Name_____Date_____

Pythagorean Theorem
Lesson Plan

Lesson Overview: In this lesson, students will use models to demonstrate the Pythagorean Theorem, and then apply the Pythagorean Theorem to solve meaningful problems. TEKS: 8.6C and 8.7C; and 8.7D

	Procedures	Facilitation Questions	Advance Preparation
Engage	• Play the video for the class. • Have students share their predictions and reasoning with the class. Emphasize reasoning, not necessarily correct answers.	• How do you know how far up the tree the rope should be tied?	None
Explore	• Play the video for the class. Pause the video to allow students time to work through the activity sheet. • Display and/or provide a copy of the **Explore Activity Sheet** for students. • Have students complete the activity sheet as you ask facilitation questions. • Resume the video to debrief the Explore. Display **Explore Activity Sheet Answer Key** for students if desired.	• What patterns do you see in the table? • Which squares do not form a right triangle? • How do the gridlines show a right angle?	• If desired make a copy of the **Explore Activity Sheet** for each student. • Scissors • Grid paper (**Activity Master**) copied onto plain paper (1 per group) • Grid paper (**Activity Master**) copied onto colored cardstock (2-3 sheets per group)
Explain	• Play the video to show a derivation of the Pythagorean Theorem. • Have students explain the derivation in their **Math Journal**, following the directions in the video.	• What other ways could you show that the Pythagorean Theorem is always true? • How would you find the area of one square if you knew the areas of the other two squares?	• Access to Math Journals • If desired make a copy of the **Explore Activity Sheet Answer Key** for each student. (This sheet can be pasted into student's Math Journals)
Elaborate	• Place students in small groups (2-3 students). Play the video. • Provide a copy of the **Elaborate Activity Sheet** for students. Or, have students record their work in their **Math Journal**. • Distribute one problem (from **Elaborate Activity Master**) to each student group to begin. Have students work on the problem. • After 3-5 minutes, call "time" and have student groups pass their problem to the next group. Repeat until students have worked all 8 problems. • Display **Elaborate Activity Sheet Answer Key** and have students check their work.	• Where in the problem do you see the right triangle? • Which side is the hypotenuse? How can you tell? • Which sides are the two legs? How can you tell? • Which side length are you trying to find? • Do you need to add the squares of the side lengths together, or subtract them? How can you tell?	• Prepare one problem set (**Elaborate Activity Master**) for each 8 student groups on cardstock. Cut problems onto half-sheets. • Optional: timer • Access to Math Journals
Evaluate	• Display the questions or provide a printed copy of the **Evaluation Questions** for each student. • Have students solve the problems in their **Math Journal**.		• Access to Math Journals • If desired make a copy of the **Evaluation Questions** for each student.