

CI 176 – Planning and Assessment Portfolio
Documentation Sheet: **Journal Article**

NAME: 53

Ponce, G.A. & Garrison, L.

DATE: February 21, 2012

Ponce is the 1st author & needs to be first, not alphabetical order.

Article reference, APA format: Garrison, Leslie., Ponce, Gregorio A. (2004/2005). Overcoming the "Walls" Surrounding Word Problems. *Teaching Children Mathematics*, 11(5), 256-262.

Mathematics topic/process: Solving Word Problems

Grade level or range: 2 - 3

Mathematics Content and Process Standards:

California Mathematics Content Standards: 3.MR.2.4; Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

California's Common Core Content Standards for Mathematics: 2.OA.1; Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

NCTM Principles and Standards for School Mathematics Algebra, Pre-k – 2, Use mathematical models to represent and understand quantitative relationships. All Students should model situations that involve the addition and subtraction of whole numbers, using objects, pictures, and symbols. Process Standard: Communication Standard; Instructional programs from prekindergarten through grade 12 should enable all students to: Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.

Summary of article (narrative): This article addresses the issues that many elementary students struggle with when they are given word problems during a math lesson. One of the strategies suggested was to combine a mathematics word problem with Daily Oral Language (DOL). This strategy allows students to first look at the problem from a grammatical point of view and corrects any errors that are written (purposely) on the board by the teacher. Once the word problem makes more sense, students are given time to work out the problem on a sheet of paper or in a journal. The teacher then allows students to share their problem solving strategies with the class and discuss each strategy individually. Eventually, the class comes to an agreement as to which strategy best follows the word problem. This lesson can take anywhere from 20 to 30 minutes depending on the class and the mathematic levels of the students.

Clear & concise

Key content/process ideas from article (at least five, bulleted):

- Students can solve the same problem in different ways
- Discussing the problem as a class can improve comprehension for many students

- Having students explain their problem solving strategies can improve their own understanding as well as for the rest of the class.
- Mathematics lessons can be combined with Language Arts without disrupting the schedule for the day
- These ^{two} topics can be combined at the beginning of the day while the teacher takes roll and lunch count as well as before each subject lesson.

Good.
As the article
states, combining
language arts & math
word problems in this
way helps students
make sense of
word problems.

CI 176 – Planning and Assessment Portfolio
Documentation Sheet: **Children's Book**

NAME: 53

DATE: February 21, 2012

Book reference, APA format: Scieszka, Jon¹/₁₇ Smith, Lane. (1995). *Math Curse*. New York: Penguin Group.

Mathematics topic: Multiplication/Division, Fractions

Grade level or range: 3 - 5

Mathematics Content Standards:

California Mathematics Content Standards 4.MR.1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing pattern.

California's Common Core Content Standards for Mathematics 4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

Summary of book (narrative): *Math Curse* is about a young student who believes that her teacher has put a curse on her because after class on Monday, the girl began thinking of EVERYTHING as a math problem. Simple tasks like eating breakfast in the morning became math questions in her mind such as; "How many quarts in a gallon?", and "How many pints in a quart?" During lunch, she thinks of her meal as a math problem by asking herself questions like; (given a pizza cut into 8 equal slices) "If I want 2 slices of pizza should I ask for; 1/8, 2/8, 2 slices of pizza?" Throughout the day, the girl in the story struggles with math problems everywhere she goes and in each class, even English, and P.E. Some of the questions she asks herself are so absurd that they're funny, and when she goes to bed at night, she even dreams about having never-ending math problems. When she finally comes to a solution in her dream, she wakes up and is relieved that she has broken her teacher's math curse!

Suggestion for using the book with students (at least five, bulleted):

- Each problem that the character has can be used as an introduction to a new lesson or review from a previous lesson.
- Teacher and students can work out some of the problems in the book together since many students can relate to some of the problems.
- This book can be read to the class before beginning a difficult math topic
- Assure students that many people struggle with mathematics but the teacher will make sure that everyone will understand in their own ways.
- Math is important and students will use it in their everyday life.

Nice statements; how could you expand them to make them suggestions for using the book?

How do these suggestions relate to the standards?

These seem like standards that could relate to the book.

Nice summary

Isn't this the same as the 1st suggestion?

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Documentation Sheet: **Mathematics Written Test**

NAME: 53

DATE: February 21, 2012

Source, APA format: Unknown Author. (n.d.). *edHelper Math Review Worksheet*. Retrieved February 17, 2012, from http://www.edhelper.com/math/math_grade1_review_3.htm

Mathematics topic: Number Sense, Measurement and Geometry, Mathematical Reasoning

Grade level or range: 1st Grade

California Mathematics Content Standards:

- | | | | |
|----------------------|----------------------|-----------------------|-----------------------|
| Question 1: 1.NS.1.5 | Question 5: 1.NS.1.2 | Question 9: 1.MG.1.1 | Question 13: K.MR.1.2 |
| Question 2: 1.NS.1.2 | Question 6: 1.MG.1.1 | Question 10: 3.NS.3.1 | Question 14: 1.NS.1.4 |
| Question 3: 1.NS.1.2 | Question 7: 1.MG.1.1 | Question 11: 3.NS.3.1 | Question 15: 1.NS.1.4 |
| Question 4: 1.NS.1.2 | Question 8: 1.MG.1.1 | Question 12: K.MR.1.2 | Question 16: 1.NS.1.4 |
| | | | Question 17: 1.NS.1.4 |

Recognition of 1st grade math might match with 2.NS.4.1, 4.2, 4.3

Covers a lot of topics!

