

Collaborative Mathematics

Welcome to CollaboMath!

Collaborative Mathematics offers a set of 16 mathematical problem solving challenges, each presented in a short video. Problem solvers are invited to watch the videos, give the problems a try, and create a response video in which they explain their solution.

The individual challenge pages are linked below. Each page includes a student handout, and many include links to response videos submitted by participants. Teachers may also wish to visit our [curriculum page](#), where we offer a lesson outline with tips for structuring a class period around exploring and discussing a Collaborative Mathematics video challenge.



Challenge 01. Ermer Numbers

In which we must count all of the numbers whose digits have a certain pattern.



Challenge 02. Multiply and Flip

In which we explore how multiplication causes some numbers to flip themselves.



Challenge 03. Finger Counting

In which we learn a new technique for counting on our fingers, then make a prediction.



Challenge 04. Two-key Calculator

In which we determine how hard it is to solve certain problems with an underpowered calculator.



Challenge 05. International Paper

In which we explore the geometric properties of different sizes of paper.



Challenge 06. Pieces of Eight

In which we must accomplish a task given a limited set of mathematical building blocks.

Challenge 07. String Theory

In which we undertake a subtle and surprising probability

Challenge 08. The Confetti Problem

In which we learn a pair of procedures for ripping up paper,



experiment.



then predict.



Challenge 09. Awe of Large Numbers

In which we explore two different applications of huge numbers.



Challenge 10. Pandigital Puzzles

In which we use the ten digits to tackle a trio of tricky tasks.



Challenge 11. The Problem With Pirates

In which we must divide a pile of treasure among a band of greedy pirates.



Challenge 12. Parenthesizations

In which we count the different ways to apply a particular piece of punctuation.



Challenge 13. Numerical Recycling

In which we explore the workings of a mathematical recycling procedure.



Challenge 14. Tick, Tick, Tick...

In which we keep time with a ticking pair of out-of-sync clocks.



Challenge 15. Pizza Party!

In which we share some pizza with friends, and learn what we have in common.



Challenge 16. Palindrome Multiples

In which we seek numbers that have two different properties at the same time.

What people are saying about CollaboMath

Read the profile of Collaborative Mathematics on [Math Munch](#).

Julie T. from Superior, Wisconsin says: "I teach a higher level 5th grade math group and the challenges have been some of the best discussion this year! The challenges have forced them to think about their thinking and explain it to others."

Listen to a discussion from the very first days of Collaborative Mathematics on the podcast [Inspired by Math](#).

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