

**Dewar College of Education and Human Services  
Valdosta State University  
Department of Early Childhood and Special Education**

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**ECED 3300  
Mathematics and Technology in Early Childhood Education  
3 SEMESTER HOURS**

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**Guiding Principles (DEPOSITS)**

(adapted from the Georgia Systemic Teacher Education Program Accomplished Teacher Framework)

Dispositions Principle: Productive dispositions positively affect learners, professional growth, and the learning environment.

Equity Principle: All learners deserve high expectations and support.

Process Principle: Learning is a lifelong process of development and growth.

Ownership Principle: Professionals are committed to and assume responsibility for the future of their disciplines.

Support Principle: Successful engagement in the process of learning requires collaboration among multiple partners.

Impact Principle: Effective practice yields evidence of learning.

Technology Principle: Technology facilitates teaching, learning, community-building, and resource acquisition.

Standards Principle: Evidence-based standards systematically guide professional preparation and development.

**National Professional Association/Accreditor Standards/Competencies/ Learning Outcomes**

*(All teacher preparation programs are required to use the InTASC Model Core Teacher Standards)*

## **InTASC Model Core Teacher Standards\***

*(To be used for all teacher preparation program courses. Identify those that apply specifically to this course.)*

Standard #1: Learner Development. The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.

Standard #2: Learning Differences. The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.

Standard #3: Learning Environments. The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self-motivation.

Standard #4: Content Knowledge. The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.

Standard #5: Application of Content. The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

Standard #6: Assessment. The teacher understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making.

Standard #7: Planning for Instruction. The teacher plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.

Standard #8: Instructional Strategies. The teacher understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful ways.

Standard #9: Professional Learning and Ethical Practice. The teacher engages in ongoing professional learning and uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.

Standard #10: Leadership and Collaboration. The teacher seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth, and to advance the profession.

*\*Council of Chief State School Offices, (2013, April). InTASC model core teacher standards and learning progressions for teachers 1.0. Retrieved from [http://www.ccsso.org/Documents/2013/2013\\_INTASC\\_Learning\\_Progressions\\_for\\_Teachers.pdf](http://www.ccsso.org/Documents/2013/2013_INTASC_Learning_Progressions_for_Teachers.pdf)*

## **INSTRUCTOR**

Name: Nancy A. Sartin

Office Number: Room 1178, Dewar College of Education Building

Telephone Number: Office Phone: 229-333-5624;  
ECSE Dept. Phone: 229-333-5929

Email Address: [nasartin@valdosta.edu](mailto:nasartin@valdosta.edu)

Office Hours: Posted on Office Door & ECSE Website:  
[www.valdosta.edu/coe/ecse/FacultyOfficeHours.shtml](http://www.valdosta.edu/coe/ecse/FacultyOfficeHours.shtml)

## **COURSE DESCRIPTION.**

### **ECED 3300 Mathematics and Technology in Early Childhood 3-0-3**

**Prerequisites: ESCE 2999.** This is a check-point course, and check-point requirements must be met. Recent developments in curriculum and methods on instruction of contemporary school mathematics in grades P-5, including the use of manipulative materials, technology, and other resources. ECED 3690, or a practicum approved at the program level, is required as a co-requisite for this course.

## **REQUIRED TEXTBOOKS/RESOURCE MATERIALS:**

**No textbook is required for this course. All learning materials will be available on the internet from Open Education Resources.**

**COURSE OBJECTIVES** *(Show alignment to InTASC Model Core Teacher Standards for all educator preparation courses).*

Teacher candidates will:

1. Use a variety of teaching resources, materials, and technologies appropriate for math instruction with P-5 children. (IS 7, 8,) TL 2.2a
2. Utilize a variety of developmentally appropriate instructional strategies for teaching math to P-5 children in order to develop deep understanding of math concepts, skills and their connections, (IS 3,7,8) CPL 2.3

3. Develop multiple methods of assessment to improve knowledge of content, to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making. (IS 6) AL 2.1

4. Design and implement hands-on/minds-on math activities to engage learners in critical thinking and collaborative problem solving with an emphasis on developing a positive attitude towards math with P-5 children. (IS 4, 5)

5. Analyze and select a variety of community and internet resources to ensure and support inclusive learning environments that enable each learner to meet high standards. (IS 1, 2) DL 2.3

