



Math Made Easy – EDUO 9522

Two Units – 30 hours

Instructor - Ryan Pickett

Welcome to **EDUO 9522 MATH MADE EASY**. This class was created by Dominican University of California in conjunction with Educational Development and Services as part of a four course series entitled **ANYONE CAN LEARN MATH**. The other three courses in the series are:

- **EDUO 9521 Stress Free Math**
- **EDUO 9523 Learning Math in Groups**
- **EDUO 9524 Learn Math Through Writing**

This series is designed to help teachers develop the tools needed to make math accessible to all students. The content learned in Math Made Easy will teach you how to utilize your student's natural learning strengths so that they will be engaged in your math curriculum as well as make significant learning gains. By meeting the requirements of this class, participating teachers will earn two semester units of graduate level extension credit from the Dominican University of California, a fully accredited university.

Although Math Made Easy is **NOT** a prerequisite for the other three courses, it does provide a foundation for them. Math Made Easy, Learning Math in Groups, and Stress Free Math all require a single book entitled Math for Humans by Mark Wahl that may be ordered at www.markwahl.com/. The fourth class, Learning Math through Writing, requires a different book entitled Writing in Math Class by Marilyn Burns which is available at Amazon.com and other bookstores.

OBJECTIVES

After completing the course Math Made Easy, you will demonstrate or indicate:

- A. Knowledge of Gardner's theory of multiple intelligences and how it can apply to your math curriculum.
- B. Knowledge of the NCTM Standards and how to apply the constructivist model to them.
- C. Knowledge of Brain Hemisphericity and how it can apply to your math curriculum.
- D. The ability to develop and utilize effective formative and summative math assessments.

GRADING RUBRIC

Exemplary: A+ to A-	Acceptable: B+ to B-	Unacceptable: Must be resubmitted
Reflective, thoughtful ideas relevant to the assignment are clearly stated	Presents some relevant ideas and connections to the assignment	Ideas are not clear or relevant
Very well organized	Generally well organized	Shows little or no organization
Responses relate numerous facts and specific details of the program materials	Some facts and specific details of the program materials are included	Few or no facts or specific details of the program materials are included
Free of spelling and/or grammatical errors	Writing contains a few spelling and/or grammatical errors	Numerous spelling and/or grammatical errors make the writing difficult to read

ASSIGNMENTS

After reading chapters 1-4 (pgs 1-36) and chapters 8-10 (pgs 53-78) in the book Math for Humans, complete assignments 1-7. Put each assignment **1-7** on a separate page, clearly labeled with the assignment number and name.

1. Multiple Intelligences

- a. Gardner's theory of multiple intelligences is outlined in the book Math for Humans. After reviewing the information on Gardner's theory, answer the following questions.
 - i. Which intelligence do you believe best describes your learning style? Why?
 - ii. Which intelligence do you consider to be your weakest? Why?
 - iii. What effect might your strengths and weakness have on student learning in your classroom?
 - iv. Which intelligences dominate your current math lessons? Explain.
- b. Create a 20 question test for your colleagues that would assess their knowledge of Gardner's theory. Attach a copy of this test along with the answer key.
- c. A major premise of the book Math for Humans is that a teacher should attempt to tap the processes that are stronger and natural in the learner rather than consistently demanding production from a weaker intelligence. Interview a colleague as to his/her thoughts regarding the above statement. Does he/she agree or disagree and what are his/her reasons for agreeing or disagreeing?
- d. How will you attempt to utilize your students' strengths in planning your future math curriculum?

2. NCTM Standards

Pick two of the ten main topic/skill areas covered in the Principles and Standards for math. Design and attach a supplemental activity for each one. Each activity should be designed to follow the constructivist model and incorporate two different learning styles/intelligences. Explain how the activities follow the constructivist model and incorporate the different learning styles.

3. Seasoning Math with MI

a. Which type of intelligence(s) would give a student the greatest advantage in each of the following math tasks?

- i. Solving the problem $105 - 55$ in your head.
- ii. Making a flow chart that shows the steps in solving for X .
- iii. A group of four students standing and arranging themselves in a symmetrical way.
- iv. Creating a rap in order to learn the times tables.
- v. Writing a paragraph, without using any numbers, on how a math problem was solved.

b. Attach three of your existing math lessons. Alter them and attach these “new” lessons so that each one is seasoned with at least two intelligences. Be sure that they are not seasoned with the intelligences that already dominate your lessons.

4. Brain Hemisphericity

- a. The book Math for Humans indicates that our schools and textbooks force students and teachers to predominately use their left-brain. Write a letter to the publisher of your math textbook outlining just how one-sided (left-brained) their textbook is. In your letter, discuss how important it is to enable students to do mathematics using both sides of the brain. In addition, make suggestions on how to better balance the textbook.
- b. Attach one of your current math lessons that you feel is predominately left-brained. Discuss the aspects of the lesson that make it “left-brained.”
- c. Adapt the above lesson so that it is predominately right-brained. Discuss the aspects of the lesson that make it “right-brained.”

