Al-Islamia
Institute for Education

**Art and Design/Technology Policy**

**Intent**

'Allah is beautiful; He loves beauty.' - Prophet Muhammad (May Allah's peace and blessing be upon him)

'You can't use up creativity. The more you use, the more you have' - Maya Angelou: author, poet, civil rights activist.

Art and Design Technology is a means by which the beauty and design of the world around us can be explored and investigated. It is an outlet through which children can express their individual selves through creative means.

Our aim for this subject is for children to communicate what they see, feel and think through the use of colour, texture, form, pattern and different materials and processes. We want to provide them with the skills and experience to shape their environment by making informed judgements and aesthetic and practical decisions. Learning about artists and designers will introduce children to ideas and approaches, while learning about the role and function of art will give them the opportunity to explore the impact on contemporary life and on different periods and cultures.

The curriculum has been planned with a view to the National Curriculum Framework for Art and Design Technology, and the units have been selected for their ability to provide children with a broad view of these subject areas.

The curriculum is designed to be delivered over two years for each phase: KS1, Years 3 and 4, and Years 5 and 6. The curriculum coverage is explored throughout the units so there is ample time and opportunity to meet curriculum objectives over the course of the two years of study. Every class/year group will complete two 6-week units for Art, and two 10-week units for Design and Technology. Art and Design Tech units of work are adapted from the Oak National Academy schemes of work, and of a breadth that is suitable to extend children's experiences, and their knowledge of artists and designers.

Staff will use the vocabulary stated within the planning to enable children to talk about their work and ideas accurately and explicitly. This will include vocabulary referring to techniques, evaluation and analysis, artists and designers, and periods and cultures.

Art and Design Technology will be further enriched with events focusing on creative concepts, such as The Big Draw and theme days that include/expect the use of art and design skills.

**Implementation**

The subject will be led by the school's Art teacher who is also the school's Art Subject Lead. With significant experience with the Primary National Curriculum Framework and her own creative expertise, the Art teacher will make the necessary adaptations to ensure that gaps in learning are addressed, such as ensuring that children engage with the works of local, national and international artists and designers as pertaining to their focus of study.

Every lesson will begin with a Rapid Recall focusing on current unit work and previous skills and knowledge, as outlined in the Assessment Policy. These questions will be collected in a bank to create a form of reference and ensure breadth.

In order to ensure successful and effective teaching of these subjects, the new teacher will also be completing training regarding the various technical skills and knowledge, as needed and appropriate. The training will comprise of CPD via the Oak Academy teaching and learning videos, as well as shadowing of the experienced Art specialist, Access Art and the Design Technology Association. This will ensure that a catalogue of skills is built up progressively and align with what the teacher and the school need.

In approaching CPD this way, we aim to have a programme of education that is effective, engaging and impactful. Children will come away from each lesson with a clear idea of what they have learned and will be able to communicate this with clarity and accuracy. The Art teacher will become confident in identifying and discussing artistic techniques and styles; critically discuss the work of artists and designers and overcome any apprehension about her own skills or experience in this area.

In addition, the CPD will also help the teacher to develop the confidence to adapt the units to suit specific concepts, such as class interests; current events; art and design (and artists and designers) reflective of the school's racial and religious communities and art and design for specific purposes or with specific meaning (such as the history of graffiti or the concept of symmetry in Islamic art).

When we move to Collegiate House, we hope to move to our new site, where we will then have a dedicated space for Art and Design Technology, where the children can work in a safe and stimulated environment that has the resources and space they need to complete their projects. In the meantime, all lessons will be delivered in the classrooms, with the necessary risk assessments associated with health and safety considerations.

**Impact**

While Art and Design is, by design, highly individual, there are some standards that all children should be able to meet. This includes critical evaluation and analysis; knowledge of artists and designers – both British and international – and a considered preference for style, technique and/or medium.

All projects will be recorded in an Art and Design journal, with physical pieces photographed and pasted in for evidence and/or annotation. This is the only subject within which an eraser can be used, under teacher direction, to correct mistakes or create specific effects. Projects should be organised in specific ways, from a clear starting point and planning activity, through the inception and practice activities and to the final evaluation and analysis of the pieces. However, the presentation of the work is not prescribed so as not to stifle creativity or creative outlet, although we do ask for the work to be legible, explained and annotated where and if necessary.

