Pythagorean Theorem

The Pythagorean Theorem explains the relationship among the lengths of the sides of a right Triangle. The area of the square on the hypotenuse is equal to the sum of the areas of the squares on the other two sides.

Activity

The materials needed to conduct this activity are:

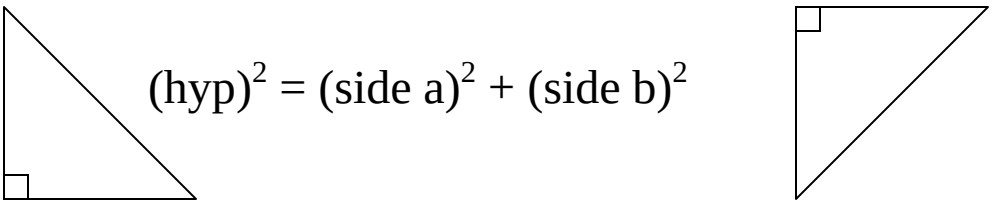
- Grid paper
- Scissors
- Rulers
- Tape
- Blank paper

Steps

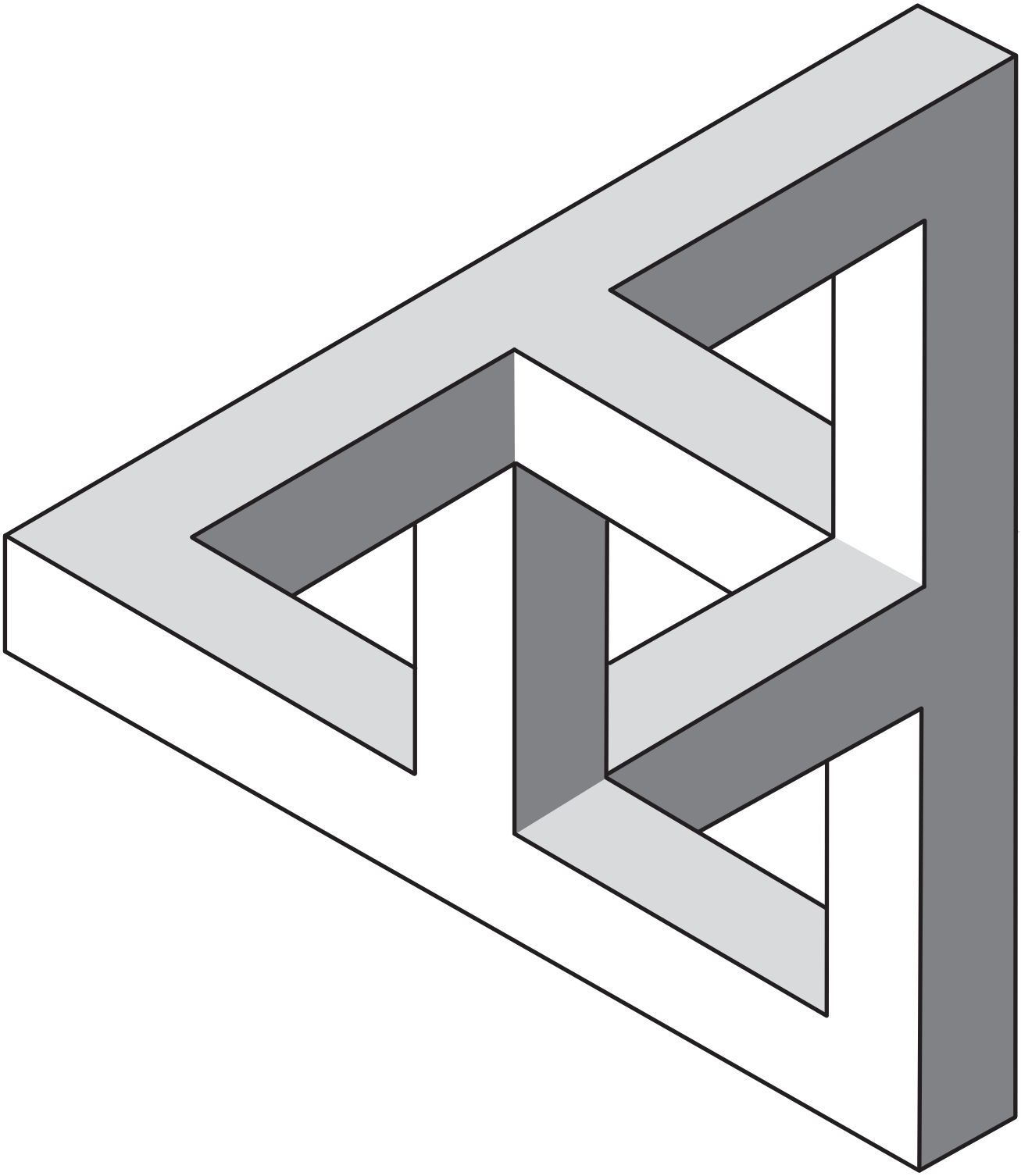
1. On the white grid paper, draw a line segment three units in length.
2. At a right angle to one end of the three unit line, draw a line four units in length.
3. Complete the triangle by drawing a line connecting the two open ends.
4. Cut out the triangle and tape it to the centre of the sheet of blank paper.
5. Using coloured grid paper (the same size as the white grid paper) cut out three squares to match the length of each side of the triangle.
6. Lay each square along its corresponding side of the triangle and tape it into position.
7. Using the white grid paper, cut out one more of each of the two smaller squares.
8. Cut or manipulate these smaller squares so that they fit on the larger square.
9. IDENTIFY the relationship that exists among the areas of three squares.

