

String Shapes

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SSEA 2022

This activity was adapted from the youcubed building shapes activity, available here: <https://www.youcubed.org/wp-content/uploads/2017/07/9-12-WiM-3-Building-Shapes.pdf>.

1 Goals

The goals of this activity are:

1. To introduce and discuss with students the concepts of growth mindset, visual mathematics, and to emphasize how we care more about their thinking than the final answer.
2. To introduce to group work, stress the fact that everyone in the group needs to be convinced, and explain the importance of checking with other people in the group while they work.

2 Materials

For this activity you will need:

1. Pieces of string or rope with length at least 6 feet that have been tied into circles.

3 Instructions

This activity will take approximately 15 minutes.

1. Form groups of 3 to 4 students, and draw various shapes on the white board.
2. Explain the rules of the activity:
 - (a) Students must use all of the rope to make a shape drawn on the white board.
 - (b) Everyone in the group must have at least one hand on the rope at all times.
 - (c) Students cannot untie the rope.
 - (d) Students must convince each other and the teacher that the shape is accurate.
3. After all groups have finished creating their shapes, have the class as a whole discuss what they noticed in completing the activity. In the discussion of strategies, ask students to consider what was important in the activity and how these things could be related to mathematics. Consider emphasizing:
 - (a) The visual nature of the work.

- (b) How they needed to work together.
 - (c) The importance of experimentation and the usefulness of possibly starting with a simpler case.
4. Highlight moments when you saw groups or individuals using these various strategies.

4 Tips

1. Explain that this, like a fair number of activities in this course, is not related to linear algebra.