

Teacher(s)	Mr. Davenport	Subject group and discipline	Math / Geometry		
Unit title <i>Make it catchy</i>	Transformations and Congruence	MYP year <i>9th = 4/ 10th = 5</i>	5	Unit duration (hrs) <i>Not days</i>	15

Inquiry: Establishing the purpose of the unit

Key concept (1)	Related concept(s) (1-2)	Global context & exploration (1)
Form	Equivalence	Global Context: Scientific and technical innovation Exploration: design

Statement of inquiry Process (Key concept + Related concept + Exploration)

Conceptual Understanding (**Key concept + Related concepts**): **Transformations of equivalent forms through space can be used to replicate efficient design.**

Statement of Inquiry (**Key concept + Related concepts + Exploration**): Can form be transformed in space but still be equivalent.

Inquiry questions (These questions need to be focused around the Key Concept, Related Concepts, and Global Context).

Factual— Line of Inquiry...

1. What does it mean to be congruent?
2. What is form

Conceptual— Line of Inquiry...

1. How is equivalent related to congruence?
2. How is form related to congruence?

Debatable — Line of Inquiry...		
1. To what extent can every transformed shape be congruent?		
Objectives and their strands	Summative assessment	
<p>IB Objectives found in your subject guides!</p> <p>A) Knowing and understanding</p> <ul style="list-style-type: none"> i. select appropriate mathematics when solving problems in both familiar and unfamiliar situations. ii. apply the selected mathematics successfully when solving problems iii. solve problems correctly in a variety of contexts 	<p>Outline of summative assessment task(s) using the GRASPS model including assessment criteria (not the strands) in the final “S” of GRASPS:</p> <p>G(oad): Can form be transformed in space but still be equivalent.</p> <p>R(ole): artist</p> <p>A(udience): Wallpaper manufacturer</p> <p>S(ituation): You're tasked with creating a new template for rolls of wallpaper ready to be printed with a eye catching design.</p> <p>P(roduct): the artist is going to create a template so the rolls of unprinted wallpaper will sell fast.</p> <p>S(tandards): Ai, Aii, Aiii</p>	<p>Explain the relationship between summative assessment task(s) and statement of inquiry:</p> <p>The SOI is related to the summative assessment because the students will create 1 original object and use transformations to prove that no matter what the transformation is used the object will always be equivalent.</p>
<p>Approaches to learning (ATL) In order for students to <u>(objective strand)</u>, students must <u>(ATL skill)</u>. (ATL category: _____, ATL Skill: _____).</p>		

The strategy that will be explicitly taught and practiced teaching strategy. Use the sentence stem in the box above for each ATL skill strategy you indicate.

In order to select appropriate mathematics when solving problems in both familiar and unfamiliar situations, the students need to critically think.

Service Learning Outcomes:

During this unit students are expected to _____. In order for their team performance to meet and exceed expectations each student will experience the following service learning outcomes.

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Action: Teaching and learning through inquiry

<p align="center">Content (TEKS) WRITE THEM OUT</p>	<p align="center">Learning Process <u>(List in the order in which you will teach the lessons, ask inquiry questions, when ATL statements will be taught and practiced, as well as when both assessment types will occur)</u></p>
<ul style="list-style-type: none"> • The student is expected to distinguish between undefined terms, definitions, postulates, conjectures, and theorems. • The student is expected to construct congruent segments, congruent angles, a segment bisector, an angle bisector, perpendicular lines, the perpendicular bisector of a line segment, and a line parallel to a given line through a point not on a line using a compass and a straightedge • The student is expected to describe and perform transformations of figures in a plane using coordinate notation 	<p align="center">Learning Experiences and Teaching Strategies</p> <p align="center"><u>Also explain how you will incorporate the Approaches to Learning and Learner Profiles.</u></p>

