

Stage 3: Course outline / OVERALL Technology SCHEME MYP 1, 2, 3

Sharing interim objectives			
Term 1	MYP 1	MYP 2	MYP 3
Unit topic	Inventing & Inventors	Everyday Inventions	Design Technology: Product Design Recycled Plastic Bag/Carrier Design
title	The Great Inventors	The Tools We Use	Plastic Fusion
Unit Question	<i>Why and how are things invented?</i>	<i>How does technology impact and improve our lives? Sub-Unit: How do we know information is true?</i>	<i>Can we impact our environment and our community positively through responsible design?</i>
Significant Concept	<p>Inventions come from necessity.</p> <p>Inventors take risks, make mistakes and overall must be curious and persistent to succeed.</p> <p>Sometimes, inventions are discovered accidentally.</p> <p>Experimentation and risk-taking is an important characteristic for an inventor to have.</p> <p><i>**REWORD: There are a lot of uses for materials and products created for other reasons. Designers and inventors re-use and apply materials in different ways to get what they want.</i></p>	<p>Technology makes the tasks in our daily lives possible.</p> <p>Life as we know it would be very different without many inventions.</p> <p>Inventions evolve and often go through several phases to get to the form we are familiar with.</p> <p>Not all sources are reliable.</p>	<p>Design is a form of problem solving, and good, innovative design can impact and change perspectives and behaviors.</p> <p>Product designers have to think out of the box, understand their user and can fulfill a need through design that does not yet exist.</p> <p>Designers often use existing products as inspiration or as a bouncing off point in order to make their unique solution.</p> <p>Sustainable design means using existing or recycled materials.</p>
AOI	HI	HI	HI, E
ATL	<ul style="list-style-type: none"> • Reflection • Thinking • Organization • Collaboration • Communication 	<ul style="list-style-type: none"> • Information Literacy • Reflection • Thinking • Transfer • Organization • Collaboration • Communication 	<ul style="list-style-type: none"> • Information Literacy • Reflection • Thinking • Transfer • Organization • Communication
Subject content	<p>Design Technology (Materials, Systems) Information Communication Technology (Information)</p> <p>Product design: User-defined design, Model-making, Product testing.</p> <p>Tools: Xacto knife, tape measuring, ruler, screwdriver, wire cutters, pliers.</p> <p>Communication Design: layout, information sourcing & sorting, visual presentation</p>	<p>Computer Technology (Information) Information & Communication Technology (Information, Materials)</p> <p>Desktop Publishing: Digital illustration (vector-based), typing, publication design and layout. Software: InkScape, Microsoft Publisher.</p> <p>Digital Citizenship & responsibility: Reliable information, plagiarism, researching online, types of sources (user-based)</p> <p>Information design: Sequencing, editing.</p>	<p>Design Technology- (Materials)</p> <p>Textile design skills: Pattern Making, Sewing & soft materials construction, 2D design illustration, 3D design illustration (from multiple perspectives)</p> <p>Tools: Xacto knife, sewing/crafting/upholstery needle, iron.</p> <p>Product design: User-defined design, Product testing, Translating an idea from concept (words, 2d drawings) to completion (3d drawings, tangible product)</p>
Objectives	<p>Criteria A: Investigate (Brainstorm & Design Brief)</p> <ul style="list-style-type: none"> • consider the importance of the product in a wider context 	<p>Criteria A: Investigate (Brainstorm & Design Brief)</p> <ul style="list-style-type: none"> • consider the importance of the product in a wider context 	<p>Criteria A: Investigate (Research & Design Brief)</p> <ul style="list-style-type: none"> • consider the importance of the bag for life, society and/or the

	<ul style="list-style-type: none"> • understand the concept of a design brief and adapt a given design brief to the problem or, with guidance, start to develop a design brief. • ask useful questions about the investigation • understand the concept of a design specification and with guidance, list the requirements that must be met by the product/solution. <p>Criteria B: Design (Sketch Designs & Choose Final Design)</p> <ul style="list-style-type: none"> • create designs and communicate them using different forms and conventions (drawings) • compare the designs against the design specifications select one design over others: which design is the best? Which one fits your design specification? <p>Criteria C: Plan</p> <ul style="list-style-type: none"> • decide on the steps needed to create and complete the final product/solution • foresee future problems and solve them • construct a plan of who does what in your group. What responsibilities will each member take? <p>Criteria D: Create: (Making Your Product According to Plan)</p> <ul