4010 Portfolio

Objectives

The student will:

- See an overview of what was learned this semester
- Have examples to use when teaching children
- Reflect on the material covered in the course.
- Have a model of a good assessment tool

Requirements

Dictionary: You should have a list of all terms defined in the class, with their definitions. This is for your reference, not for mine, so remember what I told you: Definitions are not meant to help you understand things! You may find it helpful to include brief drawings or examples.

Utah Core Curriculum: Include a copy of the K-6 core math curriculum. I will not tell you where to find this, but if you are having trouble finding a copy on your own, please come ask me for help.

Portfolio Assignments: Throughout the semester you will receive assignments labelled for inclusion in your portfolio. Be sure that these are included, and organized in some rational way. These will not generally be graded separately, though they will be sometimes be collected so I can give you comments. They will almost always be discussed in class. At the end of the semester I will remind you of all of the assignments.

Worksheets

Practicum

Organizing Your Portfolio

The main themes in 4010 are the development of number and operation concepts, study of models to explain these concepts to children, and the final goal is an in-depth understanding of how the Real Number System works and the connections between its various subsystems. These notions developed historically over time and childrens growth in understanding of these concepts develops over time as well as they progress through the K6 grades. Your portfolio should be organized to illustrate one or more of the following themes along with any other theme from the course you would like to illustrate:

- The development of number and operation concepts (whole numbers, fractions, integers, rational numbers; the four arithmetic operations) across the grades
- Representations for different number and operation concepts and their use at different grade levels
- Connections between various arithmetic operations and ways to use these connections to increase understanding of operations and their properties
Final Reflection

You should include a final reflection on your experiences. Please include two copies (one for your portfolio, and one for me). It should cover the following topics:

On Learning: What was the mathematical concept studied in this course that you found most interesting? What helped you to understand the concept and why did you find it intriguing?

On the Practicum: The goal of the practicum is to help prospective teachers learn to listen to childrens thinking and then relate this thinking to important directions or concepts in mathematics. Describe how your practicum experience did or did not accomplish that goal.

Grading

<table>
<thead>
<tr>
<th>Content</th>
<th>Required elements not including final reflection</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed all worksheets and fraction book</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Final Reflection</td>
<td>15</td>
<td></td>
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<tr>
<td>Extras</td>
<td>News articles on mathematics education</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Related items from the internet or conferences</td>
<td>5</td>
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<tr>
<td>Presentation</td>
<td>e.g. binder, tabs, title page, table of contents</td>
<td>10</td>
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<tr>
<td></td>
<td>Neatness</td>
<td>10</td>
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<td></td>
<td>Organization, Theme</td>
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</tr>
<tr>
<td>Total</td>
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Your First Portfolio Assignment

I will collect these assignments on February 9th, but only to give you comments. You won’t receive a grade on them until the end of the semester.

1. Comment on the techniques Marilyn Burns used when interviewing the children about place value. Use specific examples. Think about what you will use and how you would begin an interview with a first or second grader about subtraction. What will be your first question? How will you proceed? Be sure to type this up and label it “Marilyn Burns video”.

2. Come up with at least one example word problem testing a student’s understanding of each of the following concepts:
   (a) Relationships between sets
   (b) Venn diagrams (note that this is a subtly different concept than part a; try to make your problem reflect that)
   (c) Place value