***MYP Honors Intermediate Algebra/Geometry***

***Learning Goals and Scales: Geometry Tools Unit***

**Scale for Big Idea: Angle Relationships**

**Criterion A**: Knowing and Understanding Year 4 & 5 Rubric **Maximum: 8**

Students should be able to:

1. **select** appropriate mathematics when solving problems
2. **apply** the selected mathematicals successfully when solving problems
3. **solve** problems correctly in both familiar and unfamiliar situations in a variety of contexts.

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| Achievement Level | Proficiency  Level | Level Descriptor | Task Specific Description |
| 7-8 | Score Advanced | The student is able to:  i. **select** appropriate mathematics when  solving challenging problems in both familiar  and unfamiliar situations  ii. **apply** the selected mathematics successfully  when solving these problems  iii. generally **solve** these problems correctly. | * Can use angle relationships to determine what is wrong with a figure. * Solve problems involving multiple angle relationships * Can prove something about a figure using angle relationships |
| 5-6 | Strong | The student is able to:  i. **select** appropriate mathematics when  solving challenging problems in familiar  situations  ii. **apply** the selected mathematics successfully  when solving these problems  iii. generally **solve** these problems correctly. | * Can solve problems involving congruent and/or supplementary angles associated with parallel lines, including those with angle measures written as algebraic expressions. * Can solve problems involving the sum of the measures of the angles of a triangle, including those with angle measures written as algebraic expressions. * Can solve problems involving the side or angle measures of an isosceles triangle, including those with angle measures written as algebraic expressions. * Can solve problems involving the sum of the measures of the angles of a polygon, including those with angle measures written as algebraic expressions. * Can identify and use parallel lines cut by a transversal when embedded in a complex figure. |
| 3-4 | Getting There | The student is able to:  i. **select** appropriate mathematics when  solving more complex problems in familiar  situations  ii. **apply** the selected mathematics successfully  when solving these problems  iii. generally **solve** these problems correctly. | * Can solve problems involving the sum of the measures of the angles of a triangle. * Can recognize angle relationships but not yet able to solve problems using these properties. * Can solve problems given the tool or angle relationship |
| 1-2 | Not Yet | The student is able to:  i. **select** appropriate mathematics when solving simple problems in familiar situations  ii. **apply** the selected mathematics sometimes  when solving  iii. generally **solve** these problems correctly. | With help, partial success at score 3-4 and score 5-6 content |
| Score 0.0 | Score 0.0 | The student does not reach a standard indicated by any of the standards below. | Even with help, no success |

**Scale for Big Idea: Utilizing tools of coordinate geometry**

**Criterion A**: Knowing and Understanding Year 4 & 5 Rubric **Maximum: 8**

Students should be able to:

1. **select** appropriate mathematics when solving problems
2. **apply** the selected mathematicals successfully when solving problems
3. **solve** problems correctly in both familiar and unfamiliar situations in a variety of contexts.

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| Achievement Level | Proficiency  Level | Level Descriptor | Task Specific Description |
| 7-8 | Score Advanced | The student is able to:  i. **select** appropriate mathematics when  solving challenging problems in both  familiar and unfamiliar situations  ii. **apply** the selected mathematics  successfully when solving these problems  iii. generally **solve** these problems correctly. | * Can utilize the tools of geometry in a novel situation, such as given endpoint coordinates in variable form, can find the slope, midpoint, and/or length of the segment. * Can complete a generic case coordinate geometry proof using triangles |
| 5-6 | Strong | The student is able to:  i. **select** appropriate mathematics when solving  challenging problems in familiar situations  ii. **apply** the selected mathematics successfully  when solving these problems  iii. generally **solve** these problems correctly. | * Can use tools of slope, midpoint, and length * Can find the equation of “special lines.” For example, can find the equation of the median of a triangle or the perpendicular bisector of a line segment. * Can complete a specific case coordinate geometry proof using triangles |
| 3-4 | Getting There | The student is able to:  i. **select** appropriate mathematics when  solving more complex problems in familiar  situations  ii. **apply** the selected mathematics successfully  when solving these problems  iii. generally **solve** these problems correctly. | * Given a graph, equation, or table, students can identify the slope. * Can identify parallel and perpendicular lines from their slopes. * Understands when to apply a process for finding midpoints or length, but cannot fully follow through on the processes. |
| 1-2 | Not Yet | The student is able to:  i. **select** appropriate mathematics when solving  simple problems in familiar situations  ii. **apply** the selected mathematics sometimes  when solving  iii. generally **solve** these problems correctly. | With help, partial success at score 3-4 and score 5-6 content |
| Score 0.0 | Score 0.0 | The student does not reach a standard indicated by any of the standards below. | Even with help, no success |

**Scale for Big Idea: Congruence**

**Criterion A**: Knowing and Understanding Year 5 Rubric **Maximum: 8**

Students should be able to:

1. **select** appropriate mathematics when solving problems
2. **apply** the selected mathematicals successfully when solving problems
3. **solve** problems correctly in both familiar and unfamiliar situations in a variety of contexts.

