

George Mason University  
College of Education and Human Development  
Teaching Culturally & Linguistically Diverse and Exceptional Learners



Teaching Culturally & Linguistically Diverse and Exceptional Learners  
EDUC 513 DL1/6F1  
Teaching Elementary Math in International Schools  
3 Credits, Spring 2021 Semester, January 25<sup>th</sup> to May 10<sup>th</sup>  
CRN: 22561 / 23195

**Instructor:** Sarah Rich

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**Office Hours:** By appointment

**Meeting Dates:** Jan. 25<sup>th</sup> – May 10<sup>th</sup>, 2021

**Meeting Location:** Virtual/Online

**University Catalog Course Description**

Presents topics in school mathematics with particular emphasis on developing common PK-6 strands for application in international schools. Focuses on exploring, verifying, and explaining concepts using concrete materials. Fieldwork hours are required. Offered by [School of Education](#). May not be repeated for credit.

**Required Prerequisite:** [EDUC 511](#); Requires minimum grade of B-.

**Students, please be aware of and follow all policies and procedures for Mason's Safe Return to Campus:** <https://www2.gmu.edu/Safe-Return-Campus>

## Course Overview

In this course, we will begin an inquiry into mathematics teaching and learning that will guide you in your first teaching job and give you the tools that will enable you to continue to inquire and learn as part of your work as a teacher. Class sessions will be interactive and will include a variety of hands-on experiences with concrete and virtual manipulatives appropriate for elementary school mathematics. We will explore the teaching of mathematics, investigating both *what* to teach and *how* to teach it. We will explore what it means to do mathematics and what it means to understand mathematics through individual, small group, and large group mathematical problem solving. We will investigate ways to represent understandings of mathematical concepts, communicate reasoning about mathematical ideas, and construct mathematical arguments. We will investigate and read about ways children might represent mathematical concepts, looking at ways to help children build connections and see relationships among mathematical ideas. We will explore characteristics of a classroom environment conducive to mathematical learning by reading and discussing the importance of mathematical tasks, mathematical tools, the roles of teachers and students, and the assessment of mathematical understanding.

- **Doing Mathematics** (Learning *for* practice): We will build our own *knowledge* of mathematics by closely investigating ideas in number sense and fraction concepts. Additionally, we will engage in several math tasks, extending our knowledge of mathematics and students' thinking, which will provide the foundation for your professional decision-making.
- **Examining Records of Practice** (Learning *from* practice): Records of practice—such as videotapes of lessons taught by yourself or others, students' work, and teachers' professional writing—allow us to investigate the work of teaching mathematics and improve our own practice.
- **Trying Things Out** (Learning *in* practice): Because teaching involves more than just having knowledge, we want you to engage in *enacting* the practices we are investigating as much as possible, so that you are developing the skills and professional decision-making that will make you a successful teacher.

## Course Delivery Method

This course will be delivered online using an asynchronous format via Blackboard Learning Management system (LMS) housed in the MyMason portal. You will log in to the Blackboard (Bb) course site using your Mason email name (everything before @masonlive.gmu.edu) and email password. **The course site will be available on Monday, January 25<sup>th</sup> at 8am.**

Individual session formats vary and may include lecture, small group/large group discussion, hands-on, interactive work, student presentations, and cooperative learning. Practical applications of theory are explored in group activities.

**Under no circumstances, may candidates/students participate in online class sessions (either by phone or Internet) while operating motor vehicles. Further, as expected in a**

**face-to-face class meeting, such online participation requires undivided attention to course content and communication.**

### *Technical Requirements*

To participate in this course, students will need to satisfy the following technical requirements:

- High-speed Internet access with standard up-to-date browsers. To get a list of Blackboard's supported browsers see:  
[https://help.blackboard.com/Learn/Student/Getting\\_Started/Browser\\_Support#supported-browsers](https://help.blackboard.com/Learn/Student/Getting_Started/Browser_Support#supported-browsers)

To get a list of supported operation systems on different devices see:

[https://help.blackboard.com/Learn/Student/Getting\\_Started/Browser\\_Support#tested-devices-and-operating-systems](https://help.blackboard.com/Learn/Student/Getting_Started/Browser_Support#tested-devices-and-operating-systems)

- Students must maintain consistent and reliable access to their GMU email and Blackboard, as these are the official methods of communication for this course.
- Students will need a headset microphone for use with the Blackboard Collaborate web conferencing tool.
- Students may be asked to create logins and passwords on supplemental websites and/or to download trial software to their computer or tablet as part of course requirements.