Our strongest aspect of Art and Design is the long-established curriculum for Art, and the support of the previous Art teacher, currently a curator with Sotheby's. The children in Years 2 to 6 have had a strong foundation of engagement with Art and Design Technology, which they can build on as they move to working with their class teachers, while the Year 1 cohort have had opportunities to develop their fine motor skills and begin developing their creativity during their learning in F2.

Subject knowledge is an area that will need support and careful monitoring from both a whole-school and individual basis. We will use ongoing subject monitoring to identify gaps and use the outcomes to discuss development routes and identify/source adequate training workshops, activities or courses. The regular monitoring of the subject will enable accurate identification of gaps or areas for development and create additional action points based on outcome.

We expect children with learning needs to perform on par with their peers due to the highly individualised nature of Art and Design Technology. Nonetheless, visual and stem scaffolds will be provided to aid annotation, explanations, evaluations and analysis of projects so children can begin to use vocabulary accurately at all levels.

**Date of Policy Review: September**

**Art and Design – Curriculum Progression**

KS1:

| Unit Name | | | Year 1 | | Year 2 | |
|---|---|---|---|---|---|---|
| Strand | NC Objective | | Drawing | Painting | Printmaking | Sculpture |
| Generating Ideas | Recognise that ideas can be generated through doing as well as thinking | Record individual response to the world | | | | |
| | | Develop questions to ask when looking at artworks and /or stimulus:<br>Describe what you can see.<br>Describe what you like? Why?<br>How does it make you feel?<br>What would you like to ask the artist? | | | | |
| | Recognise that ideas can be expressed through art | Enjoy looking at artwork made by artists, craftspeople, architects and designers, and finding elements which inspire | | | | |
| | | engage with the physical world to stimulate a creative response (visiting, seeing, holding, hearing) | | | | |
| | Experiment with an open mind | Feel a sense of ownership about their ideas | | | | |
| | | Generate ideas through playful, hands-on, exploration of materials without being constricted towards a pre-defined outcome | | | | |
| Making | Try out a range of materials & processes and Recognise they have different qualities | | | | | |
| | Explore materials in a playful and open-ended manner | | | | | |
| | Use materials purposefully to achieve particular characteristics or qualities | | | | | |

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| | Be excited by the potential to create. | | | | | |
| | Understand that art is different to many subjects at school: through art, they can invent and discover | | | | | |
| Evaluating | Show interest in and describe what they think about the work of others | | | | | |
| | Take pleasure in the work they have created and see that it gives other people pleasure | | | | | |
| | Understand how evaluating creative work *during* the process, as well as at the end, helps feed the process. | Take photos of work made so that a record can be kept, to be added to a digital folder/presentation to capture progression. | | | | |
| | Begin to take photographs and use digital media | | | | | |
| Knowledge and Understanding | know how to recognise and describe some simple characteristics of different kinds of art, craft and design | | | | | |
| | Know the names of tools, techniques and formal elements | | | | | |
| | Work at different scales, alone and in groups | | | | | |
| | Be able to talk about the materials, techniques and processes they have used, using an appropriate vocabulary | | | | | |

LKS2:

| Unit Name | | | Year 3 | | Year 4 | |
|---|---|---|---|---|---|---|
| Strand | NC Objective | | Ceramics | Creative Craft | Collage | Textiles |
| Generating Ideas | Gather and review information from different sources (primary and secondary), references and resources related to their ideas and intentions | Discuss artist's intention and reflect upon your response. | | | | |
| | | Look at artforms beyond the visual arts: literature, drama, music, film etc and explore how they relate to your visual art form. | | | | |
| | | Look at a variety of types of source material and understand the differences. | | | | |
| | | Use digital media to identify and research artists, craftspeople, architects and designers. | | | | |
| | Use a sketchbook for different purposes, including recording observations, planning and shaping ideas | Begin to feel a sense of ownership about the sketchbook, which means allowing every child to work at own pace, following own exploration | | | | |
| | Understand sketchbooks are places to explore personal creativity, and as such they should be experimental, imperfect, ask questions, demonstrate inquisitive exploration | Practice and develop sketchbook use, incorporating the following activities: drawing to discover, drawing to show you have seen, drawing to experiment, exploring colour, exploring paint, testing ideas, collecting, sticking, writing notes, looking back, thinking forwards and around… | | | | |
| | Use sketchbooks, together with other resources, to understand how inspiration | Use growing knowledge of how materials and medium act, to help develop ideas. Continue to generate ideas through space for playful making. | | | | |

