
Break My Rule

The Break My Rule activity works best using geometry terms—for example, types of triangles, quadrilaterals, and other polygons that students know.

Format: Students competing one-on-one or two-on-two.

Materials: Lengths of linguine or pipe cleaners for forming geometric shapes, and three to five index cards for each pair on which are written the names of geometric figures with which students are familiar.

Step 1: Students decide who will be the first Definers and who will be the first Tricksters. Definers pull a card from the deck and show it to the Tricksters.

Step 2: The Definers then give the Tricksters a set of instructions they think will force the Tricksters to make the shape on the card. The Definers can't use the word or words on the card in their definition.

Step 3: The Tricksters *must* follow the Definers' instructions to the letter. However, their goal is to make anything other than the shape on the Definers' card.

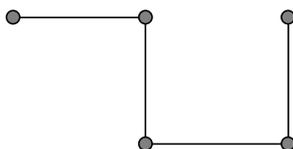
Step 4: If the Tricksters make something other than what's on the card, while still following the directions, the Definer can add another constraint to their instructions. If not, the Definer wins the card.

Step 5: If the Trickster is still able to thwart the Definer, they win the card. The team with the most cards at the end of one pair's pile wins the round.

Step 6: The teams switch roles and play through the other team's pile of cards.

Example 1: The card that comes up says, "Triangle." The Definer says, "Break the piece of linguine into 3 pieces. Arrange them so the ends touch." The Trickster then breaks the linguine into 2 very short and 1 long piece, and arranges them in an open figure. The Trickster has followed the directions but not made a triangle, so the Definer can try to add another constraint. The Definer says, "Break the piece of linguine into 3 pieces so you can arrange them to make a closed figure." The Trickster is then forced to make a triangle, so the Definer wins the round.

Example 2: The card that comes up indicates a square. The Definer says, "Make a shape with 4 equal sides." The Trickster makes a rhombus. The Definer says, "Make a shape with 4 equal sides and all right angles." The Trickster makes this shape:



The Trickster wins the card, since the shape has 4 equal sides and all right angles but is not a square.

As students play and get better at the constraints games, help them notice mathematical definitions in the problems they solve and the math work they do in class.

Often, when a class comes to a seemingly impossible-to-solve-with-common-sense problem in math, the answer can be found by considering the mathematical definitions. For example:

- ▶ Is 0 even or odd?
- ▶ Is 1 a prime number?
- ▶ Is a square a rectangle?
- ▶ Is a parallelogram a trapezoid?
- ▶ When you roll 2 six-sided dice, are there 21 or 36 possible outcomes?