of pneumatic |  |  |  |
|  |  | components neatly | systems to make |  | • Using layers and | components |  |
|  |  |  |  |
|  |  | • Selecting materials | a functional |  | spacers to hide | accurately to make |  |
|  |  | and appealing |  | the workings of | a stable frame |  |
|  |  | according to their | pneumatic toy |  | mechanical parts |  |  |
|  |  | characteristics |  |  | for an aesthetically | • Understanding that |  |
|  |  | • Following a design | • Selecting |  | pleasing result | for the frame to |  |
|  |  | materials due to |  |  | function effectively |  |
|  |  | brief | their functional |  |  | the components |  |
|  |  |  | and aesthetic |  |  | must be cut |  |
|  |  |  | characteristics |  |  | accurately and the |  |
|  |  |  | • Manipulating |  |  | joints of the frame |  |
|  |  |  |  |  | secured at right |  |
|  |  |  | materials to create |  |  | angles |  |
|  |  |  | different effects by |  |  |  |  |
|  |  |  | cutting, creasing, |  |  | • Selecting |  |
|  |  |  | folding, weaving |  |  | appropriate |  |
|  |  |  |  |  |  | materials based |  |
|  |  |  |  |  |  | on the materials |  |
|  |  |  |  |  |  | being joined and |  |
|  |  |  |  |  |  | the speed at which |  |
|  |  |  |  |  |  | the glue needs to |  |
|  |  |  |  |  |  | dry/set |  |
|  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Make | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Electrical** | • N/A | • N/A | • Making an | • Making a torch | • Making a working | • Making |  |
| **Systems** |  |  | electrostatic game, | with a working | circuit | electromagnetic |  |
|  |  | referring to the | electrical circuit |  | motors and |  |
|  |  |  | • Creating an |  |
|  |  |  | design criteria | and switch | tweaking the |  |
|  |  |  |  |  | electronics | motor to improve |  |
|  |  |  | • Using a wider | • Using appropriate | greeting card, | its function |  |
|  |  |  | range of materials | equipment to | referring to a |  |  |
|  |  |  | and equipment | cut and attach | design criteria | • Constructing a |  |
|  |  |  | safely | materials | • Mapping out | stable base for an |  |
|  |  |  | • Using electrostatic | • Assembling a torch | electromagnetic |  |
|  |  |  | where different | game |  |
|  |  |  | energy to move | according to the | components of the |  |  |
|  |  |  | objects in isolation | design and success | circuit will go | • Accurately cutting, |  |
|  |  |  | as well as in part of | criteria |  | folding and |  |
|  |  |  | a system |  |  | assembling a net |  |
|  |  |  |  |  |  | • Decorating the |  |
|  |  |  |  |  |  | base of the game |  |
|  |  |  |  |  |  | to a high quality |  |
|  |  |  |  |  |  | finish |  |
|  |  |  |  |  |  | • Making and testing |  |
|  |  |  |  |  |  | a circuit |  |
|  |  |  |  |  |  | • Incorporating a |  |
|  |  |  |  |  |  | circuit into a base |  |
|  |  |  |  |  |  |  |  |
| **Cooking and** | • Chopping fruit and | • Slicing food safely | • Knowing how to | • Following a baking | • Cutting and | • Following a recipe, |  |
| **nutrition** | vegetables safely | using the bridge or | prepare themselves | recipe | preparing | including using the |  |
| to make a smoothie | claw grip | and a work space |  | vegetables safely | correct quantities |  |
|  | • Cooking safely, |  |
|  |  |  | to cook safely in, |  | of each ingredient |  |
|  | • Identifying if a | • Constructing a | learning the basic | following basic | • Using equipment |  |  |
|  | food is a fruit or a | wrap that meets a | rules to avoid food | hygiene rules | safely, including | • Adapting a recipe |  |
|  | vegetable | design brief | contamination | • Adapting a recipe | knives, hot pans | based on research |  |
|  | • Learning where |  | • Following the | and hobs | • Working to a given |  |
|  |  |  |  |  |
|  | and how fruits and |  | instructions within |  | • Knowing how | timescale |  |
|  | vegetables grow |  | a recipe |  | to avoid cross- | • Working safely and |  |
|  |  |  |  |  | contamination |  |
|  |  |  |  |  |  | hygienically with |  |
|  |  |  |  |  | • Following a step | independence |  |
|  |  |  |  |  | by step method |  |  |
|  |  |  |  |  | carefully to make a |  |  |
|  |  |  |  |  | recipe |  |  |
|  |  |  |  |  |  |  |  |