5. Assessment

- a. Describe how you would utilize both formative and summative assessments for your math curriculum. Which type of assessment is more beneficial to your students? Why?
- b. Design and attach your own rubric for two of the lessons/activities that you have developed/altered for this class. How will you utilize these rubrics? How will you introduce them to your students?

6. Supercharged

Many students learn the tables for all mathematical operations (addition, subtraction, multiplication, and division) without fully understanding what they are used for. They therefore struggle to apply the operations in real-life situations. In order for students to put their math knowledge to use in real life, it is crucial that they have a clear set of ideas about the meaning of the four operations. They need to learn the configuration and conditions necessary for using each operation in a problem. “Fingerprints” for each operation are discussed in the book Math for Humans and examples are given for how to introduce the concepts using bodily-kinesthetic, spatial, linguistic, and logical-mathematical intelligences. Create an activity that will introduce and enhance the understanding of the “fingerprint” for one of the mathematical operations and that taps into either the intra, inter, musical, or naturalist Intelligence. Be sure to indicate which intelligence you are tapping into.

7. Sharpening the Math Facts

- a. Without using actual names, describe a student that you have encountered that has struggled to learn his/her math facts.
 - i. What do you believe his/her intellectual preferences are?
 - ii. How would you demonstrate to this student the importance of knowing his/her math facts?
 - iii. Given this student’s intellectual strengths, outline a plan on how to teach him/her the math facts. Be sure to include the different games, activities, and tricks you will use to help this student. Explain why you chose each game, activity, and/or trick.

Instructions for coursework submission:

When you have completed your assignments, post all coursework at one time in the Completed Coursework DropBox at the bottom of the course page. You are allowed 9 months to complete the course. If you have questions about the course, you can reach your instructor by email.

Ryan Pickett rpickett@dominicancaonline.com

For questions involving your registration, contact us at info@dominicanCAonline.com or see <http://dominicancaonline.com/Dominican-CA-Online-FAQ> for more information.

Additional Resources on the Web – Not Required

1. Multiple Intelligences

- <http://infed.org/mobi/howard-gardner-multiple-intelligences-and-education/>
- http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=6&ved=0CFkQFjAF&url=http%3A%2F%2Fwww.niu.edu%2Ffacdev%2Fresources%2Fguide%2Flearning%2Fhoward_gardner_theory_multiple_intelligences.pdf&ei=YmfrUc_BAs_oigLG34GYDw&usq=AFQjCNGxIBcJgeeJwKKeh5WaBTr22StDxg&sig2=9SNlcQb7g2k7dVO1nQNn2Q&bvm=bv.49478099,d.cG
- <http://www.personal.psu.edu/bxb11/MI/>

- http://www.youthink.com/quiz.cfm?action=go_detail&sub_action=take&obj_id=409
- <http://www.businessballs.com/howardgardnermultipleintelligences.htm>
- http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=7&ved=0CFAQFjAG&url=http%3A%2F%2Fwww.cssu.org%2Fcms%2Flib5%2FVT01000775%2FCentricity%2FDomain%2F32%2FCSSUMathCurricMay04.pdf&ei=hBXsUbm2GMShiALj4oCYBQ&usg=AFQjCNHDveYWhl4cDmqTjJRLxbwAyK56Yg&sig2=9aylu39_M3DtkXBmBKMM_Q&bvm=bv.49478099,d.cGE
- http://en.wikipedia.org/wiki/Principles_and_Standards_for_School_Mathematics
- http://www.thirteen.org/edonline/concept2class/constructivism/index_sub2.html
- <https://www.google.com/search?q=constructivist+model&client=firefox-a&hs=8PJ&rls=org.mozilla:en-US:official&tbm=isch&tbo=u&source=univ&sa=X&ei=kRfsUaTCE8GriQKCloDoAQ&ved=0CEEQsAQ&biw=1193&bih=836>

4. Brain Hemisphericity

- http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0CD8QFjAC&url=http%3A%2F%2Fwww.ejmste.com%2Fv3n2%2FEJMSTE_v3n2_Ali_Kor.pdf&ei=nxjsUbPXLtLWiAL2y4HYBQ&usg=AFQjCNHzUqlxY99mT2X3Y09kDHPXLNjFwA&sig2=DMEVkcqahKFfQDy18wwh6Q&bvm=bv.49478099,d.cGE
- <http://yvhsedacademy.tumblr.com/post/3796058877/hemisphericity-and-learning-styles>
- <http://www.amle.org/Publications/WebExclusive/Assessment/tabid/1120/Default.aspx>
- <http://www.cmu.edu/teaching/assessment/basics/formative-summative.html>

6. Supercharged

- http://www.jazzabrain.com/Identify_Areas_of_Strength.html
- http://www.jazzabrain.com/Multiple_Intelligences.html