

Growing with Mathematics



Grade 4

**Topic 9
Differentiation Assignments**

Challenge

Topic 9

Materials: *Problem Solving with Measurement* p. 5, pencil

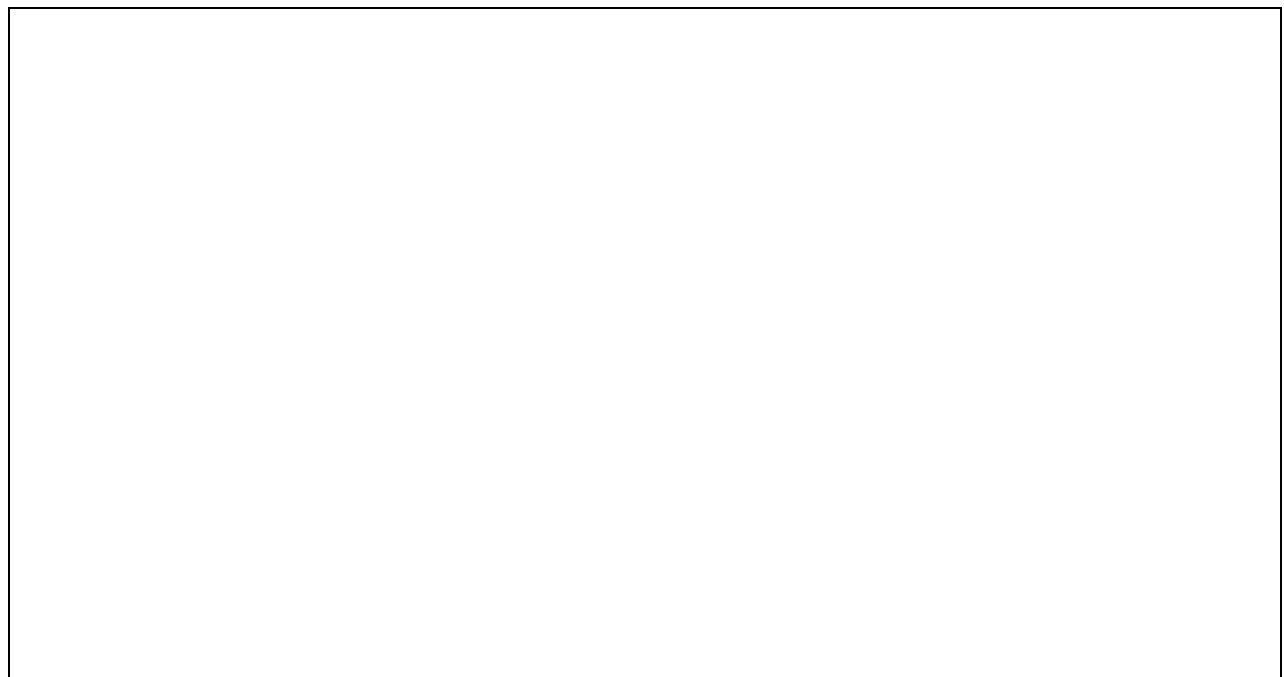
Directions:

Jeremy laid out a rectangular vegetable garden using sticks and heavy cord. He took 48 sticks and stood them up in the ground 2 feet apart to form the outside perimeter. Then he wrapped the cord around the sticks. Jeremy's garden was 30 ft long. (Think very carefully about how you diagram and count.)

1. What was the width? _____

2. What was the perimeter? _____

Explain how you reached your answer, including a diagram.



Math Differentiation Menu

Attached are your assignments for **Topic 9** in Math class. As you finish these assignments turn them into your teacher.

Pyramids and Prisms Lesson 9.1	Dimensions of Massive Monuments Lesson 9.2	Perimeters of Everyday Objects Lesson 9.3
Problems with Perimeter Lesson 9.4	Distances Around Boxes Lesson 9.5	Challenge Topic 9

Teachers:

Highlight the activities that you wish students to use for this topic and write in the box the date that the assignment is due.

