SPAGHETTI AND MEATBALLS FOR ALL BY MARILYN BURNS

ACTIVITIES FOR STUDENTS

I.   You can re-watch the video of this book being read aloud at **Santa Fe Public Library YouTube channel, the City Summer Program Website** (https://summersantafe.weebly.com) **and the MathAmigos website** (https://mathamigos.org/).

   If you have any questions about the activities (but not about the materials), please contact Michele Reich at library@santafenm.gov

II.   **Materials**
   Paper and pencil
   2 sheets of graph paper
   3 crayons of different colors
   Flip chart
   Geoboard and rubber bands
   Ruler or yard stick or tape measure
   Dice
   Rice Chex (put a hand full in a plastic bag)
   Handout (Area and Perimeter), paper clips, and a deck of cards

III. **Fun Activities to Practice Perimeter and Area**
   A.   Perimeter
      1.   Using Geoboards to create different shapes with different perimeters.
         a.   On a geoboard, use rubber bands to create a square with a perimeter of 16, a triangle with a perimeter of 12, and a pentagon with a perimeter of 25.

         b.   Create <u>four different shapes</u> on the geoboard with the rubber bands and label the figures and their perimeters. Then draw those same shapes on a sheet of paper. Put your name, the date, and the title "Using Geoboards."
         c.   Ask a family member to check your work.

      2.   Perimeter All Around
         a.   Draw a Perimeter All Around table like the one below on a sheet of paper. Pick <u>4</u> objects in your house that are polygons (like a cabinet doors, desk, box of cereal, etc.). Label each object and draw a diagram of each in <u>column one</u> of your table. Measure all sides for each selected object and write these numbers in the <u>second column</u>. In the third column, put the sum of all sides of the object.

Perimeter All Around

Name and shape of object and a diagram of it	Measurement of all sides of the object	Sum of individual sides of the object
Box of candy	15 cm + 15 cm + 10 cm + 10 cm	50 cm

3. And the Game is A Foot
   a. To play this game, ask a family member or two to play. You need two pieces of graph paper, a crayon of a different color for each player, and a pair of dice.
   b. Game Rules:
      (1) Players roll a die, and the one who rolls the highest number goes first.
      (2) The first player rolls the dice. The number on one die will be the length, and the other number will be the width of a rectangle that the player will make.
         (a) The player decides which number is the length and which one is the width.
         (b) The player draws the rectangle on the graph paper with a crayon. No player can draw a rectangle with the same dimensions as a rectangle already drawn on the paper.
         (c) Each player gets to decide where to place their rectangle on the paper.
      (3) Then the next player rolls the dice and draws a rectangle with a length and a width using the rolled numbers. A player who rolls a rectangle that cannot be drawn (either because it is a duplicate of a rectangle already drawn or one that no longer fits on the graph paper) skips a turn.
      (4) Players continue until there is no place left to put a rectangle with the numbers rolled on the graph paper; that is why players need to be strategic in placing their rectangles early in the game.
      (5) The player who has the most rectangles on the graph paper wins. (Modified from Jen Wieber's post)

IV. Fun Activities to Practice Area
A. Planning a Birthday Party with Social Distancing
1. You, like Mr. and Mrs. Comfort, are planning a party in your backyard. Before you finalize your guest list and rent tables and chairs, you must make sure that the backyard is big enough to fit the number of tables and chairs for all the guests. Keep in mind that social distancing is still in effect so all guests must be seated 6 feet apart.

2. Your back yard is in the shape of a square, 50 feet long by 50 feet wide. Each rental chair takes up 1 foot of space and each rental table is in the shape of a four-foot square.

3. Draw a plan on a piece of graph paper for placing the largest number of tables and chairs that will fit in your back yard, keeping in mind that each chair must be at least 6 feet from every other chair. Write your name, date, and title,   at the top of your paper.

B. **Rolling the Dice Area Game (modified from https://teachbesideme.com/multiplication-grid-game/)**

1. All you need for this game is a piece of graph paper, two dice, and two different colored crayons. Ask a family member to play this game with you.

2. Game Rules:

   a. Both players roll one die.   The player with the highest number goes first.

   b. The first player rolls the two die, multiplies the two numbers rolled, and colors in on the graph paper the number of blocks equal to the product of the rolled numbers. For example, if a 3 and a 4 are rolled, the player colors in an area that is 3 squares by 4 squares. The player says aloud "The product of 3 and 4 is 12 and the area of the filled in squares."

   c. Player 2 does the same, and the game continues alternating between the players.

   d. The game ends when there is no more space to make shapes, and the winner is the player with the most colored areas.

C. **Let's Find the Area**

1. Draw the same four shapes that you made on your geoboard on a sheet of paper.

2. This time, you will find the area of these shapes using Rice Chex. PLEASE <u>DO NOT EAT</u> THE RICE CHEX!

3. The Rice Chex pieces will be used to compare and contrast the area and perimeter of different polygons.

   a. How many different shapes can you make using 10 pieces of cereal?

   b. Do these shapes have the same perimeters? Do they have the same areas?
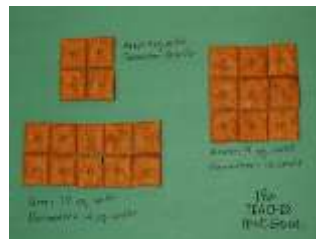
This picture shows Cheez-It … but using Rice Chex will work as well.

V. **Area and Perimeter Together Activities**

A. **Draw Your Favorite Animal**

1. Draw your favorite animal on a sheet of graph paper using only squares and rectangles. See the picture of the dinosaur below. Compute the area of your animal and its perimeter.
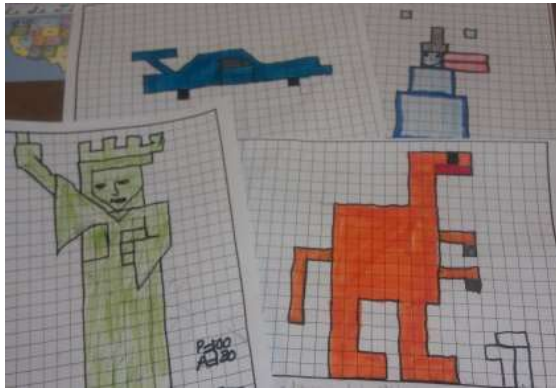
2. Remember that **area is t**he number of square units needed to cover a surface and the **perimeter is t**he sum of the lengths of all the sides of a polygon.

B. **Area and Perimeter … Flip & Spin Game** from *Not so Wimpy Teacher website*

1. To play this game, students will need a deck of cards, a paper clip, a pencil, and the handout, Area and Perimeter….Flip & Spin. [Remove the face cards and the jokers. Aces are equal to the number one.]

2. Game Rules (see them printed on the handout as well):
   a. Each player flips over two cards. The number on one card will be the length of a rectangle and the number on the other card is the width.
   b. One player uses a paperclip and spins it in the middle of the circle on the handout.
   c. The spinner announces whether the winner will be the person with the largest or smallest area or the person with the largest or smallest perimeter.
   d. Students use the chart below (or the one at the bottom of the handout) to track the winners.

Round 1 Winner	
Round 2 Winner	
Round 3 Winner	
Round 4 Winner	
Round 5 Winner	

Have fun!