### *Expectations*

- **Course Week:** Because asynchronous courses do not have a “fixed” meeting day, **our week will start on Tuesdays, and finish on Mondays.**
- **Log-in Frequency:** Students must actively check the course Blackboard site and their GMU email for communications from the instructor, class discussions, and/or access to course materials at least 4 times per week.
- **Participation:** Students are expected to actively engage in all course activities throughout the semester, which includes viewing all course materials, completing course activities and assignments, and participating in course discussions and group interactions.
- **Technical Competence:** Students are expected to demonstrate competence in the use of all course technology. Students who are struggling with technical components of the course are expected to seek assistance from the instructor and/or College or University technical services.
- **Technical Issues:** Students should anticipate some technical difficulties during the semester and should, therefore, budget their time accordingly. Late work will not be accepted based on individual technical issues.
- **Workload:** Please be aware that this course is **not** self-paced. Students are expected to meet *specific deadlines* and *due dates* listed in the **Class Schedule** section of this syllabus. It is the student's responsibility to keep track of the weekly course schedule of topics, readings, activities and assignments due.

- Instructor Support: Students may schedule a one-on-one meeting to discuss course requirements, content or other course-related issues. Those unable to come to a Mason campus can meet with the instructor via telephone or web conference. Students should email the instructor to schedule a one-on-one session, including their preferred meeting method and suggested dates/times.
- Netiquette: The course environment is a collaborative space. Experience shows that even an innocent remark typed in the online environment can be misconstrued. Students must always re-read their responses carefully before posting them, so as others do not consider them as personal offenses. *Be positive in your approach with others and diplomatic in selecting your words.* Remember that you are not competing with classmates, but sharing information and learning from others. All faculty are similarly expected to be respectful in all communications.
- Accommodations: Online learners who require effective accommodations to insure accessibility must be registered with George Mason University Disability Services.

### **Learner Outcomes or Objectives**

This course is designed to enable students to do the following:

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1. Know what constitute the essential topics in mathematics of the modern K-6 international classroom.
2. Identify and use selected manipulatives and technology such as linking cubes, attribute blocks, geoboards, base-10 blocks, fraction circles, tangrams, calculators, and computers to teach appropriate mathematics content topics in grades K-6.
3. Identify and use various instructional strategies and techniques (cooperative and peer group learning, activity centers, laboratories and workshops, teacher-directed presentations, etc.) to implement standards-based lessons of mathematical content topics appropriate for the students in grades K-6, including those from non-mainstreamed populations.
4. Identify and use alternative methods for assessing students' work in mathematics in grades K-6.
5. Solve problems in the mathematical content areas of logic, number theory, geometry, algebra, probability, and statistics appropriate for adaptation to grades K-6.
6. Know and explain the learning progression in relation to the standards-based mathematics curriculum, the key elements of the National Council of Teachers of Mathematics Principles and Standards for School Mathematics, and the key elements of the Virginia Standards of Learning for Mathematics.

Additionally, this course supports the CEHD Core Values of collaboration, ethical leadership, research-based practice, social justice, and innovation. Statements of these goals are at <http://cehd.gmu.edu/values/>.

## Professional Standards (Interstate Teacher Assessment and Support Consortium (InTASC))

Upon completion of this course, students will have met the following professional standards:

Course Student Outcomes (above)	INTASC Standard (2013)
1. Essential math	#4
2. Planning and Teaching using manipulatives	#7
3. Instructional Strategies	#8
4. Assessing	#6
5. Problem Solving	#5
6. Learner Development and understanding of Learning Progression	#2/#1

### Required Texts

Van De Walle, J., Karp, K. S., & Bay-Williams, J. M. (2018). *Elementary and middle school mathematics: Teaching developmentally*. (10th ed.). Pearson.  
ISBN: 2019:9780134802084

### HELPFUL WEBSITES

University of Washington Number Talks website: [tedd.org](http://tedd.org)  
National Council of Teachers of Mathematics – Illuminations: [illuminations.nctm.org](http://illuminations.nctm.org)  
Jo Boaler’s blog and resources: [joboaler.com](http://joboaler.com)  
Another Jo Boaler/Stanford University folks website w/K-12 math resources: [youcubed.org](http://youcubed.org)  
Number Talks and other Instructional Activities with videos and lesson plans: [tedd.org](http://tedd.org)  
Estimation 180 (Andrew Stadel’s site – elementary and MS focused): [estimation180.com](http://estimation180.com)  
Fawn Nguyen’s website (MS Math focused): [fawnnguyen.com](http://fawnnguyen.com)  
Dan Meyer’s website (more HS focused): [blog.mrmeyer.com](http://blog.mrmeyer.com)  
And his “3-Act” math lessons (MS and HS focused, linked to CCSS):  
[www.livebinders.com/play/play\\_or\\_edit?id=330579](http://www.livebinders.com/play/play_or_edit?id=330579)  
Michael Pershan’s blog, elementary school teacher: [rationalexpressions.blogspot.com](http://rationalexpressions.blogspot.com)