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| | can come from many rich and personal sources to feed into creative projects | Explore how ideas translate and develop through different medium (i.e. a drawing in pencil or a drawing in charcoal). | | | | |
| | | Develop questions to ask when looking at artworks and /or stimulus:<br>Describe the artwork.<br>What do you like/dislike? Why?<br>Which other senses can you bring to this artwork?<br>What is the artist saying to us in this artwork?<br>How might it inspire you to make your own artwork?<br>If you could take this art work home, where would you put it and why? | | | | |
| | | Take part in small scale crits throughout so that brainstorming becomes part of the creative process. | | | | |
| Making | Investigate the nature and qualities of different materials and processes | Develop practical skills by experimenting with and testing the qualities of a range of materials and techniques | | | | |
| | | Select and use appropriately a variety of materials and techniques in order to create their own work. | | | | |
| | | Use growing technical skill and knowledge of different drawing materials, combined with increasing confidence in making a creative response to a wide range of stimuli, to explore more experimental drawing, following child's own interests/affinities. | | | | |
| | | Layering of media, mixing of drawing media, e.g. Wax resist with coloured inks | | | | |
| | Be excited by the potential to create and feel empowered to begin to undertake their own exploration | Develop design through making skills and collaborative working skills through fashion design. Explore paper and card manipulation skills to build 3d forms. | | | | |
| | Apply technical skills to improve quality of work, | Develop visual literacy skills and discover how context and intention can change the meaning of objects, e.g. Making a pocket-gallery | | | | |

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| | combined with beginning to listen and trust "instinct" to help make choices | Extend into an exploration of fabric, deconstructing old clothes and reconstructing elements into new items. e.g. Psyches inspired dress | | | | |
| Evaluating | Take pleasure in the work they have created and see that it gives other people pleasure | | | | | |
| | Take the time to reflect upon what they like and dislike about their work in order to improve it | Talk to a peer or teacher about the artwork made and share what you have enjoyed during the process, and what you like about the end result. Discuss problems which came up and how they were solved. Think about what you might try next time. | | | | |
| | Understand how evaluating creative work *during* the process, as well as at the end, helps feed the process. | Think about why the work was made, as well as how | | | | |
| | Look to the work of others (pupils and artists) to identify how to feed their own work | Make suggestions about other people's work, using things you have seen or experienced yourself. | | | | |
| | Take photographs and videos and use digital media as a way to re-see work | | | | | |
| Knowledge and Understanding | Know the names of tools, techniques and formal elements | | | | | |
| | Know that different forms of creative works are made by artists, craftspeople, and designers from all cultures and times, for different purposes. Be able to know and describe the work of some artists, craftspeople, architects and designers, including artists who are contemporary, female, and from various ethnicities | | | | | |
| | Be able to demonstrate how to safely use some of the tools and techniques they have chose to work with | | | | | |

UKS2:

| Unit Name | | | Year 5 | | Year 6 | |
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| Strand | NC Objective | | Installation Art | Photography | Digital Media | Graphic Design |
| Generating Ideas | Engage in open-ended research and exploration to initiate and develop personal ideas | Use camera phones (still and video) to help "see" and "collect" (digital sketchbook) | | | | |
| | | Take part in small scale crits throughout so that brainstorming becomes part of the creative process. | | | | |
| | Confidently use sketchbooks for a variety of purposes including recording observations, developing ideas, testing materials, planning and recording information | Use growing knowledge of how materials and medium act, to help develop ideas. Continue to generate ideas through space for playful making. | | | | |
| | | Begin to feel a sense of ownership about the sketchbook, which means allowing every child to work at own pace, following own exploration. | | | | |
| | Understand sketchbooks are places to explore personal creativity, and as such they should be experimental, imperfect, ask questions, demonstrate inquisitive exploration | Increasingly see the sketchbook as a place which raises questions which can be explored/answered outside the sketchbook, so that the link between sketchbook and journey and outcome becomes understood. | | | | |
| | | Practice and develop sketchbook use, incorporating the following activities: drawing to discover, drawing to show you have seen, drawing to experiment, exploring colour, exploring paint, testing ideas, collecting, sticking, writing notes, looking back, thinking forwards and around, reflecting, making links | | | | |
| | Independently develop a range of ideas which show curiosity, imagination and originality | Use growing knowledge of how materials and medium act, to help develop ideas. Continue to generate ideas through space for playful making. | | | | |
| | | Explore how ideas translate and develop through different medium (i.e. a drawing in pencil or a drawing in charcoal). | | | | |

