

Subject	Year 7 Threshold Concepts	How to support students' learning
	During Year 7 students will be on a rotation; they will undertake two or three Art & Design projects and two Technology projects during the course of the year. You can find details of each project listed below	Please find below a range of ways that students' learning can be supported when they study each of the Art & Design or Technology projects
Art & Design	Oceanic Project Key concept: how can artists create work which has meaning and message? In the Oceanic project students will produce creative work which explores issues facing sealife and the ocean. They will learn to record observations using freehand drawing, gridding techniques and printmaking processes. They will explore ideas in a range of media in the development of a mixed media piece. During the project they will also gain knowledge about a number of artists and designers as well as analysing and evaluating their own and others' artworks. Skills and Processes: Drawing ,Gridding, Mark-making, Analysis, Wet-in-Wet, Colour wheel, Relief printing, Font and lettering, Ombre effects, Papercutting Key Vocabulary: Gridding, Intersecting, Tone, Texture, Refinement, Blending, Printmaking, Contrast, Layering, Overlapping, Slogan , Font, Embellish, Detail, Composition, Collage, Transparent Artists / Context: Tim Jeffs, John Shaw, Colleen Wilcox, Paul Doeman , Papercut Artists, Environmental artists	• Encourage your child to learn about different animals and their environments as well as undertaking some of the activities for students found on the World Wildlife Fund's website here: https://www.wwf.org.uk/learn/wildlife • Encourage your child to watch the BBC series 'Blue Planet which can be found here: https://www.bbcearth.com/shows/blue-planet • Encourage your child to research the effects of plastic pollution and climate change on our oceans and to consider ways in which this can be combatted • Encourage your child to carry out further research about the artists we are studying in this project or about other artists whose work makes a statement about caring for the environment • Encourage your child to draw and create on a regular basis in order that they gain confidence in mark making
Technology	CAD/CAM Magic Mirrors Key Concept: A strong knowledge of CAD/CAM using 2-Dimensional software	• Encourage your child to collect further information about their chosen client to add detail to the client profile started in session.

	Students will learn how to use Computer Aided Design (CAD) and Computer Aided Manufacture (CAM) to aid the design and manufacture of their project. Students will design and manufacture a fun mirror using a range of CAD/CAM tools and equipment. Students will design and make a portable and decorative mirror. Skills and Processes Techsoft Design Tools software, Client profile, Inspirational moodboards, product assembly/finishing/decoration, Microbit programming Key Vocabulary Computer Aided Design, Computer Aided Manufacture, Computer Numerical Control, Manufacture, Novelty, Quality, Situation, Design Brief, Client Profile, Specification, 2Dimensional, 3Dimensional, Isometric drawing, Techsoft software, Power Point, e-portfolio, Presentation, Evaluation, re-design, circuit, buzzer, LED, switch speaker, lamp, microcontroller, voltage, Volts, current, Amps, resistance, Ohms, integrated circuit, PIC, Microcontrollers	Pictures of the client together with their pictures of their likes and dislikes could also be collected. • Encourage your child to use the 'virtual desktop' from home so that they can practise the tools in the Techsoft Design Tools Software in preparation for the design sessions • Encourage your child to use the support resources online and in their Teams area. • Encourage your child to change the batteries in a simple product • Encourage your child to extend their learning of Microbit tutorials that were not completed in session
Art & Design	Creature Creations Project Key concept - how do artists develop and create work which is developed from the imagination? In the Creature Creations project students will produce highly imaginative and creative work which explores character design and expressions. They will explore ideas using a variety of recording techniques and processes; sometimes on their own and sometimes as part of a group task. They will evaluate the work of	• Encourage your child to develop their imaginative work by drawing in a cartoon style – some different tutorials can be found here: https://www.youtube.com/channel/UCrd1j_IoMQDv_MEEGKLoFJg • Encourage your child to carry out further research about the artists we are studying in this project • Encourage your child to draw and create on a regular basis; the focus for this project is creating exaggerated features and expressions. There are many resources online; they could

