**AUBURN UNIVERSITY**

**SYLLABUS**

1. **Course Number: CTEE 4040**

**Course Title: Curriculum Mathematics**

**Credit Hours:** 3 semester hours

**Pre/ Co-requisites:**  This section is restricted to Elementary Education majors enrolled in CTEE 4030: Natural Science

1. **Term** Spring 2017

**Day/Time** Tuesday 10am-12pm/ Lab MWF 7:30-3pm

**Room:** HC 2414

**Instructor** Dr. Megan Burton

**Office Address** 5020 Haley Center

**Contact Information (phone, e-mail)** 844-8141, megan.burton@auburn.edu

**Office Hours** Thursday, 8-10, Tuesday, 10:15-12:15pm

1. **Texts or Major Resources:**

**Required Texts:**  [**Elementary and Middle School Mathematics: Teaching Developmentally, Enhanced Pearson eText with Access Card, 9/E**](http://www.pearsonhighered.com/educator/product/Elementary-and-Middle-School-Mathematics-Teaching-Developmentally-Enhanced-Pearson-eText-Access-Card-9E/9780133999020.page)Van de Walle, Karp & Bay-Williams  ISBN- 9780134046952

**Required Materials**

Composition notebook, 1 dvd or flash drives for teaching artifact (Wait to purchase until this is discussed in class), school pouch with supplies (tape, mini-scissors, markers, pencil, black ink pen, white out, markers, index cards), COE name-button *[LRC for buttons.]* Materials needed to construct instructional charts, games, and other teaching resources.

**Alabama Course of Study: Mathematics**<http://alex.state.al.us/ccrs/node/74>

1. **Course Description:** Pedagogical content knowledge, principles, and standards in the major concepts and modes of inquiry for integrated study of mathematics for elementary learners. During this course the students will participate in part of the AMSTI precertification training for schools in the state of Alabama.
2. **Student Learning Outcomes:**
3. **Goal:** To critically analyze curriculum and the process of teaching and learning mathematics in the elementary grades.

**B. Objectives:** Student learning outcomes (SLO) for elementary education majors are based on the Alabama Quality Teaching Standards [state standards] (AQTS) and the Association of Childhood Education International (ACEI) [national standards]. After the completion of the course and the clinical based lab, the pre-service teacher should:

1. know, understand, and use the major concepts and procedures that define numbers and operations, algebra, geometry, measurement, data analysis, and probability. In doing so they will engage in problem solving, reasoning, proof, communication, connections, and representation. This includes understanding current reforms efforts and technological resources that enhance the learning experience for K-6 students. (AQTS 1.A 1, B. 1; 4.A. 3) (ACEI 2.3)

2. have knowledge of techniques for using manipulative materials and play as instruments for enhancing development and learning. Recognize and develop lessons that use techniques such as mathematical recreation, manipulative materials, and technology to enhance development and learning. (AQTS 1.A v, 1.B. iii) (ACEI 2.3, 3.1)

3. demonstrate in-depth knowledge and understanding of how the major concepts and themes of mathematics are integrated across academic fields (AQTS 1.A v, 1.B. iii) (ACEI 2.3, 3.1)

4. plan and implement engaging learning experiences based on the Alabama Course of Study for Mathematics and the National Council of Teachers of Mathematics standards in which K - 6 students are challenged to problem solve, analyze, and evaluate real world situations and are able to demonstrate their competence and build on prior knowledge. (AQTS 1. A. ii, iii,iv,v; B. ii,iii; 2.A. v, vi, vii) (ACEI 2.3, 3.3., 3.4)

5. use the major concepts and modes of inquiry from mathematics to promote elementary students' abilities problem solve, reason, communicate mathematically, make connections and represent their thinking in a clinically based lab placement (AQTS 4.A. iii, iv, v) (ACEI 2.3)

6. Recognize the importance of communication skills in themselves and in the children they teach, including strategies for reasoning, problem solving, inquiry and debate in new settings in a clinically based lab placement (AQTS 2.D. i, ii, vi, vii, ix, x; 3.A v, vi, vii) (ACEI 2.3)

7. plan and implement a variety of individual and group activities that emphasize student participation. Plan and analyze appropriate assessments in order to monitor K-6 student learning and progress (AQTS 2.E.i, ii, v, vii, viii, ix, x, xi)(ACEI 4.0)

