Common Core Standards for Mathematical Practice

MP1: Make sense of problems and persevere in solving them.

MP2: Reason abstractly and quantitatively.

MP3: Construct viable arguments and critique the reasoning of others.

MP4: Model with mathematics.

MP5: Use appropriate tools strategically.

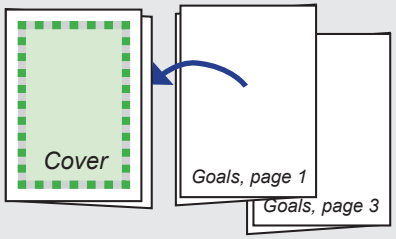
MP6: Attend to precision.

MP7: Look for and make use of structure.

MP8: Look for and express regularity in repeated reasoning.

Making a Leaflet

Fold all three sheets in half as shown. Put goal pages 1-4 within cover sheet and staple along left edge.

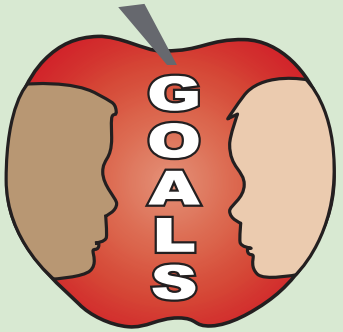


Name_____

COMMON CORE STATE STANDARDS

Grade 8 Math

"I Can" Math Goals



Clear Goals Form the* CORE *of the Grade 8 Math Program

Courtesy of K-8 Math Sense for 2017-2018

Grade 8 CCSS Math Goals

Name _____

Class _____ Date _____

For each goal that has been mastered, mark the box and write the date.

EXPRESSIONS AND EQUATIONS

1 Work with radicals and integer exponents.

1. I can simplify and evaluate numerical expressions with integer exponents. ☐ _____
2. I can develop and apply properties of exponents. ☐ _____
3. I can use square root and cube root symbols. ☐ _____
4. I can evaluate square roots and cube roots. ☐ _____
5. I can convert between standard notation and scientific notation. ☐ _____
6. I can use scientific notation to compare relative sizes of numbers. ☐ _____
7. I can perform operations on numbers in scientific notation. ☐ _____
8. I can use scientific notation to solve problems. ☐ _____
9. I can convert measurement results to appropriate units. ☐ _____

2 Understand the connections between proportional relationships, lines, and linear equations.

1. I can graph proportional relationships. ☐ _____
2. I can compare two representations of a proportional relationship. ☐ _____
3. I can use similar triangles to verify that a line has constant slope. ☐ _____
4. I can relate linear equations to slopes and intercepts. ☐ _____

3 Analyze and solve linear equations and pairs of simultaneous linear equations.

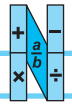
1. I can simplify and solve linear equations by writing equivalent forms. ☐ _____
2. I can identify or write equations with 0, 1, or infinitely many solutions. ☐ _____
3. I can simplify and solve linear equations with rational coefficients. ☐ _____
4. I can identify the solution to a system of two linear equations as the intersection point. ☐ _____
5. I can solve systems of two linear equations algebraically. ☐ _____
6. I can estimate the solution to two linear equations by graphing. ☐ _____
7. I can solve problems involving systems of two linear equations. ☐ _____

4 **FUNCTIONS** Define, evaluate, and compare functions.

1. I can understand that a function is a rule. ☐ _____
2. I can compare two representations of a function. ☐ _____
3. I can decide if a function is linear or non-linear. ☐ _____

5 **FUNCTIONS** Use functions to model relationships between quantities.