**Design**

**Evaluation**

**Technical**

**knowledge**

|  |  |  |  |  |  |  |  |
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| Make | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Textiles** | • Cutting fabric | • Selecting and | • Following design | • Making and testing | • Creating a 3D | • Using template |  |
|  | neatly with scissors | cutting fabrics for | criteria to create a | a paper template | stuffed toy from a | pinning panels onto |  |
|  | • Using joining | sewing | cushion | with accuracy and | 2D design | fabric |  |
|  |  |  | in keeping with the |  |  |  |
|  | methods to | • Decorating a pouch | • Selecting and | design criteria | • Measuring, marking | • Marking and |  |
|  | decorate a puppet | using fabric glue or | cutting fabrics with |  | and cutting fabric | cutting fabric |  |
|  | • Sequencing steps | running stitch | ease using fabric | • Measuring, | accurately and | accurately, in |  |
|  |  | scissors | marking and | independently | accordance with a |  |
|  | for construction |  | • Sewing cross stitch | cutting fabric using | • Creating strong | design |  |
|  |  |  | a paper template | • Sewing a strong |  |
|  |  |  | to join fabric |  | and secure blanket |  |
|  |  |  | • Decorating fabric | • Selecting a stitch | stitches when | running stitch, |  |
|  |  |  | style to join fabric, | joining fabric | making small, |  |
|  |  |  | using appliqué | working neatly | • Using applique to | neat stitches and |  |
|  |  |  | • Completing design | sewing small neat | following the edge |  |
|  |  |  | stitches | attach pieces of | • Tying strong knots |  |
|  |  |  | ideas with stuffing |  | fabric decoration |  |
|  |  |  | and sewing the | • Incorporating |  |  |  |
|  |  |  | edges | fastening to a |  | • Decorating |  |
|  |  |  |  | design |  | a waistcoat - |  |
|  |  |  |  |  |  | attaching objects |  |
|  |  |  |  |  |  | using thread and |  |
|  |  |  |  |  |  | adding a secure |  |
|  |  |  |  |  |  | fastening |  |
|  |  |  |  |  |  |  |  |

**Design**

**Evaluation**

**Technical**

**knowledge**

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| Evaluation | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Structures** | • Evaluating a | • Exploring the | • Evaluating own | • Evaluating | • Adapting and | • Improving a design |  |
|  | windmill according | features of | work and the work | structures made by | improving own | plan based on peer |  |
|  | to the design | structures | of others based on | the class | bridge structure by | evaluation |  |
|  | criteria, testing | • Comparing | the aesthetic of the | • Describing what | identifying points | • Testing and |  |
|  | whether the | finished product | of weakness and |  |
|  | structure is strong | the stability of | and in comparison | characteristics | reinforcing them as | adapting a design |  |
|  | and stable and | different shapes | to the original | of a design and | necessary | to improve it as it is |  |
|  | altering it if it isn’t | • Testing the | design | construction | • Suggesting points | developed |  |
|  |  |  | made it the most |  |  |
|  | • Suggest points for | strength of own | • Suggesting points | effective | for improvements | • Identifying what |  |
|  | improvements | structures | for modification |  | for own bridges | makes a successful |  |
|  |  | • Identifying the | of the individual | • Considering | and those designed | structure |  |
|  |  | designs | effective and | by others |  |  |
|  |  | weakest part of a |  | ineffective designs |  |  |  |
|  |  | structure |  |  |  |  |  |
|  |  | • Evaluating the |  |  |  |  |  |
|  |  | strength, stiffness |  |  |  |  |  |
|  |  | and stability of |  |  |  |  |  |
|  |  | own structure |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **Food** | • Tasting and | • Describing the | • Establishing and | • Evaluating a recipe, | • Identifying | • Evaluating a recipe, |  |
|  | evaluating different | taste, texture and | using design | considering: taste, | the nutritional | considering: taste, |  |
|  | food combinations | smell of fruit and | criteria to help test | smell, texture and | differences | smell, texture and |  |
|  | • Describing | vegetables | and review dishes | appearance | between different | origin of the food |  |
|  |  |  |  | products and | group |  |
|  | appearance, smell | • Taste testing food | • Describing the | • Describing the | recipes | • Taste testing |  |
|  | and taste | combinations and | benefits of | impact of the |  |  |
|  | • Suggesting | final products | seasonal fruits and | budget on the | • Identifying and | and scoring final |  |
|  |  | vegetables and | selection of | describing healthy | products |  |
|  | information to | • Describing the | the impact on the | ingredients | benefits of food |  |  |
|  | be included on | information that | environment | • Evaluating and | groups | • Suggesting and |  |
|  | packaging | should be included |  |  | writing up points |  |
|  |  | on a label | • Suggesting points | comparing a range |  | of improvements in |  |
|  |  | • Evaluating which | for improvement | of products |  | productions |  |
|  |  | when making a |  |  |  |  |
|  |  | grip was most | seasonal tart | • Suggesting |  | • Evaluating health |  |
|  |  | effective |  | modifications |  | and safety in |  |
|  |  |  |  |  |  | production to |  |
|  |  |  |  |  |  | minimise cross |  |
|  |  |  |  |  |  | contamination |  |
|  |  |  |  |  |  |  |  |

