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| Teacher(s) | Mr. Kearney | Subject Group and Discipline | Mathematics – Geometry | | |
| Unit Title | Show Me The Proof! Proving Triangle Congruence | MYP Year | 5 | Unit Duration (hrs) | 22.5 |

Inquiry: Establishing the Purpose of the Unit

| Key Concept | Related Concept(s) | Global Context |
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| Logic | <ul style="list-style-type: none"> • Justification • Proof | Scientific and Technical Innovation |
| Statement of Inquiry | | |
| Critical thinkers use logic, processes, and models to prove and justify congruent relationships. | | |
| Inquiry Questions | | |
| <p>Factual – How can we classify triangles?</p> <p>Conceptual – Why is an understanding of logic necessary to prove congruent relationships?</p> <p>Debatable – What is the most effective way to prove that two triangles are congruent?</p> | | |
| Objectives | Summative Assessment | |

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| <p>MYP Criteria-</p> <p>Criterion A: Knowing and Understanding</p> <p>Criterion C: Communicating</p> <p>Criterion D: Applying Mathematics in Real-Life Contexts</p> | <p>Outline of summative task / GRASPS</p> <p>Goal: You will be designing a corporate logo for the business you work for.</p> <p>Role: Graphic Designer</p> <p>Audience: Company CEO</p> <p>Situation: Your business is trying to change their image. Using your knowledge of how congruency is used in advertisement, you must create a new logo for your company and draft a proposal to justify your design.</p> <p>Product: A corporate logo that incorporates congruent triangles. A written proposal proving the congruent relationship(s) and justifying their significance to the design is necessary.</p> <p>Standards: Your corporate logo and written proposal should adhere to the attached project sheet and will be graded on the attached rubric.</p> | <p>Relationship between summative assessment task(s) and statement of inquiry:</p> <p>The students will be designing a corporate logo to reinvent the image of the business they work for. To do so, students must employ their knowledge of congruent figures in current brand logos to address the task at hand. This project allows students to use logic, processes, and models to prove and justify how congruent relationships enhance design.</p> |
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Approaches to learning (ATL)

Communication: Take effective notes in class.

Social: Delegate and share responsibility for decision-making.

Self-Management: Keep an organized and logical system of information files/notebooks.

Research: Make connections between various sources of information.

Thinking: Gather and organize relevant information to formulate an argument.

Action: Teaching and Learning Through Inquiry

| Content | Learning Process |
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| <p style="text-align: center;">Week 1</p> <ul style="list-style-type: none"> ● Inductive Reasoning and Conjecture (2-1) ● Conditional Statements and Related Conditionals (2-3) <p style="text-align: center;">Week 2</p> <ul style="list-style-type: none"> ● Introduction to Proof (2-5, 2-6, 2-7, and 2-8) ● Classifying Triangles (4-1) ● Angles of Triangles (4-2) <p style="text-align: center;">Week 3</p> | <p style="text-align: center;">Learning Experiences and Teaching Strategies</p> <ul style="list-style-type: none"> ● Mini-Lessons/Lecture ● Guided Practice ● Group Discussion ● Jigsaw Activities ● Investigations (Individual & Group) ● Problem Solving (Explore, Plan, Solve, Check) |

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| <ul style="list-style-type: none"> ● Investigating Congruent Triangles (4-3) <p style="text-align: center;">Week 4</p> <ul style="list-style-type: none"> ● Proving Triangles Congruent: SSS & SAS (4-4) ● Proving Triangles Congruent: ASA & AAS (4-5) ● Proving Triangles Congruent: Hypotenuse-Leg <p style="text-align: center;">Week 5</p> <ul style="list-style-type: none"> ● Isosceles and Equilateral Triangles (4-6) <p style="text-align: center;">Week 6</p> <ul style="list-style-type: none"> ● Grasp Project (Summative Assessment) <p style="text-align: center;">CCSS Focus Standards:</p> <p>G.CO.6 Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.</p> <p>G.CO.7 Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and pairs of angles are congruent.</p> <p>G.CO.10 Prove theorems about triangles.</p> <p>G.CO.12 Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).</p> <p>G.SRT.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.</p> | <p style="text-align: center;">Formative Assessments</p> <ul style="list-style-type: none"> ● Daily Homework Assignments ● Do-Now Assignments ● Ticket-to-Leave Assignments ● Think-Pair-Write-Share ● Skill/Vocabulary Quizzes ● Individual/Group Problem Solving Assignments ● Reflections ● Dry Erase Board Activities ● In-Class Observations |
| | <p style="text-align: center;">Differentiation</p> <ul style="list-style-type: none"> ● Open-ended questions allowing for a variety of student responses ● Review sheet of key terms (start of the unit) ● Review of HW assignments (sm./lg. group) ● Vocabulary word wall with visuals (when appropriate) ● Tiered Do-Now assignments (<i>I'm making progress, I've got this...</i>) ● Chunking directions ● Real-world hooks for classroom activities ● Reading and rereading questions for reinforcement ● Modeling of GRASPS projects ● Use of graphic organizers to focus students who write slowly and benefit from note taking structure ● Incorporation of Regents/Common Core questions daily to reinforce and apply skills |
| Resources | |
| <ul style="list-style-type: none"> ● www.mathisfun.com (Homework Help: Resources for Students) ● www.learnzillion.com (Lesson Plan Database) ● www.kutasoftware.com (Worksheet Generator: All Math Skills) ● www.occ.ibo.org (IB Online Curriculum Centre) ● www.illuminations.nctm.org (Resources for Teaching Math) ● Common-Core Aligned Textbook and Resource Masters (Glencoe Geometry) | |

Reflection: Considering the Planning, Process and Impact of the Inquiry

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| Prior to Teaching the Unit | During Teaching | After Teaching the Unit |
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