8. demonstrate an understanding of the teaching professional codes of ethical conduct (AQTS 5.E. i, ii, iii, iv F.i, ii, iii, iv) (ACEI 5.1)

9. reflect on their own teaching practices and consult with other professionals in order to grow professionally (AQTS 5.B iv, v, vi, vii) (ACEI 5.1)

10. Use clinical based lab placement's observation and practice of teaching and learning as a basis for experimenting with, reflecting on, and revising professional practice (AQTS 2.D. v, vi, vii, viii, ix, x) (ACEI 5.1)

1. **Course Content Outline: *Instructor reserves the right to change schedule/ modify experiences***

**\* All homework listed is due at the beginning of the class period**

* Jan. 17 10:00-12:00 Creating our Journal/ Standards
* HW- Bring composition notebook, textbook, supply pouch, & a printed or electronic copy of syllabi to class
* **Jan. 18, 20, & 23 AMSTI Math training at AMSTI site 8am-4pm**
* - Bring composition notebook, 2” binder,
* Jan. 24 10:00-12:00 – Introductions, Teaching Principles & Standards
* HW- Bring composition notebook, supply pouch, a printed or electronic copy of syllabi & math textbook (electronic or hard copy) to class
* Read chapter 2 & 4. Write something that resonates with you from each section in your math journal. Watch the video *Mingle and Count* from Teaching channel.com*.* Write one thing that resonated from the video.
* Jan. 25 8-12- What Is Effective Mathematics Teaching? Number sense, Place Value, Computation
* HW Due: Read Chapter 9 or 10 Write something that resonates with you from each section in your math journal.
* **Jan. 25 12-2 Lab Orientation**
* **Jan. 30 Lab Placement Begins**
* Jan. 31 10:00-12:00 Planning in PBC/ Place Value
  + HW Due: Read Chapter 11 and resonated with you from each of the 5 sections. This could be a question, observation, concern, disagreement, or "ahaa" moment.
* Feb. 7 10-12 TBA

Math Games/ Assessment Mathematics/ Asking for information in various ways to ensure there is conceptual understanding

* + HW Due: 12 or 13 and write something that resonates with you from each section
* Feb. 14 10-12:00 Algorithms/ Virtual Manipulatives
  + HW Read Ch 5 and write something that resonates with you from each section
  + **Modified Lesson Plan Due**
* Feb. 21 10-12:00 Fractions/ Concrete Manipulatives-
  + HW Due: Read Chapter 15 post something that resonates with you from each section in your journal
* Feb. 28 Fractions/ Representations
  + HW Due: Read Chapter 16 post something that resonates with you from each section in your journal.
* March 7 **Pedagogy Test**
* ***\*\*\* First Math Lesson Observation and lesson plan MUST be submitted in hard copy form within 1 week after teaching lesson***
* March 21 Measurement/ Geometry
  + HW Due: Read chapter 6 and post something that resonates with you from each section in your journal/ **Journal Due**
* March 22 8-12pm **Measurement**

***\*\*\*Submit approved math/science lesson plans & Teaching Artifact assignment***

* ***(Part I) on CANVAS AT LEAST 2 full days before teaching (If you are teaching on Wed., it must be submitted BEFORE you go to school on Monday. Must be submitted by Nov. 2\*\*\*\*\****
* March 28- **Algebra**
* April 4 Geometry/ Measurement
  + HW Due: Read chapter 20 make an entry for each section

**Kidwatching Due**

* April 10-21 Two weeks in schools full time

***\*\*\*Submit completed Teaching Artifact (Part II) in hard copy form to GTA The next day you are on campus after one week of teaching \*\*\*\*\****

***\*\*\*\*\*\*\* Last Day of Field Placements on April 21st\*\*\*\*\*\*\*\*\*\*\*\****

* April 25 8 Data Analysis Pulling It Together. What type of teacher will you be?
  + HW Due: Read Chapter 21 and make an entry for each section

\*\* The only electronic forms for placement are the weekly forms and preplanning portions of teaching artifacts and lesson plans before they are taught.

