

The Curriculum and Approaches to Learning		Key Programmes / Competitions
<p>In line with the requirements of the Design and Technology (D&T) Lower Sec 2017 Syllabus, the teaching of D&T at YSS focuses on educating students as persons through the development of cognitive skills and abilities unique in the field of design.</p> <p>D&T education aims to nurture in the students a way of thinking and doing, dispositions that are inherent in design practices:</p> <ul style="list-style-type: none"> - Embracing uncertainties and complexities - Be cognizant of and resolve real-world, ill-defined problems - Relentless drive to seek out how things work - Use of doodling and sketching, and 3D manipulation of resistant materials as a language for visualisation, communication and presentation 		<p>Competition</p> <ul style="list-style-type: none"> - Internal school competition
Term	Learning Experiences (chapter, activity)	Learning Outcomes & Assessment
1	<p><u>Learning through mini project (steady hand electronic project)</u></p> <p>Students will go through a teacher-guided mini project, where the design specifications and the dimensions of the metal, wood, plastic materials will be given:</p> <ul style="list-style-type: none"> - be aware of safety rules, processes, procedures in the workshop, and properties of metal material - learn about different types of electronic components, circuit symbols and its applications - plan and monitor own progress using a flow chart - design and make a steady hand electronic project using tools and machines (hand-eye coordination, learn to follow verbal and written instructions) - use shape borrowing ideation technique to generate random shapes - critique design ideas and selection of idea suitable for the intent - use soldering tools to connect electronic components 	<p><u>Learning Outcomes</u></p> <ul style="list-style-type: none"> - Empathy & Safety consciousness - Free-hand sketching skills [2D sketches, conversion from 2D to 3D drawings, idea generation skills] - Knowledge and understanding of metal (aluminum), wood (jelutong), plastic (acrylic) materials, and electronic components, circuit symbols and its applications - 3D manipulation [handling aluminum, jelutong, acrylic materials] - Evaluation of completed prototype against design specifications - Testing of prototype - Reflection of learning process and areas for improvement <p><u>Weighted Assessment 1</u></p> <ul style="list-style-type: none"> - Skill-based project (steady hand electronic toy)
2	<p><u>Learning through mini project (stationery holder)</u></p> <p>Students will go through a teacher-guided mini projects, where a theme, the design brief and some design specifications will be given:</p>	<p><u>Learning Outcomes</u></p> <ul style="list-style-type: none"> - Empathy & Safety consciousness - Basic research skills - Free-hand sketching skills [2D sketches, conversion from 2D

	<ul style="list-style-type: none"> - be aware of safety rules, processes, procedures in the workshop, and properties of plastic and wood materials - plan and monitor own progress using a flow chart - conduct basic research (find out the dimensions of different stationery items) and use this information in the design of the stationery holder - design and make a stationery holder using tools and machines (hand-eye coordination, learn to follow verbal and written instructions) - use SCAMPER technique to generate ideas - present the final idea through rendering 	<p>to 3D drawings (oblique, isometric), colour rendering, idea generation skills]</p> <ul style="list-style-type: none"> - Knowledge and understanding of wood and plastic materials - 3D manipulation [quick mock-ups and on handling wood and plastic materials] <p><u>Weighted Assessment 2</u></p> <ul style="list-style-type: none"> - Theory test (Design considerations; Design Situation; Design Brief; Design Specifications; Research methods; Ideation techniques; Electronics)
3	<p><u>Learning through mini project (stationery holder)</u></p> <p>Students will go through a teacher-guided mini projects, where a theme, the design brief and some design specifications will be given:</p> <ul style="list-style-type: none"> - be aware of safety rules, processes, procedures in the workshop, and properties of plastic and wood materials - design and make a stationery holder using tools and machines (hand-eye coordination, learn to follow verbal and written instructions) - modify the idea (if needed) and use a mock-up to test out the idea - determine dimensions of the holder and its parts - critique design ideas and selection of idea suitable for the intent 	<p><u>Learning Outcomes</u></p> <ul style="list-style-type: none"> - Empathy & Safety consciousness - Knowledge and understanding of wood and plastic materials - 3D manipulation [quick mock-ups and on handling wood and plastic materials] - Testing of mock-up - Evaluation of mock-up <p><u>Weighted Assessment 3</u></p> <ul style="list-style-type: none"> - Task (Design)
4	<p><u>Learning through mini project (stationery holder)</u></p> <p>Students will go through a teacher-guided mini projects, where a theme, the design brief and some design specifications will be given:</p> <ul style="list-style-type: none"> - test the prototype on the workability of stationery holder and structural stability - critique the prototype on the suitability for the intent 	<p><u>Learning Outcomes</u></p> <ul style="list-style-type: none"> - Evaluation of completed prototype against design specifications - Testing of prototype - Reflection of learning process and areas for improvement <p><u>Semestral Assessment</u></p> <ul style="list-style-type: none"> - Coursework journal - Skill-based project (stationery holder)