**Design**

**Make**

**Technical**

**knowledge**

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| Evaluation | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Mechanisms** | • Testing a finished | • Evaluating own | • Using the views of | • Evaluating the | • Evaluating the | • Evaluating the |  |
|  | product, seeing | designs against | others to improve | speed of a final | work of others and | work of others and |  |
|  | whether it moves | design criteria | designs | product based | receiving feedback | receiving feedback |  |
|  | as planned and if | • Using peer | • Testing and | on: the affect of | on own work | on own work |  |
|  | not, explaining why | shape on speed |  |  |  |
|  | and how it can be | feedback to modify | modifying | and the accuracy | • Suggesting points | • Applying points of |  |
|  | fixed | a final design | the outcome, | of workmanship on | for improvement | improvements |  |
|  | • Reviewing the | • Evaluating different | suggesting | performance |  | • Describing changes |  |
|  | improvements |  |  |  |
|  | success of a | designs |  |  |  | they would make/ |  |
|  | product by testing | • Testing and |  |  |  | do if they were |  |
|  | it with its intended |  |  |  | to do the project |  |
|  | audience | adapting a design |  |  |  | again |  |
|  | • Testing |  |  |  |  |  |  |
|  | mechanisms, |  |  |  |  |  |  |
|  | identifying what |  |  |  |  |  |  |
|  | stops wheels from |  |  |  |  |  |  |
|  | turning, knowing |  |  |  |  |  |  |
|  | • that a wheel needs |  |  |  |  |  |  |
|  | an axle in order to |  |  |  |  |  |  |
|  | move |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **Electrical** | • N/A | • N/A | • Learning to give | • Evaluating | • Evaluating a | • Testing own and |  |
| **systems** |  |  | constructive | electrical products | completed | others finished |  |
|  |  | criticism on own |  | product against | games, identifying |  |
|  |  |  | • Testing and |  |
|  |  |  | work and the work | the original design | what went well and |  |
|  |  |  | of others | evaluating the | sheet and looking | making suggestions |  |
|  |  |  |  | success of a final | at modifications | for improvement |  |
|  |  |  | • Testing the success | product and taking | that could be |  |  |
|  |  |  | of a product | inspiration from | made to improve |  |  |
|  |  |  | against the original | the work of peers | the reliability or |  |  |
|  |  |  | design criteria and |  | aesthetics of it |  |  |
|  |  |  | justifying opinions |  | or to incorporate |  |  |
|  |  |  |  |  | another type of |  |  |
|  |  |  |  |  | electronic device, |  |  |
|  |  |  |  |  | eg: buzzer |  |  |
|  |  |  |  |  |  |  |  |