Synchronous Online Learning: <http://theresawills.com/>

### CCSS Helpful Websites:

CCSS Progressions Documents: <http://ime.math.arizona.edu/progressions/>

Lots of lesson plans and videos organized by Standard: [insidemathematics.org](http://insidemathematics.org)

CCSS aligned tasks: [illustrativemathematics.org](http://illustrativemathematics.org)

CCSS aligned tasks and assessments: [map.mathshell.org/](http://map.mathshell.org/)

## **Course Performance Evaluation**

Students are expected to submit all assignments on time in the manner outlined by the instructor (e.g., Blackboard)

## **FIELDWORK REQUIREMENT**

### **Field Experience Record and Evaluation**

The **field experience is a required component** of the teacher preparation program at George Mason University. For this course, you will conduct your action research in a classroom, but you are not required to submit a fieldwork hours log. Please see the following sections for how to secure an approved fieldwork site for your project.

**For Spring 2021, there will be an alternative process for completing the PBA if you are NOT already in a school. You do not need to apply for a placement.**

**In-service teachers:** Field experience can often be conducted in your own classroom if you have access to the population of students required for the PBAs and other assignments. Please consult your instructor if you have questions about the viability of your classroom for fieldwork in this class. You must register for your school as your field experience site in the online Field Experience Request form available here: <https://cehd.gmu.edu/endorse/ferf>. You will check the box indicating that: *“I will arrange my own field experiences (observations and/or case studies) because I am a full-time contracted school system employee and will complete field experience at my workplace.”* The deadline to submit your field experience placement is Week 2 of class. Failure to do so will result in an unsatisfactory grade for your fieldwork assignment. If you are taking this course as part of a cohort program, please indicate “TCLDEL Cohort” on your request form FIRST, then select your program and placement location. HINT: Cohort courses have section numbers beginning with “6F” (e.g. EDUC 511.6F1). **If you are an international student, please submit your fieldwork request to Amanda Jenkins at [ajenki4@gmu.edu](mailto:ajenki4@gmu.edu).**

**Pre-service teachers:** If you are not currently working in a K-12 school, you will need to be placed in an appropriate fieldwork setting to complete your required PBAs and fieldwork hours. You must request a fieldwork site using the online Field Experience Request form available here:

<https://cehd.gmu.edu/endorse/ferf>. You will check the box indicating that: I will need George Mason (Clinical Practice Specialist) to arrange a placement for my field experiences (including observations and/or case studies). The deadline to submit your field experience placement is Week 2 of class. Failure to do so will result in an unsatisfactory grade for your fieldwork assignment. If you are taking this course as part of a cohort program, please indicate “TCLDEL Cohort” on your request form, then select your program and placement location. HINT: Cohort courses have section numbers beginning with “6F” (e.g. EDUC 511.6F1). **If you are an international student, please submit your fieldwork request to Amanda Jenkins at [ajenki4@gmu.edu](mailto:ajenki4@gmu.edu)**

**Virginia state or county cohort teachers:** Cohort Students are required by their district and by TCLDEL to complete field experiences as required by the Virginia Department of Education for this program. Each district has arranged for candidates to be able to work at K-12 grade levels in order to complete all licensure requirements. Please contact your district coordinator for further information.

- **Assignments and Examinations**

Assignment	Percent of Final Grade	Outcomes Addressed	Due Date
Weekly Participation	15%	1, 2, 3, 4, 5, 6	Ongoing, each week
Video Vignettes (3)	15%	1, 3, 4, 5, 6	Feb. 15 <sup>th</sup> , Mar. 8 <sup>th</sup> , Mar. 29 <sup>th</sup>
Lesson #1: Number Sense	20%	1, 2, 3, 4, 5, 6	March 15 <sup>th</sup>
Lesson #2: Problem Solving	20%	1, 2, 3, 4, 5, 6	April 19 <sup>th</sup>
Student Mathematics Interview and Action Plan (Performance-Based Assessment)	30%	1, 2, 3, 4, 6	May 10 <sup>th</sup>

*Note: Faculty reserve the right to add, alter, or omit any assignment as necessary during the course of the semester. You will always receive advanced notice of any modifications.*

### **Weekly Participation, Reflections and Professional Dispositions (15%)**

*Addresses Learner Outcomes: 1, 2, 3, 4, 5, 6*

Reading and activity reflections will be done via Math Reflection entries. During the first week, we will start with the Math Autobiography & Surveys and the last class we will have a final vision statement and post survey on Teaching practices. Throughout the course, students are expected to analyze and reflect on solution strategies, provide differentiated approaches to center activities, and actively participate in class discussions by applying field experiences and class readings. Professional dispositions are to be displayed at all times while interacting with the instructor and other students.-

### **Video Vignettes Analysis using NCTM 8 Teaching Practices: (15%)**

*Addresses Learner Outcomes: 1, 3, 4, 5, 6*

Being able to decompose a planned and enacted lesson for high quality of mathematics instruction is essential. This assignment will allow you to demonstrate your knowledge in determining the essential components of a high-quality mathematics lesson. Students will be provided video vignettes to evaluate using the [NCTM 8 Teaching Practices Observation Tool](#) (3 vignettes).