6. Develop, implement and evaluate the effectiveness of a problem-based lesson plan that encourages learner collaboration, positive social interactions, and active engagement in learning and self-motivation. (IS 1, 3, 5, 7) CPL 3.3, FL 2.2,

### **COURSE ACTIVITIES/ASSIGNMENTS/REQUIREMENTS:**

1. Collect information from current effective instructional mathematics programs used in the public school settings. (CO 1, 3)
2. Maintain a notebook/packet of course activities and materials, following a specified format. (CO 1, 2, 3, 4, 5, 6, 7)
3. Develop an electronic file of community and Internet resources for teaching and learning mathematics. (CO 1, 2, 3, 6)
4. Present one mathematics activity from *Elementary and Middle School Mathematics: Teaching Developmentally* to the class. (CO 1, 2, 3, 4, 5, 7)
5. Develop one mathematics lesson plan and implement in your practicum field experience class. This lesson plan will be entered into LiveText. (CO 1, 2, 3, 4, 5, 7)
6. Design a mathematics learning center/station. This center should include some type of technology such as virtual manipulatives, a website, etc. in which students participate and the center should be self-monitoring. (CO 1, 2, 3, 4, 5, 7)
7. Develop one mathematics lesson plan for your final exam presentation (for a grade level in your Professional Semester III field experience.) (CO 1, 2, 3, 4, 5, 7)
8. Participate in Daily Class Discussions, Assignments, and Online Activities. (CO 1, 2, 3, 4, 5, 6, 7)
9. Complete written tests and a midterm test. (CO 1, 3)

## COURSE EVALUATION

This class is part of your professional preparation. Appropriate dispositions are expected and required. You may earn the maximum number of points for all assignments and activities, contingent upon the knowledge, originality, and quality demonstrated in your work. Therefore, evaluation of all written work will be made based upon both content and mechanics.

Evaluation of all written work will be made based upon both content and mechanics.

- **Each** spelling, punctuation, syntax, grammatical, and typographical **error** will result in up to a **one-point deduction** from the total score, regardless of the point value of the assignment.
- All assignments prepared outside of class must be produced using a word processing computer program (**Microsoft Word** is best), **12-point font** (Times New Roman is best), and **double-spaced** (unless otherwise noted) and **include the teacher candidate's name, course number and section, and date**. This includes any e-mail assignments sent to the instructor.
- All assignments must be the original work of the teacher candidate submitting the work. All assignments must be completed by the teacher candidate during the current semester and not submitted to another instructor to fulfill requirements for any other course. References and citations (**using APA 6th edition format**) are required when referring to the work of others. (See POLICY STATEMENT ON PLAGIARISM AND CHEATING, which follows).
- Assignments must be submitted at the **beginning of the class period on the day they are due**. An assignment is considered late if it is not available at the start of class. Late assignments will be accepted up to one week after the due date. Ten percent (10%) of the grade/points will be deducted for each day an assignment is late. If the late assignment is not completed within one week, a grade of zero (0) will be assigned. **Make-up exams will be given at the discretion of the instructor.**

Teacher candidates' knowledge of information contained in reading assignments, class notes, and class handouts will be assessed during class on dates designated in the tentative course schedule. Daily in-class assessments may be conducted individually or in groups. Should a teacher candidate be absent when the in-class assessment is completed, he or she will not earn the points assigned to the in-class assessment. Make-up work will not be assigned for the in-class assessment.

NOTE: If you have difficulty preparing written assignments help is available at the Student Success Center (SSC) located in Langdale Residence Hall. The SSC is available to all students and provides free peer tutoring in core curriculum courses, including biology, chemistry, math, writing, and foreign languages. The SSC also provides free professional academic advising and on-campus job information in one location. Call 333-7570 to make an appointment, or visit the website: [www.valdosta.edu/ssc](http://www.valdosta.edu/ssc)

Each of the assignments listed below corresponds to the same number assignment and course objectives listed in the Course Activities/Assignments/Requirements section. Point values for all assessments are listed below.