1. I can identify rate of change from a graph, table, or description. ☐ _____
2. I can identify initial value of a function from a graph, table, or description. ☐ _____
3. I can write a function from the rate of change and initial value. ☐ _____
4. I can describe features of a non-linear function from its graph. ☐ _____
5. I can sketch a graph from a verbal description of its features. ☐ _____



THE NUMBER SYSTEM

1 Know that there are numbers that are not rational, and approximate them by rational numbers.

- **1.** I can identify rational and irrational numbers. ☐ _____
- **2.** I can convert repeating decimals to rational numbers. ☐ _____
- **3.** I can find approximations for irrational numbers. ☐ _____

GEOMETRY

1 Understand congruence and similarity using physical models, transparencies, or geometry software.

- **1.** I can identify congruent parts in rotations, reflections, and translations. ☐ _____
- **2.** I can identify transformations that move a figure onto a congruent figure. ☐ _____
- **3.** I can use coordinates to describe translations, reflections, and rotations. ☐ _____
- **4.** I can use coordinates to describe dilations. ☐ _____
- **5.** I can compare ratios of side lengths to decide if two figures are similar. ☐ _____
- **6.** I can identify the scale factor that enlarges or reduces a figure to match a similar figure. ☐ _____
- **7.** I can identify transformations that move a figure onto a similar figure. ☐ _____
- **8.** I can justify and calculate angle measures in triangles and line figures. ☐ _____
- **9.** I can justify the angle-angle criterion of similar triangles. ☐ _____

2 Understand and apply the Pythagorean Theorem.

- **1.** I can explain a proof of the Pythagorean Theorem and its converse. ☐ _____
- **2.** I can use the Pythagorean Theorem to find lengths. ☐ _____
- **3.** I can use the Pythagorean Theorem to find distance between points. ☐ _____

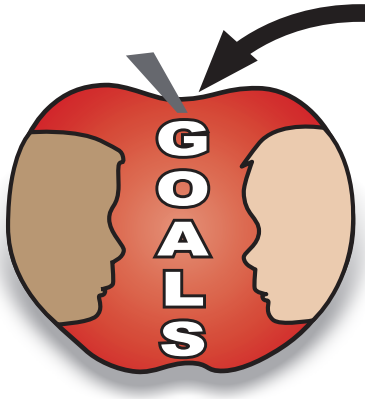
3 Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

- **1.** I can apply the formula for volume of a cone. ☐ _____
- **2.** I can apply the formula for volume of a cylinder. ☐ _____
- **3.** I can apply the formula for volume of a sphere. ☐ _____
- **4.** I can apply formulas to find volumes of combined solids. ☐ _____

STATISTICS AND PROBABILITY

1 Investigate patterns of association in bivariate data.

- **1.** I can construct scatter plots. ☐ _____
- **2.** I can interpret scatter plots. ☐ _____
- **3.** For data that appear to be linear, I can estimate a line of best fit. ☐ _____
- **4.** I can informally assess the fit of a linear model. ☐ _____
- **5.** I can interpret a linear model for real-world data. ☐ _____
- **6.** I can compare frequencies and relative frequencies from two-way tables. ☐ _____



Clear Goals Form the CORE of a Sensible Math Program

ALIGN • COMMUNICATE • ASSESS & TRACK • USE GAMES

1. How can you **ALIGN** goals to the math standards?
2. How can you effectively **COMMUNICATE** the goals?
3. How can you easily **ASSESS** all of the year's goals?
4. How can you **TRACK** students' progress towards mastering the goals?
5. How can you **USE GAMES** to help students meet the goals?

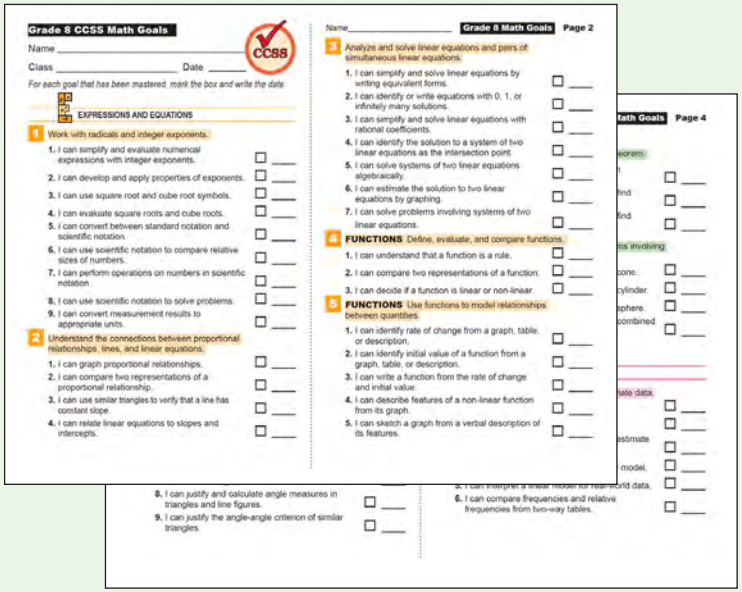
Resources from K-8 Math Sense will help you and your students achieve the year's goals.