1. **Assignments/Projects:**

1. Class Activities and Journal: This course is designed to allow opportunities to ask questions, contribute to class discussion, and share relevant experiences. Therefore, *participation and professionalism are extremely important.*  Requirements for acceptable participation include prompt, timely, and consistent attendance; attentiveness; verbal contributions to small group and whole class discussions; reflection of a positive attitude about learning and class participation; and respecting and supporting the needs of others, including the professor. Participation includes completing all assignments which facilitate the class and or cohort experience including displaying materials, sharing teaching ideas and examples of classroom incidents, writing productively and correctly in all written assignments, and bringing in other materials/information as requested.  Actively participate in class in ways that reflect your preparation including thoughtful completion of required readings. At times this may also involve assignments that you need to complete during your fieldwork and bring back to class. Information about each assignment will be shared in class. You will also complete math journal entries that are related to your experiences in the field, readings, activities, and class discussions. They are designed to help you make connections between the readings, mathematical content and your fieldwork.

2. Math Pedagogical Content Knowledge Test: By the end of this course, you should have a firm grasp of the pedagogical content knowledge that you will teach. This course is designed to build upon this and help you see how children understand and develop awareness of mathematical skills. Research shows that in order to effectively teach elementary mathematics, you must have conceptual understanding (Ball, 2006). This test will demonstrate your understanding of common elementary strategies and representations related to multiplication, division, addition, subtraction, and fractions.

**During your placement you need to take notes of specific student problems and strategies that demonstrate the Standards of Math Practices (SMPs). In addition, you will take notes of when you used or observed the Teaching Principles by your teacher. Specific examples of these will be needed on your test.**

3. Collaborative Modified Lesson Plan: You will be given a sample lesson plan and a description of students in your simulated classroom. Your task will be to write a lesson plan that matches the Teaching Principles we discuss in class and encourages students to use the Standards of Mathematical Practice. In addition, you are challenged to include ways you will accommodate/ modify instruction to meet the individual needs in your classroom.

4. Teaching Artifact/ Professional Work Sample: **This assignment is due 7 days after teaching the lesson.** This will be a small (or whole class) group reengagement based on a central focus previous taught in 3-5 lessons (either by the teacher or the preservice teacher) that needs additional support, remediation or extension. For example, perhaps 4 lessons were taught on place value, but additional attention is needed so the preservice teacher will create a reengagement lesson on the content. The central focus should support students to develop conceptual understanding, procedural fluency, and mathematical reasoning/problem-solving skills. There will be an additional assessment to analyze the effectiveness of this lesson. This assignment includes: pre-thinking about a lesson based on the assessment from prior lessons, a lesson plan, videotaped teaching, written and oral observer feedback, evidence of student learning (i.e., assessment, analysis, samples), and written reflection on practice towards continuous improvement. Details of this assignment are given in the *Field Placement Handbook*. ***The instructor reserves the right to request additional teachings based on unsatisfactory performance.***

5.  Kidwatching notebook: Select 2 different children to observe and specifically interact with during math time. Take notes of the ways they think about the math, their reactions to assignments/ activities, the ways they communicate about mathematics, how they use manipulatives, and how they think about different mathematical problems. You will also complete various assigned activities related to this, such as an interview/ reflection, an interview with your teacher about these students, a lesson observation, an observation during independent work, etc..

 6. Lab Professionalism and Observation Forms: Document your attendance, professional dispositions, and planning and teaching abilities in your field placement. You must meet weekly professional expectations in the field in order to pass this course – no continuous absences (more than 2) and no continuous NO or NAC marks on professionalism and teaching indicators. You must also demonstrate your abilities in teaching at the emerging level (Approaching Competency) on all standards and indicators listed on the *EDUCATE Alabama* observation form in order to pass this course. ***See the Laboratory Placement Handbook for all lab forms and details.*** Field experience hours in this course are linked to certification standards. You must complete the minimum number of field experience hours as stated in laboratory handbook to receive credit for this course.

\*\* The only electronic forms for placement are the weekly forms and preplanning portions of teaching artifacts and lesson plans before they are taught

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| --- | --- | --- |
| **Date Due** | **Requirement** | **Value** |
| All class sessions | Class Activities & Professionalism | 10 points |
| Feb. 14 | Submission of Collaborative lesson plan | 10 points |
| March 21 | Journal | 10 points |
| March 7 | Pedagogy Test | 20 points |
| Throughout Semester until April 4 | Kidwatching Assignment | 20 points |
| At least 2 days before you teach | Teaching Artifact Part 1 | 20 points |
| Due 7 days after you teach the lesson | Teaching Artifact Part 2 | 10 points |
| At end of lab experience  *Weekly in field*  *Final cumulative report*  *Total lab hours/Standards* | * \*\*Weekly Lab Hours & Professionalism Form   **(All completed copies required)**  **Plans (2 total- 1 peer and 1 by teacher)**   * \*\*\*Final Lab Placement Evaluation Form   **(Satisfactory Performance Required on all)** |  |
|  | **Total** | **100 points** |

