

# Teacher Guide

**BMC Issue:** #47, Playing with Triangles

**Subjects:** Geometry, Combinatorics

**Grade Level:** 4th grade and up

**Topics:** Triangles, Area, Partitions, Combinations

## Lesson Aim/Objectives:

- Observe shapes and patterns used in Native American art
- Compare areas of triangles
- Dissect shapes into triangles with equal areas
- Win the triangle game!

## Common core standards:

### Geometry 7.G

Draw, construct, and describe geometrical figures and describe the relationships between them.

### HS Modeling with Geometry G-MG

Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

### Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
7. Look for and make use of structure.

## Materials:

- Print
  - BMC issue
  - Handouts
- Bring
  - Pens or pencils
  - Any paper

## Instructions:

1. Read activities in newsletter
2. Register for BMC meeting to get Zoom link
3. Instruct students to consider the hosts as guests in the classroom.
4. Pass out a copy of newsletter to each student.
5. Tell students we encourage participation; they should share results, drawings, and ask questions. They can show their papers to the camera.

## Notes:

- Test technology; if problems arise, please let hosts know.
- Use the recap issue to revisit problems in the classroom
- Provide feedback

## Terms:

Geometry: triangle, height, base, area, square, partition

Combinatorics: vertex, edge, labeling, orientation (clockwise, counterclockwise)