Quality Talk Teacher Guide

Promoting Students' Mathematical Reasoning and Problem Solving

OVERVIEW

HOW TO USE THIS TEACHER GUIDE

WECOME TO YOUR QUALITY TALK TEACHER GUIDE!

Quality Talk (QT) is a student-led, teacher facilitated small-group discussion approach designed to enhance students' critical-analytic thinking and reasoning about, around, and with mathematical tasks and concepts.

This guide is your go-to tool for planning rich, meaningful QT mathematics discussions that spark reasoning and get students talking like mathematicians! Whether you're new to QT or a returning pro, this guide will walk you through the steps to make every QT discussion purposeful and powerful.

Each part of the guide is designed to help you think through mathematical concepts, anticipate student thinking, and prepare to facilitate QT discussions that matter. The guide consists of several parts.

Part 1: What is the mathematics behind the task?

Start by choosing a task from the Task Repository and breaking it down. What are the key mathematical concepts at play? What makes this task worth discussing? Jot down possible solutions for the task—and don't forget to note spots where students might get stuck or take unexpected paths.

Part 2: What do students need to know?

Next, take a few minutes to make sure your students are ready to engage in a QT discussion. What key mathematical ideas do they need in their toolkit? Use this section to identify and think through these mathematical concepts so that you know the task you selected inside and out.

Part 3: Preparing for discussion

Now that you've unpacked the task and thought through the mathematics, it's time to set the stage for a dynamic, student-centered QT discussion. Stary by planning a pre-discussion activity and setting mathematical and discourse goals.

- **Mathematical goals** are the big ideas you want students to explore. For example, "explore connections between the properties of rectangles and the formula for area."
- **Discourse goals** are about the kind of talk in which you want students to engage. For example, "students will support their claims with mathematical evidence."

Next, stock your toolkit with back-pocket questions—your secret weapon for keeping the discussion rolling including:

- **Knowledge questions** that help student make sense of the mathematics at the heart of the task
- **Experience questions** that invite students to connect the task to their own lives or past learning
- **Extension questions** that stretch students' thinking once they have a solution in hand

PART 1

CHOOSE A TASK FROM THE TASK REPOSITORY

DESCRIBE THE TASK USING MATHEMATICAL TERMS AND CONCEPTS:

LIST THE CHALLENGES THAT YOU THINK STUDENTS MIGHT HAVE IN SOLVING THIS TASK:

1)

2)

3)

4)

TASK SOLUTION:

PART 2

STUDENT MATHEMATICS KNOWLEDGE

Before discussion, make sure your students have the mathematical tools they need! What key mathematical concepts are involved in the task you picked? What do students need to know to feel confident and curious? Jot down a few notes for each of the concepts you identified in Part 1—what should they understand, notice, or be ready to use?

CONCEPT #1 _____

CONCEPT #2 _____

CONCEPT #3 _____

CONCEPT #4 _____

PART 3

PREPARING FOR DICUSSION

Your students won't have solved the task yet, but they will have seen it and jotted down their authentic questions. That's the perfect setup for a rich QT discussion—one that zooms in on the mathematics at the heart of the task. Take a few minutes to map out your pre-discussion activity, set your mathematical and discussion goals, and your write back-pocket questions!

KICK THINGS OFF! What pre-discussion activity will you use to get students thinking about the mathematical ideas and concepts involved in the task?

WRITE YOUR DISCUSSION GOALS:

Mathematical Goal

Discourse Goal

WRITE YOUR BACK-POCKET QUESTIONS:

Knowledge Question

Experience Question

Extension Question