**^All assignments must be completed in order to get credit for this course, even if turned in late for less credit.**

**\*Students MUST have satisfactory marks on all areas of the COURSE AND FIELD PLACEMENT by the end of this course in order to receive credit for this course.** Students will be counseled throughout the course by written notification (email), and for more serious matters in person (signed letter or contract), if they are not meeting SATISFACTORY expectations on indicators before the end-of-course conference.

\*\*Meeting weekly attendance, planning, teaching, and professional dispositions in the classroom is required for all field students in this course to show readiness for internship. Students who are not continuously meeting all of these expectations may fail their lab placement and this course. **See Lab Placement Handbook.**

\*\*\*Students must meet the total required lab hours and Standards on the *Final Lab Placement Form* in order to pass this course. **See Lab Placement Handbook.**

* Use of *Canvas* system, internet, and email for communication and instruction. All assignments must be submitted in either rich text or Microsoft word format unless directions were given to use PowerPoint or Excel. It is the students’ responsibility to check the assignment, once submitted, to ensure it went through properly. Please save all files with your last name and assignment type in the filename.
* Students will be expected to demonstrate basic skills in reading, writing, speaking, and mathematics. Assignments that have multiple mathematical, grammatical, or spelling errors will have to be revised correctly at a letter grade point loss.
* Graded course assignments are due on the assigned date and must be completed in a thorough manner. Major assignments that are incomplete or not done on time will lose points equal to one letter grade for each day late up to three days. All assignments must be completed, whether or not credit is given, in order to pass this course. **Late weekly assignments will not receive credit.**

1. **Rubric and Grading Scale:**

All rubrics are posted on Canvas. The Auburn Standard Grading Scale will be used to determine grades for this course.

A   =  90-100          B   =  80-89           C   =  70-79

D   =  60-69            F    =  below 60 points

1. **Class Policy Statements:**
2. Participation: Students are expected to participate in all class discussions and participate in all exercises. Assignments are due on announced dates. Unexcused late assignments are unacceptable. It is the student’s responsibility to contact the instructor if assignment deadlines are not met. Students are responsible for initiating arrangements for missed work. Students must satisfy all course objectives to pass the course.
   1. **At two absences from class students will be required to meet in conference to discuss continuing in this course.** [See Lab Manual for similar lab attendance policy]. Students will be counseled and placed on an attendance contract in order to continue in the course. Expected professional dispositions and performance competencies in this field-based course require students to meet attendance requirements.
   2. Five points will be deducted from the final grade for any unexcused absence from class or lab. **At 2 unexcused absences students will be referred to the Office of Student Affairs to be withdrawn from the course.** Three unexcused tardies will be counted as one unexcused absence. Leaving class early counts as an absence without prior (not same day) approval.
3. Excused Absences:  Students are granted excused absences from class for the following reasons:  Illness of the student or serious illness of a member of the student’s immediate family, the death of a member of the student’s immediate family, trips for student organizations sponsored by an academic unit, trips for University classes, trips for participation in intercollegiate athletic events, subpoena for a court appearance, and religious holidays.  Students who wish to have an excused absence from this class for any other reason must contact the instructor in advance of the absence to request permission.  The instructor will weigh the merits of the request and render a decision. When feasible, the student must notify the instructor prior to the occurrence of any excused absences, but in no case shall such notification occur more than one week after the absence.  Appropriate documentation for all excused absences is required. Please see the [*Student Policy eHandbook*](http://www.auburn.edu/student_info/student_policies/) for more information on excused absences (<http://www.auburn.edu/student_info/student_policies/>).
4. Make-Up Policy: Arrangement to make up missed major examination (e.g. hour exams, mid-term exams) due to properly authorized excused absences must be initiated by the student within one week from the end of the period of the excused absences.  Except in unusual circumstances, such as continued absence of the student or the advent of University holidays, a make-up exam will take place within two weeks from the time that the student initiates arrangements for it. Except in extraordinary circumstances, no make-up exams will be arranged during the last three days before the final exam period begins.  The format of the make-up exam will be *(as specified by instructor).*
5. Disability Accommodations**:** Students who need accommodations are asked to electronically submit their approved accommodations through AU Access and to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are needed immediately. To set up the meeting, please contact the instructor by e-mail. If you have not established accommodations through the Office of Accessibility, but need accommodations, make an appointment with the Office of Accessibility, 1228 Haley Center, 844-2096 (V/TT).
6. Honesty Code:  All portions of the Auburn University student academic honesty code (Title XII) found in the [*Student Policy eHandbook*](http://www.auburn.edu/student_info/student_policies/)will apply.  All academic honesty violations or alleged violations of the SGA Code of Laws will be reported to the Office of the Provost, which will then refer the case to the Academic Honesty Committee. Some assignments will involve integrating readings & websites into your reflections & lessons. **Plagiarism is the act of representing words, data, works, ideas, computer program or output, or anything not generated by the student as his or her own.** Plagiarism may be inadvertent or purposeful; however, plagiarism is not a question of intent.  Please be sure to cite any outside sources used in work.  Also all work is to be done individually unless otherwise specified. All submitted assignments are subject to a plagiarism check.
7. Course contingency: If normal class and/or lab activities are disrupted due to illness, emergency, or crisis situation, the syllabus and other course plans and assignments may be modified to allow completion of the course. If this occurs, and addendum to your syllabus and/or course assignments will replace the original materials.