K-8 Math Sense by Angie Seltzer

1 How can you ALIGN goals to the math standards?

GRADE 8

FREE Math Goal Leaflets



The goals in the FREE leaflets were written to match the Common Core standards with student-friendly language. These goals form the basis of all other resources by Angie Seltzer from K-8 Math Sense.

Domain Colors and Letters	
E	EXPRESSIONS & EQUATIONS
G	GEOMETRY
N	THE NUMBER SYSTEM
S	STATISTICS AND PROBABILITY

Correlations to Common Core

These tables show alignment of the goals to the Common Core standards. The shaded rows show codes for CCSS cluster statements. If your district has its own standards, fill in the numbers in the right column.

GOAL	CCSS	
8-G1	8.G.A	
8-G11	8.G.1	
8-G12	8.G.2	
8-G13	8.G.3	
8-G14	8.G.4	
8-G15	8.G.4	
8-G16	8.G.4	
8-G17	8.G.4	
8-G18	8.G.5	
8-G19	8.G.5	
8-G2	8.G.B	
8-G21	8.G.6	
8-G22	8.G.7	
8-G23	8.G.8	
8-G3	8.G.C	
8-G31	8.G.9	
8-G32	8.G.9	
8-G33	8.G.9	
8-G34	8.G.9	

GOAL	CCSS	
8-E1	8.EE.A	
8-E11	8.EE.1	
8-E12	8.EE.1	
8-E13	8.EE.2	
8-E14	8.EE.2	
8-E15	8.EE.3	
8-E16	8.EE.3	
8-E17	8.EE.4	
8-E18	8.EE.4	
8-E19	8.EE.4	
8-E3	8.EE.B	
8-E21	8.EE.5	
8-E22	8.EE.5	
8-E23	8.EE.6	
8-E24	8.EE.6	
8-E3	8.EE.C	
8-E31	8.EE.7a	
8-E32	8.EE.7a	
8-E33	8.EE.7b	
8-E34	8.EE.8a	
8-E35	8.EE.8b	
8-E36	8.EE.8b	
8-E37	8.EE.8c	

GOAL	CCSS	
8-E4	8.F.A	
8-E41	8.F.1	
8-E42	8.F.2	
8-E43	8.F.3	
8-E5	8.F.B	
8-E51	8.F.4	
8-E52	8.F.4	
8-E53	8.F.4	
8-E54	8.F.5	
8-E55	8.F.5	
8-N1	8.NS.A	
8-N11	8.NS.1	
8-N12	8.NS.1	
8-N13	8.NS.2	
8-S1	8.SP.A	
8-S11	8.SP.1	
8-S12	8.SP.1	
8-S13	8.SP.2	
8-S14	8.SP.2	
8-S15	8.SP.3	
8-S16	8.SP.4	

