

## ELL Math Scaffolds - Grade 8 - Unit 5

	Student Learning Objective (SLO)		Language Objective		Language Needed
<b>SLO: 1</b> CCSS: 8.EE.2 WIDA ELDS: 3 Speaking Reading Writing	Evaluate square roots and cubic roots of small perfect squares and cubes respectively and use square and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$ where $p$ is a positive rational number.		<u>Demonstrate comprehension</u> of and explain how to evaluate square and cubic roots of small perfect squares and cubes and use square and cube root symbols to represent solutions to equations <i>using charts, think-alouds and models.</i>		<b>VU:</b> Possible, value <hr/> <b>LFC:</b> If clauses, comparatives <hr/> <b>LC:</b> Varies by ELP level
	ELP 1	ELP 2	ELP 3	ELP 4	ELP 5
	Language Objectives	Demonstrate comprehension of square and cubic roots of small perfect squares and cubes by using square and cube root symbols to represent solutions to equations in L1 and/or use gestures, examples and selected technical words.	Demonstrate comprehension of square and cubic roots of small perfect squares and cubes by using square and cube root symbols to represent solutions to equations in L1 and/or use selected technical vocabulary in phrases and short sentences.	Demonstrate comprehension of square and cubic roots of small perfect squares and cubes by using square and cube root symbols to represent solutions to equations which use key, technical vocabulary in simple sentences.	Demonstrate comprehension of square and cubic roots of small perfect squares and cubes by using square and cube root symbols to represent solutions to equations which use key technical vocabulary in expanded sentences.
Learning Supports	<a href="#">Teacher Modeling</a> <a href="#">Think -aloud</a> <a href="#">Small group/ triads</a> <a href="#">Word/Picture Wall</a> <a href="#">L1 text and/or support</a> <a href="#">Charts</a> <a href="#">Cloze Sentences</a>	<a href="#">Teacher Modeling</a> <a href="#">Think -aloud</a> <a href="#">Small group/ triads</a> <a href="#">Word/Symbol Wall</a> <a href="#">L1 text and/or support</a> <a href="#">Sentence Frame</a> <a href="#">Charts</a>	<a href="#">Teacher Modeling</a> <a href="#">Think -aloud</a> <a href="#">Small group/ triads</a> <a href="#">Sentence Starter</a> <a href="#">Word Wall</a> <a href="#">Charts</a>	<a href="#">Teacher Modeling</a> <a href="#">Small group/ triads</a>	<a href="#">Teacher Modeling</a>

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	Student Learning Objective (SLO)		Language Objective		Language Needed
<b>SLO: 2</b> CCSS: 8.EE.2 WIDA ELDS: 3 Listening Reading Speaking	Identify $\sqrt{2}$ as irrational.		<u>Demonstrate comprehension</u> of and explain orally and in writing how to identify $\sqrt{2}$ by identifying true statements <i>using a word wall, think-aloud, chart and partner.</i>		<b>VU:</b> Rational, irrational, expression, claim
					<b>LFC:</b> Which is true? Embedded clause, prepositional phrases
					<b>LC:</b> Varies by ELP level
	ELP 1	ELP 2	ELP 3	ELP 4	ELP 5
Language Objectives	Demonstrate comprehension of rational and irrational numbers by identifying true statements which use L1 and/or use gestures, examples and selected technical words.	Demonstrate comprehension of rational and irrational numbers by identifying true statements which use L1 and/or use selected technical vocabulary in phrases and short sentences.	Demonstrate comprehension of rational and irrational numbers by identifying true statements which use key, technical vocabulary in simple sentences.	Demonstrate comprehension of rational and irrational numbers by identifying true statements which use key, technical vocabulary in expanded sentences.	Demonstrate comprehension of rational and irrational numbers by identifying true statements which use technical vocabulary in complex sentences.
Learning Supports	<a href="#">Think -aloud</a> <a href="#">Charts</a> <a href="#">Partner work</a> Demonstration <a href="#">Word/symbol wall</a> <a href="#">L1 text and/or support</a> Completed examples	<a href="#">Think -aloud</a> <a href="#">Charts</a> <a href="#">Partner work</a> <a href="#">Word/symbol wall</a> <a href="#">L1 text and/or support</a>	<a href="#">Think -aloud</a> <a href="#">Charts</a> <a href="#">Partner work</a> <a href="#">Word Wall</a>	<a href="#">Think -aloud</a> <a href="#">Charts</a> <a href="#">Partner work</a>	<a href="#">Think -aloud</a> <a href="#">Charts</a>

