

## GUMDROP MEASUREMENT

**Objective:** Build models of polygons with given perimeters and areas.

**Materials:** 20 gumdrops(or marshmallows) per participant  
30 toothpicks per participant  
Three blank overhead transparencies

**Procedures:**

1. Pass out 20 gumdrops and 30 toothpicks to each participant.
2. Hold up a toothpick and tell participants that this will be our unit of length. Put two toothpicks together with a gumdrop at the end of each toothpick to represent the endpoints of a line segment. Explain that this line segment is two toothpick units long.
3. Ask participants to make a line segment that is three toothpicks long and hold it up.
4. Ask participants to make a square whose perimeter is equal to four toothpick units. Have the participants hold up their squares. Ask a participant to state the area of this square. (One square toothpick unit).
5. Ask participants to make a rectangle that is 3 toothpicks long and 2 toothpicks wide and hold it up. Ask a participant this rectangle's area. (6 square toothpick units)
6. Have the participants display the following, one at a time:
  - a. A rectangle whose perimeter is 10 toothpicks.
  - b. A different polygon whose perimeter is 10 toothpicks.
  - c. A rectangle whose perimeter is 8 toothpicks.
  - d. A different polygon whose perimeter is 8 toothpicks.
  - e. A rectangle whose area is 6 square toothpick units.
  - f. A polygon whose area is 9 square toothpick units.
  - g. A rectangle whose perimeter is 20 toothpicks.
  - h. A different polygon whose perimeter is 20 toothpicks.

As the participants display their figures, have volunteers come to the overhead projector and sketch their figures, until each of the different figures created by various participants has been sketched.