ELED 4255/6255

**Math CAMMP 2015**

**C**omputer **A**pplications and Manipulative Mathematics Program

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CAMMP Director: Dr. Cece Toole

**Course Requirements**

1. Attend class every day (Week 2 – no possible exceptions when the students come)

2. Conduct 1 week summer CAMMP with 2-5 elementary or middle school students

3 Demonstrate proficiency with concrete, representational, & symbolic manipulatives -- -- Friday, June 19

5. Demonstrate proficiency with software package - select appropriate software for your

individual students by Friday, June 19

6. Prepare a module for an arithmetic operation to be used with your individual students - -- Due Monday, June 22

Turn in modules at Word attachments to [mggreen@uncc.edu](mailto:mggreen@uncc.edu)

Modules should be based on a task analysis of the needed skills necessary for complete an operation (e.g., *NC-SCOS*).

7. Complete a 1 page evaluation of INDIVIDUAL student performance

-- due on last day of CAMMP June 26

8. Complete TEAM EdTPA Math Module

8. Very positive attitude -- **no whining** ! !

9. If you’re late from lunch or break, we’ll start without you

# Text: Piel & Green, (2013). *Constructing Number Sense in the Elementary & Middle Grades Classrooms (2,d ed.)*. Dubuque, IA: Kendall Hunt.CAMMP 2015 SCHEDULE

## Week One

**Monday June 15**

CAMMP mathematics process -- Constructivism

Prenumber ‑ ordinal & cardinal relations – classification & seriation

Properties of the Staircase model

Addition ‑ whole numbers

Problem solving and action language

Levels of manipulatives

Reasonableness & accuracy

Lunch Break

Multiplication – whole numbers

Problem solving and action language

Levels of manipulatives

Reasonableness & accuracy

Task analysis ‑ Instructional Modules – Grade Level Teams

Tuesday, June 16

edTPA Team MathModule

Subtraction ‑ whole numbers

Problem solving and action language

Levels of manipulatives

Reasonableness & accuracy

Lunch Break

Division ‑ whole numbers

Measurement & partition

Problem solving and action language

Levels of manipulatives

Reasonableness & accuracy

Wednesday, June 17

edTPA – continuing the project

Fractions ‑ extending whole number operations

(same action on different content)

Rorange model

Comparisons

Common fractions (common denominators)

Renaming fractions (reducing to lowest terms)

