Disciplinary Subject Group Overview
DESIGN
MYP Year 1 (Grade 6)

| Unit title | Key concept | Related concept(s) | Global context | Statement of inquiry | MYP subject specific objective(s) | ATL skills | Content (topics, knowledge, skills) |
|---|---|---|---|---|---|---|---|
| ICT | | | | | | | |
| Unit 1 Introduction to Microsoft Office | Communication | Markets & Trends and Resources | Scientific and Technical Innovation | Communicating the available resources impact the markets and trends in the digital life | A.i,ii,iii,iv<br><br>B.i,ii,iii,iv | Self-Management<br><br>Organization Skills | Word Processing Software<br><br>Presentation Software<br><br>Spreadsheet Software |
| Unit 2 Web Scripting Introduction to HTML | Development | Evaluation and Perspective | Scientific and Technical Innovation | Systems are developmental in nature and should be evaluated based on own perspective | C.i,ii,iii,iv | Thinking / Creative Thinking | HyperText Markup Language (HTML) |
| Unit 3<br><br>Web Scripting<br><br>HTML with CSS | Development | Function and Form | Personal and Cultural Expression | Functional product is a form of expression which can be develop through times | D.i,ii,iii,iv | Thinking / Critical Thinking | HyperText Markup Language (HTML) with Cascading Style Sheet (CSS) |

| TLE | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit 1<br><br>Electrical Installation and Maintenance 6 | Develop | Function, Form, and Adaptation | Scientific and Technical Innovation | Knowing the function and form can develop adaptation of methods. | C.i,ii,iii,iv | Thinking/Creative Thinking<br><br>Self-management/Organization<br><br>Research/ Media Literacy | Tools in Electrical<br><br>Installation and Maintenance<br><br>Stripping of Wires<br><br>Wire Splices and Joints |
| Unit 2<br><br>Mechanical Drafting 6 | System | Function and Adaptation | Scientific and Technical Innovation | The function of the system allows adaptation of different models with accuracy and reliability. | A.i,ii,iii,iv<br><br>B.i,ii,iii,iv | Thinking/Creative thinking & Critical Thinking<br><br>Communication/Communication | System of Measurement<br><br>Drafting Tools, Materials, and Measuring Instruments<br><br>Pictorial Drawing |
| Unit 3<br><br>Consumer Electronics Servicing 6 | System | Evaluation and Resources | Identities and Relationships | Systematic evaluation of the resources can identify the status of a unit. | D.i,ii,iii,iv | Communication/Communication<br><br>Self-management/Reflection | Soldering Iron<br>Parts of Soldering Iron<br>Basic Circuit<br>Basic Troubleshooting |

Disciplinary Subject Group Overview
DESIGN
MYP Year 2 (Grade 7)

| Unit title | Key concept | Related concept(s) | Global context | Statement of inquiry | MYP subject specific objective(s) | ATL skills | Content (topics, knowledge, skills) |
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| ICT | | | | | | | |
| Unit 1<br>Digital Citizenship and Computer Hardware Servicing | Communities | Form and Sustainability | Identities and Relationship | Community forming sustainable environment produce happiness and the good life | A.i,ii,iii,iv<br><br>B.i,ii,iii,iv | Research / Media Literacy Skills | Digital Citizenship<br><br>Use Hand Tools<br><br>Perform Mensuration and Calculation |
| Unit 2<br>Computer and Design Applications | Developing | Invention and function | Scientific and Technical Innovation | Developing functional invention produce models and products | C.i,ii,iii,iv | Thinking / Creative Thinking | Tinkercad - skills Familiar |
| Unit 3<br><br>Coding and Programming | Systems | Innovation and evaluation | Scientific and Technical Innovation | Evaluating an existing system provides an opportunity to innovate | D.i,ii,iii,iv | Thinking / Critical Thinking | Computer Fundamentals (Data storage, Binary, File Storage, Applications, Computer systems, Data Transfer), C++ |