*In addition to the university recommended statements noted above, College of Education syllabi are to include the following statement:*

1. Professionalism: As faculty, staff, and students interact in professional settings, they are expected to demonstrate professional behaviors as defined in the College’s conceptual framework. These professional commitments or dispositions are listed below:

* Engage in responsible and ethical professional practices
* Contribute to collaborative learning communities
* Demonstrate a commitment to diversity
* Model and nurture intellectual vitality

     Each student is expected to exhibit courteous, mature, responsible, and professional behavior. This includes not texting messages during class, doing work for another class, and talking when someone else – a peer or instructor – is speaking. Students are expected to participate in all class discussions, exercises and readings. It is the student’s responsibility to contact the instructor if assignment deadlines are not met.  Students are responsible for initiating arrangements for missed work.

Teaching is a field that requires professional reading and reflection. Your thoughtful reading before class, your engaged participation in class discussions and activities, and the positive stance you take in interacting with your instructor and with others in the group are expected. Attend carefully to class presentations and discussions.  Professionalism is more than just showing up for class.  In this course you will be expected to treat the others in our group with respect and to support their successes. Respect does not mean always agreeing with others.  It means actively and courteously listening to what others say and responding with your own perspective.  It means taking an active role and enhancing others’ thinking by sharing your own rough draft thinking as it develops, and by clarifying the reasons that you might “agree to disagree” with others.  Developing strong relationships with colleagues is one of the most important things we do as a teachers.

Cell phones and personal iPads need to be turned to off during class and lab experiences unless otherwise instructed by the professor. In addition, students should not work on university course assignments that are not field based during their lab experience. During lab experiences students are expected to be fully and actively involved in the classrooms in which they are placed.