style="list-style-type: none"> • use different techniques and equipment with guidance • ensure a safe working environment for themselves and others • understand the importance of the plan and with guidance, follow the plan to produce the product/solution • understand the importance of monitoring progress and revisiting the plan and with guidance, making necessary changes • create, with some guidance, a product/solution of appropriate quality <p>Criteria E: Evaluate (Critical Evaluation of Your Design & Product)</p> <ul style="list-style-type: none"> • consider the success (and/or failure) of the product/solution based on testing, their own views and the views of the intended user: does it work for them? • Consider, with guidance, the impact of the product/solution on individuals and/or on society: what problem will this solve? • explain, with guidance, how the product/solution could be improved • reflect on their performance at each stage of the design cycle 	<ul style="list-style-type: none"> • ask useful questions about the investigation • with guidance, identify appropriate sources of information and acknowledge these in a suitable format. • Understand the importance of questioning the value of sources of information. • understand the concept of a design specification and with guidance, list the requirements that must be met by the product/solution. <p>Criteria B: Design (Sketch Designs & Choose Final Design)</p> <ul style="list-style-type: none"> • create designs and communicate them using different forms and conventions: page design layouts, character & invention illustrations. • compare the designs against the design specifications select one design over others: what layout will fit our information/content the best? Continue to consider our audience (PYP) <p>Criteria C: Plan</p> <ul style="list-style-type: none"> • describe with guidance, the steps needed to create and complete the final product/solution: as a class discuss audience (PYP), title of book, sequence of content, design layout, how to tell the story, and other details of project. <p>Criteria D: Create: (Making Your Product According to Plan)</p> <ul style="list-style-type: none"> • use different techniques and equipment with guidance • ensure a safe working environment for themselves and others • understand the importance of the plan and with guidance, follow the plan to produce the product/solution • understand the importance of monitoring progress and revisiting the plan and with guidance, making necessary changes • create, with some guidance, a product/solution of appropriate quality <p>Criteria E: Evaluate (Critical Evaluation of Your Design & Product)</p> <ul style="list-style-type: none"> • consider the success (and/or failure) of the product/solution based on testing, their own views and the views of the intended user: read & show book to PYP students. Get feedback from students and teachers about design and content of the book. • Consider, with guidance, the impact of the product/solution on individuals and/or on society: did PYP learn anything new from us? • explain, with guidance, how the product/solution could be 	<p>environment</p> <ul style="list-style-type: none"> • outline a simple design brief describing what kind of bag/carrier you will design, who its user is, how, where and for what it will be carried, its size, materials needed. • list, with limited guidance, the specific requirements that must be met by the design solution: size, shape, carrying ability. • design, with limited guidance, tests to evaluate the product/solution against the design specification: how will we make sure it can carry what it is supposed to? <p>Criteria B: Design (Sketch Designs & Choose Final Design)</p> <ul style="list-style-type: none"> • generate a range of designs that attempt to meet the design specifications (rough sketches) • compare the designs against the design specifications and identify the pros and cons of each design • select one design and explain its choice & draw final sketch <p>Criteria C: Plan (Outline Step-by-step Plan and Pattern-making)</p> <ul style="list-style-type: none"> • devise, with guidance, a step by step guide to create the product/solution (DIY model) • construct a plan to create the product/solution that makes effective use of resources and time • analyse the plan and explain the need for any modifications to the design <p>Criteria D: Create: (Making Your Product According to Plan)</p> <ul style="list-style-type: none"> • use appropriate techniques and equipment competently: fuse plastic from used plastic bags using an iron – use as main material. Other materials for handles, padding may be used but must be recycled. Use needles or sewing machine to put together • follow the plan to produce the product/solution with minimal guidance • review the plan and explain any changes to the plan (when necessary) • create a product/solution of appropriate quality <p>Criteria E: Evaluate (Critical Evaluation of Your Design & Product)</p> <ul style="list-style-type: none"> • carry out tests to compare the product/solution against the design specification : can the bag hold what it is designed to? • consider the success (and/or failure) of the product/solution in an objective manner based on testing, their own views and the views of the intended user: does it work for them? • consider the impact of the product/solution on individuals and/or on society: how is this going to help the environment? • explain how the product/solution could be improved
