

Geometry

Tile Setting

Subject Area: Geometry

Grade Levels: 9-11

Date: Dec 6-10

Lesson Overview:

Students will estimate the amount of material they need to tile the floor of a Bathroom. They will submit a job tag with the amount of material they need. I will fill their job tags with the correct amount of supplies. They will have 1 day to neatly tile the floor.

Materials Included in this Lesson

- Different sized Construction Paper for tiles
- “blue-print” of bathroom ditto
- glue stick

Other Materials for this Lesson

- rubber cement glue
- liquid glue

Skills the Student will Learn

- surface area of different geometric shapes
- estimating how much material they will need to tile the floor.
- Working with 10 pts extra credit to budget supplies and material needed to keep as much extra credit as possible

Student Deliverables

- list of materials needed (job tag)
- tiled blue-print

Length of Lesson: 3 Days

Activity Day One

Teach students formulas for finding the surface area and lateral surface area for different geometric shapes.

HW: text page 376-379 (14-28, 35-38, 41-43, 51, 60,61)

Activity Day Two

Go over homework-Answer any questions.

Divide students into groups of 2-3. Let groups choose which blue-print they want to work with, then have groups begin finding the surface area of the floor needed to be tiled. Hand out sample tiles sheets for groups to decide which quadrilateral they will be using. Explain to students how they can “earn” extra credit.- 10 pts are given to buy tile, glue, and other supplies needed any left over points go to students grade. Students will need to make sure the accurately estimate the number to tiles and glue needed to maximize their extra credit.

Due end of period: Job Tag with amount and type of tile needed. Type of glue needed.

Teacher HW: make Job Tags with correct material for students

Activity Day Three

Hand back the Job Tags groups turned in the previous day with materials attached. Students will have the whole period to tile the floor with no gaps. They must work together to make a neat tiled floor with design.

Due end of period: Blue-print with tiled floor.

**Projects will be accept 2 days late, with 2 points deducted each day late.

Enrichment Suggestions

Tile setter can come to class to give a presentation. He/She can go over topics such as: pay, hours, how to become a tile setter, tile helpers, etc.

Student Resources

Below are a couple of links students can use for extra help

www.purplemath.com, www.coolmath.com, www.math.com, www.khanacademy.com

Student Textbook

Tutoring

Foundation Academic Standards

▪ **Make geometric constructions**

12. Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.

- **Find arc lengths and areas of sectors of circles**

5. Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.

CTE Pathway Standards

2.0 Communications

Students understand the principles of effective oral, written, and multimedia communication in a variety of formats and contexts.

D. Residential and Commercial Construction Pathway

D4.2 Understand how to estimate materials from blueprints and specifications.

Specific applications of Geometry standards (grades eight through twelve):

(8.0) Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.

Lesson Plan Relevance To Externship

During my externship I job shadowed different employees at Citadel Tile. This company does tile work in both commercial and residential sites. While there I spent some time with the estimator; his job is to find jobs and download blue prints of the work being requested. He then measures to find the surface area and determines how much time is needed. He then figures out labor and material costs, adds a company profit, and submits the bid. Once the work is rewarded to the company, a different employee orders the supplies, and someone else makes the job tags. All job tags include the amount of material being given and the hours to complete the job. One day I visited a residential job sight where two employees were tiling the bathroom floor.

This project incorporates most of the different jobs in the tile company. Students will want to be frugal with their extra credit so they will try not to over purchase tile, and if they finish on time; they will retain their extra credit.

