** Year 7 Mathematics and History**

**Term 2, 2017**

***Rebuilding the World***

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| **Due:** Friday, Week 9 for 7O and 7G  Friday Week 10 for 7R and 7Y | **Time Allowed:** Students will work on this project in Mathematics, History, & Praxis lessons in Term 2 |
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| **Syllabus Outcomes Addressed:**  **Mathematics**  MA4-1WM - communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols  MA4-2WM - applies appropriate mathematical techniques to solve problems  MA4-3WM - recognises and explains mathematical relationships using reasoning  MA4-18MG - identifies and uses angle relationships, including those related to transversals on sets of parallel lines  MA4-13MG -uses formulas to calculate the areas of quadrilaterals and circles, and converts between units of area  MA4-12MG - calculates the perimeters of plane shapes and the circumferences of circles  **History**  HT4-3 describes and assesses the motives and actions of past individuals and groups in the context of past societies  HT4-6 uses evidence from sources to support historical narratives and explanations  HT4-9 uses a range of historical terms and concepts when communicating an understanding of the past  HT4-10 selects and uses appropriate oral, written, visual and digital forms to communicate about the past | |
| **Proficiencies (formatively assessed during Praxis sessions):**  Critical Thinking, Creative Thinking, Collaboration, Time Management and Organisation, Presentation Skills | |
| **Project description/rationale:**  The senior executive at Manly Selective Campus has decided to brighten up the school environment by commissioning year 7 students to design art pieces to be installed outside of each faculty’s staff room. Each piece of installation art must represent how revolutionary people or movements have contributed to the development of each discipline. Working in small teams of 5, students will use historical inquiry skills to research the revolutions in knowledge relevant to their allocated discipline and, using mathematical principles, they will visually represent their findings in a 2D design and a 3D prototype of their installation art piece. Students will present their process and product to a panel, explaining how their piece demonstrates the practical application of mathematical principles and skills, and knowledge of historical content and inquiry skills. Selected designs and prototypes will be developed into complete art pieces for permanent display in the school. | |
| **Driving Question:** *How do revolutions progress human knowledge?* | |
| **Task Description:**  **PROCESS:**  *Individual:* Weekly blog posts *Team:* Digital process portfolio (40%)  **PRODUCT:**  *Team:* Installation Art Piece - Each team must design a labelled 2D plan (hand drawn, or digital) AND create a 3D prototype of their design  A Week (Rube Goldberg machine inspired): maximum dimensions - 50cmx50cmx20cm  B Week: maximum dimensions - 50cmx50cmx50cm  **PRESENTATION TO PANEL: (Length - 20 minutes total)**  *Individual:* Individual 2-minute presentation, plus response to one panel question (50%)  *Team:* 2-minute overview of project supported by images/art installation prototype (10%) | |