**Design**

**Make**

**Technical**

**knowledge**

|  |  |  |  |  |  |  |  |
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| Evaluation | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Textiles** | • Reflecting on a | • Troubleshooting | • Evaluating an | • Testing and | • Testing and | • Evaluating work |  |
|  | finished product, | scenarios posed by | end product and | evaluating an end | evaluating an end | continually as it is |  |
|  | explaining likes and | teacher | thinking of other | product against | product and giving | created |  |
|  | dislikes | • Evaluating the | ways in which to | the original design | point for further |  |  |
|  |  | create similar items | criteria | improvements |  |  |
|  |  | quality of the |  |  |  |  |  |
|  |  | stitching on others’ |  | • Deciding how |  |  |  |
|  |  | work |  | many of the criteria |  |  |  |
|  |  | • Discussing as a |  | should be met |  |  |  |
|  |  |  | for the product |  |  |  |
|  |  | class, the success |  | to be considered |  |  |  |
|  |  | of their stitching |  | successful |  |  |  |
|  |  | against the success |  |  |  |  |  |
|  |  | criteria |  | • Suggesting |  |  |  |
|  |  | • Identifying aspects |  | modifications for |  |  |  |
|  |  |  | improvement |  |  |  |
|  |  | of their peers’ |  |  |  |  |  |
|  |  | work that they |  |  |  |  |  |
|  |  | particularly like and |  |  |  |  |  |
|  |  | why |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

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| Technical Knowledge | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Food** | • Understanding | • Understanding | • Learning that | • Understanding the | • Understanding | • Learning how to |  |
|  | the difference | what makes a | climate affects | impact of the cost | where food comes | research a recipe |  |
|  | between fruits and | balanced diet | food growth | and importance | from - learning | by ingredient |  |
|  | vegetables | • Knowing where to | • Working with | of budgeting | that beef is from | • Recording |  |
|  |  | while planning | cattle and how |  |
|  | • Describing and | find the nutritional | cooking equipment | ingredients for | beef is reared and | the relevant |  |
|  | grouping fruits by | information on | safely and | biscuits | processed | ingredients and |  |
|  | texture and taste | packaging | hygienically |  |  | equipment needed |  |
|  |  | • Knowing the five | • Learning that | • Understanding | • Understanding | for a recipe |  |
|  |  | the environmental | what constitutes a |  |  |
|  |  | food groups | imported foods | impact on future | balanced diet | • Understanding |  |
|  |  |  | travel from far | product and cost of | • Learning to adapt | the combinations |  |
|  |  |  |  |
|  |  |  | away and this can | production | of food that will |  |
|  |  |  | negatively impact | a recipe to make it | complement one |  |
|  |  |  |  |  |
|  |  |  | the environment |  | healthier | another |  |
|  |  |  | • Learning that |  | • Comparing two | • Understanding |  |
|  |  |  |  |  |
|  |  |  | vegetables and |  | adapted recipes | where food comes |  |
|  |  |  | fruit grow in |  | using a nutritional | from, describing |  |
|  |  |  | certain seasons |  | calculator and then | the process of |  |
|  |  |  | • Learning that each |  | identifying the | ‘Farm to Fork’ for a |  |
|  |  |  |  | healthier option | given ingredient |  |
|  |  |  | fruit and vegetable |  |  |  |  |
|  |  |  | gives us nutritional |  |  |  |  |
|  |  |  | benefits |  |  |  |  |
|  |  |  | • Learning to use, |  |  |  |  |
|  |  |  | store and clean a |  |  |  |  |
|  |  |  | knife safely |  |  |  |  |
|  |  |  |  |  |  |  |  |

