Unit 3b-Understand and Apply the Pythagorean Theorem

Content Area: **Math**
Course(s): **Math 8 Gen Ed**
Time Period: **Marking Period 3**
Length: **Wk 6-9 Envisions Mathematics Topic 7**
Status: **Published**

Essential Questions

- How can you use the Pythagorean Theorem to solve problems?

Big Ideas

- Understand and apply the Pythagorean Theorem.

CSDT Technology Integration

8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.

8.1.8.AP.2: Create clearly named variables that represent different data types and perform operations on their values.

8.1.8.AP.6: Refine a solution that meets users' needs by incorporating feedback from team members and users.

Activity: Taco Truck Activity-Desmos.com. In this activity, students use the Pythagorean theorem as a tool to solve problems involving diagonal distances. In a quick prelude, students reason with the Pythagorean theorem and with rates in a situation that they may encounter in their daily lives: taking a shortcut to save time. Students then determine the best path to a taco truck from a spot on the beach. The activity culminates in a class-wide race.

Diversity Integration

Objective: Students will be able to apply the Pythagorean Theorem to find the determine missing side lengths of a geometric picture they created using triangles. Students will be able to find the area of the triangles after they find the missing lengths.

Description of Activity: Discuss how other cultures use geometric shapes to tell stories. Students will create

their own Geometric picture using a certain number of triangles. The students will use the Pythagorean Theorem to find the area of the triangles and the other formulas to find the area of all of the shapes they created.

Technology Connection

8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose

Enduring Understandings

Geometry

8.G.6[M] Explain a proof of the Pythagorean Theorem and its converse.

8.G.7[M] Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

8.G.8[M] Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

Mathematical Practices Focus

1. Make sense of problems and persevere in solving them. and page 391
2. Reason abstractly and quantitatively. Lesson 3, and page 391
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics. Lesson 2, 4, and page 391
7. Look for and make use of structure. Lesson 1, 2, 3, 4, and page 391
8. Look for and express regularity in repeated reasoning. Lesson 1, 2, 3, 4, and page 391