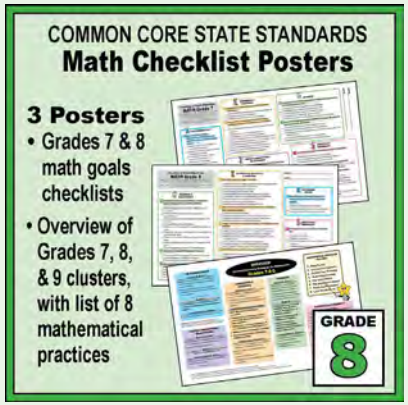
K-8 Math Sense by Angie Seltzer

2 How can you effectively COMMUNICATE the goals?

GRADE 8

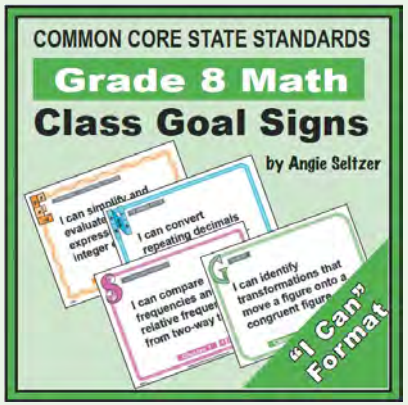
Common Core Math Communication BUNDLE

Get four resources for displaying and discussing Grade 8 math goals.



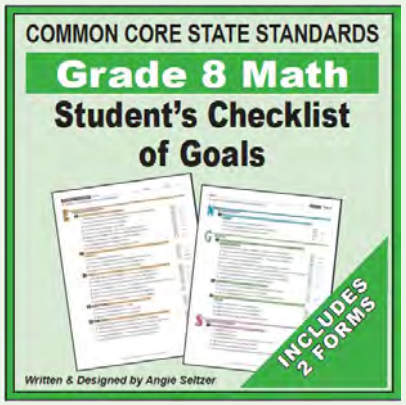
CHECKLIST POSTERS

All Grade 8 goals are on one 11” by 17” poster. Also includes posters for the prior and next grades.



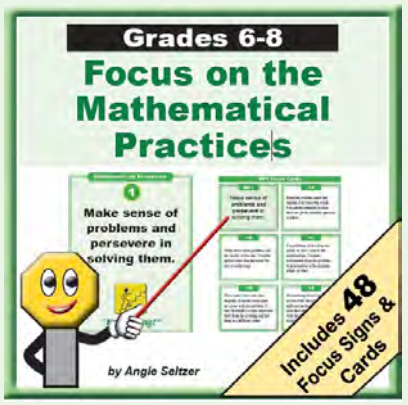
CLASS GOAL SIGNS

Each goal is a separate 8.5” by 11” sign. Display a goal each day. Add your own custom goals.



STUDENT’S CHECKLIST

All Grade 8 goals are on two 8.5” by 11” pages. Keep in students’ folders. Choose from two layouts.



FOCUS ON THE MATH PRACTICES

Display and discuss five strategies for each of the 8 MP standards. Focus cards help during problem solving.

What teachers are saying...

“So organized and a true lifesaver!”

“Thanks so much this is an awesome resource!”

“Love this set! Saved me so much time!”

“Great resource! Just what I was looking for!”

See Coordinated Resources Across K-8

PRICE: $9.95
PAGES: 160

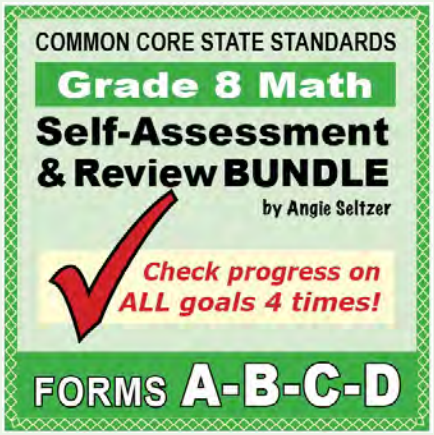
Written and designed by Angie Seltzer

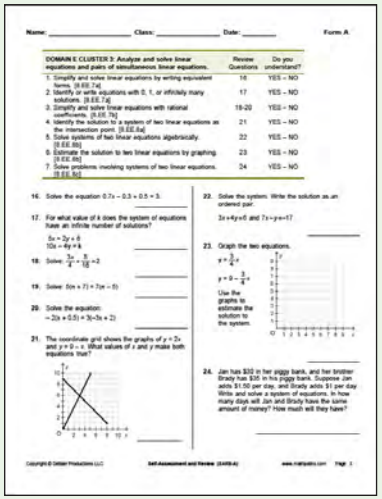
www.k8mathsense.com

How can you easily ASSESS all of the year's goals?