### **Lesson #1: Math Routine Video and Reflection with student work analysis (20%)**

*Addresses Learner Outcomes: 1, 2, 3, 4, 5, 6*

You are required to plan, teach, and complete a video reflection for a Math Routine taught to your classmates. Each 10-15 minute Math Routine will include the six essential elements of Math Routine and address a concept. A Math Routine lesson plan template will be provided, to which you will add your anticipated student responses and your expected series of questions.

- Group rehearsal for Math Routine (10%): The first Math Routine will be taught by a small group and presented to your classmates. Each group is expected to: 1) prepare any materials needed for the Math Routine; 2) anticipate possible student responses to the problems presented and plan your expected sequence of follow-up questions; and 3) video record your group-led Math Routine and respond to your video according to the prompts in the detailed assignment description. The group will complete one video reflection on this teaching experience and submit one completed lesson plan. See rubric/Blackboard for more detail.

### **Lesson #2: Group Problem Lesson with Student Learning Progression work analysis (20%)**

*Addresses Learner Outcomes: 1, 2, 3, 4, 5, 6*

[http://www.doe.virginia.gov/testing/sol/standards\\_docs/mathematics/2016/rich/index.shtml](http://www.doe.virginia.gov/testing/sol/standards_docs/mathematics/2016/rich/index.shtml)

The lesson will be taught by a small group and presented to your classmates as a simulated



lesson. Each group is expected to: 1) design a Power Point slide and e-mail it to your instructor before class; 2) anticipate possible student responses by solving the problem using all three representations (concrete, pictorial, abstract); The group will complete a written reflection on the analysis of student thinking.

As a professional learning community group, you are required to plan, teach, and complete a formal summary for a mathematics lesson. Each lesson will place an emphasis on five practices that promote productive discussions: Anticipating, Monitoring, Selecting, Sequencing, and Connecting. Each lesson should follow the guidelines set forth by the grading rubric posted on Blackboard. Documents that should be included are: the lesson plan, reflection, anticipated student responses along the learning progression/trajectory and student work samples.

### **STUDENT MATHEMATICS INTERVIEW & ACTION PLAN (Performance Based Assessment) (30%) Adapted for Spring 2021**

*Addresses Learner Outcomes: 1, 2, 3, 4, 6*

All TCLDEL licensure courses have a required Performance Based Assessment (PBA). The required PBA for this course is a student assessment interview. In order to plan effective instruction, you will need to know how to assess children's knowledge of mathematical concepts. One way to assess children's thinking is a diagnostic interview. This assignment has two parts: (1) Design a plan for the interview, assessing a specific mathematics topic using concrete, pictorial and abstract representations, (2) Conduct the interview with a child and write a report describing the outcome of the interview. Your PBA must be submitted to TK20, where it will be reviewed and graded, in order to receive credit. **TK20 waived for Spring 2021.** PBA Rubric is presented at the end of the syllabus.

### **COURSE PERFORMANCE EVALUATION**

All assignments should be turned in on the due date indicated in the schedule below via Blackboard. The submission deadline for assignments is 11:59 pm EST of the due date indicated for each assignment. All projects must be typed, in a legible 12-point font, with one-inch margins, and double-spaced. **All writing assignments should be submitted as Word documents, or a word-processor based format.** Writing quality (including mechanics, organization, and content) is figured into the overall points for each writing assignment, so please proofread carefully. Late papers and projects will not be accepted without penalty, except for in extraordinary circumstances. I am happy to clarify and lend assistance on projects and assignments, but please contact me within a reasonable timeframe.

The assignments across the semester are intended to further your understandings of what it means to teach, learn, and assess mathematics in light of current reforms in mathematics education. All assignments are to be turned in to your instructor on time.

All assignments are to be completed by the date listed in the syllabus. Written work will not be accepted after the due date unless prior arrangements have been made with the instructor.

- **Grading**

At George Mason University course work is measured in terms of quantity and quality. A credit normally represents one hour per week of lecture or recitation or not fewer than two hours per week of laboratory work throughout a semester. The number of credits is a measure of quantity. The grade is a measure of quality. The university-wide system for grading graduate courses is as follows:

Grade	GRADING	Grade Points	Interpretation
A+	=100	4.00	Represents mastery of the subject through effort beyond basic requirements
A	94-99	4.00	
A-	90-93	3.67	
B+	85-89	3.33	Reflects an understanding of and the ability to apply theories and principles at a basic level
B	80-84	3.00	
C*	70-79	2.00	Denotes an unacceptable level of understanding and application of the basic elements of the course
F*	<69	0.00	

**Note: “C” is not satisfactory for a licensure course; “F” does not meet requirements of the School of Education**

See the University Catalog for details:

<http://catalog.gmu.edu/policies/academic/grading/>

### **Honor Code & Integrity of Work**

**Integrity of Work:** TCLDEL students must adhere to the guidelines of the George Mason University Honor Code (<https://catalog.gmu.edu/policies/honor-code-system/>).

