**MATH STANDARDS: REQUIRED FLUENCIES AND CLUSTERS**

**8**

A PACIFIC UNION CONFERENCE CORRELATION OF NAD AND CCSS

Required fluencies are the skills to be mastered at this level. Clusters define where students and teachers should spend a large majority of their time in order to meet the expectations of the standards. Each fluency/cluster is linked to the corresponding NAD and Common Core Standard. The teacher will notice the NAD Standards are summarized and the Common Core standards provide an extensive explanation of the standards.

**Color Key:** Major Clusters Supporting Clusters Additional Clusters

Common Core State Standards (CCSS) North American Division Standards (NAD)

| **Fluencies / Clusters** | | **Big Ideas Correlation** | **Assessment Dates** | | **Notes**  **(Struggling students, additional resources & ideas, etc.)** |
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| **Required**  **Fluencies** | Solutions of one-variable linear equations where coefficients may be rational.  ([NAD 8.OAT.3](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Operations%20and%20Algebraic%20Thinking.pdf)) ([CCSS 8.EE.7](http://www.corestandards.org/Math/Content/8/EE/)) | Section 1.1, 1.2, 1.3, 1.3b, 1.4, 2.1, 2.5, 2.6, 2.7, 3.5, 8.1, 8.2, 8.3, 8.4 |  |  |  |
| Set of geometric measurement skills (volume of cones, cylinders, and spheres – includes seventh grade work in angle measure, area, surface area and volume).  ([NAD 8.GEO.3](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Geometry.pdf)) ([CCSS 8.G.9](http://www.corestandards.org/Math/Content/8/G)) | Topic 2 |  |  |  |
| **NUMBERS AND OPERATIONS (NAD) / THE NUMBER SYSTEM (CCSS)** | | | | | |
| Know that there are numbers that are not rational, and approximate them by rational numbers. ([NAD 8.NO.1](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Numbers%20and%20Operations.pdf)) ([CCSS 8.NS.1-2](http://www.corestandards.org/Math/Content/8/NS/)) | | Section 6.3, 6.3b, 6.4 |  |  |  |
| **OPERATIONS AND ALGEBRAIC THINKING (NAD) / EXPRESSIONS AND EQUATIONS (CCSS)** | | | | | |
| Work with radicals and integer exponents.  ([NAD 8.OAT.1](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Operations%20and%20Algebraic%20Thinking.pdf)) ([CCSS 8.EE.1-4](http://www.corestandards.org/Math/Content/8/EE/)) | | Section 6.1, 6.2, 6.3, 6.3b, 6.5, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.6b |  |  |  |
| Understand the connections between proportional relationships, lines, and linear equations. ([NAD 8.OAT.2](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Operations%20and%20Algebraic%20Thinking.pdf)) ([CCSS 8.EE.5-6](http://www.corestandards.org/Math/Content/8/EE/)) | | Section 1.5, 2.2, 2.2b, 2.3, 2.4, 3.1, 3.2, 3.4, 3.4b |  |  |  |
| Analyze and solve linear equations and pairs of simultaneous linear equations.  ([NAD 8.OAT.3](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Operations%20and%20Algebraic%20Thinking.pdf)) ([CCSS 8.EE.7-8](http://www.corestandards.org/Math/Content/8/EE/)) | | Section 1.1, 1.2, 1.3, 1.3b, 1.4, 2.1, 2.5, 2.6, 2.7, 3.5, 8.1, 8.2, 8.3, 8.4 |  |  |  |
| **OPERATIONS AND ALGEBRAIC THINKING (NAD) / FUNCTIONS (CCSS)** | | | | | |
| Define, evaluate, and compare functions.  ([NAD 8.OAT.4](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Operations%20and%20Algebraic%20Thinking.pdf)) ([CCSS 8.F.1-3](http://www.corestandards.org/Math/Content/8/F/)) | | Section 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.4b |  |  |  |
| Use functions to model relationships between quantities.  ([NAD 8.OAT.4](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Operations%20and%20Algebraic%20Thinking.pdf)) ([CCSS 8.F.4-5](http://www.corestandards.org/Math/Content/8/F/)) | | Section 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.4b |  |  |  |
| **GEOMETRY (NAD / CCSS)** | | | | | |
| Understand congruence and similarity using physical models, transparencies, or geometry software.  ([NAD 8.GEO.1](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Geometry.pdf)) ([CCSS 8.G.1-5](http://www.corestandards.org/Math/Content/8/G/)) | | Topic 1 / Section 5.1, 5.2, 5.3, 5.4, 5.5 |  |  |  |
| Understand and apply the Pythagorean Theorem. ([NAD 8.GEO.2](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Geometry.pdf)) ([CCSS 8.G.6-8](http://www.corestandards.org/Math/Content/8/G/)) | | Section 6.2, 6.5 |  |  |  |
| Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.  ([NAD 8.GEO.3](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Geometry.pdf)) ([CCSS 8.G.9](http://www.corestandards.org/Math/Content/8/G/)) | | Topic 2 |  |  |  |
| **DATA ANALYSIS, STATISTICS, AND PROBABILITY (NAD) / STATISTICS AND PROBABILITY (CCSS)** | | | | | |
| Investigate patterns of association in bivariate data.  ([NAD 8.DSP.1](http://adventisteducation.org/downloads/pdf/Elementary%20Math%20Standards%20Data%20Analysis%20Statistics%20and%20Probability.pdf)) ([CCSS 8.SP.1-4](http://www.corestandards.org/Math/Content/8/SP/)) | | Section 2.1, 7.1, 7.2, 7.3, 7.3b, 7.4 |  |  |  |