**MATH STANDARDS: TEACHER RESOURCES**

**8**

A PACIFIC UNION CONFERENCE CORRELATION OF NAD AND CCSS

This resource provides the teacher with identification of fluencies/clusters to be taught, vocabulary necessary for student comprehension, as well as internet, app and print resources to support implementation of the Mathematics Standards.

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

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

| **Teacher Resources** |
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| **REQUIRED FLUENCIES (Skills to be mastered at this level)** |
| 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/)) |
| 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)) |
| **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/)) |
| **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/)) |
| 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/)) |
| 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/)) |
| **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/)) |
| 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/)) |
| **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/)) |
| 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/)) |
| 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/)) |
| **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/)) |
| **MATH TARGET VOCABULARY** |
| alternate exterior anglesalternate interior anglesassociationbivariateclusteringcoefficientcongruenceconsecutive interior anglescorresponding anglescube rootdecimal notationimageinputirrational number | linearline-of-best fitmagnitudenon-linearoutputperfect cube/squarepre-imageprinciple square rootPythagorean theoremradicalradicandrate of changereflectionrotation | scatterplotsscientific notationsimilar figuresslope-intercept formstandard notationsubstitutionsystems of linear equationstransformation dilationtransversaltruncatetwo-way tabley-intercept |
| **INTERNET RESOURCES** |
| **Symbaloo** – Set up by the Pacific Union Conference, contains links to various Common Core resources including: general overview, teaching resources, assessment links, and parent resources; [www.symbaloo.com/mix/mathccresources-sda](http://www.symbaloo.com/mix/mathccresources-sda). |
| **CCSS Math** – Includes a collection of resources for every Common Core standard at every grade level. Each grade level’s page has links to an extensive variety of resources. Resources include blackline masters, instructional videos, and entire lesson plans; <https://ccssmath.org/?page_id=70>.  |
| **Discovery Education Math Common Core Wiki** – Is a good resource page for teachers of all grade levels to become familiar with the common core and its learning targets. Includes “I Can” statements; [http://demathacademy.wikispaces.com/Page+1](http://demathacademy.wikispaces.com/Page%2B1).  |
| **Engage NY** – Provides curriculum lessons for grades K-8 correlated to Common Core by grade level and topic, in addition to many other Common Core Resources filtered by subject, grade level and resource. Use the Common Core Hat dropdown menu to find Common Core Assessments with access to annotated test questions and answers for grades 3-8; [www.engageny.org/ccss-library](http://www.engageny.org/ccss-library).  |
| **Illustrative Mathematics** – Provides sample problems and illustrations for each standard; [www.illustrativemathematics.org/standards/k8](http://www.illustrativemathematics.org/standards/k8). |
| **Inside Mathematics** – Includes resources categorized by grade level and domain. Resources include .pdf blackline copies of lesson plans & student sheets, videos, MARS tasks, and problems of the month. Particularly useful for gifted students. This site also includes information and videos about implementing the Common Core standards for mathematical practice; [www.insidemathematics.org/common-core-resources/mathematical-content-standards/standards-by-grade/8th-grade](http://www.insidemathematics.org/common-core-resources/mathematical-content-standards/standards-by-grade/8th-grade).  |
| **Internet 4 Classrooms CCSS Home Page** – Is a website that has printables, assessments, links, homework help, training for teachers, and technology skills by grade level for each of the standards; [www.internet4classrooms.com/common\_core/index.htm](http://www.internet4classrooms.com/common_core/index.htm).  |
| **Khan Academy** – Provides online practice activities for students by CCSS number. Includes explanation video for each standard; [www.khanacademy.org/commoncore/grade-8-G](http://www.khanacademy.org/commoncore/grade-8-G).  |
| **Live Binders CCSS for Math** – Is a clearinghouse website with extensive resources for each CCSS standard, including links, downloads, reviews of resources such as mobile apps; [www.livebinders.com/play/play/187117](http://www.livebinders.com/play/play/187117).  |
| **North Carolina Mathematics Wiki** – Gives a variety of resources for 7th grade in relationship to the common core and more links to other sites; [http://maccss.ncdpi.wikispaces.net/Eighth+Grade](http://maccss.ncdpi.wikispaces.net/Eighth%2BGrade).  |
| **Opus Math** – Is a worksheet generator by standard for all grade levels. Opus is strongest in grades 7 and 8, but has a growing collection of problems outside those grades; [www.opusmath.com](http://www.opusmath.com). |
| **Share my Lesson** – Has lessons organized by standard that were created by teachers for teachers. Join for free to access lessons; [www.sharemylesson.com/article.aspx?storyCode=50005646](http://www.sharemylesson.com/article.aspx?storyCode=50005646).  |
| **Teaching Channel** – Provides hundreds of videos for instructional support including Common Core. Search by subject, grade level and/or topic; [www.teachingchannel.org/videos?page=1&categories=grades\_8,topics\_common-core&load=1](http://www.teachingchannel.org/videos?page=1&categories=grades_8,topics_common-core&load=1).  |
| **APP RESOURCES** |
| ***Common Core Library*** by WAGmob is a free iPhone/iPad app that lists all of the standards and includes links to math activities and assessments by grade level. Links to grade level activities are available for $1.99. |
| ***Hands on Equations 1*** by Hands on Equations is a iPhone/iPad app that uses virtual game pieces to demystify complex algebraic concepts. Proven to help students gain confidence with algebra. Try the free lite version. Full version is $3.99. |
| **PRINT RESOURCES** |
| ***The Common Core: Clarifying Expectations for Teachers & Students****,* published by McGraw-Hill, has flipbooks for each grade level which include “I Can” statements, activities, and assessments for each standard. Each flipbook costs approximately $15.00. Available at: [www.mheonline.com/aaa/index.php?page=flipbooks&cur=MathPage](http://www.mheonline.com/aaa/index.php?page=flipbooks&cur=MathPage). |