<b>Assignments</b>	<b>Points</b>
1. Course Exams, Quizzes, and Assignments	100
2. Current Mathematics Programs Information	50
3. Mathematics Course Notebook/Packet	50
4. Electronic Mathematics Resource File	100
5. Mathematics Activity Presentation	100
6. Math Lesson Plan for Practicum Class	200
7. Mathematics Learning Center	100
8. Math Lesson Plan - Final Exam Presentation	200
9. Readings from Teaching Children Mathematics	<u>100</u>
	<b>Total Points 1000</b>

**Grade Scale:**

- A = 90-100% (900-1000 Points)
- B = 80-89% (800-899 Points)
- C = 70-79% (700-799 Points)
- D = 60-69% (600-699 Points)
- F = 59% and below (599 and below Points)

**Final Exam:**

**TBA**

*NOTE: To provide the best possible learning experience it may be necessary for the instructor to change, adapt, or adjust the requirements, evaluations, activities and /or schedule as presented here. As the instructor of this course I reserve the right to add or delete objectives and assignments depending upon the progress made by the class.*

**ATTENDANCE POLICY**

Teacher candidates are to attend all class sessions and actively participate in class discussions, groups, and activities. All assignments and class activities are the teacher candidate’s responsibility. If you are absent from class, please ask another member of the class to collect handouts and other materials distributed in class to ensure that you have all the course materials.

Please be familiar with the attendance policy as stated here. You are expected to attend every

class for the full session. This is an activity-based class; you must participate to be successful. Attendance, including tardies (arriving more than 5 minutes late) and early departures (leaving more than 5 minutes before the end of class), will be recorded. Three tardies and/or early departures will count as one absence. One absence will be allowed with no penalty. Each subsequent absence will result in the deduction of fifteen (15) points from the participation grade.

As per VSU policy (stated below), a teacher candidate who misses more than 20% the scheduled classes of a course will be subject to receiving a failing grade in the course.

"The University expects that all students shall attend all regularly scheduled class meetings held for instruction or examination.... Instructors are required to maintain records of class attendance... It is recognized that class attendance is essentially a matter between students and their instructors. Instructors must explain their absence policy in the course syllabus. All students are held responsible for knowing the specific attendance requirements as prescribed by their instructors and for the satisfactory make-up work missed by absences. When students are compelled for any reason to be absent from class, they should immediately contact the instructor. A student who misses more than 20% of the scheduled classes of a course will be subject to receiving a failing grade in the course" (*VSU Undergraduate Catalog 2010-2011*, p. 92).

## **PROFESSIONALISM**

As a teacher candidate, you are expected to conduct yourself in the professional educator role as defined by the Georgia Professional Standards Commission Code of Ethics for Educators. You will be provided with a copy of the Code of Ethics for Educators which can be found on the following URL <http://www.gapsc.com/Rules/Current/Ethics/505-6-.01.pdf>. Failure to follow the Code of Ethics will result in disciplinary actions through the College of Education Concern Form process.

- Arrive for class on time and prepared by having read all assigned materials, including other materials distributed during the semester.
- Sign the Class Sign-in Sheet at every class meeting (even when arriving late to class).
- Plan to stay for the entire class period.
- Remain on task and actively participate in class activities and discussions.
- Avoid distracting yourself, others, and the instructor during class by turning off (or making inaudible) all cell phones, pagers, or other electronic devices and leaving such devices packed away. Continued violation of this policy will result in a concern form. If you have extenuating circumstances in which you need your cell phone, inform the instructor before class.
- Use of laptops is allowed for instructional/academic purposes only. Laptops may not be used to access email or websites not related to class discussions/activities or for checking social networking pages (such as Twitter, Facebook, etc.). Teacher candidates who violate this policy will lose the privilege of using their laptops in class. Laptops must be packed away

during individual and group presentations, during guest lectures, and during quizzes, tests, and exams.

- Contact the instructor concerning missed assignments.  
NOTE: If you experience extenuating circumstances (illness, emergency, etc.) that will require more than one absence, please contact the Office of the Dean of Students at **(229) 333-5941** and give them the details of your illness/emergency. They will notify all of your instructors of the situation.
- Use only VSU e-mail accounts for corresponding with the instructor for this course. Please check your VSU e-mail at least once a day. Be sure to check your Junk Email box. When e-mailing the instructor of this course for any reason, place the name of the course and the section in the subject line (for example: ECSE 3210 Section A). If you have problems with your VSU email account, call the Information Technology Help Desk **(229-245-HELP)**.
- A folder will be provided at the beginning of the semester for you to submit your assignments for this class. Work will not be accepted unless it is placed in your folder.

### **DEWAR COLLEGE OF EDUCATION& HUMAN SERVICES POLICY ON PLAGIARISM**

(<http://www.valdosta.edu/colleges/education/deans-office/policy-statement-of-plagiarism.php>).