| TLE | | | | | | | |
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| Unit 1<br><br>Mechanical Drafting 7 | Development | Form and Perspective | Scientific and Technical Innovation | Development of form and perspective ensures accuracy of design models. | B.i,ii,iii,iv<br><br>C.i,ii,iii,iv | Thinking/Creative thinking<br><br>Self-management/Reflection<br><br>Research/Media Literacy | System of Measurements<br><br>Bond paper with Borderline<br><br>Pictorial Drawing<br><br>Perspective Drawing |
| Unit 2<br><br>Electrical Installation and Maintenance 7 | System | Resources & Function | Scientific and Technical Innovation | System efficiently utilizes resources to ensure the function of each model operates correctly. | A.i,ii,iii,iv | Creative thinking, Communication<br><br>Inquiring and Analyzing (iv)<br><br>Self-management/Reflection<br><br>Inquiring and Analyzing (ii)<br><br>Research/Media Literacy | Electricity<br><br>Types of Wires and cable used in EIM<br><br>Wire Splices and Joints<br><br>Circuit.<br><br>Parts of Circuit |
| Unit 3<br><br>Consumer Electronics Servicing 7 | Development | Function and Form | Scientific and technical Innovation | Development focuses on optimizing both function and form of a product. | D.i,ii,iii,iv | Thinking/Creative Thinking | Hand Tools in Consumer Electronics Servicing<br><br>Electronic Materials |

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| | | | | | | Self-management/Organization<br><br>Communication/Communication & Research/Media Literacy | Electronic Components<br><br>Parallel Circuit |

## Disciplinary Subject Group Overview
## DESIGN
## MYP Year 3 (Grade 8)

| Unit title | Key concept | Related concept(s) | Global context | Statement of inquiry | MYP subject specific objective(s) | ATL skills | Content (topics, knowledge, skills) |
|---|---|---|---|---|---|---|---|
| ICT | | | | | | | |
| **Unit 1 Digital Citizenship and Computer Hardware Servicing** | Communities | Collaboration and Evaluation | Fairness and Development | The collaboration between community security and freedom is essential to evaluate for the improvement of the environment | A.i,ii,iii,iv<br><br>B.i,ii,iii,iv | Communication / Communication Skills<br>Social / Collaboration Skills | Digital Citizenship<br><br>Prepare and Interpret Technical Drawing<br><br>Practice Occupational and Safety Health |
| **Unit 2 Computer and Design Applications** | Communication | Perspective and function | Personal and Cultural Expression | Communicating one's perspective can lead to functional and creative solutions | C.i,ii,iii,iv | Thinking / Creative Thinking<br>Communication / | Tinkercad - skills Original |

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| | | | | | | Communication Skills | |
| Unit 3<br>Coding and Programming | Systems | Innovation and Adaptation | Scientific and Technical Innovation | Systems are achieved thru adaptation and innovation of products | D.i,ii,iii,iv | Thinking / Critical Thinking<br>Social / Collaboration Skills | C++ |
| TLE | | | | | | | |
| Unit 1<br>Electrical Installation and Maintenance 8 | Communication | Resources and Function | Scientific and Technical Innovation | Communication ensures system and resource's functionality. | C.i,ii,iii,iv | Communication/ Communication<br>Self-management/ Reflection<br>Research/Media Literacy | Electrical Circuit<br>Types of Electrical Circuit<br>Types of Electrical Diagram<br>Wire Splices and Joints |
| Unit 2<br>Mechanical Drafting 8 | Communication | Forms & Perspective | Personal and Cultural Expression | Effective communication involves using diverse forms, crafts, and perspectives to convey expression. | D.i,ii,iii,iv | Communication/Communication<br>Self-Management/Reflection | System of Measurement<br>Orthographic<br>Orthographic Drawing |

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| Unit 3<br><br>Consumer Electronics Servicing 8 | Communication | Resources and Function | Scientific and Technical Innovation | Communication ensures system and resource's functionality. | A.i,ii,iii,iv<br><br>B.i,ii,iii,iv | Thinking skills/Creative thinking<br><br>Communication/Communication<br><br>Self-management/Reflection | Electronic Circuit<br><br>Soldering Iron<br><br>Parts of Soldering Iron<br><br>Types of Electronic Circuit<br><br>Types of Electronic Diagram |

