

# Learning Communities Involving Developmental Math

## The 3 R's: Do They Work Together?

### Math and English Learning Communities



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# Who Are You Trying To Target?

- ☛ Who is your Audience?
- ☛ What are your Objectives?
- ☛ What will it Look Like?
- ☛ How will the Work be Split?
- ☛ Administration's view?

# Some Examples

- Math and Study Skills/Reading
  - Beginning Algebra/Study Skills
  - Prealgebra/Study Skills
- Math and Writing
  - Beginning Algebra/English 101
  - Prealgebra/Developmental Writing
- College Level Science Courses
  - Beginning Algebra/Biology

# Data

- ✔ We found that our students involved in the Math and Study Skills/Reading LC have a higher rate of retention and higher overall GPA in our college
- ✔ Linking Math and Writing (English 101) left students with a higher grade in Math but lower in English
- ✔ Waiting to see what will happen with Developmental Ed pairings (Prealgebra and Dev Ed Writing)

# Resources for Reading

- ☛ Reading in the Content Areas: Mathematics, McGraw Hill ISBN 0-07-861706-5
- ☛ Teaching Reading in Mathematics from Association for Supervision and Curriculum Development ([www.ascd.org](http://www.ascd.org)), Stock No 302053 (ISBN 1-893476-04-9); also has a Blacklines Masters that accompanies it (Stock No 305159)

# Resources for Writing

- ☛ Comparison/contrast paper: Students in groups select 2 products and conduct “taste test”
- ☛ Concept Mapping—particularly for vocabulary and prereading
- ☛ Summary Statements
- ☛ <http://faculty.spokanefalls.edu/AutoWebs/Default.asp?ID=2712&VLD=2712> developed by Phy 100 and Eng 101 instructors (Asa Bradley and Lori Monnastes)

# Email Resources

- ☛ Jean La Bauve (Reading, Writing and Study Skills) [JeanL@spokanefalls.edu](mailto:JeanL@spokanefalls.edu)
- ☛ Debbie Olson (Prealgebra) [DebraO@spokanefalls.edu](mailto:DebraO@spokanefalls.edu)
- ☛ Penny Coffman (Prealgebra/Algebra I) [PennyC@spokanefalls.edu](mailto:PennyC@spokanefalls.edu)
- ☛ Åsa Bradley (Physics) [AsaB@spokanefalls.edu](mailto:AsaB@spokanefalls.edu)
- ☛ Beverly Vredevelt (Algebra I) [BeverlyV@spokanefalls.edu](mailto:BeverlyV@spokanefalls.edu)

# Sample Assignments

- ✓ Prereading used in Prealgebra/Study Skills Pairing
- ✓ Application Problem Worksheet used in Beginning Algebra/Study Skills Pairing
- ✓ What's Rational About That? (from Reading in the Content Areas: Mathematics) used in Beginning Algebra/Study Skills
- ✓ Concept Mapping used in Prealgebra/Writing

# Prereading

## **1. PREPARE – Before the day of the discussion/lesson**

a. **CHECK-OFF** each of the following tasks as you complete them.

**PREVIEW** the activity in text (objectives, headings, bold words, boxes, etc).

**PENCIL** a first draft of your concept map on the back of this page (start with the summary vocabulary).

**COMPLETE THE ACTIVITY** in the text. As you read, answer all questions, write the answers in the text, and make additions/changes to your concept map.

**(1 pt.) All activity questions are answered in your text**

b. **(1 pt.) CONCEPT MAP** on the back of this page

c. **(1 pt.) LIST AND DEFINE** any **symbols** that appear in the activity and any **terms** that are not second nature to you.

d. **(1 pt.) Concept map draft, symbols, and terms are ready for class discussion.**

# Reflect

## ***2. PRACTICE/REFINE – Before the day of the discussion/lesson***

***(4 pts.) The degree to which the exercises are neatly completed in your text with work shown and answers circled:***

## ***3. REFLECT - After the discussion/lesson and homework***

- a. ***(1 pt.)*** Use your concept map to write a brief **summary** of the section. (Make additions and corrections to your concept map on the back of this page if necessary.)
- b. ***(1 pt.)*** Write a 1-2 sentence **response** to the section. Be sure to mention any concepts and/or problems that you still find confusing.