# DAILY LESSON PLAN TEMPLATE

|  |  |
| --- | --- |
| **Preliminary Information** | |
| **Created by**: | **Date developed**: |
| **Lesson Title**: | **Date of lesson**: |
| **Grade Level/ Subject**: | **Number of students**: |
| **Unit/Theme**: | **Period/Time/Estimated Duration**: |
| **Where in the unit does this lesson occur?**  (Beginning, middle, or end?): | **Structure(s) or grouping for the lesson** (Select all that apply)  Whole class, small group, 1:1:  Other (specify): |
| **Any other information that you know about the context, including diversity among the students**: | |
| **Resources and materials required for the lesson (e.g. textbook(s), module, equipment, technology, art materials)**: | |
| **1. What are your goals for student learning and why are they appropriate for these students at this time?** | |
| **Big Idea or Concept Being Taught - - ESSENTIAL QUESTION** | |
|  | |
| **Content Standards**  (Include the AL College & Career Readiness Learning Standards or Next Gen Sc. Standards addressed in this lesson. For CCSS, list strand, grade, and standard number, e.g., RI.4.3 Reading informational text, grade 4, anchor standard 3, and write out the standard.) | |
|  | |
| **Rationale/Context for Learning - - JUSTIFICATION FOR YOUR PLANS**  (Why this lesson at this time, for this group of learners? How does it connect to previous learning or succeeding lessons?) | |
|  | |
| **Prior Knowledge and Conceptions**  (What knowledge, skills and/or academic language must students already know to be successful with this lesson?) | |
| **Prior knowledge**:  **Prior skills**:  **Prior academic language** (ex figurative language, water cycle or multiplication):  **Prior academic vocabulary** (similes, precipitation, or product): | |
| **Learning Objective(s)** (These must be behavioral & measurable.)  **STATEMENTS OF WHAT STUDENTS WILL BE ABLE TO DO AT THE END OF THE LESSON** | |
| [Teacher version] Students will demonstrate . . .    [**Learning target**=Student version] We will be able to . . . *or*  I can . . . | |
| **2. How will you know and document students’ progress towards meeting your learning objectives?** | |
| **Evidence and Assessment of Student Learning**  (How will you know students are meeting objectives? What tools will measure their progress? How will feedback be provided to promote learning?) | |
| **Before/ Diagnostic/pre-assessment(s)**:  **During Formative assessment(s)/feedback to learners**:  **After assessment(s)**: | |
| **Expectations for Student Learning - - STANDARDS & CRITERIA**  (Describe in detail the following levels of student performance. What will students’ work look like when it exceeds expectations? When it meets expectations? When it falls below expectations? How will you communicate these expectations to students? Provide any rubrics you will use. If using a worksheet, how many will meet expectation in addition to the criteria you are looking for. If you list something as exceeds, make sure there is an opportunity for the student to display this.) | |
| **Exceeds expectations**:  **Meets expectations**:  **Below expectations**: | |
| **3. How will you support students to meet your goals? Describe EXPLICITLY what you will do! Scripting with bullets is extremely helpful. Put what you will say in regular font, expected answers should be underlined and things you will do (such as passing out materials to each table) will be in italics.** | |
| **ENGAGE: Launch/Hook/Anticipatory Set**  (How will you get the lesson started? What questions, texts, inquiry, materials, modeling, and/or other techniques will you use to engage students? Initiate the learning tasks by accessing prior knowledge and learning experiences and mentally engaging students in the concept, process or skill to be explored**.**  List at least 2 higher order thinking questions or tasks within the scripted portion of this lesson. Be sure to include the main answers/ points you want to draw from students in this section of the lesson and from each question/ task). | |
|  | |
| **EXPLORE: Instructional Strategies to Facilitate Student Learning**  (Provide a common base of experience within which students identify and develop current concepts, processes or skills. Students use ‘active’ learning to manipulate materials or explore the environment. How will you engage students with ideas/texts/ materials to develop understandings? What questions will you ask? Be sure to list at least 2 higher order thinking questions/ phrases within the script & the main answers/ points you want to draw from students in this section of the lesson. How will you address the academic language demands? **Detail your plan.** Note: For math lesson plans, please write or attach every task/problem that students will solve during the lesson – with the correct answers). | |
|  | |
| **EXPLAIN: Instructional Strategies to Facilitate Student Learning**  (Provide opportunities for learners to develop explanations of concepts that they have been exploring. Students must verbalize conceptual understanding, demonstrate skills, and attach formal labels and definitions to new ideas. How will you engage students in debriefing and building on the exploration of ideas/texts/ materials to develop understandings? What questions will you ask? Be sure to list at least 2 higher order thinking questions/ phrases within the script & the main answers/ points you want to draw from students in this section of the lesson. How will you address the academic language demands? **Detail your plan.** Note: For math lesson plans, please write or attach every task/problem that students will solve during the lesson – with the correct answers.). | |
|  | |
| **ELABORATE & EVALUATE: Closure**  (How will you develop in learners deeper and broader understanding and practice, applying newly acquired skills and behaviors to new or practical situations (such as related this to issues beyond the classroom or using the information in a new way? How will you end the lesson in a way that promotes student learning and retention? List at least 2 higher order thinking questions/ phrases or tasks in this section. Be sure to include the main answers/ points you want to draw from students in this section of the lesson. Be sure to clearly explain how you will learn if the students are able to do the objective.) | |
|  | |
| **Differentiation/Extension**  (How will you provide successful access to the key concepts by all the students at their ability levels? | |
| **Supporting students with special needs** (this includes an explicit and specific description of how you will implement accommodations/ modifications required by IEPs/504 Plans and other ways that you will address diverse student needs. If you do not have a student who meets this criteria, you still need to list a way you would support a student with a special need in this lesson):  **Supporting ELL students:**  **Challenging Early finishers:** | |
| **References**  (Cite all sources used in the development of this lesson including URLs or other references).. | |
|  | |
| **Reflection** | |
| 1. What when well? What evidence do you have that it went well? 2. What didn’t go well? What did you change because it wasn’t going well? | |

