

Homework 2

Note that this homework involves watching and responding to a video clip from the IMAP CD. See the following page for instructions on accessing IMAP videos.

1. IMAP Video 02 – Dillon (10:00 minutes)

a. Before Watching the Video

- Open the Video Guide and go to Video Clip 2 (p. 6).
- Identify the problem type for the seven problems. You must give the complete name or acronym for each problem (refer to the charts if necessary).
 1. Join, Change Unknown
 2. Part Part Whole, Part Unknown
 3. Join, Start Unknown
 4. Compare, Difference Unknown
 5. Equal Groups, Total Unknown
 6. Equal Groups, Amount in Group Unknown
 7. Equal Groups, Number of Groups Unknown
- Note what it says about a problem being omitted from the video.
- Respond to the prompt under To Consider Before Viewing the Video Clip.

b. While Watching the Video

For each problem Dillon solves:

- Identify whether Dillon got the problem correct or incorrect.
- Identify what strategy type Dillon uses for each problem and explain how you know. (Direct Modeling, Counting, Derived Facts, or Algorithm.)
 - Note: one problem is completely unclear; you can write “unclear” for that one.
 1. Correct, Counting. He counted on his fingers up from six until he hit 13.
 2. Incorrect, Algorithm. He writes the problem vertically and attempts to solve the addition problem 14 plus 8. He even regroupes correctly!
 3. Incorrect, Algorithm. Again, he writes the problem vertically and adds 9 to 4 to get 13.
 4. Correct, Counting. He counts up from four to 9 and saw that he had 5 fingers.
 5. Correct, Unclear.
 6. Correct, Direct Modeling. He divides up 18 blocks into 3 groups, and then counts how many are in each group.
 7. Correct, Direct Modeling. He counts out 20 blocks and makes groups of 4. Then he counts that they are 5 groups of 4.

2. CGI Problem Types (see pages 3-4)

Identify the problem types of problems A-J (give the complete name or acronym).

- Note: you need to read the information about Low Income and Poor to understand some of the problems.
- Note: the wording of these problems is purposely more challenging than what I would use for young children.

3. Equal Groups problems

Make your own set of the three equal groups problems around a common theme.

- Label each problem.
- Write the corresponding number sentence for each problem type.
- Extra credit for using real data with a citation provided.

4. Short Response (about 150-200 words)

What do you think about the substance of problems A-J (do not worry about the difficulty of the numbers involved or the wording)? Do they belong in a K-8 classroom? Why or why not? Would you be likely to use these types of topics as a teacher? Why or why not?

5. Textbook Problem: Section 6.1 (p. 226): 1

- a. $252 \div 12 = 21$ packages
How many groups? / number of groups unknown
- b. $506 \div 23 = 22$ stickers per child
How many in each group? / group size unknown
- c. $48 \div 8 = 6$ gallons
How many groups? / number of groups unknown
- d. $360 \div 12 = 30$ miles per gallon
How many in each group? / group size unknown
- e. $177 \div 3 = 59$ miles per hour
How many in each group? / group size unknown
- f. $84 \div 12 = 7$ feet
How many groups? / number of groups unknown

CGI Problem Types

The data in the problems below are from:

- * indicates the National Center for Children in Poverty (www.nccp.org), specifically <http://nccp.org/tools/demographics/>
- † indicates the US Census Bureau, specifically <http://www.census.gov/hhes/www/poverty/data/incpovhlth/2009/table4.pdf>
- ‡ indicates the US Debt Clock (<http://www.usdebtclock.org/>) and the U.S. Census Bureau (<http://www.census.gov/population/www/popclockus.html>)

I used their terms for race/ethnicity. The NCCP's definitions for low income and poor are below.

Low Income: Families and children are defined as low-income if the family income is less than twice the federal poverty threshold (see Poor). [note: so “low-income” includes “poor” families as well]

Poor: Families and children are defined as poor if family income is below the federal poverty threshold. The federal poverty level for a family of four with two children was \$22,050 in 2010.

- A. The U.S. national debt is currently about \$15 trillion (that's \$15,000,000,000,000). The U.S. population is currently about 312 million (that's 312,000,000). What is the average national debt per person?‡
[Equal Groups, Group Size Unknown](#)
- B. In 2008 there were about 2,754K poor people who worked full-time. In 2009 this decreased to 2,641K. How much did it decrease by?†
[Separate \(Take Away\), Change Unknown](#)
- C. In 2008 there were about 10,987K Hispanic people in poverty. In 2009 this increased by 1,363K. How many Hispanic people were in poverty in 2009?†
[Join, Result Unknown](#)
- D. In 2008 there were about 3,656K elderly people (65 or older) living in poverty. This decreased by 223K in 2009. How many elderly poor people were there in 2009?†
[Separate, Result Unknown](#)
- E. In Arizona there are 469,553 Hispanic children living in low-income situations. This is 398,209 more than the number in Wisconsin. How many low-income Hispanic children are in Wisconsin?*
- [Compare, Smaller Amount Unknown](#)
- F. The average national debt per person in the U.S. is about \$48,000. The total U.S. national debt is about \$15 trillion. About how many people are there in the U.S.?‡
[Equal Groups, Number of Groups Unknown](#)

- G. In Wisconsin 63% of Hispanic children are low-income. In Arizona it is 1% point higher. What percentage of Hispanic children are low-income in Arizona?*
- [Compare, Bigger Unknown](#)
- H. In Arizona there are 242,286 Hispanic children living in poverty. There are 227,267 Hispanic children who are considered low-income but not poor. How many low-income Hispanic children are there in Arizona?*
- [Part-Part-Whole, Whole Unknown](#)
- I. The average national debt per person in the U.S. is about \$48,000. There are about 312 million people currently in the U.S. How large is the U.S. national debt?‡
- [Equal Groups, Product Unknown](#)
- J. In 2009 there were about 3,433K elderly people (65 or older) living in poverty. This was down 223K from the previous year. How many elderly poor people were there in 2008?†
- [Separate, Start Unknown](#)