	other artists and designers and develop their artistic language skills. Students will be introduced to a range of art forms such as illustration, cartoon work and graffiti fonts. Skills and Processes: Drawing, Analysis, Imagination, Creating features, Expressions, Compositions, Experimentation, Painting, Colour theory, Lettering, Font , Evaluation Key Vocabulary: Line, Monoprint, Watercolour, Colour Wheel, Tone, Gradient, Abstract, Composition, Refinement, Draft, Shape Combination Artists/Context: John Burgerman Graffiti Fonts Nathan Wyburn	experiment with making ‘coffee blot monsters’ such as shown in this video: https://www.youtube.com/watch?v=uHtr-gFjJvU
Technology	Animal Grabbers Key Concept – developing practical and workshop skills through the design and manufacture of a mechanical product, with a focus on simple mechanisms, user needs, and creative design inspired by animal forms. By the end of the project, students will: • Design and manufacture a fully functioning animal-themed grabber tool • Demonstrate safe and accurate use of workshop tools • Show understanding of how an elastic band mechanism creates movement • Produce a product that meets a clear design specification	Explore and Watch: • Simple machines and mechanisms (BBC Bitesize): https://www.bbc.co.uk/bitesize/topics/z9c3rwx • Forces and motion basics: https://www.bbc.co.uk/bitesize/topics/zw4rkqt • STEM learning activities for Design & Technology: https://www.stem.org.uk/homelearning/secondary-design-technology Discuss Together: • How tools (like litter pickers or grabbers) help people in everyday life • How animals inspire designs (e.g. claws, jaws, beaks) • Why safety and accuracy are important when making products • Careful and safe working habits • Problem-solving when things don’t go to plan

	- Evaluate their work, identifying strengths and areas for improvement Project Overview During this project, students will build on their workshop skills by designing and manufacturing an animal-themed grabber tool (similar to a litter picker). They will explore how mechanisms work, particularly using elastic bands to create movement. Students will learn how to safely use workshop tools and equipment while developing their understanding of how products are designed for a purpose and user. They will apply creativity to design a fun, themed product that is both functional and engaging. Skills & Processes - Designer research and product analysis - Writing a Specification & Design Brief - Designing for a target user and purpose - Sketching and developing ideas - Model making and testing mechanisms - Practical workshop skills (measuring, marking out, cutting, shaping, assembling) - Safe use of tools and equipment - Understanding and applying tension using elastic band mechanisms - Evaluating and improving designs - Problem-solving and iterative design Key Vocabulary	
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	Mechanism, input, output, process, force, motion, elastic energy, linkage, pivot, lever, accuracy, prototype, evaluate, function, aesthetics, user, specification, design brief	
Art & Design	Bugs Life Project Key concept: How can artists use different styles and materials to create meaning and message? In the Bugs Life project students will produce creative work which explores 2D and 3D elements of bug design. They will record observations and ideas in a range of media including drawing, painting, printmaking and sculpting. They will be introduced to a number of artworks and designs from contemporary artists and will analyse these in order to inform their own ideas. Key terms will be introduced which will help them to further develop their use of artistic language and they will gain understanding of a number of different art forms including relief work. Skills and Processes: Drawing , Zentangle, Pattern, Tonal work, Mark making, Continuous line, Symmetry, Relief work, Cutting, Constructing, Painting, Decorating Key Vocabulary: Line, Tone , Gradient, Cross hatching, Mark making, Relief , Intaglio, Texture, Emboss, Dry Brush, Decorate Artists / Context: Zentangle patterns Art for wellbeing Rosalind Monks Relief artists	• Encourage your child's dexterity with manipulating materials – some starter ideas here: https://www.weareteachers.com/cardboard-activities/ • Encourage your child to create their own pattern work – here are some ideas for creating different patterns: https://www.youtube.com/watch?v=hVisGnUFzho • Encourage your child to sketch and draw different insects and use tonal contrast to make them look more realistic. For an example please see this video: https://www.youtube.com/watch?v=X4oXLsNdkjY
Technology	Funny Money	

