Standards Based Lesson Plan

Lesson Information

Teacher: Nancy Jones and Francis Johnson

Class: Math II

Unit Title: Right Triangle Trigonometry

Lesson Title: Special Right Triangles

Materials Needed: coaching folders, special right triangle transparencies, scientific calculators, special triangle application problems

Learning Targets

Students will know/do/understand…

- Know how to calculate the missing sides of a 30-60-90 and a 45-45-90 triangle
- Students will be able to solve application problems involving 30-60-90 and a 45-45-90 triangle

Standards

Georgia Performance Standards

MM2G1. Students will identify and use special right triangles.
   a. Determine the lengths of sides of 30°-60°-90° triangles.
   b. Determine the lengths of sides of 45°-45°-90° triangles.

Instructional Activities

Presentation:

What content will you present to students?

- Pythagorean theorem (used by students to discover the relationship of the special right triangles)
- Relationship of the sides of the 30-60-90 and 45-45-90 triangle

What strategies will you use for teaching, modeling and checking for understanding?

- Pre-assessment to determine where students are with finding the sides of special right triangles (6 problems)
- Students that have difficulty determine the sides of special right triangles will work in pairs for the PALS Special right triangle coaching and then move to working on application problems involving the sides of special right
- (Transparencies with special triangles to help students identify the sides)
- Students that are able to find the sides of the special right triangles without difficulty will work on a few more practice problems to ensure that they have a solid understanding of the relationships and then spend the remainder of time

on application problems involving the sides of special right triangles

Guided Practice/Independent Practice

Activity/Application: Initiate practice activities that are under direct teacher supervision. What will students do independently to practice concept or skill?

Warm-up
Independent Practice
PALS Special Right Triangles
Homework

Closing

Wrap up lesson by summarizing the learning targets and ask students to state the relationship between the sides of the special right triangles and work a problem for each special right triangle.

Assessment/Evaluation

Performance tasks/projects:

Test and quiz questions or essay prompts: find the missing side of the special right triangles (skill based) and finding the missing side of special right triangles in application problems

Other evidence to be used (e.g., observations, evaluation of work samples, discussion)
Teacher observations, PALS coaching sheets,

Student self-assessments: Students are working with partners on the PALS materials for special right triangles and can assess themselves along the way. Students will also be provided a chance to reflect on what they understand and what they are having difficulty with as it relates to finding the missing sides of the special right triangles

Reflections

After completing this lesson, we saw that it was useful to have students discover the relationship between the sides of the special right triangle. Some students still had some difficulty, but they were able to follow the steps provided in the PALS portion of the lesson and work to find the missing side(s) using the "Coach's Question Sheet"