

Grade G10

Time	Content	Skills	Assessment
<p><u>10 weeks</u></p>	<p><u>See this!</u></p> <p>The aim of this unit is to introduce students to Google SketchUp as an example of 3d modeling software. The students will complete a project during which they will create a 3d model of their school building (or a model of Maycomb - if project corresponds with English programme). The project will require implementing the Design Cycle in all of its stages,</p>	<p>At the end of this unit students should have a knowledge and understanding of:</p> <ul style="list-style-type: none"> • 3d modeling and its limitations in a 2d environment • How to use Google SketchUp at an intermediate level • The need to reduce the complexity and size of their models because of bandwidth limitations • the creating of a product of high quality that is life-like and a fair representation of reality • appropriate testing and proofing methods 	<p><u>Students will be graded for the following tasks:</u></p> <ul style="list-style-type: none"> • Investigation Stage Report • Design Stage Report • Plan Stage report • Create stage Report (includes Process Journal) • Evaluate Stage Report • Final Product • Attitude during project (participation during discussions, work independence, attitude towards safety and co-operation with others)
<p><u>7 weeks</u></p>	<p><u>Robo-Sumo</u></p> <p>The aim of this unit is to introduce the students to simple programming techniques, with the use of the LEGO Mindstorms kit. In teams of two, the students will design a robot and its algorithm</p>	<p>At the end of this unit students should have a knowledge and understanding of:</p> <ul style="list-style-type: none"> • The basics of object-oriented programming • Algorithms and their design • The history and basic ideas of robotics and artificial intelligence • Advanced designing and planning skills • Using the LEGO Mindstorms kit at an intermediate level • the creating of a product that is effective, functional and practical 	<p><u>Students will be graded for the following tasks:</u></p> <ul style="list-style-type: none"> • Investigation Stage Report • Design Stage Report • Plan Stage report • Create stage Report (includes Process Journal) • Evaluate Stage Report • Final Product (based on competition results)

	with the aim of defeating other robots in a 1 on 1 sumo match.		<ul style="list-style-type: none"> • Attitude during project (participation during discussions, work independence, attitude towards safety and co-operation with others)
<u>7 weeks</u>	<p><u>You choose it!</u></p> <p>In this project it is the students who must come up with the problem to solve and they who must follow this problem through the Design Cycle to create an appropriate solution.</p>	<p>At the end of this unit students should have a knowledge and understanding of:</p> <ul style="list-style-type: none"> • how to solve real problems that they encounter or see around them with the use of technology and the design cycle • how to fully implement the design cycle on their own • what areas of interaction the problem they want to solve touches upon • creating a solution and a product of high quality that solves the problem they found 	<p><u>Students will be graded for the following tasks:</u></p> <ul style="list-style-type: none"> • initial idea • Investigation Stage Report • Design Stage Report • Plan Stage report • Create stage Report (includes Process Journal) • Evaluate Stage Report • Final Product • Attitude during project (participation during discussions, work independence, attitude towards safety and co-operation with others)
<u>7 weeks</u>	<p><u>Extra Unit (Olympic year) - ECO-javelin</u></p> <p>(interdisciplinary unit with PE, History and Physics, all MYP classes complete this project simultaneously)</p> <p>The aim of this unit is to</p>	<p>At the end of this unit students should have a knowledge and understanding of:</p> <ul style="list-style-type: none"> • The need to use recycled materials whenever it's possible • The physical characteristics of different materials and how those characteristics relate to the effectiveness of their product • Material-oriented design and planning • Ways of connecting and binding materials • Measuring weight of materials and components • the creating of a product that is effective, functional and practical • testing and constant product improvement based on those tests 	<p><u>Students will be graded for the following tasks:</u></p> <ul style="list-style-type: none"> • Investigation Stage Report • Design Stage Report • Plan Stage report • Create stage Report (includes Process Journal) • Evaluate Stage Report • Final Product (based on

	teach the students design and planning skills while they produce their own javelin made from recycled materials for the School Olympic Games.		<p>competition results)</p> <ul style="list-style-type: none"> • Attitude during project (participation during discussions, work independence, attitude towards safety and co-operation with others)
<u>7 weeks</u>	<p><u>Extra Unit - Spaghetti Bridges</u></p> <p>(all MYP classes complete this project simultaneously)</p>	<p>At the end of this unit students should have a knowledge and understanding of:</p> <ul style="list-style-type: none"> • The ways bridges are constructed - types of bridges, lengths, sizes, etc • Compression and tension in bridge design • Using computer aided design (CAD) to simulate future events and improve design quality (WestPoint Bridge Designer) • Orthographic projection and it' s uses • How shapes can affect and change the strength of construction elements • Using a hot-glue gun • Different ways of connecting and joining pieces of material to make rigid shapes (with the use of linguine) • self-evaluation • the creating of a product of high quality and durability, at the same time being economical and practical 	<p><u>Students will be graded for the following tasks:</u></p> <ul style="list-style-type: none"> • Investigation Stage Report • Design Stage Report • Plan Stage report • Create stage Report (includes Process Journal) • Evaluate Stage Report • Final Product (based on competition results) • Attitude during project (participation during discussions, work independence, attitude towards safety and co-operation with others)