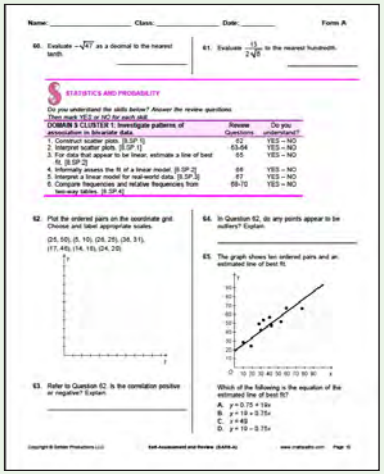
GRADE 8

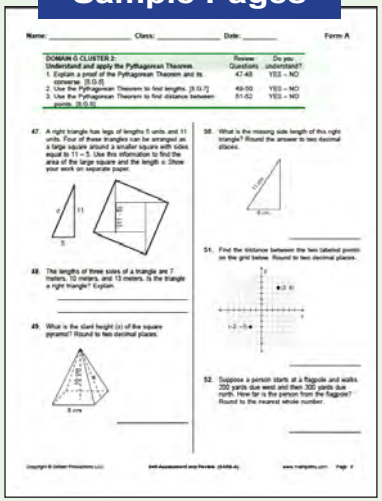
Math Self-Assessment & Review BUNDLE (Forms A-D)





Sample Pages





OVERVIEW

View goals and related review questions aligned to ALL Common Core math standards. This bundle includes four parallel versions, A-D, for Grade 8. Use throughout the year to check progress. Even if your state is using a variation of CCSS, the content is likely to match closely.

FEATURES OF EACH REVIEW PACKET

- Self-assessment checklist of goals for each Common Core cluster
- 70 review questions (at least one per goal)
- 11 student pages and 3 answer pages
- Paper-saving two-column layout

Review Bundles are Available for Grades 3-8

What teachers are saying...

"Great tool for self-assessment and state testing!!"

"The self-assessment is great. Keeps students accountable for their learning. Thank you."

"I like the layout and variety of problems."

"Awesome tool!!"

"I love the checklist at the top for the student to be able to see what the standards/goals are!"

K-8 Math Sense by Angie Seltzer

PRICE: $12.50
PAGES: 64

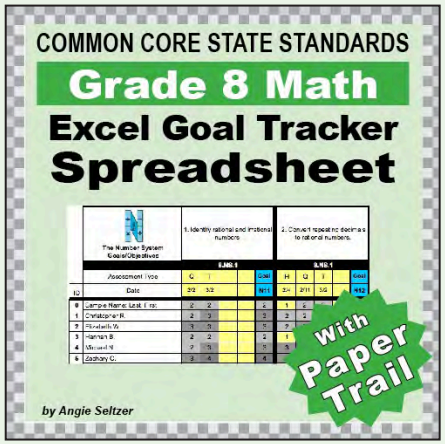
Written and designed by Angie Seltzer

www.k8mathsense.com

How can you TRACK students' progress towards mastering the goals?