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	Student Learning Objective (SLO)		Language Objective		Language Needed
<b>SLO: 3</b> CCSS: 8.G.6 WIDA ELDS: 3 Speaking Reading Writing	Explain a proof of the Pythagorean Theorem and its converse.		<u>Explain</u> orally and in writing a proof of the Pythagorean Theorem and its converse <i>using a chart, a word wall, linguistic supports and math journal.</i>		<b>VU:</b> Congruent, substitution, simplification, Pythagorean Theorem, isosceles
					<b>LFC:</b> Summary statements, embedded clauses
					<b>LC:</b> Varies by ELP level
	ELP 1	ELP 2	ELP 3	ELP 4	ELP 5
Language Objectives	Explain orally and in writing a proof of the Pythagorean Theorem and its converse using L1 and/or gestures, drawings and selected technical vocabulary.	Explain orally and in writing a proof of the Pythagorean Theorem and its converse using L1 and/or selected technical vocabulary in phrases and short sentences.	Explain orally and in writing a proof of the Pythagorean Theorem and its converse using key, technical vocabulary in simple sentences.	Explain orally and in writing a proof of the Pythagorean Theorem and its converse using key, technical vocabulary in expanded sentences.	Explain orally and in writing a proof of the Pythagorean Theorem and its converse using technical vocabulary in complex sentences.
Learning Supports	<a href="#">Teacher Modeling</a> <a href="#">Charts</a> <a href="#">Math Journal</a> <a href="#">Word/picture wall</a> <a href="#">L1 text and/or support</a> Competed examples <a href="#">Cloze Sentences</a> with choices for answers	<a href="#">Teacher Modeling</a> <a href="#">Charts</a> <a href="#">Math Journal</a> <a href="#">Word/picture wall</a> <a href="#">L1 text and/or support</a> <a href="#">Sentence Frame</a>	<a href="#">Teacher Modeling</a> <a href="#">Charts</a> <a href="#">Math Journal</a> <a href="#">Sentence Starter</a> <a href="#">Word Wall</a>	<a href="#">Teacher Modeling</a> <a href="#">Charts</a> <a href="#">Math Journal</a>	<a href="#">Charts</a> <a href="#">Math Journal</a>

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	Student Learning Objective (SLO)		Language Objective		Language Needed
<b>SLO: 4</b> CCSS: 8.G.7 WIDA ELDS: 3 Speaking Writing	Utilize the Pythagorean Theorem to determine unknown side lengths of right triangles in two and three dimensions to solve real-world and mathematical problems.		Demonstrate comprehension of the Pythagorean Theorem by applying it to determine unknown side lengths of right triangles in two and three dimensions in real world and mathematical problems <i>using charts, notes, a math journal, and completed examples.</i>		<b>VU:</b> Diagonal, round (estimate), dimension
					<b>LFC:</b> Past tense, comparatives
					<b>LC:</b> Varies by ELP level
	ELP 1	ELP 2	ELP 3	ELP 4	ELP 5
Language Objectives	Demonstrate comprehension of the Pythagorean Theorem by applying it to determine unknown side lengths of right triangles in two and three dimensions in real world, mathematical problems which use in L1 and/or using gestures, examples and selected technical words in phrases.	Demonstrate comprehension of the Pythagorean Theorem by applying it to determine unknown side lengths of right triangles in two and three dimensions in real world, mathematical problems which use L1 and/or selected technical vocabulary in phrases and short sentences.	Demonstrate comprehension of the Pythagorean Theorem by applying it to determine unknown side lengths of right triangles in two and three dimensions in real world, mathematical problems which use key, technical vocabulary in simple sentences.	Demonstrate comprehension of the Pythagorean Theorem by applying it to determine unknown side lengths of right triangles in two and three dimensions in real world, mathematical problems which use key, technical vocabulary in expanded sentences.	Demonstrate comprehension of the Pythagorean Theorem by applying it to determine unknown side lengths of right triangles in two and three dimensions in real world, mathematical problems which use technical vocabulary in complex sentences.
Learning Supports	Notes <a href="#">Math Journal</a> <a href="#">Charts</a> <a href="#">Word Wall</a> <a href="#">L1 text and/or support</a> Completed examples	Notes <a href="#">Math Journal</a> <a href="#">Charts</a> <a href="#">Word Wall</a> <a href="#">L1 text and/or support</a> Completed examples	Notes <a href="#">Math Journal</a> <a href="#">Charts</a> <a href="#">Word Wall</a> Completed examples	Notes <a href="#">Math Journal</a> <a href="#">Charts</a>	Notes <a href="#">Math Journal</a> <a href="#">Charts</a>