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	<ul style="list-style-type: none"> • identify and describe parts they found easy and the parts that proved difficult. With guidance, suggest ways in which their performance could be improved. <p>Criteria F: Attitudes (Your attitude & Behavior in Class):</p> <ul style="list-style-type: none"> • demonstrate consistent positive behaviour, work safely & responsibly 	<p>improved</p> <ul style="list-style-type: none"> • reflect on their performance at each stage of the design cycle • identify and describe parts they found easy and the parts that proved difficult. With guidance, suggest ways in which their performance could be improved. <p>Criteria F: Attitudes (Your attitude & Behavior in Class):</p> <ul style="list-style-type: none"> • demonstrate consistent positive behaviour, work safely & responsibly: Personal engagement and cooperative work with peers is appropriate, respectful and helpful; positive attitude and engagement in the project displays motivation, interest and independence; uses materials and resources available and provided to them respectfully and responsibly (Computer and Information Technology RUG) 	<ul style="list-style-type: none"> • reflect on their performance at each stage of the design cycle • identify the parts that were difficult and suggest ways in which performance could be improved <p>Criteria F: Attitudes (Your attitude & Behavior in Class):</p> <ul style="list-style-type: none"> • demonstrate consistent positive behaviour, work safely & responsibly
Formative Assessments	<p>A: Brainstorm ideas of inventions – work in group to agree on one. Research famous inventions and their inventors.</p> <p>B: Design what the invention would look like and how it would work through visual sketches.</p> <p>C: Write notes on goals and steps to complete task and project (process journal). Select relevant and interesting information from research on inventors.</p> <p>D: Create safety goggles from recycled plastic bottles and other re-usable materials.</p> <p>E: Evaluate continuously through creation process what materials need to be used, what tools are appropriate, how can one object turn into another.</p> <p>F: Utility knife test demonstrating safety and responsible use of tools.</p>	<p>A: Think about and discuss daily routine and what technology makes each task possible.</p> <p>B: Narrow down list to most important inventions. Choose one and identify what information you want, need to know.</p> <p>C: Plan what information you need for invention and where to find it. Use google to search specific information. Keep a list of sources for both text and images in a Word document. Edit content.</p> <p>D: Draw sketches of inventions, character in book, page/graphic layout design on paper and digitally. Edit content.</p> <p>E: Evaluate quality of each stage of work and go back to complete, change and/or improve.</p>	<p>A: Identifies problem & considers its importance for the environment & society; Identify a specific user and the purpose the product (bag/carrier) will fulfill</p> <p>B: Generate several feasible designs in sketches and patterns, each evaluated against and fitting the design specification; Design reflects Human Ingenuity & original and creative thought</p> <p>C: Demonstrate ways of working safely using necessary tools; Keep records of each step with detailed entries and reflections in PJ or through photos</p>
Summative Assessment	<p>A: Work in groups to design inventions using design cycle; create design brief answering all questions (first individually, then as group).</p> <p>D: Create a model of the invention using recycled/found materials. It must fit and follow the design specifications. Create a poster of an inventor incorporating required relevant and interesting information to educate viewers.</p> <p>E: Written self-evaluation of participation, responsibility and effort of work in group. Evaluate each stage of design cycle and communicate (written) how each stage was significant, what problems/challenges arose and how it could be</p>	<p>C: Hand in edited text and content, typed (in Word with sources)</p> <p>D: Create layout page for designated invention with relevant , agree upon and important information. Combine text and imagery effectively to enhance readability, design of page and staying consistent with rest of class. <i>Subtopic: Work as a class to edit, reword and construct a comprehensive list sharing new knowledge about how to find reliable sources on the internet. → signage for IT lab.