Addition of fractions

Problem solving and action language

Levels of manipulatives

#### Module Development & edTPA: Group work

Lunch Break

Subtraction of fractions

Problem solving and action language

Levels of manipulatives

Multiplication of fractions

Problem solving and action language

Levels of manipulatives

#### Module Development & edTPA: Group work

Thursday, June 18

Division of fractions

Problem solving and action language

Levels of manipulatives

Multiplying by the reciprocal

Relating fractions to decimals ‑‑ Base 10 blocks

Operations on decimals

Geometry: area, perimeter, volume

**Lunch Break**

Probability

Pre Algebra – Algebra: Hands-on-Equations

#### Module Development & edTPA: Group work

Friday, June 19

**Walk through procedures & dorm rooms with CAMMP Director Dr. Toole**

**Manipulative proficiency check—Know your checker!**

#### Module development in the lab

**Lunch Break**

Module & edTPA development

**Last one out LOCKS up**

**Week Two**

**CAMMP for Students**

**Daily Schedule of Events**

**Group 1 Group 2 Group 3**

**Time Youngest 25 Middle 25 Oldest 25**

**All teachers must be ready at 8:40**

8:45 Arrival Arrival Arrival

9:00 Manips Computer Manips

10:15 Activity Snack Computer

10:30 Activity

10:45 Snack

11:00 Manips

11:15 Computer Snack

11:30 Activity

12:00 Dismissal Dismissal Dismissal

Summary of CAMMP Components

Action Language x Hierarchy Grid

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Action Language** | **Concrete** | **Representational** | **Transitional** | **Symbolic** |
| Joined with | Cuisenaire rods, counters,  unifix cubes, number track,  walk on number line | Chisanbop,  base 10 blocks, abacus,  place value chart, number line | expanded notation,  partial sums, computer programs, calculators | low stress, scratch,  casting out nines,  reasonableness |
| **Sets of** | Cuisenaire rods, number track, unifix cubes with number track | Chisanbop,  base 10 blocks, abacus,  place value chart, numberline | expanded notation,  partial products, computer programs, calculators | lattice, casting out nines,  reasonableness |
| **take away**  **compared to**  **joined with**  **no action** | Cuisenaire rods, number track, unifix cubes with number boats and track | Chisanbop,  base 10,  abacus,  place value chart, numberline | expanded notation,  partial differences, computer programs, calculator | equal addition, dribble down,  casting out nines,  reasonableness |
| **grouped into sets of**  **grouped into sets with how many in each set** | Cuisenaire rods, unifix cubes, walk-on numberline | Chisanbop,  base 10 blocks, abacus,  place value chart, numberline, | expanded notation,  partial quotients, computer programs calculator | scaffolding division with rounding up,  casting out nines,  reasonableness |

**Math CAMMP at UNC-Charlotte**

Student\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Not Yet Some of the time Most of the time Proficient**

Understanding and usage of *action* 1 2 3 4

*language* representing an operation

Use of concrete manipulatives when 1 2 3 4

solving simple word problems

Use of representational manipulatives 1 2 3 4

when solving more advanced

word problems

Use of symbolic transition activities 1 2 3 4

to connect manipulative actions to

symbolic procedures

Use of standard or alternative algorithms 1 2 3 4

to solve sophisticated word problems

Ability to logically determine appropriate 1 2 3 4

operations or methods of operation in

problem solving activities

Evidence of student learning and suggestions for home follow-up

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Teacher:

Mathematical Operation:

TEAM edTPA Project

Purpose

The purpose of this project is to give you practice with a new credentialing requirement: edTPA, as it applies to mathematics teaching and learning. Working together, a grade level team will complete the activities and templates required for this project. Submission of a completed set of documents is a course requirement; all team members who contribute to the submission will receive equal course credit for the completed project. Ultimately you will be working with a video segment of your teaching when you are in student teaching. This practice project will not require a video. It will be an ungraded but required element of this Math CAMMP course – you must submit the report to receive credit for the course.

**Overview**

Identify and support, through measured progress, students who are having difficulty. You will diagnose the difficulty or misconception and then prescribe an appropriate remediation using CAMMP principles. Through the implementation of this remediation strategy, you will document how the students overcome their difficulty. Follow the steps outlined below to accomplish this task; these are correlated with the math section of EdTPA and will be your sole opportunity to practice *Task 4:* *Elementary Mathematics Assessment Task.* Based on the limitations of this two-week class, timeliness will be extremely important.

* Identify a Common Core Essential Standard appropriate for your grade. Then plan a central focus for your lessons that will help students develop “conceptual understanding, procedural fluency, and mathematical reasoning/problem solving” (edTPA, 2013).
* Identify within your group of students two who demonstrate learning difficulties in mathematics. “Learning difficulties” is subjective, but you will need to have specific data that justifies your selection.
* Describe your instructional plan (refer to the5-day thematic module and summarize the steps or hierarchy of instruction. (Ultimately this will be reduced to 2 pages maximum during student teaching.)
* Develop a formative assessment for conceptual understanding, procedural fluency (computation), and mathematical reasoning/problem solving. Specify your evaluation criteria (how will it be graded or scored?)
* Collect and analyze student data for the targeted students.
* Design a reengagement teaching/learning session.
* Collect and reanalyze student data for the targeted students.
* Evaluate the effectiveness of the reengagement teaching session (using data) and describe its impact on student learning.
* Describe the specific instructional tactics and Common Core math content that would constitute “next steps” for each of your two students.
* Place the above into a WORD document with Grade Level and Teacher Names on the top, front page. Delineate sections using appropriate headings. Do NOT identify your students beyond the data about their math performance.
* Complete Math Template 1 and Math Template 2, and submit them via your Task Stream portal. Each team member submits the same file(s). Within these templates, refer to the WORD document when appropriate. Templates can be downloaded from the course web site.

You may also access, view, or download from the course web site the actual Scoring Rubrics (#17 & #18) that will be used for this project and for your final Math Task during student teaching.