

# Curriculum Overview –

## Year 7 Design and Technology

Sequencing of topics	What knowledge will students develop? (Including key terminology)	What skills will students develop? (Including literacy & numeracy)	Assessment opportunities	Homework opportunities	Personal development (Ursuline Values, Catholic Social Teaching, Cultural Capital, Cross curricular, Careers)	Curriculum links
<b>Scheme of Work (SoW repeated for second carousel) 18 - week rotation</b>						
Introduction Project overview, Health and Safety (H&S) in the workshop	Introduction to safety guidelines for working with tools and materials	Developing safe use of basic hand tools and equipment	<i>Afl in lessons</i> Homework H&S review H&S hazard assessment Focused Practical tasks.	Worksheets Research on common hazards in the workshop. Practical task write-up Lesson quiz lets and poster making.	Identifying risk & hazards and learning to mitigate their occurrence	Safe tool handling Workshop Safety: Awareness of Health and Safety Legislation Risk assessment
Research Properties of paper, card and board, Modelling and making of Mock-ups and prototypes.	Understanding the properties of paper, card and board and its suitability for different mechanisms. Study of different types of movement, paper engineering techniques, mechanisms, including levers, linkages and gears	Exploration of various modelling materials and their working properties. Modelling and making of basic paper engineering techniques mechanisms & pop-ups. Investigation of how mechanisms work and their applications.	<i>Practical skills assessed</i> Paper engineering. Making and modelling tasks of mechanisms. Self/peer/teacher assessment using agreed and set success criteria.	Worksheets Research and exploration of different modelling materials	Paper engineering, Model making, Architecture, i	Coursework investigation Development of Drawing Techniques (2D & 3D) Spatial relationship development of concepts Technical accurately
Design & make. Design contexts exploration and research Exploring the Iterative design process	Exploring different techniques for sketching, design, decorating and customizing ideas (Ideation). Design and construction of intricate paper models. Integration of sustainability and environmental considerations in paper engineering	Exploring and developing freehand sketching and drawing & shading techniques. Creation of paper modelling and developing mechanisms. Design and construction of paper models incorporating moving parts & mechanisms.	<i>Practical skills assessed</i> Reflection on the design and construction process, identifying successes & challenges. Development of puppet mechanisms and aesthetics	Worksheets Design ideas research and reflection tasks. Peer feedback and discussion tasks. Completion of personalised design and modelling tasks.	Interior designing, Model making, Engineering	Drawing Techniques (2D & 3D) Spatial relationship development of concepts of paper engineering Technical accurately
Workshop techniques, materials testing	Creating card cut-outs using specially selected dies, the Sizzix machine and other hand tools. Materials testing and	Modelling, tools and machine use including CAD & CAM. Improved dexterity and hand meddling skills	<i>Practical and written skills assessed</i> .Self, peer and	Worksheets, research tasks, Focused practical tasks (FTP)	Teamwork, Resilience, Maths, Science, Quantity	Coursework ideation; idea generation, creativity and design

& use of equipment. Marking out and making. Exploring use of scales in making	use. Advanced study of complex paper mechanisms, including cam mechanisms and pulleys. Analysis of principles behind mechanisms and their real-world applications. Design and construction of more intricate paper models, such as mechanical puppets, etc		teacher assessment of individual outcomes.		surveying and project management	development with accuracy. Exploring fine motoring skills and dexterity.
Introduction of mechanisms and understanding design requirements	Exploration of basic puppet construction techniques using paper and other modelling materials. Researching different puppet designs and identifying their mechanisms. Introduction to the historical significance of puppetry and study of different types of mechanical puppets, such as marionettes and shadow puppets	Understanding the design requirements for mechanical puppets. Concept development and design Manual construction of puppets and planning Exploring and making simple mechanisms	Self, Peer and teacher assessment of individual outcomes. Making skills	Worksheets, demo and focused practical tasks (FTP)	Fostering teamwork through group and paired tasks linked to participation. Risks of modern technology discussed. Model maker, Architecture, Building services, etc	Coursework ideation; idea generation, creativity and design development with accuracy. Applying fine motoring skills and dexterity.
Construction of mechanical puppet. Decoration and Personalization	Integration of simple mechanisms to control linkages and card movements. Adding finishing touches and finalizing construction for making. Reflection on the design and construction process, identifying successes and challenges. Evaluation and refinement of the Iterative design process to improve outcome.	Construction, modelling and making skills using paper and other suitable materials. Integration of simple mechanisms e.g., levers, pulleys and strings to control puppet movements. Testing, troubleshooting and personalization of outcome (techniques for decorating and customizing ) e.g., use of colours, patterns & additional materials to enhance aesthetics and incorporate storytelling elements.	Practical assessments (e.g., quality of workmanship, adherence to design plans). Design portfolio assessments (e.g., sketches, design plans, reflection). Peer and self-assessment activities. Final presentation and evaluation of the completed project. Resources and Materials	Worksheets, demo and focused practical tasks (FTP)	Maths, Science, English, Grateful - in awe of our creation, understanding and appreciating the work of others United in harmony when working together and learning.	Coursework Workshop techniques & Materials testing Skills development, proficiency & application Knowledge interpretation Exploring use of Scales in making
Reflection on the design and construction process, identifying successes and challenges	Peer feedback and discussion on the effectiveness of made mechanisms and aesthetics Integration of sustainability and environmental considerations in paper engineering and puppet construction. Development of critical thinking skills through analysing and improving made outcome.	Development of critical thinking skills through analysing of made outcome. Integration of technology tools. Opportunities for creativity and individual expression through write ups and backdrop making and development of critical thinking skills in pitch preparation and narration in show	Self, Peer and teacher assessment of individual outcomes. Dragon's den style presentation	Worksheets, testing and evaluation tasks	Model maker, Architecture, Building services, etc	Design evaluation and reflection on own learning. Problem-solving and iteration: Reflecting challenges, identifying problem-solving strategies and exploring new opportunities. Improvement in learning enhanced skills