### **ACCESSIBILITY STATEMENT**

Valdosta State University is an equal opportunity educational institution. It is not the intent of the institution to discriminate against any applicant for admission or any student or employee of the institution based on the age, sex, race, religion, color, national origin, disability, or sexual orientation of the individual. It is the intent of the institution to comply with the Civil Rights Act of 1964 and subsequent Executive Orders as well as Title IX, Equal Pay Act of 1963, Vietnam Era Veterans Readjustment Assistance Act of 1974, Age Discrimination in Employment Act of 1967, and the Rehabilitation Act of 1973.

Students with disabilities who are experiencing barriers in this course may contact the Access Office for assistance in determining and implementing reasonable accommodations. The Access Office is located in Farber Hall. The phone numbers are 229-245-2498 (V), 229-375-5871 (VP) and 229-219-1348 (TTY). For more information, please visit <http://www.valdosta.edu/access> or email: [access@valdosta.edu](mailto:access@valdosta.edu).



## **STUDENT OPINION OF INSTRUCTION**

At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available on BANNER. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous, and instructors will be able to view only a summary of all responses two weeks after they have submitted final grades. Instructors will not be able to view individual responses or to access any of the responses until after final grade submission. Complete information about the SOIs, including how to access the survey and a timetable for this term is available at <http://www.valdosta.edu/academic/OnlineSOIPilotProject.shtml>.

### **Content websites to be used during course:**

*Introduction to Principles and Standards for School Mathematics:*

<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/Curriculum-and-Instruction/Pages/CCGPS.aspx>

<http://www.nctm.org/standards/content.aspx?id=26802>- Principles

<http://www.nctm.org/standards/content.aspx?id=322> Process Standards

<http://www.corestandards.org/Math/Practice/> Common core that states use

<http://www.fayar.net/east/Teacher.web/Math/Standards/Previous/ProfStds/index.htm>

Professional standards

<http://www.fayar.net/east/Teacher.web/Math/Standards/Previous/ProfStds/FirstSteps.htm>

*Foundations of Math:*

*Common Core Georgia Performance Standards for Mathematics*

<https://www.georgiastandards.org/Common-Core/Pages/Math-K-5.aspx>

*High Quality Math Instruction*

<http://iris.peabody.vanderbilt.edu/module/math/challenge/#content>

[http://iris.peabody.vanderbilt.edu/ebp\\_summaries/](http://iris.peabody.vanderbilt.edu/ebp_summaries/)

*National Council of Teachers of Mathematics (NCTM)*

<https://www.oercommons.org/courses/teaching-math-a-video-library-k-4>

*Constructivist Theory*

<http://www.math.upatras.gr/~mboudour/articles/constr.html>

*Sociocultural Theory*

<http://www.education.com/reference/article/sociocultural-theory/>

[https://www.youtube.com/watch?v=-p\\_0n2f35o](https://www.youtube.com/watch?v=-p_0n2f35o)

### *Problem Solving and Teaching Through Problem Solving:*

*Problem Solving Process*

<http://math.berkeley.edu/~gmelvin/polya.pdf>

*Problem Solving Strategies*

[http://floridarti.usf.edu/resources/format/pdf/Classroom%20Cognitive%20and%20Metacognitive%20Strategies%20for%20Teachers\\_Revised\\_SR\\_09.08.10.pdf](http://floridarti.usf.edu/resources/format/pdf/Classroom%20Cognitive%20and%20Metacognitive%20Strategies%20for%20Teachers_Revised_SR_09.08.10.pdf)

<http://www.mathstories.com/strategies.htm>

<http://thesingaporemaths.com/stratf.html>

<https://www.teachingchannel.org/videos/math-problem-solving-strategies>

*Example of Problems*

[https://learnzillion.com/lesson\\_plans/335](https://learnzillion.com/lesson_plans/335)

*Problem-Based Lessons*

[http://www.gulfcoast.edu/pbl/elementary\\_school/ElementarySchoolLessonPlans.htm](http://www.gulfcoast.edu/pbl/elementary_school/ElementarySchoolLessonPlans.htm)

[http://illuminations.nctm.org/Search.aspx?view=search&type=ls&kw=problem%20based&st=na&gr=Pre-K-2\\_3-5](http://illuminations.nctm.org/Search.aspx?view=search&type=ls&kw=problem%20based&st=na&gr=Pre-K-2_3-5)