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| | Investigate, research and test ideas and plans using sketchbooks and other approaches | Look at a variety of types of source material and understand the differences. | | | | |
| | | Be given time and space to engage with the physical world to stimulate a creative response (visiting, seeing, holding, hearing), including found and manmade objects. | | | | |
| | | Continue to develop a "sketchbook habit", using a sketchbook as a place to record individual response to the world.<br>Begin to feel a sense of ownership about the sketchbook, which means allowing every child to work at own pace, following own exploration. | | | | |
| | | Take part in small scale crits throughout so that brainstorming becomes part of the creative process. | | | | |
| Making | Confidently investigate and explore new materials, beginning to lead their own search for new experiences | Explore relationship between sculpture and design through a sketchbook project which takes film/literature/drama as its starting point and facilitates an open-ended sculptural exploration, with children working at their own pace and following their own journey e.g. Developing sketchbook work | | | | |
| | | Explore architecture of another time and / or culture, and make individual work in response to what is seen.<br>Enable evolution of ideas through a combination of design through making and drawn inspiration. E.g. Architecture and mark making | | | | |
| | Independently take action to refine technical and craft skills to improve mastery of materials and techniques | Revisit still life. Develop drawing skills using observational drawing e.g. Graphic inky still life or Still life in cubist style | | | | |
| | | Develop drawing and making skills and combine with narrative/character development and make puppets. | | | | |
| | Confidently follow intuition and instinct during the making process, making | Work collaboratively to perform, and use digital media to record e.g. Shadow puppets and whiteboards and Shadow puppet play | | | | |

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| | intelligent and confident creative choices | Explore transformation of materials following own journey to produce an object which conveys personality of maker/designer, e.g. Making Seats | | | | |
| | Independently select and effectively use relevant processes in order to create successful and finished work | Explore sequential drawing and narrative e.g. manga and graphic novels, possibly linking into develop into set design (see Design & Making), e.g. Manga | | | | |
| | | Explore geometric design/pattern / structure, e.g. Wave bowls | | | | |
| | Use acquired technical expertise, combined with beginning to listen and trust "instinct" to help make choices, to make work which effectively reflects ideas and intentions | Explore the relationship of line, form and colour. | | | | |
| | | Follow a series of guided activities which each offer pupils an opportunity to make their own individual creative response. e.g. Inspired by Miro and Building a communal drawing | | | | |
| | Feel safe enough to take creative risks | Develop visual literacy skills: explore how we look at and respond to things people have made, and then include this awareness when making sculpture e.g. Inspired by anglo saxon houses | | | | |
| | | Explore sculptural ideas of balance (physical and aesthetic) and creative risk taking and play, e.g. Making sculpture and drawing | | | | |
| | | Paint on new surfaces (e.g. stone, fabric, walls, floors and work collaboratively to produce images in new contexts, e.g Communal summer picnic drawing or Treasured fossils | | | | |
| | | Using tools to cut intricate shapes and use fastenings to create moving parts. | | | | |
| Evaluating | | Ask questions about process, technique, idea or outcome. | | | | |