The principle of academic integrity is taken very seriously and violations are treated as such.

*Violations of the Honor Code* include:

1. Copying a paper or part of a paper from another student (current or past);
2. Reusing work that you have already submitted for another class (unless express permission has been granted by your current professor **before** you submit the work);
3. Copying the words of an author from a textbook or any printed source (including the Internet) or closely paraphrasing without providing a citation to credit the author. For examples of what should be cited, please refer to:

<https://owl.english.purdue.edu/owl/resource/589/02/>

### **Late Work Policy**

At the graduate level all work is expected to be of high quality and submitted on the dates due. *Work submitted late will be reduced by 10% for every day of delay.* Because we live in uncertain times, if you have any extraordinary circumstances (think flood, earthquake, evacuation) that prevent you from submitting your work in a timely manner, it is your responsibility to contact the instructor as soon as possible after the circumstances occur and make arrangements to complete your work. *It is up to the discretion of the instructor to approve the late/makeup work.*

### **Course Withdrawal with Dean Approval**

For graduate and non-degree students, withdrawal after the last day for dropping a course requires approval by the student's academic dean, and is permitted only for nonacademic reasons that prevent course completion (Mason catalog). *Students must contact an academic advisor in APTDIE to withdraw after the deadline.* There is no guarantee that such withdrawals will be permitted.

### **Online Participation/Attendance Policy**

Students are expected to participate in **all** online discussions. Not participating in an online discussion module will be reflected with a zero for the week and as an absence.

**Students with two absences will receive a one-letter grade deduction in their final grade; students with three absences will receive a two-letter grade deduction in their final grade; students with four absences will not receive credit for the course.**

### **Incomplete (IN)**

This grade may be given to students who are in good standing, but who may be unable to complete scheduled course work for a cause beyond reasonable control. The student must then complete all the requirements by the end of the ninth week of the next semester, not including summer term, and the instructor must turn in the final grade by the end of the 9th week. Unless an explicit written extension is filed with the Registrar's Office by the faculty deadline, the grade of IN is changed by the registrar to an F (Mason catalog).

Faculty may grant an incomplete with a contract developed by the student with a reasonable time to complete the course at the discretion of the faculty member. The faculty member does not need to allow up to the following semester for the student to complete the course. A copy of the contract will be kept on file in the APTDIE office.

## **OTHER GMU POLICIES**

### **Professional Dispositions**

See <https://cehd.gmu.edu/students/policies-procedures/>

### **Core Values Commitment**

The College of Education and Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles: <http://cehd.gmu.edu/values/>.

## **GMU Policies and Resources for Students**

### *Policies*

- Students must adhere to the guidelines of the Mason Honor Code (see <https://catalog.gmu.edu/policies/honor-code-system/>).
- Students must follow the university policy for Responsible Use of Computing (see <https://universitypolicy.gmu.edu/policies/responsible-use-of-computing/>).
- Students are responsible for the content of university communications sent to their Mason email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students **solely** through their Mason email account.
- Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see <http://ds.gmu.edu/>).
- Students must silence all sound emitting devices during class unless otherwise authorized by the instructor.

### *Campus Resources*

- Support for submission of assignments to Tk20 should be directed to [tk20help@gmu.edu](mailto:tk20help@gmu.edu) or <https://cehd.gmu.edu/aero/tk20>. Questions or concerns regarding use of Blackboard should be directed to <https://its.gmu.edu/knowledge-base/blackboard-instructional-technology-support-for-students/>.
- For information on student support resources on campus, see <https://ctfe.gmu.edu/teaching/student-support-resources-on-campus>

## **Notice of mandatory reporting of sexual assault, interpersonal violence, and stalking:**

As a faculty member, I am designated as a “Responsible Employee,” and must report all disclosures of sexual assault, interpersonal violence, and stalking to Mason’s Title IX Coordinator per University Policy 1202. If you wish to speak with someone confidentially, please contact one of Mason’s confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-380-1434 or Counseling and Psychological Services (CAPS) at 703-993-2380. You may also seek assistance from Mason’s Title IX Coordinator by calling 703-993-8730, or emailing [titleix@gmu.edu](mailto:titleix@gmu.edu).

For additional information on the College of Education and Human Development, please visit our website <https://cehd.gmu.edu/students/>.