	Key Concept: A strong knowledge of mechanical systems and workshop techniques You will learn how to use a range of different workshop tools, equipment and machinery, safely and accurately in order to manufacture a high-quality product. Your brief is to design and manufacture a coin drop money box that appeals to a client of your choice, using workshop tools and equipment. You will learn about why designers often redesign their products and about different mechanical systems and how they work. You will then apply this knowledge to your own product and redesign your money box so that it includes at least one mechanical system. Skills and processes Design brief and specification, drawing, design and annotation skills, isometric drawing, rendering, accurate measuring, marking and cutting, workshop skills including use of cutting tools, hand drills and sanding machines, product assembly, painting/finishing a product, why designers redesign their products, basic movement and mechanical systems, evaluating your own work. Key vocabulary Design brief, specification, client, isometric drawing, rendering , mitre angle, mitre joint, right angle, annotation, 2Dimensional, 3Dimensional, diameter, radius, millimetres, coping saw, tenon saw, Hegner (fret) saw, belt sander (band facer), sand paper, sanding	• Encourage your child to develop their design skills by drawing an everyday object around the house and then redesigning it in their own creative style • Encourage your child to learn about different mechanical systems, by looking at and researching mechanical objects they use on a daily basis. • Encourage your child to use the support resources online and in their Teams area
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	block, bench vice, bench hook, hand drill, drill bit, screw, MDF (Medium Density Fibreboard), acrylic, steel rule, try square, PVA glue, bumpers, siderails, front panel, backboard, high quality finish, technology push, market pull, redesigning, linear motion, rotary motion, reciprocating motion, oscillating motion, cams, cam profiles, followers, slides, cam shaft, levers, linkages, effort, load, fulcrum (pivot), gears, gear trains, simple gear train, idler gear, bevel gears, pulleys and belts, chains and sprockets, evaluation	
Technology	Paper Mechanics Key Concept Developing an understanding of mechanisms and movement through creative design and model making, applying these principles to produce an interactive product for a specific user. Students will: • Understand different types of motion (linear, rotary, reciprocating, oscillating) • Learn how levers and linkages create and control movement • Explore how paper mechanisms can transform input into motion (output) • Understand key pop-up structures, including: ○ A over V fold mechanisms ○ Sliding mechanisms ○ Rotary mechanisms ○ A range of additional pop-ups from simple to more complex designs • Recognise the importance of accuracy, structure, and neatness in model making	Explore and Watch: • Pop-up books and how they work (BBC Bitesize): https://www.bbc.co.uk/bitesize/topics/zrvbkqt • Forces, motion, and mechanisms basics: https://www.bbc.co.uk/bitesize/topics/zw4rkqt • STEM Design & Technology activities: https://www.stem.org.uk/homelearning/secondary-design-technology Discuss Together: • What makes a book engaging for young children • How moving parts in books and cards work • How stories and visuals work together Encourage: • Drawing and storytelling ideas • Careful cutting and neat assembly • Testing ideas and improving designs

	• Understand how to design engaging, age-appropriate products for children Project Overview During this project, students will design and make a children's pop-up book that includes a range of moving paper mechanisms. They will explore how different types of motion can be created using paper engineering techniques such as folds, sliders, and rotating components. Students will learn how to safely use model-making tools, including a craft knife, and will develop their creativity by designing for a young audience. The project combines practical making skills with imaginative storytelling and visual design. Skills & Processes • Researching and designing for a target audience (children) • Writing a Specification & Design Brief • Generating ideas through sketching and annotation • Model making and prototyping mechanisms • Constructing paper mechanisms with accuracy • Safe use of craft knives and model-making equipment • Understanding and applying levers and linkages • Practical assembly and finishing techniques • Testing, evaluating, and refining designs Key Vocabulary	
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	Mechanism, motion, lever, linkage, pivot, rotary, linear, reciprocating, oscillating, input, output, A over V fold, slider, prototype, accuracy, craft knife, annotation, evaluation, user	
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Subject	Year 8 Threshold Concepts	How to support students' learning
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	During Year 8 students will be on a rotation; they will undertake two or three Art & Design projects and two or three Technology projects during the course of the year. You can find details of each project listed below	Please find below a range of ways that students' learning can be supported when they study each of the Art & Design or Technology projects
Art & Design	Celebrity Portraits Project Key concept: How can artists portray the human face in different ways using a variety of materials and processes? In the Celebrity Portraits project students will work creatively to produce a series of portraits which reflect different artistic styles and movements. They will record observations and experiences using a range of media and techniques including collage and printmaking. They will study the work of a number of artists in depth and will analyse the key components of their approaches before experimenting with some of these elements in their own portraiture. Students will learn how to draw the facial features in a realistic manner whilst also developing a more abstract approach. Throughout the project they will develop an extensive use of artistic language in both verbal and written work. Skills and Processes: Drawing, Facial Features , Collage, Printmaking, Analysis, Presentation, Mixed Media, Colour Blocking, Mark Making, Evaluation, Graphic Style, Colour Theory Key Vocabulary: Theme, Portaiture, Style, Similarities, Differences, Media , Tone, Gradient, Linear, Analysis, Facets, Angles, Directional, Posterised, Photoshop, Complimentary, Harmonious, Contrast, Monochromatic, Scale, Proportion, Outline, Shape, Abstract, Realistic, Geometric, Collage Artists / Context: Andy Warhol	• Encourage your child to practice drawing the human face and facial features using guidance found online such as: https://www.skillshare.com/blog/how-to-draw-a-face-a-step-by-step-guide/ or here: https://www.artistsnetwork.com/art-mediums/drawing/beginners-guide-draw-facial-features/ • Encourage your child to practice creating their own or others faces using a mirror or working from photos. Get them to try using different media (pencil, pen, paint, collage) to do this as well as experimenting with working on different surfaces such as lined paper, old envelopes etc • Encourage your child to carry out further research about the artists we are studying in this project; they could create Powerpoint research pages on their favourite artist/s • Encourage your child to draw and create on a regular basis