Supervising Teacher's Signature:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

NOTE: Be sure to attach all Power Points and worksheets for activities (if applicable), evaluation pieces, and content information that go with this lesson- and likely came from the lesson source.

**Teaching Artifact for Math**

**Materials Required:** LRC digital video camera with charged battery and tripod, DVD, lesson plan and lesson attachments, student assessment and rubric/check-sheet, *Elementary Lab Placement Lesson Observation Instrument. You will not receive the jumpdrive or dvd back.*

*This will be a small (or whole class) group reengagement based on a central focus previous taught in 3-5 lessons (either by the teacher or the preservice teacher) that needs additional support, remediation or extension. For example, perhaps 4 lessons were taught on place value, but additional attention is needed so the preservice teacher will create a reengagement lesson on the content based on the assessments from the prior lessons. The central focus should support students to develop conceptual understanding, procedural fluency, and mathematical reasoning/problem-solving skills. There will be an additional assessment to analyze the effectiveness of this lesson.*

***Before you teach your re-engagement lesson- based on the data from the previously taught 3-5 lessons***

**Analyzing whole class understanding {Approximately 2 pages, double-spaced, 11 font Arial}**

Construct your reengagement lesson plan in consultation with your cooperating teacher. Arrange for your cooperating teacher to review and approve your lesson before observing you teach it. Then respond to the following questions in writing with specific detailed examples from your lesson:

1. Description of the community of learners (i.e. grade level, arrangement of the class, types of materials teacher uses for math/science, diversity and diverse needs of students, dynamics of the class as a whole).
2. Describe any district, school, or cooperating teacher requirements or expectations that might affect your planning or delivery of instruction, such as required curricula, pacing plan, use of specific instructional strategies, or standardized tests.
3. How much time is devoted each day to the subject? Is it ability grouped? If so how does this impact your class?
4. Briefly describe the 3-5 lessons taught by yourself or your cooperating teacher before the assessment will be administered. What is the objective and how does it connect to the assessment that is planned?
5. What should students know and do (objective)? What are important understandings and core concepts students should develop during this lesson? Include the formative assessment you developed or adapted for the lessons and connect it to your objective. The assessment should reflect the work of individuals, not groups, but may be individual work from a group task. The assessment should provide opportunities for students to demonstrate

◼conceptual understanding  
◼computational/procedural fluency  
◼mathematical reasoning/problem-solving skills

1. Include a blank copy of the formative assessment (used in the previously taught lessons) that includes directions/ prompts for students. Share the evaluation criteria you used to analyze student learning related to the mathematical understanding described above. *The evaluation criteria should go beyond counting the number of correct responses that a student has and should list specific skills and understandings*, such as: “Can draw at least two equivalent fractions for a given fraction; uses counting on to solve a join result unknown problem; names three attributes of a given shape.”

**Evaluating student learning/ assessment {No more than 4 pages including chart and examples, double-spaced, 11 font Arial }** Collect and analyze student work from the chosen formative assessment and summarize student learning in graphic (chart or table) or narrative form to identify patterns of learning within and across learners in the class. You may submit text files with scanned student work OR, for oral assessments of primary grade students (e.g., counting), a video file. (Note that the oral assessment must be given to each student in the whole class, though not necessarily on the same day.)