Student Signature

Date

Parent Signature

Date

Teacher Signature

Date

Pyramids and Prisms

Lesson 9.1

Materials: Paper

Directions:

You have four prisms and four pyramids. One prism and one pyramid have a 9 sided base, one of each has a 10 sided base, another of each has an 11 sided base, and the final ones have a 12 sided base.

1. Predict the number of faces, vertices, and edges in the prisms and pyramids with the 9, 10, 11 and 12 sided bases.

P r i s m s	Sided-bases	Faces	Vertices	Edges
	9			
	10			
	11			
	12			

P y r a m i d	Sided-bases	Faces	Vertices	Edges
	9			
	10			
	11			
	12			

2. On a separate sheet of paper try to construct these shapes to verify your predictions. Label the shapes Prisms or Pyramid

Dimensions of Massive Monuments

Lesson 9.2

Materials: Resource page *Buildings 9.2a*, computer

Directions:

Research the shapes of monuments and buildings that are pyramid shaped, or similar to a pyramid, on the computer. If the computer is not available, use *Buildings 9.2a* as your reference material.

1. What do you find similar in the buildings?

2. What do you find different in the building shapes?

3. Why do you think modern buildings are sometimes built like the ancient Egyptian pyramids?

Extra:

4. Design your own pyramid-like structure and tell what it would be used for once it was built. Describe the materials you would use to construct the building.

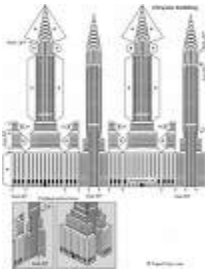
**Transamerica Pyramid Building,
San Francisco**



Louvre, Paris



Chrysler Building, New York



Flatiron Building, New York



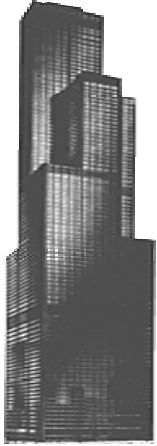
Washington Monument, D. C.



Park Row, New York



Sears Tower, Chicago



Empire Building, New York



Singer Building



Woolworth Building, New York



Met Life Building, New York



Manhattan Building, New York



Perimeters of Everyday Objects

Lesson 9.3

Materials: Paper, pencil

Directions:

You have 28 feet of lumber to build bookcases. You may design the bookcases any way you would like, including the shape and number of shelves, however each bookcase cannot use more than 28 feet of lumber total, including the shelves.

1. Design at least 2 bookcases. Make sure you show your measurements. You do not need to use all 28 feet, but you cannot use more than the 28 feet of lumber for each case.

2. Determine the perimeters of the bookcases.

3. Which bookcase has the greatest perimeter? _____

4. Which has the least perimeter? _____

5. Explain which would be the most practical.

Solving Problems with Perimeter

Lesson 9.4

Materials: BLM 9.4, ruler or tape measure, paper

Directions:

1. Complete BLM 9.4 by calculating the perimeter of each shape.
2. On question 5, list some items you *think* have a perimeter of 50 cm and about 100 cm in your classroom and list them on BLM 9.4.
3. Now measure the sides of the objects you chose to represent the 50 cm and the 100 cm and write those measurements down.
4. Calculate the measurements you took to determine the actual perimeters. Then find the differences between the estimated and the actual measures.

Distances around Boxes

Lesson 9.5

Materials: Paper, pencil

Directions:

It is common to wrap a package for someone with wrapping paper and trim it with ribbon. Usually the ribbon trim goes around two perimeters, not just one.



1. You are going to be wrapping a package. It is 3 feet long, $1\frac{1}{2}$ feet wide and 15 inches tall.
2. You need to find the total length of the ribbon needed to wrap the different combinations of the two distances around, or the two perimeters.
3. Calculate the ribbon needed, but don't forget to add in an extra 24 inches for the bow.



4. How much ribbon will you need? _____

5. Explain how you reached your answer.