Acceptable Responses

- | | |
|---|---------------------------------------|
| Question 1: 1, 4, 5, 6 | Question 9: 3, 1, 2 |
| Question 2: is greater than, or (>) | Question 10: circle the second object |
| Question 3: is greater than, or (>) | Question 11: circle the first object |
| Question 4: is less than, or (<) | Question 12: 9 |
| Question 5: is greater than, or (>) | Question 13: 8 |
| Question 6: circle the 1 gallon of milk | Question 14: 1 |
| Question 7: circle the 6 quarts of milk | Question 15: 79 |
| Question 8: 2, 3, 1 | Question 16: 90 |
| | Question 17: 17 |

Do these items assess the understanding of the > < sym hold? why or why not?

Do they have to write in this counting sequence to get credit for the answer?

Aren't these more? The directions ask for less.

The degree to which the test items match the standards

This test would be most effective after an entire unit lesson or after several smaller lessons. Since this test is more comprehensive, it covers multiple standards. The test meant for students at a first grade level who have learned about half of the California content standards. Questions 2 through 5 address Number Sense and the use/understanding of greater than/less than symbols. This test also assesses student knowledge of grouping objects/numbers in ones and tens.

Use summary of the test.

In my opinion, this test is a good tool to use in order to assess students on their knowledge and understanding of different math concepts. For instance, question 15 asks to write the number with "7 tens and 9 ones." If students have a good understanding of what groups of tens are and what groups of ones are, they will give the correct answer of 79. This test may also include some questions that are easier and meant for review purposes for the first grade students. Question number 12 asks to count the blocks, and the test shows a visual picture of 3 green blocks and then 6 purple blocks. There is also a number sentence directly below the question that reads $3 + 6 = \underline{\quad}$. For some first graders, this is a good way to review basic addition problems in connection with new math concepts.

Perhaps - but they might write it that way because that's the way it's given. What if it was given 9 ones 7 tens - what might students write?

CI 176 – Planning and Assessment Portfolio
Documentation Sheet: **Mathematics & Social Sciences**

NAME: 53

DATE: February 21, 2012

California History Social Science Content Standard

1st Grade; A Child's Place in Time and Space. Standard 1.6.1; Understand the concept of exchange and the use of money to purchase goods and services.

California Mathematics Content Standards 1.NS.1.5; Identify and know the value of coins and show different combinations of coins that equal the same value.

What would you do to connect these standards in a lesson or unit?

These standards can be connected during a math lesson in which history standards can also be addressed. Students can be given pretend money (like from a monopoly game, self made money, or plastic coin money) and a worksheet that allows them to work together and physically act out different processes of the economy. Students are also given new materials such as pencils, glue sticks, rulers, erasers, or any additional materials that can be used as a purchased item. About half of the students are given these materials because they will be acting as the merchants while the other half of the students are consumers. The teacher may choose one or two students to act as "bank tellers" who can choose to allow their peers to withdraw money or not. The sheet of paper contains prices for individual items and multiple sentence frames for students to reference when they interact with one another. This activity allows students to get up out of their seats and move around and interact with each other in a way that will help them understand the exchange of money for goods and/or services. At the bottom of the worksheet, students are asked to add/subtract the money that they began with and the money they spent, using the prices listed for each material item. During this activity, students are actively engaged with the lesson and practice their knowledge of different amounts of coin money while also practicing addition and subtraction facts.

This is an interesting idea; however it seems like to do this activity students already need to know the value of coins. How would you teach the value of coins through ✓

In general, how can integrating mathematics and social science make mathematics more meaningful?

When students have personal experiences along with the practice of mathematics and social science, they are able to reference those experiences and expanding their background knowledge during the many lessons that follow. It is not always easy for students to grasp certain concepts of mathematics and/or social science because math can sometimes seem so abstract and it is hard to connect with concepts that one has never experienced before.

True

If students actively participate in a lesson which provides knowledge of math and social science, they acquire background knowledge in the process and learn in a way that is meaningful and that they will someday experience using real money and real goods/services. These concepts will be used by the students on a daily basis as they grow older. Giving them the experience in advance can help them when they need to draw on those experiences and applying them to future knowledge.

yes.

CI 176 – Planning and Assessment Portfolio, Scoring Guide

PROFESSIONAL READING: Journal Article

	Possible Points	Your Score
Copy of the article & Reference	1	1
Mathematics topic/process & grade level	1	1
Mathematics Content Standards	3	3
Summary of article	2	2
Key content/process ideas	3	3
TOTAL	10	10

INSTRUCTION: Children's Book

	Possible Points	Your Score
Copy of the cover & reference	1	1
Mathematics topic & grade level	1	1
Mathematics Content Standards	3	3
Summary of book	2	2
Suggestions for use with students	3	1
TOTAL	10	8

ASSESSMENT: Mathematics Written Test

	Possible Points	Your Score
Copy of test & reference	1	1
Mathematics topic and grade level	1	1
Mathematics Content Standards (by item)	3	3
Acceptable responses (by item)	3	2
Opinion of match between item & standard	2	2
TOTAL	10	9

MATHEMATICS AND OTHER SUBJECTS: Mathematics and Social Sciences

	Possible Points	Your Score
CA History Social Science Standard	2	2
CA Mathematics Content Standard(s)	2	2
Connections in lesson or unit	3	2
Making mathematics meaningful	3	3
TOTAL	10	9

Grand Total: 36 /40