## Disciplinary Subject Group Overview
## DESIGN
## MYP Year 4 (Grade 9)

| Unit title | Key concept | Related concept(s) | Global context | Statement of inquiry | MYP subject specific objective(s) | ATL skills | Content (topics, knowledge, skills) |
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| ICT | | | | | | | |
| Unit 1 Product Management | Communication | Form<br>Invention | Scientific Technical Innovation | Communicating design ideas, can take many forms, depending on purpose, audience, and context. | A.i,ii,iii,iv<br><br>C.i,ii,iii,iv | Communication<br>Organization<br>Affective<br>Media Literacy<br>Critical Thinking<br>Creative Thinking | Observation / description / design terminology, jargon<br>Use of Google Slides as a SKETCH PAD<br>Flowcharting<br>Snipping tool<br>BLENDER (9)/ONSHAPE (10) |

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| | | | | | | | Design Cycle<br>Project Log<br>Basic Modelling<br>Dimensioning<br>Basic blueprinting<br>Intro to Arduino components |
| **Unit 2 Product: Modules, Components and Systems** | Development | Innovation<br>Invention | Scientific Technical Innovation | Understanding, acknowledging, and seeing that everything functions as parts of a System is the first step in encouraging Development through Innovation by opening up one's inventiveness. | C. ii, iii<br>D. I, ii | Collaboration<br>Organization<br>Affective<br>Information Literacy<br>Media Literacy<br>Critical Thinking<br>Creative Thinking<br>Transfer | -Deep Dive: Simple Machines, how they woke up man's inventiveness<br>-How things Work: Products of Man's Inventiveness<br>1. Materials / Fasteners<br>2. Basic tools and instruments<br>3. Basic structures<br>4. Gears and Linkages<br>5. Arduino: Circuits / Programming |
| **Unit 3 Nom Nom for Everyone** | Communities<br>Development | Resources<br>Sustainability | Globalization and sustainability | Communities thrive when targeted development addresses the sustainability of certain necessities and resources. | B.i,ii,iii,iv<br><br>D.i,ii,iii,iv | | |

| TLE | | | | | | | |
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| Unit 1<br><br>Electronic Circuit Boards | Development | Resources & Function | Scientific and technical Innovation | Developing a system relies on the allocation of resources to optimize function and performance. | A.i,ii,iii,iv | Communication/Communication, Thinking/Creative thinking<br><br>Self-management/Reflection | Soldering Iron<br><br>Parts of Soldering Iron Plug<br><br>Electronic Components<br><br>Electronic Materials |
| Unit 2<br><br>Electronic Wiring Circuits | System | Evaluate & Function | Scientific and technical Innovation | System evaluation leads to safety and optimum function of a model. | D.i,ii,iii,iv | Thinking/Creative Thinking<br><br>Communication/Communication<br><br>Self-management/Reflection | Types of Multimeter<br><br>Scale of Multimeter<br><br>Graduation Scale<br><br>Fan motor speed identification<br><br>Wiring Circuit |
| Unit 3<br><br>Assembling Electronic Products | Communication | Collaboration & Innovation | Scientific and technical Innovation | Communication and collaboration produces innovation of systems and products. | B.i,ii,iii,iv<br><br>C.i,ii,iii,iv | Thinking/Creative thinking<br><br>Self-management/Reflection<br><br>Research/Media Literacy | Electronic Figures<br><br>Planning<br><br>Preparation of Tools, Equipment, and Materials<br><br>Procedures |

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| | | | | | | | Evaluation |

## Disciplinary Subject Group Overview
## DESIGN
## MYP Year 5 (Grade 10)

| Unit title | Key concept | Related concept(s) | Global context | Statement of inquiry | MYP subject specific objective(s) | ATL skills | Content (topics, knowledge, skills) |
|---|---|---|---|---|---|---|---|
| Unit 1 Product Management | Communication | Form<br>Invention | Scientific<br>Technical<br>Innovation | Communicating design ideas, can take many forms, depending on purpose, audience, and context. | A.i,ii,iii,iv<br><br>C.i,ii,iii,iv | Communication<br><br>Organization<br><br>Affective<br><br>Information Literacy<br><br>Media Literacy<br><br>Critical Thinking<br><br>Creative Thinking | Observation / description / design terminology, jargon<br>Use of Google Slides as a SKETCH PAD<br>Flowcharting<br>Snipping tool<br>BLENDER (9)/ONSHAPE (10)<br>Design Cycle<br>Project Log<br>Basic Modelling<br>Dimensioning<br>Basic blueprinting<br>Intro to Arduino components |