The hypotenuse is the longest side of a right-angled triangle and it is located opposite to the right angle.

The students should now be able to write the equation that shows the relationship between the hypotenuse and the other two sides of the triangle.

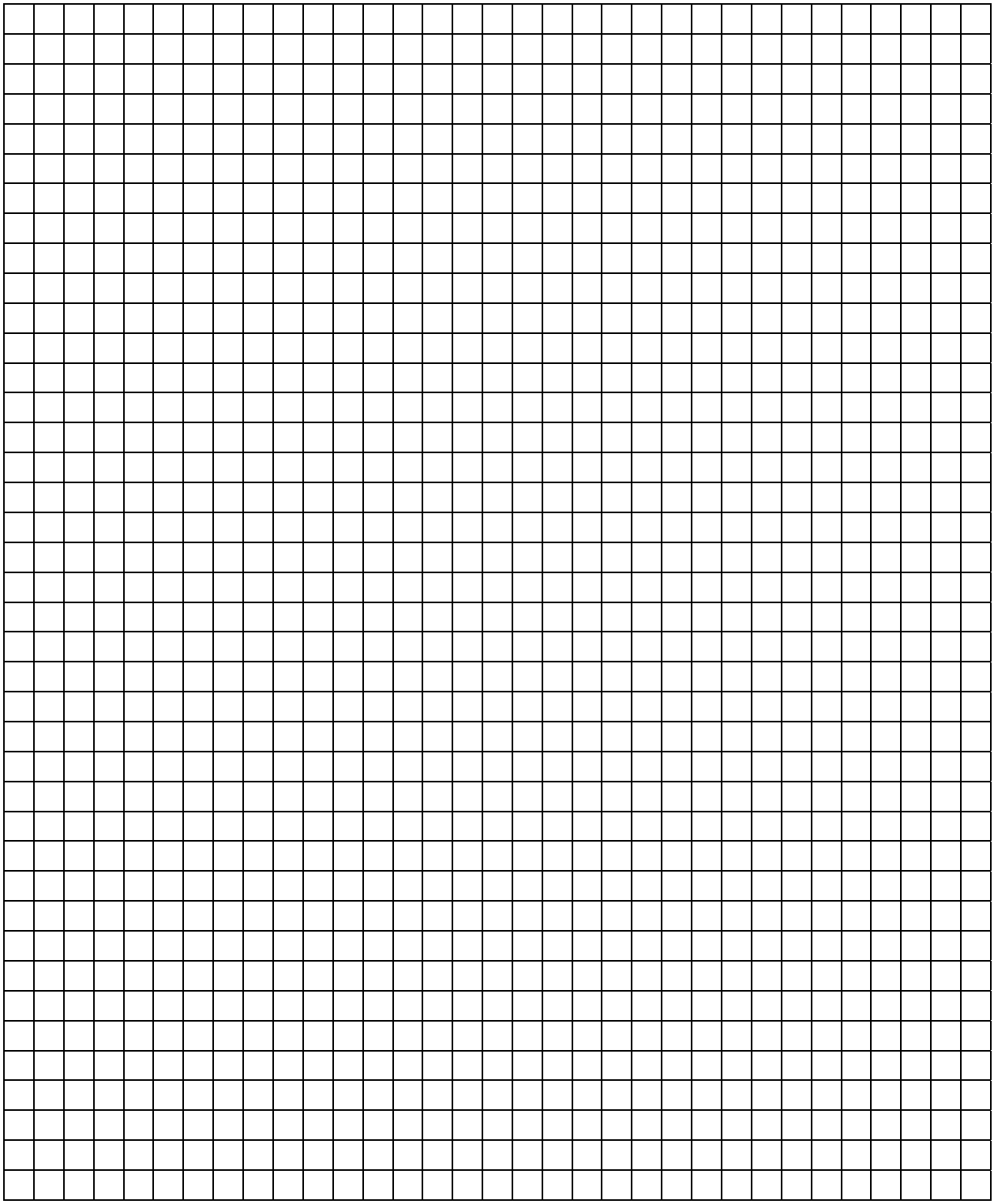


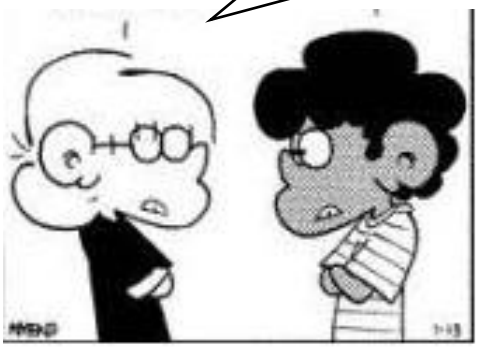
Grid Paper (2.0 cm)



Grid Paper (1.0 cm)

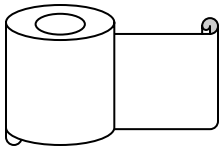
Grid Paper (0.5 cm)

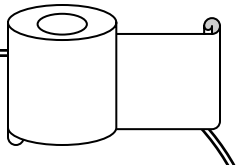




Toilet Paper Math

By
Darlene Ells, Sherene Sharpe





Workshop Concepts

Objective: 1. Hands – on activity to reinforce the concept of perimeter and area.

2. To enhance previously learned skills:
   - (a) estimation
   - (b) decimal work
   - (c) calculator procedures
   - (d) formulas and strategies for finding: perimeter , area, changing a cylinder into a rectangle.
   - (e) cooperative group learning

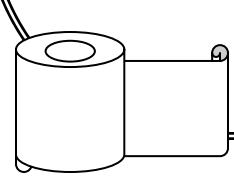
3. To use perimeter and area in a real-world situation:
   - (a) companies and products
   - (b) consumer groups and how they rate products

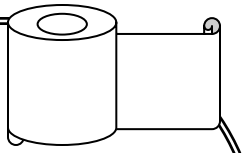
Lesson

1. Put students into groups of 2 or 4 (your choice).
2. Materials needed: (students)
   - (a) 1 roll of toilet paper (brand name is required; i.e. White Swan, Dove, etc.)
   - (b) ruler, pencils, etc.
   - (c) calculator
   - (d) Toilet Paper Math Activity Sheet
3. Teacher Materials:
   - (a) Extra rolls of toilet paper (someone always forgets to bring one!)
   - (b) Make a larger version of the Toilet Paper Math Activity Sheet on Bristol board and laminate.
   - (c) Washable markers
4. Discussion:

   When the students have finished the activity, record all of the information (by groups) on your laminated copy. Discuss your (their) results; i.e Does the data make sense?, What brand provide the most sheets?, Is the perimeter and area approximately the same for all?
5. Evaluation:

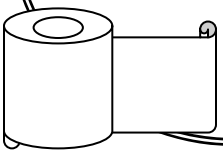
   Evaluate individual participation within each group
6. Extension: “Paper Towel Math”





Toilet Paper Math Activity Sheet

Activity	Estimation	Actual Measurement
Total number of sheets		
Perimeter of one sheet		
Perimeter of the entire roll of paper		
Perimeter of the toilet paper tube		
Area of one sheet		
Area of the entire roll of paper		
Area of the toilet paper tube		
Brand of toilet paper		



Measurements and Calculations

- Record all the measurements that you make
- Show all the calculations that you must do to complete the Toilet Paper Math Activity Sheet.