Curriculum Overview –

Year 9 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
Scheme of Work (SoW repeated for second carousel) 18-week rotation						
Introduction and Project overview, Health and Safety (H&S) in the workshop	Introduction to safety guidelines for working with tools and materials. Understanding the safety precautions associated with working with materials and the workshop environment. Key terminology - Risk assessment, Hazard safety procedures, Personal protective equipment (PPE), Tool and equipment safety handling.	Literacy and reading skills: The ability to read and comprehend technical texts, instructions, safety guidelines, and design specifications. Technical Vocabulary: The ability to acquire and understand specialized vocabulary including terminology associated with materials, tools, processes, and design principles.	*AfL in lessons* 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.	United in Harmony: working and learning together to create safe working spaces. Identifying risks & hazards and learning to mitigate their occurrence. stewardship, justice, and solidarity, in project discussions.	Safe tool handling Workshop Safety: Awareness of Health and Safety Legislation Risk assessment
Research on different materials and development of drawing techniques including 2- and 3-Dimensional (2D & 3D) drawing techniques. Practical demonstrations for proper handling and tool use in Focused Practical Tasks (FTP)	Understanding the properties of paper, card and manufactured boards and their suitability for use in making. Study and experimentation with different types drawing techniques including 2D, 3D and isometric drawing and rendering techniques	Research: Information gathering from various sources, communication, collaborative working, effectively conveying understanding. Geometry and Spatial Awareness: Apply geometric concepts to visualize, plan and create 2-D & 3-D objects and structures. Develop an understanding of angles, shapes, symmetry, and proportions. Explore various modelling materials and their working properties.	*Practical skills assessed* Paper and card engineering. Making and modelling iterations	Worksheets Research and exploration of different modelling materials	Courageous & Resilient: preparing to explore various ways collecting information and share ideas. Discuss how traditional craftsmanship and design practices can contribute	Coursework research Coursework investigation Development of Drawing Techniques (2D & 3D) Spatial relationship development of concepts Technical accurately.
Knowledge and understanding	Identify and explain the properties of different resistant materials and their uses.	Application: Explore the applications of resistant materials in everyday life objects and products.	*Research skills assessed:* Documenting processes and skills. Written assignments on research tasks. Assessments to evaluate knowledge and application of concepts and class presentations	Worksheets Research and quizzes. Presentation slides	Acting with Truth & Integrity: in working with others. Explore the historical and cultural significance of resistant materials from diverse cultural perspectives	Coursework investigation Technical accurately
Design & make.	Exploring different techniques for sketching, design, decorating and customizing ideas (Ideation).	Critical Thinking: Cultivation of critical thinking skills to analyse problems, create design solutions, evaluate	*Practical skills assessed* Reflection on the design and construction process,	Worksheets Design development	Acting with Truth & Integrity: in working with others. Interior designing, Model making,	Coursework ideation and development accurately

Design contexts exploration and research Exploring the Iterative design process	Design and construction of detailed corrugated card models. Integration of sustainability and environmental considerations in model engineering	design options and make informed decisions based on functional, aesthetic and ethical considerations. Design Thinking: Developing students' skills in the design thinking process and involving ideation, sketching, testing, prototyping and iterative refinement to meet specified criteria and user needs.	identifying successes & challenges. Development of design concepts	research and reflection tasks. Peer feedback and discussion tasks. Completion of personalised design and modelling tasks.	Mathematics (Scale drawings & model), Science (materials)	
Workshop techniques, materials testing & use of equipment. Marking out and making. Exploring use of scales in making	Creating card cut-outs using	Troubleshooting: Learning to identify and diagnose technical problems/faults that may arise during the design and manufacturing processes, developing skills in troubleshooting and finding appropriate solutions. Skills: Acquisition of hands-on skills in the use of various tools, equipment, machines and processes including CAD & CAM. Improved dexterity and hand meddling skills Numeracy skills in measurement: Developing skills and conversion of units, crucial for precision.	*Practical and written skills assessed* .Self, peer and teacher assessment of individual outcomes.	Worksheets, research tasks, Focused practical tasks (FTP)	Peace & Reconciliation: through compromise during group work Teamwork, Resilience, Maths, Science, Quantity surveying and project management. sustainable and ethical practices when working with resistant materials. Fostering teamwork through group and paired tasks linked to participation. Risks of modern technology discussed. Model maker, Architecture, Building services, etc	Coursework Workshop techniques & Materials testing Skills development, proficiency & application Knowledge interpretation Exploring use of Scales in making
Practical Skills development	Safely and effective use tools and equipment for working with resistant materials. Accurately measure, cut, shape, and join resistant materials. Apply finishing techniques to enhance the appearance of the final product. 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 other suitable materials. Integration of simple finishing techniques. 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)	Dignity of the human being; Community & Participation; Peace & Reconciliation. 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 Developing competence in tool & equipment use. Exploring and mastering skills. Developing knowledge of materials and components. Understanding selection criteria for materials. Prototyping and Testing: Quality Control and Finishing:
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 Linkages to other subjects (e.g., mathematics, science) through measurement, material properties, and principles. stewardship, justice, and solidarity, in project discussions.	Design evaluation and reflection on own learning. Assessing accuracy & precision. Problem-solving and iteration: Reflecting challenges, identifying problem-solving strategies and exploring opportunities. Continuous Improvement with personal evaluation of learning: Enhance skills and knowledge in DT