GRADE 8

EXCEL Goal Tracker Spreadsheet

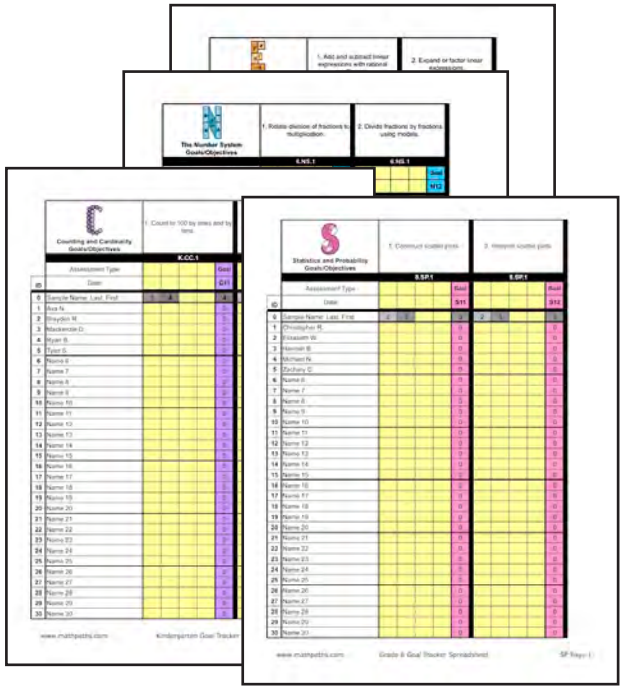


OVERVIEW

This product provides the tools you need to easily plan and track progress of all 53 Grade 8 math goals using Excel. An interactive Preview is available.

FEATURES

- Tabbed worksheets for each domain show all goals and space for custom goals.
- Enter up to 30 students' names on one sheet and they are automatically copied to the other sheets.
- Record progress four times for each goal. Entries are shaded so you can see mastery levels at-a-glance.
- The "Paper Trail" is a quick way to document class progress on any goal.
- View class summaries for each goal or all progress for one student.
- Comes with a 75-page PDF of all Excel pages.



'PaperTrail' Class Goal Assessments

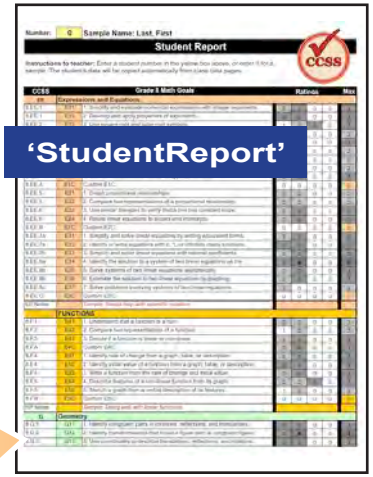
What teachers are saying...

"Wow! So much thoughtfulness went into the creation of this product."

"Perfect for tracking student progress. Very easy to use! Data collection has never been easier :)"

"Amazing resource!!!"

'StudentReport'



Document Progress for a Class of 30 Students

PRICE: $9.95
PAGES: 75

www.k8mathsense.com

5 How can you USE GAMES to help students meet the goals?

GRADE 8

Multi-Match Math Games BUNDLE

OVERVIEW

This bundle includes 13 card sets aligned to key Grade 8 goals. Card sets are quick-prep – just print 5 sheets of paper, cut, and play! You'll also get a Games Guide with instructions for four games in English and Spanish. Play the games with any card set.

PRICE: $10.79
PAGES: 145

FEATURES OF EACH SET

- 36 math cards as 9 groups of four cards, one from each of four suits
- A recording sheet and answer key
- A handy folding card storage pocket
- Brief instruction cards for four games
- Perfect to use in a math center, by partners or groups
- Great for emphasizing Common Core MP standards

Goal		Grade 8 Card Sets
8-E11	E	***FREE*** Understanding Integer Exponents
8-E14	E	Understanding Square Roots
8-E14	E	Understanding Cube Roots
8-E15	E	Scientific Notation
8-E31	E	Equivalent Equations
8-E42	E	Models for Linear Functions
8-G18	G	Angle Relationships
8-G22	G	Length of the Hypotenuse
8-G23	G	The Pythagorean Theorem & Coordinates
8-G31	G	Volume of Cones
8-G32	G	Volume of Cylinders
8-G33	G	Comparing Volumes of Spheres, Cones, & Cylinders
8-N12	N	Fractions as Repeating Decimals

What teachers are saying...

"Great activities and lots of fun. Gives good practice for my students. Thank you so much."

"Great resource. The kids love the activities/ games. Keeps them thinking."

"These are terrific - very engaging, and they will encourage higher-level thinking and good discussions between the kids. Thank you!

"Great to be able to have a resource that I can just pull out and USE!"

"Wonderful!"