

Class Challenge #1

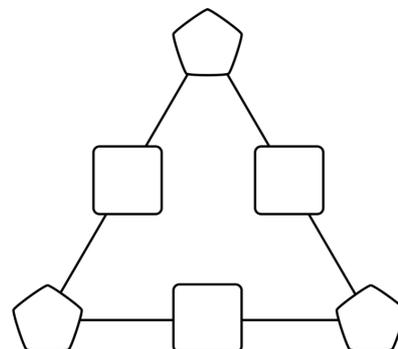
Triangle Challenge - Sides of Five

This is a puzzle where students need to place numbers into the shapes on this triangle.

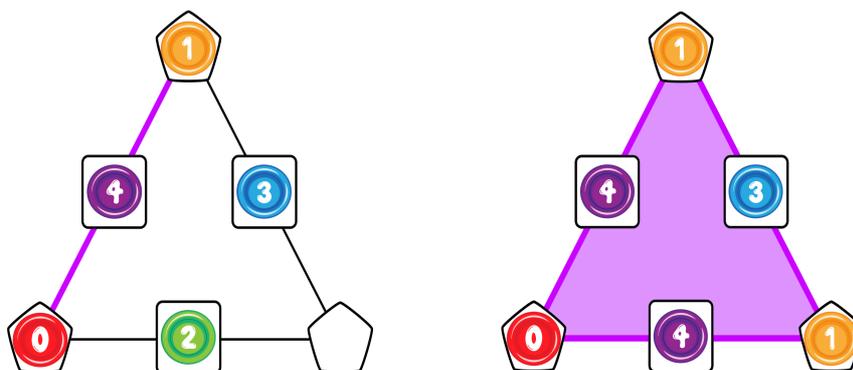
Students can use the numbers 0, 1, 2, 3, 4, and 5.

They can use each number as many times as they like.

The challenge is to make a triangle where the numbers on each line add up to 5.



There is a digital version of this challenge for you to use on your IWB. In the digital version, when a line adds up to 5 it turns purple. When all three sides add up to five, the triangle turns purple.



Take care to make sure students don't mistake this as the type of puzzle where each number can only be used once to make every side add to the same value. It's similar to that puzzle system, but in this challenge each number can be used as many times as needed.

There is a video on the Challenge #1 webpage demonstrating the digital version of the puzzle.

Introduction - 5 mins: Load the digital version of the challenge on your screen. Demonstrate the system and then invite students to take turns to come and find a solution. When you are confident your students understand the system and what is needed to create a solution, give each small group a selection of the challenge cards.

Activity sheets for students to use to solve the challenges are available on the webpage.

Tip: Placing a dice in each shape can be helpful. Students can turn it to show the number 1, 2, 3, 4 or 5 and remove it from a shape to show zero. This avoids the frustration of rubbing out numbers or cutting out lots of counters. If you have students who would prefer counters, there is a set on the webpage to download and cut out for them.

Group time - 15 mins: Groups **do not** have to complete each of the four challenges. You might like to assign a particular challenge to groups/students or let them select one to solve. There is an extra challenge for your extension students.

Make sure at least two groups attempt each challenge so findings can be compared.

If students **solve** their challenge in time, they might like to choose another to try.

If a group is **still stuck** five minutes or so into challenge time, let them swap their challenge for a different one to try.

If you have more time available and you would like groups to explore several challenges, you are very welcome to.

Class Discussion: Look at each challenge and compare the answers found. Ask students to explain their decisions to the class.

There is a link on the webpage to submit your answers. It includes an 'extra information' section where you and/or your students can add any details or disputes. You can submit your responses together as a class or teachers can enter them later if time

Students accessing the digital version: It is your choice if you would like your students to have access to the tool on an iPad or laptop. We've done a little testing and it seems to load.

You might instead choose to only have the digital version on your class IWB for demonstration and discussion and require the students to use the activity sheets and manipulatives to explore the challenges.



Submission: Please send your answers in by Friday, 19th August.