

## Grades 9-12 Unpacked Advanced Math Standards – Measurement

**9-12.M1.1A.** Students are able to **use** dimensional analysis to check answers and **determine** units of a problem solution.

**Webb Level: 2**

**Bloom: Application**

**Verbs Defined:**

**Use:** apply

**Determine:** find

**Key terms defined:**

Dimensional analysis: A method of manipulating unit measures algebraically to determine the proper units for a quantity computed algebraically.

Units: measurement quantities

**Teacher Speak:**

Students are able to use (apply) dimensional analysis to check answers and determine (find) units of a problem solution.

**Student Speak:**

- I can apply (use) equivalent unit measures to convert within and between metric and US customary systems.
- I can apply (use) dimensional analysis (A method of manipulating unit measures algebraically to determine the proper units for a quantity computed algebraically.) as a problem solving tool (a way of checking answers.)

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**9-12.M.1.2A.** Students are able to **use** indirect measurement in problem situations that defy direct measurement.

**Webb Level: 3**

**Bloom: Analysis**

**Verbs Defined:**

**Use:** Apply.

**Key terms defined:**

Indirect Measurement: Problem situations in which distances and angle measurements cannot be determined with a measurement tool.

Direct Measurement: Problem situations in which distances and angle measurements can be determined with a measurement tool.

**Teacher Speak:**

Students are able to use (apply) indirect measurement in problem situations that defy direct measurement.

**Student Speak:**

I can apply similar triangles to find missing sides and angles that can't be measured directly.

I can apply the laws of sines (ASA, AAS, SSA), and cosines (SSS, SAS) to find the missing sides and angles.

Given a problem situation, I can find the angles of elevation and/or depression (inclination and declination).

Given appropriate measurements (SSS, SAS, ASA, AAS, SSA), I can find the area of any triangle.

I can apply triangle relationships to find the area of any quadrilateral, any polygon up to 5 sides and any regular polygon.