

Stage 5 Graphics Technology: Year 9	
Core module: Module 3	Module duration: 10 weeks
Module title: Child's toy	Outcomes (targeted outcomes in bold) A student: 5.1.1 communicates ideas graphically using freehand sketching and accurate drafting techniques 5.1.2 analyses the nature of information and intended audience to select and develop appropriate presentations 5.2.1 designs and produces a range of graphical presentations 5.2.2 evaluates the effectiveness of different modes of graphical communications for a variety of purposes 5.3.1 identifies, interprets, selects and applies graphics conventions, standards and procedures in graphical communications 5.3.2 manages the development of graphical presentations to meet project briefs and specifications 5.4.1 manipulates and produces images using computer-based drafting and presentation technologies 5.4.2 designs, produces and evaluates multimedia presentations 5.5.1 identifies, assesses and manages relevant OHS factors to minimise risks in the work environment 5.5.2 demonstrates responsible and safe work practices for self and others 5.6.1 demonstrates the application of graphics to a range of industrial, commercial and personal settings 5.6.2 evaluates the impact of graphics on society, industry and the environment
Module description: This 10 week module is placed in Year 9 in the first 100 hours of the 200 hour course. The theme for this unit is <i>Child's toy</i> . Throughout this unit students will be introduced to: <ul style="list-style-type: none">produce concept, idea, and design sketchesprototype freehand sketchesorthogonal drawingsproduce assembly exploded and sectioned viewsproduce prototype drawings CAD -rendered layeredinvestigate role in industry of industrial designerclass presentation of project (<i>PowerPoint</i> presentation).	
Resources: Computer lab and appropriate software and printing facilities, technical drawing and drafting equipment, OHP, coloured pencils, rendering markers, paper and card. Equipment will be provided as a class set. Students will be expected to purchase their own equipment to enable project and homework completion. A complete class set will enable all students to participate without disadvantage from day 1 and will promote ownership and pride in their work environment. Students will be trained to maintain and manage their physical environment, boards, t-squares, equipment, and storage of work and work samples. Programming requirements: Consideration has been given to the time lost through external and internal assessment procedures and variations in school routines. This module has been designed to be delivered over 8 weeks with final 2 weeks allocated for completion of the final assessment task.	
Class tasks: Throughout this unit students will complete a number of technical drawing tasks in class.	
Assessment: Assessment will be based on the class tasks and the final assessment task in each module.	

Students learn about:	Students learn to:	Integrated learning experiences, instructions and assessment	Evidence of learning	Feedback
Graphical principles and techniques <i>Work practices</i> <ul style="list-style-type: none"> the importance of accurate and neat work practices the importance of <ul style="list-style-type: none"> selection and maintenance of equipment clean and ordered work practices collaborative work practices career opportunities pathways in graphics 	<ul style="list-style-type: none"> apply planned and ordered approaches to producing drawings work collaboratively in the production of a graphics project explore careers in graphics analyse the roles and contributions of males and females to the graphics industry 	<ul style="list-style-type: none"> Students are introduced to new materials and equipment to be used and maintained in this module. Students are instructed and briefed on the theme of this module. Students will work in groups to research children's toys for the 18 month to 3 year age group. Specifically pull along toys <i>with an affect</i>, i.e. make a noise or affect another action, rolling, turning etc Students will identify careers in graphics and present a one minute presentation to the class on a chosen career. 	<p>Students demonstrate correct use and storage of equipment</p> <p>Students work reflects an understanding of the brief and competence in documenting research.</p> <p>Presentation of the information.</p>	<p>Teacher observation and oral feedback during completion of task.</p> <p>Teacher observation and oral feedback during completion of task.</p> <p>Peer and self assessment.</p>
<i>Computing principles</i> <ul style="list-style-type: none"> the CAD environment output options including printers, file formats, magnetic/optical media and computer-based communication media 	<ul style="list-style-type: none"> use standard features of CAD software including layers, symbol libraries and page templates output information to a specified device or medium 	<ul style="list-style-type: none"> Teacher introduces CAD software application and outlines general navigation through the software. Students create basic shapes and experiment with use of colour and texture in rendering. Class discussion on tools and their use. 	<p>Student displays confidence in the use and exploration of the application.</p>	<p>Observation and oral feedback.</p>