<ul style="list-style-type: none"> • The student is expected to describe and perform transformations of figures in a plane using coordinate notation • The student is expected to determine the image or pre-image of a given two-dimensional figure under a composition of rigid transformations, a composition of non-rigid transformations, and a composition of both, including dilations where the center can be any point in the plane • The student is expected to identify the sequence of transformations that will carry a given pre-image onto an image on and off the coordinate plane • The student is expected to apply the definition of congruence, in terms of rigid transformations, to identify congruent figures and their corresponding sides and angles • The student is expected to identify and determine the validity of the converse, inverse, and contrapositive of a conditional statement and recognize the connection between a biconditional statement and a true conditional statement with a true converse • The student is expected to verify that the conjecture is false using a counterexample 	<p>Week 1/ Day 1 Segment length and midpoints Week 1/ Day 2 Angle measures and bisectors Week 2/ Day 1 angle measures and bisectors Week 2/ Day 2 representing and describing transformations Week 2/ Day 3 Quiz Week 3/ Day 1 Translations and Reflections Week 3/ Day 2 rotations Week 3/Day 3 review translations, reflections, and rotations. Week 4/Day 1 sequence of Transformations Week 4/Day 2 related Conditionals Week 5/ Day 1 tessellation project Week 5/ Day 2 test</p>
Formative Assessment (formal and informal)	
<p>plickers quizzes</p>	<p>thumbs up/down</p>
Differentiation (Consider your student population, their special accommodations and modifications and language supports)	
<p>Visuals Simplified sentences Notes already created Anchor Charts</p>	

Resources:			
State Resources	Text Books, Consumables, Etc.	Online Resources	Technological Resources
<ul style="list-style-type: none"> 1. TEKS 2. Scope & Sequence 	<ul style="list-style-type: none"> 3. GRASPS 4. Principles into Practice 5. IB Subject Guide - Language & Literature 	<ul style="list-style-type: none"> 6. Padlet 7. Quizlet 8. Quizizz 9. Edpuzzle 	<ul style="list-style-type: none"> 10. Laptop 11. Electronic devices

Reflection: Considering the planning, process and impact of the inquiry *You can answer the questions directly

Prior to teaching the unit	During teaching	After teaching the unit
<p>Why do we think that the unit or the selection of topics will be interesting? What do students already know, and what can they do? What have students encountered in this discipline before? What does my experience tell me about what to expect in this unit? Students will have a hard time with rotations and finding the unknown x What attributes of the learning profile does this unit offer students opportunities to develop? Thinker What potential interdisciplinary connections can we identify? Transformations can be directly linked to art What do we know about my students' preferences and patterns of interaction? Are there any possible opportunities for meaningful service learning? What in the unit might be inspiring for community or personal projects? Students could create murals using dilations, scale factor, and transformations.</p>	<p>What difficulties did we encounter while completing the unit or the summative assessment task(s)? What resources are proving useful, and what other resources do we need? What student inquiries are emerging? What can we adjust or change? What skills need more practice? What is the level of student engagement? How can we scaffold learning for students who need more guidance? What is happening in the world right now with which we could connect teaching and learning in this unit? How well are the learning experiences aligned with the unit's objectives? What opportunities am I hearing to help students explore the interpretative nature of knowledge, including personal biases that might be retained, revised or rejected? (DP Theory of knowledge skills development)</p>	<p>For this portion, it will serve as a reflection for how the unit went. Explain what can be done to make the lesson more thorough next school year.</p> <p>What were the learning outcomes of this unit? How well did the summative assessment task serve to distinguish levels of achievement? Was the task sufficiently complex to allow students to reach the highest levels? What evidence of learning can we identify? What artefacts of learning should we document? Which teaching strategies were effective? Why? What was surprising? What student-initiated action did we notice? What will we do differently next time? How will we build on our experience to plan the next unit? How effectively did we differentiate learning in this unit? What can students carry forward from this unit to the unit? to the next year/ level of study? Which subject groups could we work with next time? What did we learn from standardizing the assessment?</p>

<p>Could we develop authentic opportunities for service learning? How can we use my students' multilingualism as a resource for learning?</p>		
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