1. Create a one-page chart or table with descriptions and numbers (frequencies, percents, averages, etc.) for student learning results for the class as a whole, including data and analysis for any student subgroups and/or individual students. The table should show each question or criteria to help you analyze difficult questions. It should also list all students to explore each student’s understanding. Identify the learning objective and standards measured in this assessment. In a narrative go beyond simple counting the number of right and wrong responses. Provide specific, concrete examples for each of your assertions. [For example: Many students showed… As evidenced by student 1’s work on problem 2. OR Like most of the class, student 2 and 3 showed in problem 6 that they could not…]. Discuss the whole class pattern of learning in relation to:

◼conceptual understanding  
◼computational/procedural fluency  
◼mathematical reasoning/problem-solving skills

1. From the whole class analysis identify one specific area of struggle. Include 3 student samples (names removed) that demonstrate an area of struggle identified in your analysis and analyze the errors or misconceptions related to the struggle. [Or if applicable attach sample digital photographs if it was a student creation.]. Be specific about what 1 area of struggle these samples illustrate. If possible, select a student with an IEP, 504 plan, gaps in academic knowledge, an English Language Learner, and/or a gifted student who needs more support or challenge.
   1. What errors, confusions, and partial understandings did you see? Connect the data from the 3 student samples to specifically share their struggles in relation to the math concepts. How will you use these to re-engage students in learning to address identified areas of challenge or need? How will you reengage students in learning to address identified areas of challenge or need? (For example, if a student error occurs in a subtraction problem, the underlying struggle may be regrouping, understanding the meaning of subtraction, and/or subtraction as the inverse of addition.) Then the related understanding of this concept will be the basis for your re-engagement lesson.
   2. How does this connect to the literature on your topic?

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| ***Re-Engagement of students in learning mathematics- Lesson Planning*** |

INCLUDE YOUR LESSON PLAN

→ **DUE DATE #1: 2 days before you teach the lesson-**

***Digital Video Directions:***

*Sign out your digital video camera equipment from the LRC on the day before you teach – Only one camera per classroom. Make sure batteries are charged. Use the plug while in a classroom.* ***Test out your camera and play it back to make sure it is working.*** *Ensure that you know how to transfer it to a computer, and later DVD, before you record your one teaching episode.* **You should save the video file as a .mov or quicktime movie format***. A peer partner can videotape your teaching. Download your teaching episode to a computer BEFORE returning it by 4 p.m. that same afternoon. Watch your episode to complete your Teaching Artifact.* ***You are REQUIRED to turn in your episode on DVD or thumb drive to your instructor (you will not receive this back).***

***While you teach your lesson***

**Implementation**

Ask your peer to evaluate your teaching using the Elementary Lab Placement Lesson Observation Instrument (ELPLOI) and to take notes in each of the four areas of: (1) Organization and management of the learning environment, (2) Instructional strategies to engage learners, (3) Assessment of learning, and (4) Content knowledge. They will not add a score, but will only make comments to support your professional growth.

Observers should keep the following issues in mind during the observation:

* Examples of student insights and/or high levels of engagement
* Examples of student confusion and/or lack of engagement
* More and less effective parts of the lesson including notes on how characteristics of effective teaching and student management explain differences in the effectiveness of these parts.
* Observers should provide at least 2 specific positive comments and 2 specific suggestions for improvement.

**Include a signed copy of the completed ELPLOI as evidence of your lesson’s implementation.**

**{If applicable, take a digital image of any needed student artifacts used for assessment purposes.}**

***After you teach your lesson***

**Reflection/ Analysis of teaching. {2-3 pages, double-spaced, 11 font Arial}**

After viewing the video of the lesson, analyze the effectiveness of the strategies you used during the re-engagement lesson to develop students’ mathematical understanding in the identified area of struggle. Cite evidence from literature and the 3 focus students’ work samples from the re-engagement lesson to support your response. Consider the change in students’ mathematical understanding or misconception(s) in relation to the identified area of struggle when describing the effectiveness of the re- engagement lesson. Provide specific comparisons between the initial assessment to the re-engagement data on students.

Consider the following questions while viewing your video episode of your teaching:

1. What additional insights did you gain on the above reflection questions from watching your video that are different from your observer’s feedback?

**→**DUE DATE #2: The next closest day to one week after you complete the Teaching Artifact that you are on campus. For example, if you teach on Wednesday, it is due the following Thursday.

* **Did you attach the completed and signed lesson observation instrument, ELPLOI?**
* **Did you include your DVD or thumb drive of your teaching in .mov or quicktime movie file format?**
* **Did you include or attach your *analysis of student learning* data page?**
* **Did you attach 3 anonymous sample of an evaluated student assessment in both the 3-5 lesson assessment and the re-engagement lesson and refer to it specifically in your analysis responses? (Or digital image if applicable)**