Lab Framework

Text:CORD

Unit number and title: Unit 1 problem solving

Short Description: building a paper model can save time, money and mistakes.

Developed by: Gordon Patterson

Contact Information: gordon.patterson@vansd.org

Date:6/25/08

Lab Title

Problem Solving with a Simple 3d Paper Model

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**
  Building a model to solve a problem
- **Statement of pre-requisite skills needed** (i.e., vocabulary, measurement techniques, formulas, etc.)
  Listening and following directions
- **Vocabulary**
  Model
- **Materials List**
  One 8 ½ X 11 piece of paper for each student
  Cube handout
- **GLEs (State Standards) addressed**

Math: 2.1.1 Formulate questions to be answered to solve a problem.
2.1.2 Determine what information is missing or extraneous.
2.2.1 Select and use relevant information to construct solutions.
2.2.3 Apply a variety of strategies and approaches to construct solutions.
2.2.4 Determine whether a solution is viable, is mathematically correct, and answers the question.
3.2.1 Draw and support conclusions, using inductive or deductive reasoning.
3.3.2 Evaluate reasonableness of results.

Reading: (Reading)
Writing: (Writing)

- **Leadership Skills**
  Listening
- **Set-up information**
  Students receive the flip and check handout
- **Lab organization**(-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required)**
  Students remain seated
  They follow directions
  They answer questions on a handout
- **Teacher Assessment of student learning** (scoring guide, rubric)
  Students check handout with the key

- **Summary of learning** (to be finished after student completes lab)
  -discuss real world application of learning from lab
  -opportunity for students to share/present learning
  What professionals might use models to solve problems.
  Other than 3d models are there other types of models? Give examples

- **Optional activities**
  Cube with letters
- **Career Applications**
  Engineers, Architects

LAB TITLE: **Problem Solving with a Simple 3d Paper Model**

STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
  Some problems are best solved by building a model

- **Grouping instructions and roles**
  NA

- **Procedures** – steps to follow/instructions
  Instructor hands out paper to students.
  Students listen and follow directions
  Students build a cube
  Students place different shapes and cymbals on the sides of the cube
  Students use the cube to solve the problem of what's on the other side

- **Outcome instructions**
  Students have a cube they also have answered the handout with 100% accuracy.

- **Assessment instructions** (peer-teacher)
  Collect hand outs

Lab Data Collection

Student: _____ Date: _____

Unit: _____

Lab Title:

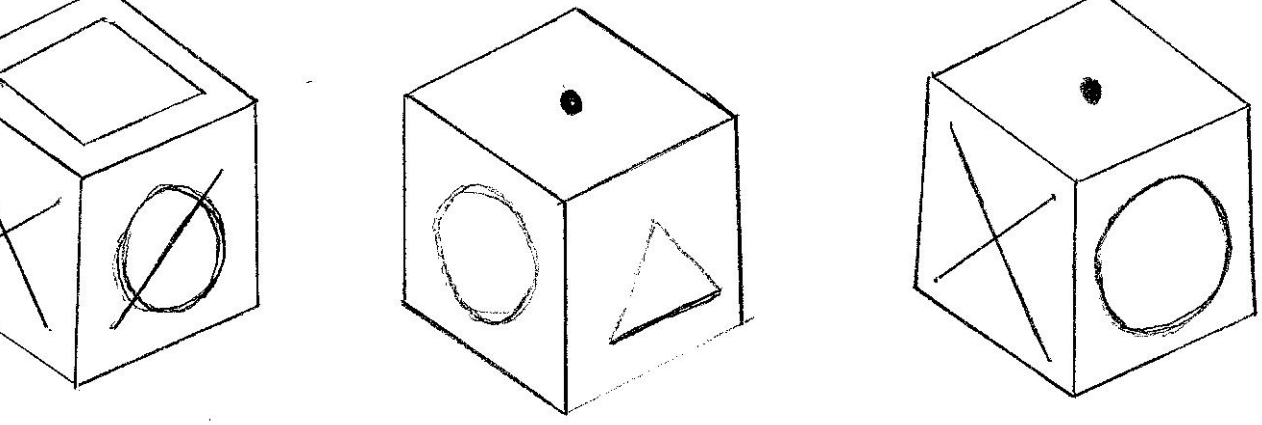
Criteria: Write the problem/objective in statement form

Data Collection: Record the collected/given data

Calculations: Complete the given calculations to solve for an answer(s)

Summary Statement:

Other Assessment(s)



Flip and Check

what shape is opposite

• → _____

△ → _____

○ → _____

× → _____

□ → _____

⊘ → _____

Washington Applied Math Council

https://wa-appliedmath.org/