	Luke Dixon Pablo Picasso Henri Matisse Brianna McCarthy Christina Spagsberg	
Technology	CAD/CAM – Inventor Magic Key Concept: A strong knowledge of CAD/CAM and 3-dimensional software. To develop an awareness of 3D printing During this project you are going to become familiar with CAD software. Students will use Autodesk, Inventor software. This is a fantastic package which allows students to produce professional and accurate 3-dimensional designs. The tools will be demonstrated in session and students must complete each task to develop their knowledge and understanding of the software. The project will also enable Students to work in a team and demonstrate knowledge and understanding of the software Skills and Processes Autodesk Inventor Software, 3D printer, CAD assembly, working with constraints. Key Vocabulary CAD/CAM, Design development, complexity, intricate, 3-Dimensional, Inventor Software, 3D printing, STL, Work Planes, Extrude, Dimensions, Render, Orthographic drawing, Rectangular pattern, Revolve, Assembly, Mate/flush, constraints, Complex, Trim	• Encourage your child to view the following clips to reinforce their knowledge and understanding of 3D Printing: • How Hershey's is Using 3-D Printers to Make Chocolate Kisses • 3D Printed Jewellery with Jewellery Designer Isaac Cohen • Experimenting with 3D Printed Fabric • 3D Printed House • Bentley Prototyping • Encourage your child to use the 'virtual desktop' from home so that they can practise the tools in the Techsoft Design Tools Software in preparation for the design sessions • Encourage your child to use the support resources online and in their Teams area
Technology	Bluetooth amplifier project Students will design and make a Bluetooth speaker incorporating a theme of their choice. They will develop an	• Sustainable electronics Sustainable electronics - BBC Bitesize

	understanding of how to analyse products in detail using ACCESSFM which is an important part of the GCSE course. Students will develop and apply their mathematical skills in using scale, ratio and measuring accuracy. Students will also learn about scales of production and the importance of these when looking at how products are made in industry. Students will create and use their own templates to achieve accuracy when making their own products. Students will further develop their skills, knowledge and understanding learned in year 7 by using more advanced techniques when working with tools and materials. Skills and processes: Design brief and specification, drawing techniques, design and annotation skills, isometric drawing, rendering, accurate measuring, soldering, using basic electronic components, use of a range of cutting, shaping and finishing processes, creating templates, drawing to scale and accurately, scales of production, use of manufactured boards. Key Vocabulary: Bluetooth, amplifier, circuit board, speaker, soldering, solder, personal protective equipment, aesthetics, cost, client, environment, dimensions, safety, function, materials, scale, ratio, medium density fibreboard, manufactured, batch production, mass production, continuous production, sustainability	• Systems approach to designing Systems - Systems approach to designing - AQA - GCSE Design and Technology Revision - AQA - BBC Bitesize • Timber based materials Timbers - Timber-based materials - AQA - GCSE Design and Technology Revision - AQA - BBC Bitesize • How Bluetooth technology works How Bluetooth Works Simple Explanation for Everyone. @TS7 StudyZone • Electronic components Basic Electronic Components for Beginners : 7 Steps - Instructables
Art & Design	Fast Food Project Key concept: How can artists develop and create a visually exciting mixed media composition? In the Fast Food project students will produce a creative large scale composition reflecting various elements of fast	• Encourage your child to notice colours and colour combinations in their environment; they could note down their favourite colour combinations and consider where these sit on the colour wheel.