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| Technical Knowledge | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Mechanisms** | • Learning that | • Learning that | • Understanding | • Learning that | • Knowing that an | • Using a bench hook |  |
|  | levers and sliders | mechanisms are | how pneumatic | products change | input is the motion | to saw safely and |  |
|  | are mechanisms | a collection of | systems work | and evolve over | used to start a | effectively |  |
|  | and can make | moving parts that | • Learning that | time | mechanism | • Exploring cams, |  |
|  | things move | work together in a |  |  |  |
|  | • Identifying | machine | mechanisms are | • Learning that all | • Knowing that | learning that |  |
|  |  | a system of parts | moving things have | output is the | different shaped |  |
|  | whether a | • Learning that | that work together | kinetic energy | motion that | cams produce |  |
|  | mechanism | there is an input | to create motion | • Understanding | happens as a result | different follower |  |
|  | • is a lever or slider | and output in a |  | of starting the | movements |  |
|  | mechanism | • Understanding that | that kinetic energy | input |  |  |
|  | and determining |  | pneumatic systems | is the energy that |  | • Exploring types |  |
|  |  |  |  |
|  | what movement | • Identifying | can be used as part | something (object | • Knowing that | of motions and |  |
|  | the mechanism will | mechanisms in | of a mechanism | person) has by | mechanisms | direction of a |  |
|  |  |
|  | make | everyday objects | • Learning that | being in motion | control movement | motion |  |
|  | • Using the | • Learning that a |  |  |  |  |
|  |  |  |  |  |
|  | pneumatic systems |  | • Describing |  |  |
|  | vocabulary: up, | lever is something | force air over a |  | mechanisms that |  |  |
|  | down, left, right, | that turns on a | distance to create |  | can be used to |  |  |
|  | vertical and | pivot | movement |  | change one kind |  |  |
|  | horizontal to | • Learning that a |  |  | of motion into |  |  |
|  | describe movement |  |  | another |  |  |
|  | • Identifying what | linkage is a system |  |  |  |  |  |
|  | of levers that are |  |  |  |  |  |
|  | mechanism makes | connected by |  |  |  |  |  |
|  | a toy or vehicle roll | pivots |  |  |  |  |  |
|  | forwards | • Exploring wheel |  |  |  |  |  |
|  | • Learning that for |  |  |  |  |  |
|  | mechanisms |  |  |  |  |  |
|  | a wheel to move it | • Learning how axels |  |  |  |  |  |
|  | must be attached |  |  |  |  |  |
|  | to an axle | help wheels to |  |  |  |  |  |
|  |  | move a vehicle |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

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| Technical Knowledge | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Structures** | • Describing | • Identifying natural | • Identifying | • Learning what | • Exploring how to | • Knowing that |  |
|  | the purpose | and man-made | features of a castle | pavilions are and | create a strong | structures can |  |
|  | of structures, | structures | • Identifying suitable | their purpose | beam | be strengthened |  |
|  | including windmills | • Identifying when a |  |  | by manipulating |  |
|  | • Learning how to | materials to be | • Building on prior | • Identifying arch | materials and |  |
|  | structure is more | selected and | knowledge of | and beam bridges | shapes |  |
|  | turn 2D nets into | or less stable than | used for a castle, | net structures | and understanding |  |  |
|  | 3D structures | another | considering weight, | and broadening | the terms: | • Identifying the |  |
|  | • Learning that the | • Knowing that | compression, | knowledge of | compression and | shell structure in |  |
|  | tension | frame structures | tension | everyday life (cars, |  |
|  | shape of materials | shapes and |  |  |  | aeroplanes, tins, |  |
|  | can be changed | structures with | • Extending the | • Learning that | • Identifying | cans) |  |
|  |  |
|  | to improve the | wide, flat bases or | knowledge of wide | architects consider | stronger and |  |  |
|  | strength and | legs are the most | and flat based | light, shadow and | weaker structures | • Understanding |  |
|  |  |
|  | stiffness of | stable | objects are more | patterns when | • Finding different | man made and |  |
|  | structures | • Understanding | stable | designing | natural structures |  |
|  |  |
|  | • Understanding |  |  | ways to reinforce |  |  |
|  | that the shape of | • Understanding | • Implementing | structures |  |  |
|  | that cylinders are | a structure affects | the terminology | frame and | • Understanding |  |  |
|  | a strong type of | its strength | of strut, tie, span, | shell structure |  |  |
|  | structure that | • Using the | beam | knowledge | how triangles |  |  |
|  | are often used | • Understanding the | • Considering | can be used to |  |  |
|  | for windmills and | vocabulary: | reinforce bridges |  |  |
|  | lighthouses | strength, stiffness | difference between | effective and | • Articulating the |  |  |
|  |  | and stability | frame and shell | ineffective designs |  |  |
|  | • Understanding that | • Knowing that | structure |  | difference between |  |  |
|  | windmill turbines |  |  | beam, arch, truss |  |  |
|  | use wind to turn | materials can be |  |  | and suspension |  |  |
|  | and make the | manipulated to |  |  | bridges |  |  |
|  | machines inside | improve strength |  |  |  |  |  |
|  | work | and stiffness |  |  |  |  |  |
|  | • Understanding | • Building a strong |  |  |  |  |  |
|  | that axles are used | and stiff structure |  |  |  |  |  |
|  | in structures and | by folding paper |  |  |  |  |  |
|  | mechanisms to |  |  |  |  |  |  |
|  | make parts turn in |  |  |  |  |  |  |
|  | a circle |  |  |  |  |  |  |
|  | • Developing |  |  |  |  |  |  |
|  | awareness of |  |  |  |  |  |  |
|  | different structures |  |  |  |  |  |  |
|  | for different |  |  |  |  |  |  |
|  | purposes |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