Students learn about:	Students learn to:	Integrated learning experiences, instructions and assessment	Evidence of learning	Feedback
Design in graphics <ul style="list-style-type: none"> design principles and processes freehand pictorial and orthogonal drawings design principles and processes 	<ul style="list-style-type: none"> identify design principles and processes in the development, production and evaluation of graphical presentations visualise and sketch common objects identify and apply freehand drawing techniques to a range of simple orthogonal and pictorial drawing types apply design principles and processes in the development, production and evaluation of graphical presentations select and apply graphical communication techniques for specific purposes 	<ul style="list-style-type: none"> Students develop concept sketches of a pull along toy. The sketches should communicate: <ul style="list-style-type: none"> the design development, the materials the toy is to be made from the finish on the toy explanation of the affect, noise or action the toy makes construction details. 	<p>Students demonstrate understanding and competence in the development and production of sketches and complete tasks as directed.</p>	<p>Annotations on and marking of students work and support and discussions in class.</p> <p>Observation and oral feedback during completion of class tasks and discussions.</p>
<ul style="list-style-type: none"> research sources, e.g. Internet, journals, magazines, digital media, libraries and personal interviews freehand design drawings 	<ul style="list-style-type: none"> use a range of sources to gather information to assist in the development of project work apply different graphical representations in elementary design situations use sketches to assist with problem-solving and communication of ideas 	<ul style="list-style-type: none"> Teacher led discussion and presentation of a series of product drawings of toys and other products. Teacher led discussion about the samples and students identify the processes and materials used. 	<p>Students indicate through discussion they can discriminate between types of product drawings</p>	<p>Observation and oral feedback.</p>

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Planning and construction <i>Applied geometry</i> <ul style="list-style-type: none"> • basic developments of simple solids including application to cones, prisms, cylinders and pyramids Additional content <ul style="list-style-type: none"> • Advanced geometric constructions 	<ul style="list-style-type: none"> • produce developments of simple objects • apply development techniques to pattern design • Students develop and plot cam profile to generate movement and effect in toy 	<ul style="list-style-type: none"> • Students develop templates, layouts and patterns required if the toy was to progress to manufacture. • Students develop and plot cam profile to generate movement and effect in toy. 	<p>Students evidence ability to competently produce templates</p> <p>Students produce quality drawing which communicates design concept.</p>	<p>Annotations on and marking of students work and support and discussions in class.</p>
<i>Orthogonal drawing</i> <ul style="list-style-type: none"> • assembled orthogonal drawings • sectioned orthogonal views 	<ul style="list-style-type: none"> • produce assembly drawings from exploded pictorial drawings and detail drawings • produce orthogonal drawings containing full sections • select appropriate views and drawing types for a particular context • apply orthogonal drawing techniques to architectural, engineering or cabinet drawing 	<ul style="list-style-type: none"> • Students develop final working drawings of pull-a-long toy. These should include: <ul style="list-style-type: none"> – orthogonal assembly drawing including sectioning – full size or scaled templates of components – specifications on colour use. 	<p>Students produce quality drawing which communicate design concept using AS1100 standards.</p>	<p>Annotations on and marking of students work and support and discussions in class.</p>

Students learn about:	Students learn to:	Integrated learning experiences, instructions and assessment	Evidence of learning	Feedback
<i>Pictorial drawing</i> <ul style="list-style-type: none"> a variety of pictorial representation techniques including <ul style="list-style-type: none"> isometric and oblique planometric/axonometric 1 and 2-point perspective 	<ul style="list-style-type: none"> visualise and draft common objects construct pictorial circles and geometric shapes utilise a range of pictorial representations 	<ul style="list-style-type: none"> Students to produce a pictorial representation of the pull-a-long toy using templates and guides. 	Students produce quality drawing which communicate design concept	Annotations on and marking of students work and support and discussions in class.
<ul style="list-style-type: none"> generation of graphic shapes in the CAD environment to create realistic 3D images 	<ul style="list-style-type: none"> create 3D images using the principles of extrusion and revolution manipulate 3D objects in relation to size, placement and orientation 	<ul style="list-style-type: none"> Students use simple 3D modelling and rotational techniques to produce a realistic representation of part of the toy or its components. 	Students competently use CAD to complete task.	Annotations on and marking of students work and support and discussions in class.

Students learn about:	Students learn to:	Integrated learning experiences, instructions and assessment	Evidence of learning	Feedback
<p>Presentation</p> <p><i>Rendering</i></p> <ul style="list-style-type: none"> • shading, shadows, tone, texture • representation and colour • computer modelling and computer-based graphics <p><i>Techniques</i></p> <ul style="list-style-type: none"> • multimedia and traditional presentation methods 	<ul style="list-style-type: none"> • use manual and /or computer-based rendering techniques in a variety of 2D and 3D drawings • apply both traditional and multimedia techniques to present products graphically 	<ul style="list-style-type: none"> • Students render a pictorial representation of the pull-a-long toy to assist in the visualisation of the product. 	<p>Students select and use appropriate drawings and rendering techniques.</p> <p>Students successfully use computer-based graphics.</p>	<p>Annotations on and marking of students work and support and discussions in class.</p> <p>Observation and oral feedback.</p>
		<p>Weeks 9 and 10</p> <p><i>Final task</i></p> <p>PowerPoint presentation of the development of the pull-a-long toy to the class. Students will present from initial design sketches to final product drawing the developmental process and documentation undertaken in completing the design process.</p> <p>Presentation should include:</p> <ul style="list-style-type: none"> • relevant research data • initial idea sketches • final sketches • working drawings • rendered pictorial drawing • explanations and definitions. 		