**Class Schedule:**

**EDUC 513 Class Schedule**

<b>Module 1</b>	<i>Welcome &amp; Introduction</i>
Dates	Tuesday, January 26 <sup>th</sup> – Monday, February 1 <sup>st</sup>
Readings	<ul style="list-style-type: none"> <li>• Chapters 1, 2</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>• Read through syllabus</li> <li>• Post self-introduction (<b>by Friday, January 29<sup>th</sup></b>)</li> <li>• Read Module 1 readings</li> <li>• Participate in Discussion Board 1:               <ul style="list-style-type: none"> <li>*Math Autobiography and Vision Statement</li> <li>*Complete Rich Task #1: Farmer Bob</li> </ul> </li> </ul>

<b>Module 2</b>	<i>Number Sense: Teaching Through Problem Solving &amp; Math Modeling</i>
Dates	Tuesday, February 2 <sup>nd</sup> – Monday, February 8 <sup>th</sup>
Readings	<ul style="list-style-type: none"> <li>• Chapter 3, 7</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>• Read Module 2 readings</li> <li>• Routine: <a href="#">Quick Images</a></li> <li>• Rich Task #2: The Caterpillar Problem (discussion board)</li> <li>• The Caterpillar Problem part 2 (analyzing student work)</li> </ul>

<b>Module 3</b>	<i>Problem Situations</i>
Dates	Tuesday, February 9 <sup>th</sup> – Monday, February 15 <sup>th</sup>
Readings	<ul style="list-style-type: none"> <li>• Chapters 4, 5</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>• Read Module 3 readings</li> <li>• Routine: <a href="#">Choral Counting</a></li> <li>• Vignette Activity #1 (<b>due by Monday, Feb. 15<sup>th</sup></b>)</li> <li>• Rich Task #3: The Kickball Problem (discussion board)</li> </ul>

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<b>Module 4</b>	<b><i>Whole Number &amp; Place Value Concepts</i></b>
Dates	Tuesday, February 16 <sup>th</sup> – Monday, February 22 <sup>nd</sup>
Readings	<ul style="list-style-type: none"> <li>• Chapters 6, 10</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>• Read Module 4 readings</li> <li>• Routine: <a href="#">Number Wave</a></li> <li>• Rich Task #4: Working with English Language Learners (discussion board)</li> </ul>

<b>Module 5</b>	<b><i>Addition &amp; Subtraction Strategies/Algebraic Reasoning</i></b>
Dates	Tuesday, February 23 <sup>rd</sup> – Monday, March 1 <sup>st</sup>
Readings	<ul style="list-style-type: none"> <li>• Chapters 9, 11</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>• Read Module 5 readings</li> <li>• Routine: <a href="#">Number Strings</a></li> <li>• Rich Task #5: Hopscotch (discussion board)</li> </ul>

<b>Module 6</b>	<b><i>Multiplication &amp; Division Strategies/Algebraic Reasoning</i></b>
Dates	Tuesday, March 2 <sup>nd</sup> – Monday, March 8 <sup>th</sup>
Readings	<ul style="list-style-type: none"> <li>• Chapters 12, 13</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>• Read Module 6 readings</li> <li>• Routine: <a href="#">Using Arrays</a></li> <li>• Rich Task #6: Multiplication Strategies (discussion board)</li> <li>• Vignette Activity #2 (<b>due Monday, March 8<sup>th</sup></b>)</li> </ul>

<b>Module 7</b>	<b><i>Measurement</i></b>
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Dates	Tuesday, March 9 <sup>th</sup> – Monday, March 15 <sup>th</sup>
Readings	<ul style="list-style-type: none"> <li>Chapter 18</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>Read Module 7 readings</li> <li>Rich Task #7: Area &amp; Perimeter (discussion board)</li> <li>Lesson #1: Number Routine (<b>due by Monday, March 15<sup>th</sup></b>)</li> </ul>

<b>Module 8</b>	<i>Geometry</i>
Dates	Tuesday, March 16 <sup>th</sup> – Monday, March 22 <sup>nd</sup>
Readings	<ul style="list-style-type: none"> <li>Chapter 19</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>Read Module 8 readings</li> <li>Routine: <a href="#">What Comes Next?</a></li> <li>Rich Task #8: Geometry Activity (discussion board)</li> </ul>

<b>Module 9</b>	<i>Data &amp; Statistics Reasoning</i>
Dates	Tuesday, March 23 <sup>rd</sup> – Monday, March 29 <sup>th</sup>
Readings	<ul style="list-style-type: none"> <li>Chapter 20</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>Read Module 8 readings</li> <li>Routine: <a href="#">Slow Reveal Graphs</a></li> <li>Rich Task #9: Real World Graphing Activity (discussion board)</li> <li>Vignette Activity #3 – <b>due Monday, March 29<sup>th</sup></b></li> </ul>

