

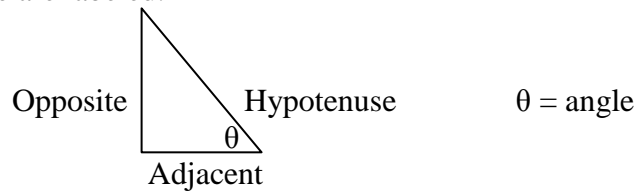
Task

Discovering Trigonometry

How did right triangle trigonometry develop?

Begin by telling the class that we will be studying trigonometry, which is a branch of mathematics that deals with the sides and angles of triangles. Explain that we will mostly be dealing with right triangles in this unit just like the previous unit on Pythagorean Theorem. Also, mention how many professionals including surveyors, engineers, architects, and designers use trigonometry. Go on to explain that throughout the unit we will be trying to answer two essential questions: “How did right triangle trigonometry develop?” and “What is the purpose of right triangle trigonometry?” Post these in the front of the room. State that we will begin this unit with an activity that will help to show us how mathematicians discovered trigonometry a long time ago. This will help us begin to answer our first essential question.

Pass out the “Discovering Trigonometry” activity (see attached instruction sheet). Review the instructions with the class, by doing an example on the board of a right triangle similar to the ones they will be drawing. Go over the terms opposite, adjacent, and hypotenuse, so that they know how the three sides of a right triangle are labeled.



Assign students to their cooperative groups of 3 or 4. Each group will need protractors. Students should spend the remaining class time completing the chart on the instruction sheet. Each student should use their own data to fill in one row of the chart, and receive the data for the other rows from their group members. For homework, ask the students to write one or two sentences explaining any patterns they notice in the data.

Rubric:

	1	2	3	Score
Interaction	Little interaction	Some interaction	Enthusiastic interaction	
Conversation	Not always focused on topic	Usually focused on topic	Involved conversation on topic	
Involvement	One student involved	Several students involved	Entire group involved	
Consensus	No help	Little help	Helps negotiate	
Handout	Incomplete		Complete	
Facts	Inaccurate		Accurate	
Calculations	Inaccurate		Accurate	