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| | Regularly analyse and reflect upon progress taking into account of intention | Talk to a peer or teacher about the artwork made and share what you have enjoyed during the process, and what you like about the end result. Discuss problems which came up and how they were solved. Think about what you might try next time. | | | | |
| | | Present work in retrospect, i.e. to class, assembly or parents. | | | | |
| | Look to the work of others (pupils and artists) to identify how to feed their own work | Make suggestions about other people's work, using things you have seen or experienced yourself. | | | | |
| | | Share how other artists/artwork inspired you and how your work fits into larger context. | | | | |
| | | Feel able to express and share an opinion about the artwork. | | | | |
| | Take photographs and videos and use digital media as a way to re-see work | Take photos of work made so that a record can be kept, to be added to a digital folder/presentation to capture progression. Use documenting the artwork as an opportunity for discussion about how to present work, and a chance for pupils to use digital media | | | | |
| | Provide a reasoned evaluation of both their own work and professionals work which take into account starting points, intentions and contexts | Feel able to express and share an opinion about the artwork. | | | | |
| | | Discuss why the work was made, as well as how. | | | | |
| | | Share your response to the artwork. | | | | |
| | | Ask questions about process, technique, idea or outcome. | | | | |
| | Know the names of tools, techniques and formal elements | | | | | |

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| Knowledge and Understanding | Research and discuss ideas and approaches of range of artists, craftspeople, architects and designers from all cultures and times, for different purposes. Be able to know and describe the work of some artists, craftspeople, architects and designers, including artists who are contemporary, female, and from various ethnicities | | | | |
| | Be able to talk about the materials, techniques and processes they have used, using an appropriate vocabulary. Describe processes used and how they hope to achieve high quality outcomes | | | | |
| | Be able to demonstrate how to safely use some of the tools and techniques they have chosen to work with | | | | |

## Design Technology Progression

### KS1:

| Unit Name | | | Year 1 | | Year 2 | |
|---|---|---|---|---|---|---|
| Strand | National Curriculum Objective | | Freestanding Sculptures | Salads – Fruit and Veg. | Textiles | Mechanisms |
| Thinking like a Design Technician | Engage with creative and practical activities | Engage successfully and with increasing independence in the process of designing and making | | | | |
| | Taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making | Ideas are communicated and clarified through action. Thought leads to action, resulting in further thought and action as pupils resolve design problems and address design opportunities | | | | |
| | work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment | Carry out projects within contexts that add meaning, relevance and create motivating opportunities for learning. Engaging with contexts may involve visiting locations and people outside school, inviting experts into school and using media to enable pupils to explore less familiar surroundings. For example, in KS1 pupils may also work in contexts that are imaginary or story-based | | | | |
| Design | design purposeful, functional, appealing products for themselves and other users based on design criteria | think about what their products are for, how they will work and whether they will be liked by intended users | | | | |
| | | think about who their products will be for. In KS1, users might include themselves, imaginary or story-based characters | | | | |
| | | think about what their product must do to be successful and use these criteria to inform their evaluation throughout the designing and making process | | | | |
| | generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology | Learn a range of ways to develop their ideas. The techniques chosen should be appropriate for the product they are designing and making and the needs of the individual pupil. Some pupils may find it easier to develop this technique retrospectively by drawing their product when it has been completed | | | | |
| | | – when designing, KS1 pupils could, for example, use a basic paint program to draw the design for a coat for Teddy | | | | |
| Make | select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] | have the opportunity to select from a range of tools, equipment and materials provided by their teacher | | | | |
| | | The range of tools and equipment used should be determined by the school. These should match the fine motor skills of the pupils. | | | | |

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| | select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics | design and make with all the materials specified. 'Ingredients' means food ingredients. Construction kits should be added to the list to help pupils design and make structures and mechanisms. | | | | |
| Evaluate | explore and evaluate a range of existing products | opportunities to handle collections of existing products related to their projects. | | | | |
| | evaluate their ideas and products against design criteria | Learn how to ask questions such as who the products are for, what they are for and how they work | | | | |
| Technical Knowledge | build structures, exploring how they can be made stronger, stiffer and more stable | predominantly freestanding, including walls, towers and frameworks. Through exploring and assembling they should learn how to make structures stronger, stiffer and more stable. | | | | |
| | explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. | advisable for pupils to use wheels and axles, and levers and sliders in KS1 | | | | |