<b>Module 10</b>	<i>Developing Fractions Concepts</i>
Dates	Tuesday, March 30 <sup>th</sup> – Monday, April 5 <sup>th</sup>
Readings	<ul style="list-style-type: none"> <li>Chapter 14</li> </ul>
Assignments	<ol style="list-style-type: none"> <li>Read Module 10 readings</li> <li>Routine: <a href="#">Same, but different</a></li> <li>Rich Task #10: Fraction Challenges (discussion board)</li> </ol>

<b>Module 11</b>	<i>Developing Fractions Concepts</i>
Dates	Tuesday, April 6 <sup>th</sup> – Monday, April 12 <sup>th</sup>

Readings	<ul style="list-style-type: none"> <li>Chapter 15</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>Read Module 11 readings</li> <li>Routine: <a href="#">Ordering Fractions</a></li> <li>Rich Task #11: Video Games (discussion board)</li> </ul>

<b>Module 12</b>	<b><i>Developing Decimal Computation</i></b>
Dates	Tuesday, April 13 <sup>th</sup> – Monday, April 19 <sup>th</sup>
Readings	<ul style="list-style-type: none"> <li>Chapter 16</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>Read Module 12 readings</li> <li>Routine: <a href="#">Decimal Squares</a> (<a href="#">main link</a>)</li> <li>Rich Task #12: Crab Walk Relay (discussion board)</li> <li>Lesson #2: Problem Solving (<b>due by Monday, April 19<sup>th</sup></b>)</li> </ul>

<b>Module 13</b>	<b><i>Proportional Reasoning</i></b>
Dates	Tuesday, April 20 <sup>th</sup> – Monday, April 26 <sup>th</sup>
Readings	<ul style="list-style-type: none"> <li>Chapter 17</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>Read Module 13 readings</li> <li>Routine: <a href="#">Proportionate Pokémon</a></li> <li>Rich Task #13: Making Juice (discussion board)</li> </ul>

<b>Module 14</b>	<b><i>Probability</i></b>
Dates	Tuesday, April 27 <sup>th</sup> – Monday, May 3 <sup>rd</sup>
Readings	<ul style="list-style-type: none"> <li>Chapter 21</li> </ul>
Assignments	<ul style="list-style-type: none"> <li>Read Module 14 readings</li> <li>Routine: <a href="#">What are the Chances?</a></li> <li>Rich Task #14: Probability Misconceptions (discussion board)</li> </ul>



<b>Module 15</b>	<b><i>Integers</i></b>
Dates	Tuesday, May 4 <sup>th</sup> – Monday, May 10 <sup>th</sup>
Readings	<ul style="list-style-type: none"> <li>Chapter 22</li> </ul>
Assignments	<ol style="list-style-type: none"> <li>1. Read Module 15 readings</li> <li>2. Routine: <a href="#">How to use algebra tiles for integers</a></li> <li>3. Rich Task #15: Final Reflections (discussion board)</li> <li>4. Student Mathematics Interview and Action Plan (PBA) <b>due by May 10<sup>th</sup></b></li> </ol>

### PBA RUBRIC: Student Mathematics Interview and Action Plan

Criteria	Score			
	4 – Exceeds Standard	3 – Meets Standard	2 – Approaching Standard (Not Met)	1 – Needs Improvement (Not Met)
Design Interview Plan – Applying Knowledge ACEI Standard 3.1 – Integrating and Applying Knowledge	Interview plan uses extensive knowledge of the student, including performance in other academic, social, and behavioral areas, to design appropriate and relevant interview strategies. (Cite references)	Interview plan uses knowledge from some diverse areas to design appropriate interview strategies. Minimal references are cited.	Interview Plan uses minimal knowledge of the student to design specific interview strategies.	Interview Plan uses no knowledge of the student and creates only generic interview strategies.
Design Interview Plan – Developmental Appropriate ACEI Standard 1.0 – Development, Learning & Motivation	Interview plan demonstrates extensive knowledge and theories of child development to design appropriate interview questions. Theories are clearly integrated in interview strategy.	Interview plan uses some knowledge and theories of child development to design interview questions and strategies	Interview plan make little reference to child development to design interview questions	Interview plan contains no references to child development to design interview questions
Conduct Interview – Content Knowledge ACEI Standard 2.3 – Content Mathematics	Interviewer clearly and accurately describes specific and age appropriate mathematical concepts to be evaluated in the interview.	Interviewer describes an appropriate mathematical concept to be evaluated in the interview	Interviewer describes mathematical concept in vague or general terms	Interviewer fails to accurately describe mathematical concept being evaluated