# Math Problem

## **P R O B L E M :**

After a three-for-two stock split, each shareholder will own 1.5 times as many shares as before. If 555 shares are owned after the split, how many were owned before?

# 3-level Comprehension Guide

## *Math*

### I. Facts of the Problem (Literal Level):

Identify the facts of the problem. As you read the problem, decide which of the following statements is clearly stated in the problem. Mark those and be prepared to support your choices. Indicate the statement that supports your choice.

1. \_\_\_\_\_ A total of 555 shares are owned after the split.
2. \_\_\_\_\_ A three-for-two stock split means you will own three stocks for every two owned before the split.
3. \_\_\_\_\_ 1.5 times the number of stocks I own now will tell me how many stocks I'll own after the split.

## II. Ideas (Interpretive Level):

Check any statements that contain formulas or "ideas" that would help solve this problem.

\_\_\_\_\_ Addition increases the amount that you have.

\_\_\_\_\_ When we have a future amount, subtraction gets me back to the original.

\_\_\_\_\_ When we take a fraction of something, we multiply by the fraction.

\_\_\_\_\_ 1.5 is the same as  $\frac{3}{2}$ .

\_\_\_\_\_ 1.5 is the same as  $1 + .5$ .

\_\_\_\_\_  $x$  should represent the number of stocks each person has.

\_\_\_\_\_  $x$  should represent the number of stocks before the split.

### III. Equations (Applied Level):

Below are possible equations to solve to get an answer. Check any that will work for this problem.

\_\_\_\_\_  $555 - x = 1.5$

\_\_\_\_\_  $555x = x$

\_\_\_\_\_  $x + .5x = 555$

\_\_\_\_\_  $555 - .5(555) = x$

\_\_\_\_\_  $1.5x = 555$

# 3-Levels of Learning

<i>Comprehension level</i>	<i>Definition</i>	<i>Metacognition</i>	<i>Algebra text<sup>1</sup>, p. 98</i>	<i>Winning at Math<sup>2</sup>, p. 147-152</i>
<i>Literal Journal A</i>	<i>Read the Lines</i>	<i>What does it say?</i>	<i>Step 1</i>	<i>1,2,3</i>
<i>Interpretive Journal B</i>	<i>Read between the lines</i>	<i>What does it mean?</i>	<i>Step 2</i>	<i>4,5,6,7</i>
<i>Applied Journal C</i>	<i>Read beyond the lines</i>	<i>How can I use it?</i>	<i>Step 3 Step 4,5</i>	<i>8,9 10</i>

# Designing Theme Based & Integrative Learning<sup>[1]</sup>

Thanks to: Åsa Bradley & Lori Monnastes

**What are your big ideas? I.e. what do you most want your students to learn from your course (or discipline)?**

**What on and off campus resources will you use to teach these ideas?**

## **Integrative Assignment** **1. What is the assignment?**

**2. What learning outcomes does it support? How are they related to the outcomes for your disciplines?**

**3. How does it relate to your overall theme?**

**4. What resources are available for you and your students for this assignment?**

**5. What will the students do in each discipline to prepare for this assignment?**

**6. How will you assess the assignment? How does the assessment relate to each member's big ideas?**

# MAC<sup>3</sup>

The summer Institute will be held only if a minimum enrollment is reached by **June 3, 2008**.

## AMATYC SUMMER INSTITUTE

MATHEMATICS ACROSS THE COMMUNITY COLLEGE CURRICULUM  
JULY 15–18, 2008

**Middlesex Community College - Lowell, Massachusetts**

The purpose of this Institute is to provide community college faculty with the time and assistance to develop mathematics across the curriculum activities and assessments. The Institute, modeled after other national MAC<sup>3</sup> programs, offers an overview of the numerous and diverse ways mathematics can be integrated with other disciplines. Session topics include Service Learning and Civic Engagement, Learning Communities Models, Developing Learning Outcomes and Pre/Post Assessment, and Spreading the MAC Word through Changing the Culture. In addition, the Institute will provide extensive time for faculty teams to plan together and work with the Facilitator, as well as to share ideas with one another.