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| **CRITERIA FOR MATHEMATICS OUTCOMES** | **MARK** |
| * Skilfully communicates and connects mathematical ideas thoughtfully using appropriate terminology, diagrams and symbols in individual presentation (I) * Thoughtfully recognises and explains mathematical relationships using insightful reasoning in individual presentation (I) * Skilfully describes the application of appropriate mathematical techniques to solve problems in the thoughtful design of a piece of installation art (I) * Confidently identifies and uses angle relationships, including those related to transversals on sets of parallel lines in the effective design of a piece of installation art (T) * Thoughtfully uses formulas to calculate the areas of quadrilaterals and circles, and converts between units of area in the effective design of a piece of installation art (T) * Skilfully calculates the perimeters of plane shapes and the circumferences of circles in the effective design of a piece of installation art (T) | **13-15** |
| * Effectively communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols in individual presentation (I) * Recognises and explains mathematical relationships using effective reasoning in individual presentation (I) * Describes the application of appropriate mathematical techniques to solve problems in the design of an effective piece of installation art (I) * Identifies and uses angle relationships, including those related to transversals on sets of parallel lines in the design of a well-developed piece of installation art (T) * Effectively uses formulas to calculate the areas of quadrilaterals and circles, and converts between units of area in the design of a well-developed piece of installation art (T) * Effectively calculates the perimeters of plane shapes and the circumferences of circles in the design of a well-developed piece of installation art (T) | **10-12** |
| * Communicates and connects mathematical ideas using mostly appropriate terminology, diagrams and symbols in individual presentation (I) * Recognises and explains most mathematical relationships using reasoning in individual presentation (I) * Describes the application of mostly appropriate mathematical techniques to solve problems in the design of a piece of installation art (I) * Identifies and uses angle relationships, including those related to transversals on sets of parallel lines in the design of a piece of installation art (T) * Uses formulas to calculate the areas of quadrilaterals and circles, and converts between units of area in the design of a piece of installation art (T) * Calculates the perimeters of plane shapes and the circumferences of circles in the design of a piece of installation art (T) | **7-9** |
| * Attempts to communicates and connects mathematical ideas using some appropriate terminology, diagrams and symbols in individual presentation (I) * Recognises and explains some mathematical relationships using reasoning in individual presentation (I) * Describes the application of some appropriate mathematical techniques to solve problems in the design of a sound piece of installation art (I) * Identifies and uses angle relationships, including those related to transversals on sets of parallel lines in the design of a sound piece of installation art (T) * Uses formulas in a basic way to calculate the areas of quadrilaterals and circles, and converts between units of area in the design of a sound piece of installation art (T) * Attempts to calculate the perimeters of plane shapes and the circumferences of circles in the design of a piece of installation art (T) | **4-6** |
| * A limited attempt to communicate and connect mathematical ideas using limited terminology, diagrams and symbols in individual presentation (I) * Recognises and explains basic mathematical relationships using reasoning in individual presentation (I) * Attempts to describes the application of mathematical techniques to solve problems in the design of a piece of installation art (I) * A limited attempt to identify and use angle relationships, including those related to transversals on sets of parallel lines in the design of a limited piece of installation art (T) * A limited attempt to use formulas to calculate the areas of quadrilaterals and circles, and converts between units of area in the design of a limited piece of installation art (T) * A limited attempt to calculate the perimeters of plane shapes and the circumferences of circles in the design of a limited piece of installation art (T) | **1-3** |

**Medals:**

**Missions:**

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| **CRITERIA FOR HISTORY OUTCOMES** | **MARK** |
| * Thoughtfully describes and assesses the motives and actions of past individuals and groups in the context of past societies relevant to focus discipline (T) * Skilfully uses evidence from a diverse range of sources to support insightful historical narratives and explanations about revolutions in knowledge relevant to focus discipline (T) * Thoughtfully uses a wide range of sophisticated historical terms and concepts when communicating an understanding of the past in individual presentation (I) * Skilfully selects and uses highly appropriate oral, written, visual and digital forms to communicate about the past in individual presentation (I) | **13-15** |
| * Effectively describes and assesses the motives and actions of past individuals and groups in the context of past societies relevant to focus discipline (T) * Uses evidence from a range of sources to support effective historical narratives and explanations about revolutions in knowledge relevant to focus discipline (T) * Uses a wide range of historical terms and concepts when effectively communicating an understanding of the past in individual presentation (I) * Selects and uses appropriate oral, written, visual and digital forms to effectively communicate about the past in individual presentation (I) | **10-12** |
| * Sound description and assessment of the motives and actions of past individuals and groups in the context of past societies relevant to focus discipline (T) * Uses evidence from sources to support sound historical narratives and explanations about revolutions in knowledge relevant to focus discipline (T) * Uses a range of historical terms and concepts when communicating an understanding of the past in individual presentation (I) * Selects and uses mostly appropriate oral, written, visual and digital forms to communicate about the past in individual presentation (I) | **7-9** |
| * Attempts to describe and assess the motives and actions of past individuals and groups in the context of past societies relevant to focus discipline (T) * Attempts to use evidence from sources to support basic historical narratives and explanations about revolutions in knowledge relevant to focus discipline (T) * Uses some historical terms and concepts when communicating a basic understanding of the past in individual presentation (I) * Selects and uses some oral, written, visual and digital forms to communicate in a basic way about the past in individual presentation (I) | **4-6** |
| * Makes a limited attempt to describe and assess the motives and actions of past individuals and groups in the context of past societies relevant to focus discipline (T) * Uses limited evidence from sources to support limited historical narratives and explanations about revolutions in knowledge relevant to focus discipline (T) * Uses limited historical terms and concepts when communicating a limited understanding of the past in individual presentation (I) * Makes a limited attempt to select and use appropriate oral, written, visual and digital forms to communicate about the past in individual presentation (I) | **1-3** |

**Medals:**

**Missions:**