

Dear Parents,

Below is information regarding Unit 4, Geometry. Look for additional newsletters for future units.

Geometry

By the end of this unit, students will be able to:

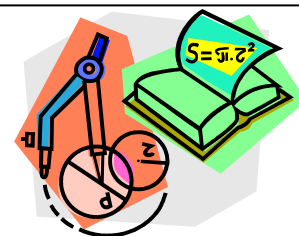
- Draw geometric shapes with given conditions (focus on triangles).
- Describe 2-D figures that result from slicing 3-D figures (prisms, pyramids, cones, cylinders & spheres).
- Use the formulas for the area and circumference of a circle to solve problems.
- Use facts about supplementary, complementary, vertical and adjacent angles in a multi-step problem to find an unknown angle measure.
- Solve real-world problems involving area, volume and surface area of 2-D & 3-D objects composed of triangles, quadrilaterals, polygons, cubes and right prisms.

Vocabulary

- **Adjacent Angle:** Angles in the same plane that have a common vertex and a common side, but no common interior points.
- **Circumference:** The distance around a circle.
- **Complementary Angle:** Two angles whose sum is 90 degrees.
- **Congruent:** Having the same size, shape and measure. $\angle A \cong \angle B$ denotes that $\angle A$ is congruent to $\angle B$.
- **Cross-section:** A plane figure obtained by slicing a solid with a plane.
- **Irregular Polygon:** A polygon with sides not equal and/or angles not equal.
- **Parallel Lines:** Two lines are parallel if they lie in the same plane and they do not intersect. $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$ denotes that \overleftrightarrow{AB} is parallel to \overleftrightarrow{CD} .
- **Pi:** The relationship of the circle's circumference to its diameter, when used in calculations, pi is typically approximated as 3.14; the relationship between the circumference (C) and diameter (d), $\frac{C}{d} \approx 3\frac{1}{7}$ or 3.14
- **Regular Polygon:** A polygon with all sides equal (equilateral) and all angles equal (equiangular).
- **Supplementary Angle:** Two angles whose sum is 180 degrees.
- **Vertical Angles:** Two nonadjacent angles formed by intersecting lines or segments. Also called opposite angles.

<http://intermath.coe.uga.edu/dictionary/homepg.asp>

<http://www.teachers.ash.org.au/jeather/maths/dictionary.html>



Textbook Connection

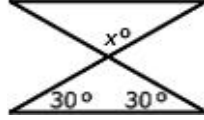
McGraw Hill Georgia Math Grade 7: Chapter 8 Lessons 1-5; Chapter 9 Lessons 1-4, 6-8
Textbook Online: connected.mcgraw-hill.com

Web Resources

- <http://www.mathsisfun.com/geometry/construct-ruler-compass-1.html>
- http://www.cimt.plymouth.ac.uk/projects/mepres/book7/bk7i5/bk7_5i5.htm
- www.learner.org/channel/courses/learningmath/geometry/session9/part_c/index.html
- <http://illuminations.nctm.org/LessonDetail.aspx?id=U166>
- <http://illuminations.nctm.org/ActivityDetail.aspx?ID=116> circumference
- <http://www.uen.org/Lessonplan/preview.cgi?LPid=23360> entire lesson plan area/circum.
- <http://www.shodor.org/interactivate/activities/SurfaceAreaAndVolume/>
- <http://www.learner.org/interactives/geometry/area.html> surface area/volume
- <http://www.analyze-math.com/Geometry/angles.html>
- <http://www.mathsisfun.com/geometry/vertical-angles.html>
- <http://www.mathsisfun.com/geometry/adjacent-angles.html>

Practice Problems

- 1) Find the measure of angle x .

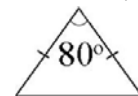


- 2) Draw an isosceles triangle with only one eighty degree angle. Is this the only possibility or can another triangle be drawn that will meet these conditions?
- 3) A triangle has an area of 6 square feet. The height is four feet. What is the length of the base?
- 4) What is the face shape created from cuts made parallel to the base of a rectangular pyramid?

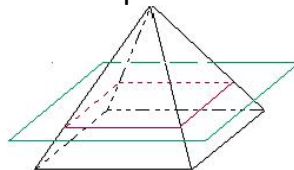
- 1) First, find the missing angle measure of the bottom triangle ($180 - 30 - 30 = 120$). Since the 120 is a vertical angle to x , the measure of x is also 120° .

- 2) Through exploration, students recognize that the sum of the

angles of any triangle will be 180 degrees.



- 3) One possible solution is to use the formula for the area of a triangle and substitute in the known values, then solve for the missing dimension. The length of the base is 3 ft.
- 4) If the pyramid shown is cut parallel to the base, the resulting face shape is a rectangle.



A
n
s
w
e
r
s