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| Unit 2<br>Modules, components and systems | Development<br>Systems | Innovation<br>Invention | Scientific and technical innovation | Understanding and acknowledging that everything functions as part of System encourages innovation and development by opening up one's inventiveness. | C.i,ii<br><br>D.i,ii | Collaboration<br>Organization<br>Affective<br>Information Literacy<br>Media Literacy<br>Critical Thinking<br>Creative Thinking<br>Transfer | -Deep Dive: Simple Machines, how they woke up man's inventiveness<br>-How things Work: Products of Man's Inventiveness<br>1. Materials / Fasteners<br>2. Basic tools and instruments<br>3. Basic structures<br>4. Gears and Linkages<br>5. Arduino: Circuits / Programming |
| Unit 3<br>Nom Nom for Everyone | Communities<br>Development | Resources<br>Sustainability | Globalization and sustainability | Communities thrive when targeted development addresses the sustainability of certain necessities and resources. | B.i,ii,iii,iv<br><br>D.i,ii,iii,iv | | |
| TLE | | | | | | | |
| Unit 1<br><br>Observe Proper Procedure | Development | Adaptation &<br>Resources | Scientific and technical Innovation | Developing a system and product requires careful adaptation of available resources. | C.i,ii,iii,iv | Thinking/ Creative thinking<br><br>Self-management/ Reflection | Wire Splices and Joints<br><br>Extension Cord |

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| | | | | | | Research/ Media Literacy | |
| Unit 2<br><br>Testing Electrical Devices | System | Collaboration and Evaluation | Scientific and technical Innovation | The effective collaboration and evaluation involves a systematic method to ensure the validity of the performance. | D.i,ii,iii,iv | Thinking/Creative Thinking<br><br>Communication/Communication<br><br>Self-management/Reflection | Multimeter<br><br>Types of Multimeter<br><br>Parts of Multimeter<br><br>Types of Diagram in EIM<br><br>Types of Circuit in EIM |
| Unit 3<br><br>Installation of Electrical Circuits | Communication | Collaboration & Form | Scientific and technical Innovation | Communication and collaboration can produce a quality and efficient system in forming a design model. | A.i,ii,iii,iv<br><br>B.i,ii,iii,iv | Thinking/Creative thinking<br><br>Self-management/Organization<br><br>Communication/Communication | Electrical circuit.<br><br>Ohm's Law<br><br>Series and Parallel<br><br>Flow of electrons |

**Criterion A: Inquiring and analyzing**

i. explain and justify the need for a solution to a problem for a specified client/target audience
ii. identify and prioritize primary and secondary research needed to develop a solution to the problem
iii. analyse a range of existing products that inspire a solution to the problem
iv. develop a detailed design brief, which summarizes the analysis of relevant research.

**Criterion B: Developing ideas**

i. develop design specifications, which clearly states the success criteria for the design of a solution
ii. develop a range of feasible design ideas, which can be correctly interpreted by others
iii. present the chosen design and justify its selection

iv. develop accurate and detailed planning drawings/diagrams and outline the requirements for the creation of the chosen solution.

**Criterion C: Creating the solution**

i. construct a logical plan, which describes the efficient use of time and resources, sufficient for peers to be able to follow to create the solution
ii. demonstrate excellent technical skills when making the solution
iii. follow the plan to create the solution, which functions as intended
iv. fully justify changes made to the chosen design and plan when making the solution.

**Criterion D: Evaluating**

i. design detailed and relevant testing methods, which generate data, to measure the success of the solution
ii. critically evaluate the success of the solution against the design specification
iii. explain how the solution could be improved
iv. explain the impact of the solution on the client/target audience.