<p>Conduct Interview – Differentiation</p> <p>ACEI Standard 3.2 – Adaptation to Diverse Students</p>	<p>Interviewer uses different forms of representation (pictorial, concrete, and abstract) with different examples of each form to assess child’s understanding of mathematic concept. Questions provide extensions for different levels of student performance and are clearly aligned with concept.</p>	<p>Interviewer uses a variety of tasks and questions for each of the forms of representation to assess child’s understanding of mathematic concept. Tasks and questions are aligned with concept.</p>	<p>The tasks and questions designed for the interview are only somewhat aligned with the mathematics concept being assessed. Forms of representation are used.</p>	<p>The tasks and questions designed for the interview are not clearly aligned with the mathematics concept being assessed.</p>
<p>Conduct Interview – Critical Thinking</p> <p>ACEI Standard 3.3 – Development of Critical Thinking</p>	<p>Questions require student to engage in critical thinking and communicate about and through mathematics concepts. Questions help students work through their understanding of the concept during the interview.</p>	<p>Questions require critical thinking on mathematics concepts during the interview.</p>	<p>Questions only require minimal critical thinking during the interview.</p>	<p>Questions do not allow for engagement or critical thinking during the interview.</p>
<p>Conduct Interview – Engagement</p> <p>ACEI Standard 3.4 – Active Engagement in Learning</p>	<p>Questions and tasks are designed to creatively engage the child in mathematical concepts. Child responds to tasks enthusiastically and demonstrates motivation throughout the interview (provide transcript).</p>	<p>Questions and tasks are designed to engage child in mathematical concepts with some success throughout the interview.</p>	<p>Questions and tasks are not designed to engage the student during the interview. Child is unenthusiastic or confused during the interview.</p>	<p>No transcript is provided to demonstrate student engagement during the interview</p>
<p>Create Action Plan – Assessment</p> <p>ACEI Standard 4.0 - Assessment</p>	<p>Action plan includes an accurate assessment of child’s current level of understanding of the mathematical concept. Assessment is supported with ample evidence including a variety of work samples from the interview.</p>	<p>Action plan includes an assessment of the child’s understanding with evidence from the interview to support this.</p>	<p>Action plan includes an assessment of the child’s understanding but includes little supporting evidence.</p>	<p>Action plan does not include an assessment or does not include evidence to support the assessment.</p>
<p>Create Action Plan – Collaboration</p> <p>ACEI Standard 5.2 - Collaboration</p>	<p>Action plan uses extended sources on math development including texts, interviews with colleagues, and references to outside agencies or materials to support the assessment and action plan</p>	<p>Action plan includes sufficient supplemental sources to support the assessment and action plan.</p>	<p>Action plan includes minimal evidence of outside sources or collaboration to support the assessment and action plan.</p>	<p>Action plan does not include any outside sources to support the assessment and action plan.</p>
<p>Create Action Plan – Instructional Plan</p> <p>ACEI Standard 3.1 – Integrating and Applying Knowledge for Instruction</p>	<p>Action plan clearly integrates all gathered information to create an instructional plan that works well with the curriculum and is developmentally appropriate.</p>	<p>Action plan integrates most of the gathered information to create an instruction plan that is developmentally appropriate.</p>	<p>Action plan does not clearly demonstrate integration of gathered information or is not developmentally appropriate.</p>	<p>Action plan does not demonstrate integration of gathered information. Plan shows lack of support.</p>

<p>Create Action Plan – Differentiation</p> <p>ACEI Standard 3.2- Adaptation to Diverse Students</p>	<p>Action plan identifies extensive and specific examples of activities and tasks that would further enhance the child’s knowledge of the mathematical concept</p>	<p>Action plan identifies satisfactory examples of activities and tasks that enhance the child’s knowledge of the mathematical concept</p>	<p>Action plan only includes minimal examples of activities or tasks that could enhance the child’s knowledge of the mathematical concept</p>	<p>Action plan examples of activities or tasks that do not appear to enhance the child’s knowledge of the mathematical concept</p>
<p>Provide Reflection – Pilot Lesson Plan</p> <p>ACEI Standard 5.1 – Professional Growth, Reflection &amp; Evaluation</p>	<p>Reflection includes a pilot of activities and tasks discussed in the action plan. Action plan is implemented in class or in tutoring environment.</p>	<p>Reflection includes extensive evaluation of how activities discussed in the action plan could be implemented</p>	<p>Reflection includes little discussion of how any activities discussed in the action plan could be implemented</p>	<p>Reflection includes no follow up to the action plan or evidence that these tasks have been evaluated.</p>
<p>Provide Reflection – Self-Evaluation</p> <p>ACEI Standard 5.1 – Professional Growth, Reflection, &amp; Evaluation</p>	<p>Interviewer provides detailed self-reflection and analysis of the interview process. Reflection suggests specific areas for improvement and makes deep connections between activity and overall effective teaching practice.</p>	<p>Interviewer provides a self-evaluation and reflection of the interview process and makes connections between this activity and overall effective teaching practice.</p>	<p>Interviewer provides little reflection or self-evaluation or does not draw connection to overall effective practice.</p>	<p>Interviewer provides no reflection, self-evaluation, or connections to overall teaching practice.</p>