## KS2

| Unit Name | | | Year 3 | | Year 4 | | Year 5 | | Year 6 | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Strand** | **National Curriculum Objective** | | Healthy and Varied Diets | Levers and Linkages | Electronics | Structures | Cooking and Nutrition | Control | Textiles | CAD |
| Think like a Design Technician | Engage with creative and practical activities | Engage successfully and with increasing independence in the process of designing and making | | | | | | | | |
| | Taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making | Ideas are communicated and clarified through action. Thought leads to action, resulting in further thought and action as pupils resolve design problems and address design opportunities | | | | | | | | |
| | work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment | Carry out projects within contexts that add meaning, relevance and create motivating opportunities for learning. Engaging with contexts may involve visiting locations and people outside school, inviting experts into school and using media to enable pupils to explore less familiar surroundings. For example, in KS1 pupils may also work in contexts that are imaginary or story-based | | | | | | | | |
| Design | use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at individuals or groups | Could include the use of secondary sources, relevant websites, questionnaires, surveys and interviews | | | | | | | | |
| | | Develop and prioritise their own criteria and use these to evaluate their ideas and products throughout the designing and making process | | | | | | | | |
| | | Pupils given scope and encouraged to be original with their thinking, create products that are required to work in some way to be successful, and think about the features of their products that will be interesting and engaging for intended users | | | | | | | | |
| | | always think about the tasks that their products should perform | | | | | | | | |
| | | always create products with a specific client, consumer or a target group in mind | | | | | | | | |
| | generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded | use of sketching techniques with related notes to develop, record and communicate their thinking | | | | | | | | |
| | | cross-sectional drawings are an effective technique when pupils want to show what their products will look like | | | | | | | | |

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| | diagrams, prototypes, pattern pieces and computer-aided design | inside, for example the parts of a torch. Exploded diagrams enable pupils to communicate the components that will be used to build their products and the order of assembly, for example when designing battery-powered vehicles. | | | | | | | | |
| | | Draw shapes accurately, for example the nets for packaging. With the addition of text and graphics it can also help to ensure pupils' products have a high quality finish | | | | | | | | |
| Make | select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately | pupils should be using appropriate tools, equipment and techniques with accuracy. | | | | | | | | |
| | select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities | Pupils should design and make with all the materials specified, adding to those used in KS1. 'Ingredients' means food ingredients. Construction kits should be added to the list to help pupils design and make structures and mechanical systems. | | | | | | | | |
| | | functional properties – characteristics of materials and components that enable products to work effectively, for example strength, flexibility and electrical conductivity. | | | | | | | | |
| | | aesthetic qualities – characteristics of materials and components that make products pleasing to the user, for example, colour, pattern and texture. | | | | | | | | |
| Evaluate | investigate and analyse a range of existing products | through asking a range of questions pupils should investigate, analyse and evaluate a range of existing products related to the product they will be designing and making. | | | | | | | | |
| | evaluate their ideas and products against their own design criteria and consider the views of others to improve their work | wherever possible pupils should ask for feedback on their ideas and products from intended users | | | | | | | | |
| | understand how key events and individuals in design and technology have helped shape the world | opportunities for pupils to research famous designers and inventors, and ground-breaking products should be integrated into investigative and evaluative activities | | | | | | | | |

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| Technical Knowledge | apply their understanding of how to strengthen, stiffen and reinforce more complex structures | include shell structures which have an outer skin to provide strength (e.g. packaging) and frame structures (e.g. tent frame) which are constructed using an arrangement of thin components. | | | | | | | | |
| | understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] | think about the related components that make up mechanical systems, for example the levers, linkages and pivots in a moving picture. They should also think about the input movement used to operate the mechanism, the output movement produced by the mechanism and the process – how the mechanism changes the input movement into the output movement | | | | | | | | |
| | understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] | think about the related components that make up electrical systems, for example the switch, bulb and batteries. They should also think about what type of input device, for example a toggle switch or push-to-make switch, they will use to control their product, what output device will be operated, for example a bulb or buzzer, and the process that causes input devices to control output devices. | | | | | | | | |
| | apply their understanding of computing to program, monitor and control their products. | opportunities to use a computer to operate electrical products they design and make, for example creating a sequence to make an illuminated sign flash on and off in a repeating pattern. As they progress through KS2 they should also use switches or sensors to monitor products, for example a delayed reaction burglar alarm they have created and programmed | | | | | | | | |