

MARINA INTERNATIONAL SCHOOL

DESIGN & TECHNOLOGY SCHEME OF WORK

FORM 5 - TERM 1

WEEK	TOPIC	TOPIC DETAILS
1.1	Selection/organization	Select and develop a solution after consideration of time, cost, skill and resources
1.2	Selection/organization	Organize and plan in detail the production of the selected solution
2.1	Practical design application	Consider how existing products meet the needs of the users
2.2	Practical design application	Consider production manufacturing as: one-off, batch and mass production
3.1	Practical design application	<ul style="list-style-type: none">• Generate design proposals:<ul style="list-style-type: none"><input type="checkbox"/> Identify the resources needed<input type="checkbox"/> Plan the stages of manufacture<input type="checkbox"/> Evaluate proposals against a specification
3.2	Practical design application	<ul style="list-style-type: none">• Generate design proposals:<ul style="list-style-type: none"><input type="checkbox"/> Understand the relevance of function and aesthetics (in terms of appreciation of the use of line, shape, form, proportion, space, colour and texture) as appropriate to their designed solutions and the work of others<input type="checkbox"/> Understand the importance of anthropometrics and ergonomics<input type="checkbox"/> Use modeling to test proposals.
4.1	Control	Identify the features of a control system in terms of inputting devices, processing elements, output devices, feedback.
5.1	Evaluation	Evaluate existing products/systems, the work of others and their own work
5.2	Evaluation	Test the performance of the product/solution against the original specification
6.1	Evaluation	Use different methods and sources to assess the effectiveness of a product (e.g. sampling, questionnaires, interviews).

WEEK	TOPIC	TOPIC DETAILS
6.2	Evaluation	Suggest any possible modification and improvements (consideration to include functional, safety, aesthetic, ergonomic and economic factors).
7.1	Implementation and realization	Show an awareness of correct procedures for the preparation of materials.
7.2	Implementation and realization	Show an awareness of the correct and accurate methods of drawing, marking out and testing.
7.3	Implementation and realization	Select appropriate processes for shaping, forming, cutting, joining, fitting, assembling and finishing a variety of materials.
8.1	Initiation and development of ideas, and recording of data	Extract relevant information from sources, and interpret and record information and data.
9.1	Use of technology in design and making	Research existing products (for example by using the internet)
9.2	Use of technology in design and making	Understand the benefits of CAD/CAM when designing and manufacturing one-off or batch production
9.3	Use of technology in design and making	Understand how CAD can be used to generate 2D and 3D images
10.1	Use of technology in design and making	Understand how CAD/CAM is used in industry
10.2	Use of technology in design and making	Be aware of variety of machines that can be controlled by computer, including CNC machines: miller/router/engraver, lathe, laser cutter
10.3	Use of technology in design and making	Have an awareness and understanding of how computers can enhance stock control and quality control.
11.1	Sectional views	Select the most suitable section and draw whole, part, revolved and removed sections.
12.1	Exploded views and Assembly drawings	Draw exploded views of component parts along one axis only
12.2	Exploded views and Assembly drawings	Assemble given component parts into a single drawing, including parts lists

WEEK	TOPIC	TOPIC DETAILS
13.1	Enlarging and reducing	Use graphical methods to enlarge/reduce a shape to fit within a given size or location
14.1	Enlarging and reducing	Apply one-point perspective to enlarge/reduce a shape
14.2	Enlarging and reducing	Use a graphical method to enlarge/reduce a line to a given scale or ratio.
15.1	REVISION	REVISION

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FORM 5 - TERM 2

WEEK	TOPIC	TOPIC DETAILS
1.1	Presentation	<ul style="list-style-type: none"> • Demonstrate the following range of techniques: <ul style="list-style-type: none"> <input type="checkbox"/> Thin and thick line <input type="checkbox"/> Light and shade to show form and mass <input type="checkbox"/> Textural representations to illustrate a range of materials <input type="checkbox"/> Colour rendering using a range of materials and aids
1.2	Presentation	Select the most relevant method to present information for a particular purpose
1.3	Presentation	Demonstrate the different modes of drawing diagrams and lettering necessary for the communication of information according to content, purpose and user
2.1	Presentation	<ul style="list-style-type: none"> • Demonstrate an awareness of varied lettering effects produced by the use of: <ul style="list-style-type: none"> <input type="checkbox"/> Different lettering styles <input type="checkbox"/> Different lettering spacing <input type="checkbox"/> Dry transfer methods <input type="checkbox"/> Stencils <input type="checkbox"/> Computer-generated lettering
3.1	Data graphics	Produce line, pie, bar and flow charts/graphs from data provided
3.2	Data graphics	<ul style="list-style-type: none"> • Produce sequence drawings from data provided • Show an understanding of the range and purpose of standardized signs and symbols.
4.1	Materials and modeling	Use modeling to scale
4.2	Materials and modeling	Have a knowledge of the following materials: paper, card, corrugated card and plastic, Styrofoam and foam board, thin plastic sheet, self-adhesive ninyl, polymorph, shape memory alloy (SMA) and thermochromics
4.3	Materials and modeling	Produce a scale drawing to enable a visual model to be made

WEEK	TOPIC	TOPIC DETAILS
5.1	Materials and modeling	Recognize and select methods of temporary and permanent joints in graphic products using adhesives
5.2	Materials and modeling	Recognize and use non-permanent joining methods including slots, arrow-tabs and flaps
5.3	Materials and modeling	Recognize the use of reinforcing, fold-over locking flaps and lock rudder flaps used in packaging and display.
6.1	Identification of a need or opportunity with a brief analysis leading to a design brief	Explore several possible design needs or design opportunities
6.2	Identification of a need or opportunity with a brief analysis leading to a design brief	Identify and explore the needs of intended user(s)
6.3	Identification of a need or opportunity with a brief analysis leading to a design brief	Develop one potential design need/opportunity
6.4	Identification of a need or opportunity with a brief analysis leading to a design brief	Present a full and clear design brief
7.1	Research into the design brief resulting in a specification	Complete research into aspects of the design brief
7.2	Research into the design brief resulting in a specification	Consider needs of user/s
7.3	Research into the design brief resulting in a specification	Analyse data/information generated
7.4	Research into the design brief resulting in a specification	Produce a detailed and justification specification.
8.1	Generation and exploration of design ideas	Identify and sketch a wide range of imaginative solutions which are

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8.2	Generation and exploration of design ideas	Develop and clarify each solution with reference to the specification, using annotations
8.3	Generation and exploration of design ideas	Explore technical aspects of each idea/part idea, e.g. possible materials and constructions
8.4	Generation and exploration of design ideas	Evaluate ideas/part ideas regarding each specification point.
9.1	REVISION	REVISION
10.1	REVISION	REVISION