

Discipline: Mathematics

Standard Category: Measurement and Estimation

Lesson Focus: Measuring angles

PA Standard(s):	Related TESOL Standard(s):
2.3.8C: Measure angles in degrees and determine relations of angles.	Goal 2: To use English to achieve academically in all content areas. Standard 1: Students will use English to interact in the classroom. Standard 2: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form.

Key Objectives in Accordance with TESOL Level:

Pre-Conversational/ Beginning	Intermediate	Advanced
Students will be able to: <ul style="list-style-type: none">• Use a protractor, measure angles using whole numbers, and follow oral instructions thorough modeling.	Students will be able to: <ul style="list-style-type: none">• Demonstrate beginning level objectives as well as uses terminology (protractor, angle) and follow oral instructions.	Students will be able to: <ul style="list-style-type: none">• Demonstrate beginning and intermediate objectives as well as classify acute, obtuse, and right angles.

Materials:

1. Protractor
2. Various angles on a worksheet
3. Toothpicks
4. Glue
5. Paper

Procedures: (ELL suggestions are written in italics)

1. After demonstrating how to use a protractor, the teacher guides students in individual practice of measuring angles on the worksheet. *Pair English speaker with ELL*
2. Students create their own angles by using toothpicks and gluing them down to paper.
3. The students create an answer key for their angles. *Provide vocabulary support for ELL.*
4. The students trade papers, measure each other's angles, and classify as acute, obtuse, or right.
5. They trade back again and correct their partner's paper with their answer keys.

Suggested Level:
Middle

Lesson Focus:
Measuring angles

Teaching Strategies:
Whole group instruction

Lecture

Modeling

Independent work

Assessment Strategies:
Recall/identifying

Observations

Recorded measurements

Assessment:

The teacher may use the students' assessments of their partner's papers for a quick check on mastery of the skill.

Beginner

Measure the same items as in the independent practice but without a partner. Provide word bank for students to identify the various angles. The teacher or another student may orally read the words.

Provide vocabulary support.

Intermediate

Measure new angles independently and provide word bank for classification. *Provide vocabulary support.*

Advanced

Measure new angles independently and classify words without word bank.

Terms to Know: acute, obtuse, right, protractor

