## Learning Targets

### Pythagorean Theorem and Irrational Numbers

### Lesson 1: The Areas of Squares and Their Side Lengths

* I can find the area of a tilted square on a grid by using methods like “decompose and rearrange” and “surround and subtract.”
* I can find the area of a triangle.

### Lesson 2: Side Lengths and Areas

* I can explain what a square root is.
* If I know the area of a square, I can express its side length using square root notation.
* I understand the meaning of expressions like $\sqrt{25}$ and $\sqrt{3}$.

### Lesson 3: Rational and Irrational Numbers

* I know what an irrational number is and can give an example.
* I know what a rational number is and can give an example.

### Lesson 4: Square Roots on the Number line

* I can find a decimal approximation for square roots.
* I can plot square roots on the number line.
* When I have a square root, I can reason about which two whole numbers it is between.

### Lesson 5: Finding Side Lengths of Triangles

* I can explain what the Pythagorean Theorem says.

### Lesson 6: A Proof of the Pythagorean Theorem

* I can explain why the Pythagorean Theorem is true.
* If I know the lengths of two sides, I can find the length of the third side in a right triangle.
* When I have a right triangle, I can identify which side is the hypotenuse and which sides are the legs.

### Lesson 7: The Converse

* I can 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.
* If I know the side lengths of a triangle, I can determine if it is a right triangle or not.

### Lesson 8: Applications of the Pythagorean Theorem

* I can use the Pythagorean Theorem to solve problems.

### Lesson 9: Finding Distances in the Coordinate Plane

* I can find the distance between two points in the coordinate plane.
* I can find the length of a diagonal line segment in the coordinate plane.

### Lesson 10: Edge Lengths, Volumes, and Cube Roots

* I can approximate cube roots.
* I know what a cube root is.
* I understand the meaning of expressions like $\sqrt[3]{5}$.

### Lesson 11: Decimal Representations of Rational Numbers

* I can write a fraction as a repeating decimal.
* I understand that every number has a decimal expansion.

### Lesson 12: Infinite Decimal Expansions

* I can write a repeating decimal as a fraction.
* I understand that every number has a decimal expansion.

### Lesson 13: When Is the Same Size Not the Same Size?

* I can apply what I have learned about the Pythagorean Theorem to solve a more complicated problem.
* I can decide what information I need to know to be able to solve a real-world problem using the Pythagorean Theorem.



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