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| Achievement Level | Proficiency  Level | Level Descriptor | Task Specific Description |
| 7-8 | Score Advanced | The student is able to:  i. **select** appropriate mathematics when  solving challenging problems in both  familiar and unfamiliar situations  ii. **apply** the selected mathematics  successfully when solving these  problems  iii. generally **solve** these problems  correctly. | * Can use congruence conjectures to prove properties of other figures * Can prove/articulate why SSA and AA don’t work as congruence conjectures Be able to show evidence of proficiency from the other bands in the rubric. |
| 5-6 | Strong | The student is able to:  i. **select** appropriate mathematics when  solving challenging problems in familiar  situations  ii. **apply** the selected mathematics  successfully when solving these  problems  iii. generally **solve** these problems  correctly. | * Can determine reason why figures are congruent (i.e. congruence conjectures) * Can use congruence conjectures to solve a problems (possibly via cpctc, or algebraic problem with expression in figures) * Can decide whether triangles are congruent or not( knows when AAA or SSA make it impossible to determine congruency) |
| 3-4 | Getting There | The student is able to:  i. **select** appropriate mathematics when  solving more complex problems in  familiar situations  ii. **apply** the selected mathematics  successfully when solving these  problems  iii. **generally** solve these problems  correctly. | * Can complete a congruence statement accurately * Can determine why figures are congruent given all of the information * Can use congruence statement to determine congruent parts * Reasoning is only partially correct (or correct in only part of the problem) |
| 1-2 | Not Yet | The student is able to:  i. **select** appropriate mathematics when  solving simple problems in familiar  situations  ii. **apply** the selected mathematics  sometimes when solving  iii. generally **solve** these problems  correctly. | With help, partial success at score 3-4 and score 5-6 content |
| Score 0.0 | Score 0.0 | The student does not reach a standard indicated by any of the standards below. | Even with help, no success |

**Scale for Big Idea: Problem solving**

**Criterion A**: Knowing and Understanding Year 5 Rubric **Maximum: 8**

Students should be able to:

1. **select** appropriate mathematics when solving problems
2. **apply** the selected mathematicals successfully when solving problems
3. **solve** problems correctly in both familiar and unfamiliar situations in a variety of contexts.

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| Achievement Level | Proficiency  Level | Level Descriptor | Task Specific Description |
| 7-8 | Score Advanced | The student is able to:  i. **select** appropriate mathematics when  solving challenging problems in both  familiar and unfamiliar situations  ii. **apply** the selected mathematics successfully  when solving these problems  iii. generally **solve** these problems correctly. | * Can find the missing dimensions in a multi-step problem using appropriate tools. * Can solve problems that include mixed units of measure. * Can apply tools in a novel situation(may need to explore multiple solutions) * Be able to show evidence of proficiency from the other bands in the rubric. |
| 5-6 | Strong | The student is able to:  i. **select** appropriate mathematics when  solving challenging problems in familiar  situations  ii. **apply** the selected mathematics successfully  when solving these problems  iii. generally **solve** these problems correctly. | * Can accurately solve multiple-step problems. * Can use tools to solve story problems or real world problems |
| 3-4 | Getting There | The student is able to:  i. **select** appropriate mathematics when  solving more complex problems in familiar  situations  ii. **apply** the selected mathematics successfully  when solving these problems  iii. generally **solve** these problems correctly. | * Can successfully solve one part of a multi-step problem. Can solve multiple-step problems, with minor errors. * Can accurately model a problem using a diagram. * Can choose the appropriate tool for solving a problem. * Can accurately solve multiple-step problems with scaffolding provided. |
| 1-2 | Not Yet | The student is able to:  i. **select** appropriate mathematics when  solving simple problems in familiar  situations  ii. **apply** the selected mathematics sometimes  when solving  iii. generally **solve** these problems correctly. | With help, partial success at score 3-4 and score 5-6 content |
| Score 0.0 | Score 0.0 | The student does not reach a standard indicated by any of the standards below. | Even with help, no success |