Unit 8: Pythagorean Theorem and Irrational Numbers

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Lesson	Skill	Online Resources	Standard
1	Calculate the area of a triangle.	https://www.khanacademy.org/math/basic-geo/basic-geo-area-and-perimeter/area-triangle/v/intuition-for-area-of-a-triangle https://www.ixl.com/math/grade-6/area-of-triangles	8.NS.A.2
2	Understand the meaning of expressions like $\sqrt{25}$ and $\sqrt{3}$. Express a squares side length, based on its area, using square root notation Explain what a square root is.	https://www.khanacademy.org/math/algebra/rational-exponents-and-radicals/alg1-radicals/v/introduction-to-square-roots https://www.khanacademy.org/math/algebra/rational-exponents-and-radicals/alg1-radicals/v/understanding-square-roots https://www.youtube.com/watch?v=bXeQv9JdvYI	8.EE.A.2, 8.F.B, 8.NS.A
3	Know what an irrational number is and can give an example. Know what a rational number is and can give an example.	https://www.khanacademy.org/math/algebra/rational-and-irrational-numbers/alg-1-irrational-numbers/v/introduction-to-rational-and-irrational-numbers https://www.khanacademy.org/math/algebra/rational-and-irrational-numbers/alg-1-irrational-numbers/v/recognizing-irrational-numbers https://www.khanacademy.org/math/algebra/rational-and-irrational-numbers/alg-1-irrational-numbers/e/recognizing-rational-and-irrational-numbers https://www.ixl.com/math/grade-8/identify-rational-and-irrational-numbers	8.EE.A.2, 8.NS.A
4	Find a decimal approximation for square roots. Plot square roots on the number line.	https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-square-roots/v/approximating-square-roots https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-square-roots/e/square_roots_2 https://www.youtube.com/watch?v=JywEjZNKSco	8.EE.A.2, 8.NS.A.2
5	Reason about which two whole numbers a square root is between numbers it is between.	https://ca.ixl.com/math/grade-8/estimate-square-roots https://www.thatquiz.org/tq/previewtest?1/2/O/D/HOG61473688624	8.EE.A.2, 8.NS.A.2

6	Explain what the Pythagorean Theorem says.	https://www.khanacademy.org/math/basic-geo/basic-geometry-pythagorean-theorem/geo-pythagorean-theorem/v/the-pythagorean-theorem https://www.youtube.com/watch?v=NIF37BTQXWM	8.G.B, 8.G.B.7
7	Explain why the Pythagorean Theorem is true.	https://www.youtube.com/watch?v=BNCj-K2hd_k https://www.youtube.com/watch?v=YompsDlEdtc https://www.brightstorm.com/math/geometry/pythagorean-theorem/pythagorean-theorem-proofs/ https://www.youtube.com/watch?v=yt-EJlbJQp8 https://www.mathsisfun.com/geometry/pythagorean-theorem-proof.html	8.G.B, 8.G.B.6, 8.G.B.7
8	Identify the hypotenuse and legs of right triangles. Find the length of the third side in a right triangle when the other two are known.	http://virtualnerd.com/algebra-1/radical-expressions-equations/pythagorean-theorem/pythagorean-theorem-examples/hypotenuse-legs-right-triangle-definition https://www.brightstorm.com/math/geometry/pythagorean-theorem/using-the-pythagorean-theorem-to-find-a-missing-hypotenuse/ https://www.brightstorm.com/math/geometry/pythagorean-theorem/using-the-pythagorean-theorem-to-find-a-missing-leg/ https://ca.ixl.com/math/grade-8/pythagorean-theorem-find-the-length-of-the-hypotenuse https://ca.ixl.com/math/grade-8/pythagorean-theorem-find-the-missing-leg-length	8.G.B.7
9	Explain why it is true that if the side lengths of a triangle satisfy the equation $a^2+b^2=c^2$ then it must be a right triangle. Determine whether three side length measurements can form a right triangle or not.	https://www.brightstorm.com/math/geometry/pythagorean-theorem/converse-of-the-pythagorean-theorem/ https://www.brightstorm.com/math/geometry/pythagorean-theorem/converse-of-the-pythagorean-theorem-problem-1/ https://ca.ixl.com/math/grade-8/converse-of-the-pythagorean-theorem-is-it-a-right-triangle	8.G.B, 8.G.B.6
10	Use the Pythagorean Theorem to solve problems.	https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-geometry/modal/v/pythagorean-theorem-3 https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-geometry/modal/v/pythagorean-theorem-1	8.EE.A.2, 8.G.B.7, 8.NS.A

		https://ca.ixl.com/math/grade-8/pythagorean-theorem-word-problems	
11	Find the distance between two points in the coordinate plane. Find the length of a diagonal line segment in the coordinate plane.	https://www.brightstorm.com/math/geometry/pythagorean-theorem/distance-formula/ https://www.brightstorm.com/math/geometry/pythagorean-theorem/distance-formula-problem-1/ https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-geometry/pythagorean-distance/v/distance-formula https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-geometry/pythagorean-distance/e/distance_formula https://www.ixl.com/math/geometry/distance-formula	8.G.B.8
12	Know what a cube root is. I understand the meaning of expressions like $^3\sqrt{5}$. Approximate cube roots.	https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-roots/v/introduction-to-cube-roots https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-roots/e/cube_roots	8.EE.A.2, 8.NS.A.2
13	Reason about which two whole numbers a cubed root is between numbers it is between.	https://www.youtube.com/watch?v=3qpf6N3jesA https://www.mathsisfun.com/numbers/cube-root.html https://www.youtube.com/watch?v=9QIixvX-BDE https://www.youtube.com/watch?v=SqxVNKcC1DQ	8.EE.A.2, 8.NS.A.2
14	Understand that every number has a decimal expansion. Write a fraction as a repeating decimal.	https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-repeating-decimals/v/converting-a-fraction-to-a-repeating-decimal https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-repeating-decimals/e/writing-fractions-as-repeating-decimals https://www.khanacademy.org/math/arithmetic/arith-decimals/arith-review-decimals-to-fractions/e/converting_fractions_to_decimals	8.EE.A, 8.NS.A, 8.NS.A.1
15	Write a repeating decimal as a fraction. Understand that every number has a decimal	https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-repeating-decimals/v/coverting-repeating-decimals-to-fractions-1	8.NS.A.1

	expansion.	https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-repeating-decimals/v/coverting-repeating-decimals-to-fractions-2 https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-repeating-decimals/e/converting_repeating_decimals_to_fractions_1	