</i></p> <p>E: Read/present book to PYP classes in a “reading”. Have discussion after with audience about what they thought. Hand out survey?</p>	<p>A: write a design brief answering all provided questions outlining design specification; materials & tools needed, size, weight & objects carried); Specify how you will test your product to ensure its quality</p> <p>B, C: choose & justify final design; make step by step plan to construct a reusable bag or carrier out of recycled plastic bags that fits the design specification outlined in the design brief; create a pattern with specific & accurate measurements</p> <p>D: create a bag or carrier following plan that is original, creative and unique; create to appropriate quality; apply a suitable finish to product</p>

	improved.	F: Evaluate personal effort and behaviour in class	E: evaluate the product by testing to see if it meets design specifications and usage; evaluate individual process and effort through written reflection and by providing ideas for improvement
Links	Science, Humanities, Math	Language, Art	Science, Art

Term 1	MYP 4	MYP 5
Unit topic	Information & Communication Technology PSA – for school-aged children as audience	Information & Communication Technology PSA – any audience
Title	Public Service Announcement	Public Service Announcement
Unit Question	<i>How can we impact the action or behaviour of others? (Our Younger Peers?)</i>	<i>How can we impact the action or behaviour of others?</i>
Significant Concept	<p>We can design and create products to raise awareness, solve a problem or provide a solution</p> <p>We can raise awareness, alter perspective and change behavior through effective communication</p> <p>There are many ways to communicate information, but we must always consider the audience</p>	<p>We can design and create products to raise awareness, solve a problem or provide a solution</p> <p>We can raise awareness, alter perspective and change behavior through effective communication</p> <p>There are many ways to communicate information, but we must always consider the audience</p>
AOI	HSE, CS	HSE, CS
ATL	<ul style="list-style-type: none"> • Information Literacy • Reflection • Thinking • Transfer • Organization • Collaboration • Communication 	<ul style="list-style-type: none"> • Information Literacy • Reflection • Thinking • Transfer • Organization • Collaboration • Communication
Technology content	<p>Information & Communication Technology- (Information) following design cycle</p> <p>Blogging (Understand role and benefit of an online weblog. Design, embed videos, change settings, images, create links. Digital networking and privacy)</p> <p>Video producing & editing skills: Script writing & important elements (character, setting, narration, credits). Video producing, directing and editing. Storyboard with: graphics, title, frame descriptions, camera angles, camera movements, narration, sound</p> <p>Information & Communication Technology: Persuasive storytelling/communication. Target audience communication – understanding appropriation for audience type (age, sex, culture). Software applications for image & video editing. Information Design & Sequencing. Visual literacy & interpretation</p>	<p>Information & Communication Technology- (Information) following design cycle</p> <p>Blogging (Understand role and benefit of an online weblog. Design, embed videos, change settings, images, create links. Digital networking and privacy)</p> <p>Video producing & editing skills: Script writing & important elements (character, setting, narration, credits). Video producing, directing and editing. Storyboard with: graphics, title, frame descriptions, camera angles, camera movements, narration, sound</p> <p>Information & Communication Technology: Persuasive storytelling/communication. Target audience communication – understanding appropriation for audience type (age, sex, culture). Software applications for image & video editing. Information Design & Sequencing. Visual literacy & interpretation</p>
Objectives	Criteria A: Investigate (Research & Design Brief)	Criteria A: Investigate (Research & Design Brief)

