

## Lesson Plan

**Text:** CORD

**Unit number and title:** Unit 01 – Problem-solving Techniques

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**Date:** June 24, 2009

**Short Description:** Steps of the problem-solving process

### LESSON PLAN

**TEACHER:** Teacher Prep/ Lesson Plan

- **Lesson Objectives**

Students will be able to:

- Articulate the steps of the problem-solving process
- Use the problem solving process

- **Statement of pre-requisite skills needed**

Self-awareness

- **New Vocabulary:**

Process

- **State Standards addressed:**

**Math:**

A1.8.A Analyze a problem situation and represent it mathematically.

A1.8.B Select and apply strategies to solve problems.

A1.8.C Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.

A1.8.D Generalize a solution strategy for a single problem to a class of related problems, and apply a strategy for a class of related problems to solve specific problems.

A1.8.G Synthesize information to draw conclusions, and evaluate the arguments and conclusions of others.

**Reading:** (Reading)

**Writing:** (Writing)

- **Set-up information (Remind students to follow these basic rules.)**

How many people drive? What do you do when you get to your car and it does not start? [problem solve]

Who watches TV? What do you do when you click on the remote but the TV does not turn on? [problem solve]

- **Materials**

White/Smart board

Student problems

- **Lesson**

With these and any problems, you follow some sort of process. You probably just do not know it. Here is a formal approach to problem solving:

Identify the Problem

Develop a Plan

Execute the Plan

Check to See if the Plan Worked

If that is what you already do when you solve problems, then you already know what you need to do to solve every problem. Even math problems.

Here is a problem:

[http://www.gocomics.com/features/66/feature\\_items/407134](http://www.gocomics.com/features/66/feature_items/407134)

FoxTrot by Bill Amend January 25, 2009

AAAA! I CAN'T DO THESE MATH PROBLEMS! WHY AM I SO STUPID?!

" IF  $2x + y = 60$  AND  $x + 2y = 75$ , SOLVE FOR  $x$  AND  $y$ . HOW THE HECK DO I FIGURE THAT OUT?!"

IF TWO SHIRTS AND A SWEATER COSTS \$60, AND A SHIRT AND TWO SWEATERS COSTS \$75, WHAT DOES EACH ITEM COST?

THE SHIRTS ARE \$15 AND THE SWEATERS ARE \$30. DUH.

YOU AREN'T STUPID, PAIGE, JUST WEIRD.

COME BACK! YOU STILL HAVEN'T TOLD ME HOW TO SOLVE THE PROBLEM!

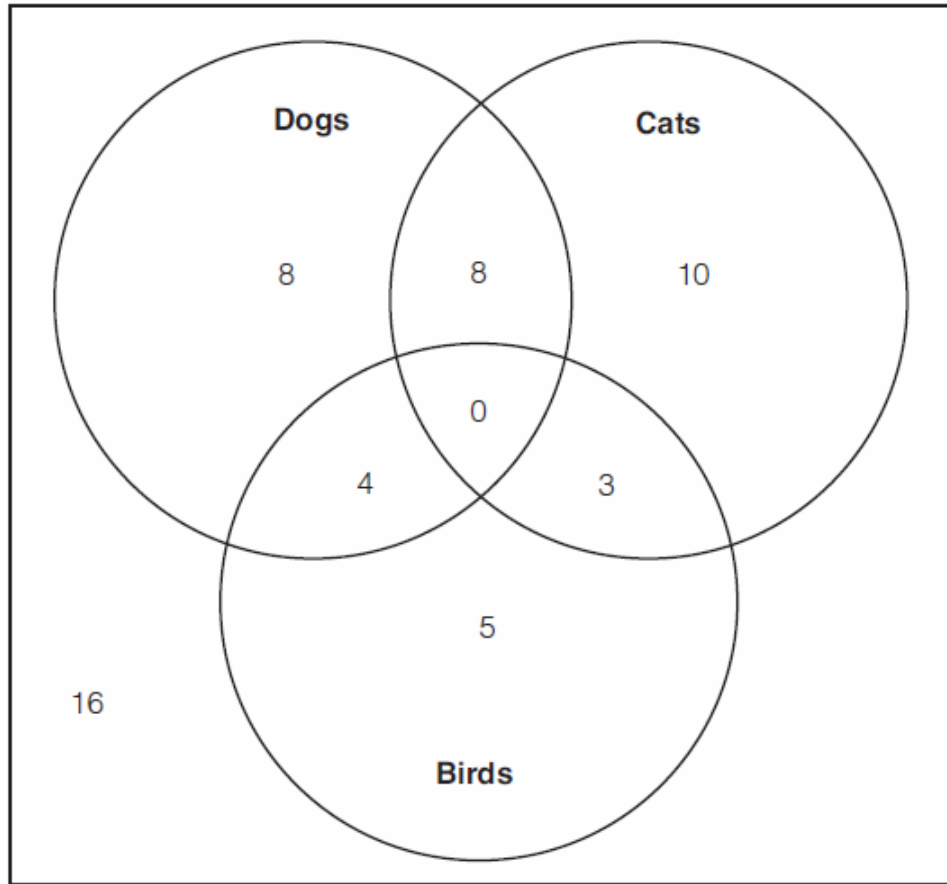
# Council

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Here is another problem:

- 2 Jeremy wanted to determine how many of the 972 students at East High School have dogs. Jeremy surveyed 54 students.

East High School / Pet Ownership Society



Based on the survey results, which is the **best** prediction of the total number of students in the school who have dogs?

- A. 144
- B. 216
- C. 360
- D. 432

Here is another:

Jay earns \$16.42 per hour. He earns 1.5 times his hourly wage for every hour he works over 40 hours each week. He earns 2 times his hourly wage on Sunday. Jay worked 3 hours on Sunday and earned a total of \$903.10 for the week.

How many total hours did Jay work last week?

Regardless of the problem, they are all solved with the same process.

Identify the Problem

Develop a Plan

Execute the Plan

Check to See if the Plan Worked

Can you solve the problems?

- **Teacher Assessment of student learning (scoring guide, rubric)**  
The problems above will be done as a group. To demonstrate the problem solving process. Student participation is paramount.
- **Summary of learning**  
Know the problem solving process. You probably already use it. You just might have different names for the steps.
  - Identify the Problem
  - Develop a Plan
  - Execute the Plan
  - Check to See if the Plan Worked
- **Optional activities**  
Solve other problems
- **Career Applications**  
Repairing an automobile, helping a student figure out his/her schedule for next year.

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