List of Formative Rubrics - Geometry

1. [Classifying triangles with justification](#_Score_levels_for…)
2. [Using the Pythagorean Theorem](#_Score_levels_for…_1)
3. [Lines, transversals, and the angles they form](#_Scoring_levels_for)
4. [Identifying and using perpendicular lines](#_Score_levels_for)
5. [Similar triangles and proportional parts](#_Score_levels_for…_2)

# Score levels for… “classifying triangles by sides and angles with justification”

10 – Student correctly classifies triangles by sides and angles (equilateral, isosceles, or scalene) and (obtuse, acute, right). Student provides justifications and justifications are as precise as possible from the information / tools available. Student uses well -structured sentences to communicate their claims.

8 - Student correctly classifies triangles by sides and angles (equilateral, isosceles, or scalene) and (obtuse, acute, right). Student provides justifications and justifications are as precise as possible from the information / tools available.

6 - Student correctly classifies triangles by sides and angles (equilateral, isosceles, or scalene) and (obtuse, acute, right).

4 – Student incorrectly classifies triangles by sides and/or angles.

# Score levels for… “using the Pythagorean Theorem”

10 – Student demonstrates an understanding of the Pythagorean Thm. regardless of position of missing side. Student uses (and justifies) the Pythagorean Theorem, or distance formula, to find the distance between two coordinates. Student uses the Pyth Thm to classify a triangle by angles.

8 – Student fully meets two of the criteria for a score of 10.

6 – Student fully meets one of the criteria for a score of 10.

4 – Student partially meets one of the criteria for a score of 10, but does not fully meet any.

# Scoring levels for “Lines, transversals, and the angles they form”

There are three criteria for this standard.

1. The student can recognize, name (from an illustration), and justify the ‘angle pairs’ discussed in the text that are formed by a pair of lines and a transversal. These pairs are… alternate interior angles, corresponding angles, consecutive interior angles, alternate exterior angles. ‘Same side interior’ is equivalent to ‘consecutive interior’.
2. The student recognizes the relationship that exists between angles, if and only if lines are parallel, in a ‘pair’.
3. The student recognizes the relationship that exists between angles, independent of parallel lines, in a ‘pair’.

Scoring note – When scoring criteria 2, the student’s response actually has two levels to consider. First, the student must correctly understand what ‘congruent’ and ‘supplementary’ mean. Second, the student must choose angles whose relationship depends on the lines being parallel. If the student clearly demonstrates an understanding of the ‘congruent’ and ‘supplementary’, then the student should receive at least ‘partially correct’.

10 – The student fully meets each of the three criteria.

8 – The student fully meets two of the three criteria.

6 – The student partially meets two of the criteria, but does not fully meet any.

 OR The student completely meets exactly one of the criteria.

5 – The student partially meets only one of the criteria.

# Score levels for … “Identifying and using perpendicular lines”

There are three criteria for this standard.

1. Given information defining a pair of lines on the coordinate plane (equation, points, etc) the student determines if the lines are perpendicular – and justify their decision.

E – student correctly determines if lines are perpendicular AND (justifies the decision by stating the slopes do (or do not) have a product of -1 OR determines –and states- actual angle measures found from an accurate graph or using trigonometry.

P – student correctly determine if lines are perpendicular, but justification is weak.

I – student does not make the correct determination.

1. Given a pair of perpendicular lines (stated or labeled), the student communicates that this implies their angle of intersection measures 900.

This criteria is scored as essentially correct or incorrect.

1. Given a pair of perpendicular lines (stated or labeled) and expressions (algebraic) representing parts of the angle of intersection,
2. the student determines (and states) the relationship between the expressions
3. the student uses the relationship to find the missing information (value of variable or angle meausures)

E – the student determines the correct relationship between the expressions AND the student correctly finds the missing information (minor calculation (not concept) errors may be overlooked)

P – the student determines the correct relationship between the expression, but the student does not find the missing information correctly

I – the student does not determine the correct relationship.

# Score levels for… “similar triangles and proportional parts.”

There are three parts to this standard, each scored separately.

1. Given information about a pair of triangles, written or illustrated, the student determines if the triangles are similar – and correctly justifies their decision from the given information.

In addition to the definition of similar triangles, students may cite the applicable theorems such as AA, SSS, or SAS. If the student bases their decision on inferred relationships, then students should justify those inferences.

E -> student correctly determines if the triangles are similar and correctly justifies their decision from the given information.

P-> student correctly determines if the triangles are similar BUT justification is incomplete or incorrect.

I-> student does not correctly determine if the triangles are similar.

1. Given a pair of similar triangles, the students uses the relationships (corresponding sides are proportional and corresponding angles are congruent) to find missing indicated measures.

E-> student correctly finds missing angle measures as well as missing side measures

P-> student correctly finds one type of missing measurement, but not both.

I-> student does not correctly find missing measurements.

1. Given a triangle in which two sides are cut by a segment that is parallel to the third side, the student determines / uses the proportionality of the cut sides to find missing measures AND the student bases this relationship on the parallel lines segments.

E-> student meets each of these criteria (find and justify)

P-> student meets only one of these criteria

I-> student does not meet either criteria