Lab Framework

Text: Cord

Unit number and title: Unit 1 Learning problem Solving Strategies

Short Description: Students will construct a world globe that is a polygon.

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Lab Title
Building the world

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**
  Students will be able to read and follow directions to assemble an earth globe using limited resources in a limited time frame
- **Statement of pre-requisite skills needed**
  Students need to know how to use scissors, fold on a straight line, read and follow multit-step directions.
- **Vocabulary**
  Students need to understand the following vocabulary: fold, tab, and crease
- **Materials List**
  Scissors, Glue, directions, Globe Template
- **GLEs (State Standards) addressed**
  Math: **2.2.3 Apply a variety of strategies and approaches to construct solutions.**
  EXAMPLES

EX Select and use tools to construct a solution.
EX Apply a variety of strategies and approaches.
EX Determine when an approach is unproductive and modify or try a new approach.

Reading: **3.2.2 Apply understanding of complex information, including functional documents, to perform a task.**
Read instructions, credit card or job applications, legal documents such as contracts, policies, and timetables, to perform everyday life functions (e.g., find employment, research colleges or trade schools, purchase goods and services, take vacations, locate people and places).

- **Leadership Skills**
  Students will have to share some materials and they need to show respect, responsibility, and safety when doing their project.
- **SCAN Skills/Workplace Skills**
  Read to perform a Task
- **Set-up information**
  Talk about different ways to represent data. Such as a map or globe. Talk about sometimes you are given a task where you have to make decisions about how to complete the task without assistance

- **Lab organization**(-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required)**

  This lab will take 55 minutes for students to complete. Each student will be completing the required task , but everyone will have to cooperate with each other to complete the task on time.
- **Teacher Assessment of student learning** (scoring guide, rubric)

  Assessment will be done by evaluating the completed project. Each student will be evaluated on the craftsmanship, accuracy, and ability to complete the project in the time given.
- **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

  Reading to complete a task is part of everyday life. Every math story problem require you to read a problem, understand what you have read, develop a plan, carry out the plan, and check your results. This is how the real world works.

  Students will share their project and tell what problems they had to overcome in completing their task.

- **Optional activities**

  Completing a pop up calendar.
- **Career Applications**

  Assembly, carpentry, architects, medical occupations.

LAB TITLE: Building the WORLD
STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
  Students will have to demonstrate the ability to read and follow directs to build a world globe using limited tools and problem solving strategies.

- **Grouping instructions and roles**
  Each student will work to complete their own project in this exercise.

- **Procedures** – steps to follow/instructions
  Each student needs to get a pair of scissors and the globe template.
  There are 4 rulers and 4 glue sticks on the tables on either side of the room.
  These items cannot be taken from the tables and have to be shared.
  Some assembly tips:

- in the map fold-outs, folding lines separating polygon faces are absent; they are included in the crease patterns available here for practice
- precision and patience matter most. Small errors can accumulate and prevent fitting the last faces
- using a dull blade (or a spent ballpoint pen) guided by ruler or straightedge, lightly and carefully score all folding lines *before* cutting. This will make creasing easier and more precise
- if you prefer scoring the paper's reverse side to avoid scratching the inked surface, use a needle or pin to punch tiny guide holes at every vertex
- a utility knife guided by a straightedge is more precise than scissors, but please be careful! To keep better alignment, score or cut as many lines as possible without moving the straightedge; also, use the extra alignment ticks included in several maps
- check every white tab's fit before applying glue
- a single face (shaded in the preview pattern) should be glued last; it has no tabs, so must be aligned by sight as a rule of thumb, polyhedra with more (and smaller) faces are harder to assemble.

- **Outcome instructions**
  When have completed your project it needs to be checked off by the teacher and turned in

- **Assessment instructions** (peer-teacher)
  Teacher will grade you based on the following criteria.
  Precision
  Quality
  Following directions

Completeness

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