	food and popular culture. They will record observations and ideas using a range of media and techniques which will have a strong focus on use of colour. They will analyse and evaluate the work of other artists including those from the movements of Pop Art and Hyperrealism. During the project they will develop an extensive and proficient use of artistic language when writing about and discussing their own work and the work of others. Skills and Processes: Drawing, Colour Theory, Watercolour blends, Image transfer, Colour mixing, Layering, Mixed media, Gridding, Shading, Analysis, Evaluation Key Vocabulary: Colour, Tint, Tone, Blending, Primary, Secondary, Tertiary, Media, Theme, Connections, Style, Similarities, Differences, Harmonious, Complementary, Shade, Highlight, Smooth, Transition, Composition, Scale, Layout, Position, Template, Wash, Texture, Linear, Pattern, Graphite, Accurate, Detail, Balance, Layering Artists / Context: Pop Art Roy Lichtenstein Richard Hamilton Andy Warhol Hyperrealism Sarah Graham Danny Gregory Joel Penkham Karen Barton Joseph Decommer	• Encourage your child to create their own creative colour wheels – there are some different ideas here: https://theartofeducation.edu/2019/01/25/a-more-creative-way-to-teach-color-theory/ • Encourage your child to carry out further research about the artists we are studying in this project; they could produce a Powerpoint showing the work of their favourite pieces. • Encourage your child to draw and create on a regular basis; for this project a specific focus on different foods.
Technology	Alessi-Fy It!	

	Key Concept: A strong knowledge of the work of influential and successful commercial designers and an introduction to food preparation & nutrition During this project you are going to extend your design and manufacture skills in the workshop become familiar with the successful Italian design company Alessi. This project is designed to introduce you to food manufacture, preparation, and nutrition as we incorporate these skills into the manufacture of a confectionary product and its packaging. Your teacher will demonstrate the tools and you must complete each task to develop your knowledge and understanding the designer and safe and hygienic food preparation. Skills & Processes Designer research, product analysis, design and produce work in the style of real designer (Alessi), critical thinking, writing a 'Specification & Design Brief', sketching, model making, practical skills when measuring, marking, sawing, cutting and assembling their final project, workshop health and safety, vacuum forming, packaging, knowledge of origins of food, knowledge of allergies and intolerances, writing systems diagrams (open loop feedback system & closed loop) Vocabulary Alessi, Form, Function, Product Analysis (Aesthetics, Customer, Cost, Environment, Size, Safety, Function, Material/manufacture), Sketch model, Former, Mould, Vacuum former, Coping saw, file, draft angle, allergy, intolerance, enzyme, anaphylaxis, cacao, winnowing, input, output, process, decision	• Encourage your child to explore the work of successful design companies such as Alessi Timeless Design Iconic Gift Ideas Alessi Spa (UK) • Encourage your child to view the following clips to reinforce their knowledge and understanding of the designer: • Alessi - The Design Factory - YouTube • How the Alessi Bird Kettle is made - BRANDMADE.TV - YouTube • The Whole Process Of Making Chocolate How Do They Do It? - YouTube • Where does chocolate come from and how is it made? - YouTube • Encourage your child to use the support materials online
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	Designer research Alessi	
Art	Patterned Pumpkins Project Key concept: how can artists create work which has meaning and message? In the Patterned Pumpkin project students will produce a selection of mini projects which explore the shape, structure and formal elements within a pumpkin. This project is heavily inspired by Yayoi Kusama the Japanese artist. Students will learn how to explore ideas in a range of media such as pencil, fine liner pen and clay. During the project they also explore the ideas, identity and culture behind Yayoi Kusama's work. Skills and processes: Drawing, Gridding, Mark-making, Analysis, Inlay, Onlay, Clay building, Font and lettering, Tonal application, Painting. Key Vocabulary: Gridding, Intersecting, Tone, Texture, Refinement, Blending, Inlay, Onlay, Ceramic, Build, Sculpture, Composition, Font, Overlapping. Artists/Context: Yayoi Kusama, Georgia O'Keeffe, Japan, 3D, the culture of American art and the inspiration of Japanese art.	• Encourage your child to learn about the inspiration behind the Japanese Artist; Yayoi Kusama. They could make a mind map exploring the inspiration behind her artworks, both two and three dimensional. https://www.youtube.com/watch?v=IG_8vNTAXbY • Encourage your child to explore why Yayoi Kusama is obsessed with all things dots! https://www.myartbroker.com/artist-yayoi-kusama/articles/symbolism-of-polka-dots-yayoi-kusama • Encourage your child to draw their own pumpkin with polka dots, inspired by Yayoi Kusama.