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	Student Learning Objective (SLO)		Language Objective		Language Needed
<b>SLO: 5</b> CCSS: 8.G.8 WIDA ELDS: 3 Listening Reading Speaking	Use the Pythagorean Theorem to determine the distance between two points in the coordinate plane.		<u>Demonstrate comprehension</u> of how to use the Pythagorean Theorem to determine the distance between two points in the coordinate plane <i>using a chart, think-alouds and personal math dictionary.</i>		<b>VU:</b> Coordinate plane, perimeter, distance
					<b>LFC:</b> Prepositional clauses
					<b>LC:</b> Varies by ELP level
	ELP 1	ELP 2	ELP 3	ELP 4	ELP 5
Language Objectives	Demonstrate comprehension of the Pythagorean Theorem by determining the distance between two points in the coordinate plane after listening to or reading problems which use L1 and/or using gestures, examples and selected technical words.	Demonstrate comprehension of the Pythagorean Theorem by determining the distance between two points in the coordinate plane after listening to or reading problems which use L1 and/or using selected technical vocabulary in phrases and short sentences.	Demonstrate comprehension of the Pythagorean Theorem by determining the distance between two points in the coordinate plane after listening to or reading problems which use key, technical vocabulary in simple sentences.	Demonstrate comprehension of the Pythagorean Theorem by determining the distance between two points in the coordinate plane after listening to or reading problems which use key technical vocabulary in expanded sentences.	Demonstrate comprehension of the Pythagorean Theorem by determining the distance between two points in the coordinate plane after listening to or reading problems which use technical vocabulary in complex sentences.
Learning Supports	<a href="#">Think -aloud</a> Personal math dictionary <a href="#">Partner work</a> <a href="#">Word Wall</a> <a href="#">L1 text and/or support</a> Examples	<a href="#">Think -aloud</a> Personal math dictionary <a href="#">Partner work</a> <a href="#">Word Wall</a> <a href="#">L1 text and/or support</a> Examples	<a href="#">Think -aloud</a> Personal math dictionary <a href="#">Charts</a> <a href="#">Partner work</a> <a href="#">Word Wall</a>	<a href="#">Charts</a> <a href="#">Partner work</a>	<a href="#">Charts</a> <a href="#">Partner work</a>

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	Student Learning Objective (SLO)		Language Objective		Language Needed
<b>SLO: 6</b> CCSS: 8.G.9 WIDA ELDS: 3 Reading Listening Speaking	Know and apply the appropriate formula for the volume of a cone, a cylinder, or a sphere to solve real-world and mathematical problems.		Explain orally and in writing how to find the volume of a cone, a cylinder, or a sphere by applying the appropriate formula when solving real world, mathematical problems <i>using a personal math dictionary, word wall, examples, and a think-aloud.</i>		<b>VU:</b> Cone, volume, radius, base, cylinder/cylindrical, spherical, diameter
					<b>LFC:</b> Negative questions (which is NOT), suffixes -ical
					<b>LC:</b> Varies by ELP level
	ELP 1	ELP 2	ELP 3	ELP 4	ELP 5
Language Objectives	Demonstrate comprehension of the volume of a cone, a cylinder, or a sphere by applying the appropriate formula when solving real world, mathematical problems which use L1 and/or use gestures and selected technical words.	Demonstrate comprehension of the volume of a cone, a cylinder, or a sphere by applying the appropriate formula when solving real world, mathematical problems which use L1 and/or use selected technical vocabulary in phrases or short sentences.	Demonstrate comprehension of the volume of a cone, a cylinder, or a sphere by applying the appropriate formula when solving real world, mathematical problems which use key, technical vocabulary in simple sentences.	Demonstrate comprehension of the volume of a cone, a cylinder, or a sphere by applying the appropriate formula when solving real world, mathematical problems which use key, technical vocabulary in expanded sentences.	Demonstrate comprehension of the volume of a cone, a cylinder, or a sphere by applying the appropriate formula when solving real world, mathematical problems which use technical vocabulary in complex sentences.
Learning Supports	<a href="#">Think -aloud</a> Personal math dictionary <a href="#">Word/symbol wall</a> <a href="#">L1 text and/or support</a> <a href="#">Cloze Sentences</a> Examples	<a href="#">Think -aloud</a> Personal math dictionary <a href="#">Word/symbol wall</a> <a href="#">L1 text and/or support</a> <a href="#">Sentence Frame</a> Examples	<a href="#">Think -aloud</a> <a href="#">Sentence Starter</a> <a href="#">Word Wall</a> Examples	<a href="#">Think -aloud</a> Examples	<a href="#">Think -aloud</a>