PROBLEM SOLVING

FOR THE 21ST CENTURY

BUILT FOR THE

NYS NEXT GENERATION LEARNING STANDARDS

Illustrative Math Alignments

Grade 8

1. Login to Exemplars Library: library.exemplars.com with your school e-mail and password

2. Select the Grade 8 Unit you are working on:
   - Unit 1: Rigid Transformations and Congruence
   - Unit 2: Dilations, Similarity, and Introducing Slope
   - Unit 3: Linear Relationships
   - Unit 4: Linear Equations and Linear Systems
   - Unit 5: Functions and Volume
   - Unit 6: Associations in Data
   - Unit 7: Exponents and Scientific Notation
   - Unit 8: Pythagorean Theorem and Irrational Numbers
   - Unit 9: Putting it All Together

3. Once you are in the correct Unit, click on the task name, which is directly linked to the Exemplars Library where you can download a printer-friendly PDF and lesson planning sheet for the corresponding task.

Illustrative Math: Grade 8

Unit 1: Rigid Transformations and Congruence
Lessons 1-17

Rigid Transformations (Lessons 1-6) NY-8.G.A.1 NY-8.G.A.3	Properties of Rigid Transformations (Lessons 7-10) NY-8.G.A.1	Congruence (Lessons 11-13) NY-8.G.A.1 NY-8.G.A.2	Angles in a Triangle (Lessons 14-16) NY-8.G.A.1 NY-8.G.A.5	Let's Put It to Work (Lesson 17) NY-8.G.A.1 NY-8.G.A.2 NY-8.G.A.5

The standards of focus in this unit do not have any aligned tasks in the Exemplars Library because the standards cannot be assessed through problem solving. The standards are too narrowly defined to assess at DOK3.

Depth-of-Knowledge Level 3 (Strategic Thinking) requires reasoning, planning, using evidence, and a higher level of thinking than the previous two levels. In most instances, requiring students to explain their thinking is a Level 3. Activities that require students to make conjectures are also at this level. The cognitive demands at Level 3 are complex and abstract. The complexity does not result from the fact that there are multiple answers, a possibility for both Levels 1 and 2, but because the task requires more demanding reasoning. An activity, however, that has more than one possible answer and requires students to justify the response they give would most likely be a Level 3. Other Level 3 activities include drawing conclusions from observations; citing evidence and developing a logical argument for concepts; explaining phenomena in terms of concepts; and deciding which concepts to apply in order to solve a complex problem.

Depth-of-Knowledge definition per Norman L. Webb & others, Web Alignment Tool (WAT) Training Manual, University of Wisconsin-Madison and Wisconsin Center for Education Research, 2005, page 45. Accessed June 2012. https://watv2.wceruw.org/

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Unit 2: Dilations, Similarity, and Introducing Slope
Lessons 1-13

Dilations (Lessons 1-5)	Similarity (Lessons 6-9)	Slope (Lessons 10-12)	Let's Put It to Work (Lesson 13)
NY-8.G.A.3	NY-8.G.A.2 NY-8.G.A.4 NY-8.G.A.5	NY-8.EE.B.6 NY-8.G.A.5	NY-8.G.A.4 NY-8.G.A.5

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Unit 3: Linear Relationships
Lessons 1-14

Proportional Relationships (Lessons 1-4) NY-8.EE.B.5	Representing Linear Relationships (Lessons 5-8) NY-8.EE.B.5 NY-8.EE.B.6	Finding Slopes (Lessons 9-11) NY-8.EE.B.6	Linear Equations (Lessons 12-13) NY-8.EE.C.8.a	Let's Put it to Work (Lesson 14) NY-8.EE.B.6 NY-8.EE.C.8.a
	Race Day	Continue with task from Unit 3.		On Target
	Cafeteria Crew			
	Summative Assessment Task: Tree Growth			

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Unit 4: Linear Equations and Linear Systems
Lessons 1-16