	<ul style="list-style-type: none"> • evaluate the importance of the problem for life, society and/or the environment (research PSA's & issues) • outline the design brief • identify and acknowledge a range of appropriate sources of information • evaluate the sources of information (process journal) <p>Criteria C: Plan (Script & Storyboard)</p> <ul style="list-style-type: none"> • construct a plan to create the product/solution that has a series of logical steps (storyboard & script) • construct a plan to create the product/solution that makes effective use of resources and time (storyboard & script) • evaluate the plan and justify any modifications to the design <p>Criteria D: Create: (Film & Edit)</p> <ul style="list-style-type: none"> • use a range of appropriate techniques and equipment competently (cameras, software, audio equipment) • follow the plan to produce the product/solution (storyboard, script) • evaluate the plan and justify any changes to the plan (when necessary) • create a product/solution of appropriate quality <p>Criteria E: Evaluate (Screen, Survey & Self-Assess)</p> <ul style="list-style-type: none"> • evaluate the success of the product/solution in an objective manner based on testing, their own views and the views of the intended user (by creating a short survey to give to audience at screening) • evaluate the impact of the product/solution on individuals and on society (reflection & YouTube, discussion) • explain how the product/solution could be improved (evaluation, reflection, product quality & goal assessment) • evaluate their performance at each stage of the design cycle • suggest ways in which their performance could be improved 	<ul style="list-style-type: none"> • evaluate the importance of the problem for life, society and/or the environment (research PSA's & issues) • outline the design brief • identify and acknowledge a range of appropriate sources of information • evaluate the sources of information (process journal) <p>Criteria C: Plan (Script & Storyboard)</p> <ul style="list-style-type: none"> • construct a plan to create the product/solution that has a series of logical steps (storyboard & script) • construct a plan to create the product/solution that makes effective use of resources and time (storyboard & script) • evaluate the plan and justify any modifications to the design <p>Criteria D: Create: (Film & Edit)</p> <ul style="list-style-type: none"> • use a range of appropriate techniques and equipment competently (cameras, software, audio equipment) • follow the plan to produce the product/solution (storyboard, script) • evaluate the plan and justify any changes to the plan (when necessary) • create a product/solution of appropriate quality <p>Criteria E: Evaluate (Screen, Survey & Self-Assess)</p> <ul style="list-style-type: none"> • evaluate the success of the product/solution in an objective manner based on testing, their own views and the views of the intended user (by creating a short survey to give to audience at screening) • evaluate the impact of the product/solution on individuals and on society (reflection & YouTube, discussion) • explain how the product/solution could be improved (evaluation, reflection, product quality & goal assessment) • evaluate their performance at each stage of the design cycle • suggest ways in which their performance could be improved
Formative Assessments	<p>A: Process Journal entries; blog entries; online research & resources; and reflections on existing PSA's</p> <p>B: Design Brief (Rough & Final drafts)</p> <p>C: Storyboard & script. Peer presentation & peer assessment</p>	<p>A: Process Journal entries; blog entries; online research & resources; and reflections on existing PSA's</p> <p>B: Design Brief (Rough & Final drafts)</p> <p>C: Storyboard & script. Peer presentation & peer assessment</p>
Summative Assessment	<p>A: Choose an issue/cause that is important to them to research and communicate to a chosen audience in order to raise awareness.</p> <p>C: Display adequate planning and preparation through their storyboard and script: in which students include important elements such as: camera angles & movement, narration/sound/music, frame #'s & descriptions, characters, setting, timing.</p> <p>D: Final edited video Public Service Announcement (originally created, directed, produced and edited by student)</p> <p>E: Create a survey of 5 questions to give after screening to intended and/or "test"</p>	<p>A: Choose an issue/cause that is important to them to research and communicate to a chosen audience in order to raise awareness.</p> <p>C: Display adequate planning and preparation through their storyboard and script: in which students include important elements such as: camera angles & movement, narration/sound/music, frame #'s & descriptions, characters, setting, timing.</p> <p>D: Final edited video Public Service Announcement (originally created, directed, produced and edited by student)</p> <p>E: Create a survey of 5 questions to give after screening to intended and/or "test" audience to</p>

	audience to get feedback from user. A final written self-evaluation showing reflection and assessing understanding, evaluating performance in each stage of design cycle and final product against design brief.	get feedback from user. A final written self-evaluation showing reflection and assessing understanding, evaluating performance in each stage of design cycle and final product against design brief.
Links	Languages, Humanities	Languages, Humanities