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| Technical Knowledge | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Textiles** | • Learning different | • Joining items using | • Threading needles | • Understanding that | • Learning to sew | • Learning different |  |
|  | ways in which | fabric glue or | with greater | there are different | blanket stitch to | decorative stitches |  |
|  | to join fabrics | stitching | independence | types of fastenings | join fabric | • Application |  |
|  | together: pinning, |  |  | and what they are |  |  |
|  | stapling, gluing | • Identifying benefits | • Tying knots | • Articulating the | • Applying blanket | and outcome of |  |
|  |  | of these techniques | with greater | stitch so the space | the individual |  |
|  |  | • Threading a needle | independence | benefits and | between the | technique |  |
|  |  | • Sewing cross stitch | disadvantages of | stitches are even | • Sewing accurately |  |
|  |  | • Sewing running | different fastening | and regular |  |
|  |  | and appliqué | types | • Threading needles | with even |  |
|  |  | stitch, with evenly |  |  | regularity of |  |
|  |  | spaced, neat, even | • Understanding the |  | independently | stiches |  |
|  |  | stitches to join | need to count the |  |  |  |  |
|  |  | fabric | thread on a piece |  |  |  |  |
|  |  | • Neatly pinning and | of even weave |  |  |  |  |
|  |  | fabric in each |  |  |  |  |
|  |  | cutting fabric using | direction to create |  |  |  |  |
|  |  | a template | uniform size and |  |  |  |  |
|  |  |  | appearance |  |  |  |  |
|  |  |  | • Understanding |  |  |  |  |
|  |  |  | that fabrics can be |  |  |  |  |
|  |  |  | layered for affect |  |  |  |  |
|  |  |  |  |  |  |  |  |

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| Technical Knowledge | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |  |
|  |  |  |  |  |  |  |  |
| **Electrical** | • N/A | • N/A | • Understanding | • Learning how | • Learning the | • Understanding |  |
| **systems** |  |  | what static | electrical items | key components | how |  |
|  |  | electricity is and | work | used to create a | electromagnetic |  |
|  |  |  |  |
|  |  |  | how it moves | • Identifying | functioning circuit | motors work |  |
|  |  |  | objects through |  |  |  |
|  |  |  | attraction or | electrical products | • Learning that | • Learning that |  |
|  |  |  | repulsion | • Learning what | graphite is a | batteries contain |  |
|  |  |  |  | conductor and can | acid, which can be |  |
|  |  |  | • Generating | electrical | be used as part of a | dangerous if they |  |
|  |  |  | static electricity | conductors and | circuit | leak |  |
|  |  |  | independently | insulators are | • Learning the | • Learning that when |  |
|  |  |  | • Using static | • Understanding that |  |
|  |  |  |  |
|  |  |  | difference between | electricity enters |  |
|  |  |  | electricity to make | a battery contains | series and parallel | a magnetic field it |  |
|  |  |  |  |
|  |  |  | objects move in a | stored electricity | circuits | can make a motor |  |
|  |  |  | desired way | and can be used to | • Understanding that |  |  |
|  |  |  |  |  |
|  |  |  |  | power products |  |  |
|  |  |  |  | • Identifying the | breaks in a circuit |  |  |
|  |  |  |  | will stop it from |  |  |
|  |  |  |  | features of a torch | working |  |  |
|  |  |  |  | • Understanding |  |  |  |
|  |  |  |  | how a torch works |  |  |  |
|  |  |  |  | • Articulating the |  |  |  |
|  |  |  |  | positives and |  |  |  |
|  |  |  |  | negatives about |  |  |  |
|  |  |  |  | different torches |  |  |  |
|  |  |  |  |  |  |  |  |