Puzzle Problems (Lesson 1) NY-8.EE.C.7	Linear Equations in One Variable (Lesson 2-9) NY-8.EE.C.7	Systems of Linear Equations (Lesson 10-15) NY-8.EE.C.8	Let's Put It to Work (Lesson 16) NY-8.EE.C.8.c
Continue with tasks from Unit 3.	Sweet Somethings	Party Time	Continue with tasks from Unit 4.
	Kathryn's Capacity	Head Start	
	Super Savings	Dance-a-Thon DJ	
	So Much Coin	The Farmer's Wife	
	Summative Assessment Task: Icing on the Cake	Making Squares	
		Summative Assessment Task: T-Shirt Fundraiser	

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Unit 5: Functions and Volume
Lessons 1-10

Inputs and Outputs (Lessons 1-2) NY-8.F.A.1	Representing and Interpreting Functions (Lesson 3-7) NY-8.F.A.2 NY-8.F.A.3 NY-8.F.B.4 NY-8.F.B.5	Linear Functions and Rates of Change (Lesson 8-10) NY-8.F.A.2 NY-8.F.A.3 NY-8.F.B.4 NY-8.F.A.5
Continue with tasks from Unit 3 & 4	Running Late for School!	Speed-Reading Contest
	Possible Profits	Okay Zoomer
		Summative Assessment Task: The Tortoises' Hair
		Table Hopping
		Fashion Plus! Commission
		Bridges
		Perplexing Polygon Problem
		Aw, Nuts!
		Losing Charge
		Summative Assessment Task: Alien Creature Out of Control!

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Unit 5: Functions and Volume
Lessons 11-22

Cylinders and Cones (Lessons 11-16) NY-8.G.C.9	Dimenstions and Spheres (Lesson 17-21) NY-8.G.C.9	Let's Put It to Work (Lesson 22) NY-8.G.C.9
The Mystery of the Broken Cones	The Crow and the Pitcher	Continue with tasks from Unit 5
Growing Around in Circles	3 Little Pig Builders	
	April Fools' Day	
	Summative Assessment Task: Popcorn Sale	

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Unit 6: Associations in Data
Lessons 1-11

Does this Predict That? (Lessons 1-2) NY-8.SP.A.1	Associations in Numerical Data (Lessons 3-8) NY-8.SP.A.1 NY-8.SP.A.2 NY-8.SP.A.3	Associations in Categorical Data (Lessons 9-10)	Let's Put It to Work (Lesson 11) NY-8.SP.A
Continue with tasks from Unit 5.	Scattered Scores	Continue with tasks from Unit 5	Fair Weather Fans
	Summative Assessment Task: Snow Cone Sales		

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Unit 7: Exponents and Scientific Notation
Lessons 1-16

Exponent Review (Lesson 1) NY-8.EE.A.1	Exponent Rules (Lessons 2-8) NY-8.EE.A.1	Scientific Notation (Lessons 9-15) NY-8.EE.A.3 NY-8.EE.A.4	Let's Put It to Work (Lesson 16) NY-8.EE.A.3 NY-8.EE.A.4

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Exemplars® K–12
We Set the Standards!

Standards-Based Assessment + Instruction

Illustrative Math: Grade 8
Unit 8: Pythagorean Theorem and Irrational Numbers
Lessons 1-16

Side Lengths and Areas of Squares (Lessons 1-5) NY-8.EE.A.2 NY-8.NS.A.2	The Pythagorean Theorem (Lessons 6-11) NY-8.G.B.6 NY-8.G.B.7 NY-8.G.B.8	Side Lengths and Volumes of Cubes (Lessons 12-13) NY-8.EE.A.2 NY-8.NS.A.2	Decimal Representation of Rational and Irrational Numbers (Lessons 14-15) NY-8.NS.A.1	Let's Put it to Work (Lesson 16) NY-8.G.B.7
	Proving Pythagoras	Continue with tasks from Unit 8		
	Thinking inside the Box			
	Square Farms			
	Across the Canyon			
	Anchors Away			
	The Sunny Side			
	Summative Assessment Task: Stage Presence			
	Oceans Away			
	If a Bear Walks Into the Woods			
	Summative Assessment Task: Scary Reunion			

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Unit 9: Putting It All Together
Lessons 1-6

Tessellations (Lessons 1-4) NY-8.G.A.5	The Weather (Lessons 4-6) NY-8.F.A.1 NY-8.F.B NY-8.SP.A
	Continue with tasks from Unit 5 & 6