### *Assessment*

*Types of Assessment in Mathematics*

<http://illuminations.nctm.org>

<http://mathforum.org/library>

<http://www.exemplars.com/resources/rubrics/assessment-rubrics>

[www.youtube.com/watch?v=rJxFXjfb\\_B4](http://www.youtube.com/watch?v=rJxFXjfb_B4)

*Feedback on Assessment in Mathematics*

[www.youtube.com/watch?v=FldnHUgjTcM](http://www.youtube.com/watch?v=FldnHUgjTcM)

[www.youtube.com/watch?v=1Tihrg7nBos](http://www.youtube.com/watch?v=1Tihrg7nBos)

*Student Self-Assessment in Mathematics*

[www.google.com/search?q=Student+self+assessment+in+math&espv=2&biw=1876&bih=926&tbm=isch&tbo=u&source=univ&sa=X&ei=z7GEVMq8BMmYNtv0gbgK&ved=0CCYQsAQ](http://www.google.com/search?q=Student+self+assessment+in+math&espv=2&biw=1876&bih=926&tbm=isch&tbo=u&source=univ&sa=X&ei=z7GEVMq8BMmYNtv0gbgK&ved=0CCYQsAQ)  
<http://www.exemplars.com/resources/formative-assessment/tools-for-students-peer-and-self-assessment>  
<http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/studentselfassessment.pdf>  
<http://www.spfk12.org/Page/5960>  
[http://www.bc.edu/research/intasc/PDF/opd\\_bat\\_StudentPost\\_fall06.pdf](http://www.bc.edu/research/intasc/PDF/opd_bat_StudentPost_fall06.pdf)

*Equitable Teaching of Mathematics:*

*Student with Special Needs in Mathematics*

<http://iris.peabody.vanderbilt.edu/module/rti-math/challenge/#content>  
<http://www.parentcenterhub.org/repository/math/#disability>  
<http://www.centeroninstruction.org/files/Mathematics%20Instruction%20LD%20Guide%20for%20Teachers.pdf>

*English Language Learners and Mathematics Instruction*

<http://www.gustine.esc14.net/users/0001/docs/Accommodations%20Checklist%20from%20TEA%20from%20TELL-IT.pdf>  
<http://gtpdx.wikispaces.com/file/view/accommodations%20ESL.pdf/378926664/accommodations%20ESL.pdf>  
[http://ell.stanford.edu/teaching\\_resources/math](http://ell.stanford.edu/teaching_resources/math)  
<http://www.colorincolorado.org/article/12907/>

*Gender-friendly Mathematics Instruction*

<http://ncisla.wceruw.org/publications/articles/Gender.pdf>

*Gifted Students and Math Instruction*

[http://www.davidsongifted.org/db/Articles\\_id\\_10514.aspx](http://www.davidsongifted.org/db/Articles_id_10514.aspx)  
<http://educationnorthwest.org/sites/default/files/12.99.pdf>  
[http://www.hoagiesgifted.org/math\\_gifted.htm](http://www.hoagiesgifted.org/math_gifted.htm)  
<http://www.exquisite-minds.com/gifted-resources-lessons-and-curriculum/>  
[http://www.soe.vt.edu/tandl/pdf/Wilkins/Publications\\_Wilkins\\_Differentiating\\_curriculum\\_Elementary\\_Gifted\\_Mathematics\\_students.pdf](http://www.soe.vt.edu/tandl/pdf/Wilkins/Publications_Wilkins_Differentiating_curriculum_Elementary_Gifted_Mathematics_students.pdf)  
<http://www.homeschoolmath.net/online/gifted.php>

*Low-Achievers in Mathematics Instruction*

<http://www.ernweb.com/educational-research-articles/effective-math-instruction-for-low-achievers/>  
<http://iris.peabody.vanderbilt.edu/module/ss1/perspectives-and-resources/what-do-teachers-need-to-understand-about-why-some-students-struggle-with-learning/page-1-characteristics-of-high-and-low-achievers/>

## *Technological Tools for Mathematics:*

### *Calculators*

<http://pbskids.org/cyberchase/math-games/calculator/>  
<http://www.coolmath.com/calculators/index.html>  
<http://www.math.com/students/calculators/calculators.html>  
<http://www.calculator.org/jcalc98.aspx>  
<http://www.online-calculator.com/>

### *Digital Tools for Mathematics*

[http://k-12.pisd.edu/currinst/elemen/math/SOL\\_2013/index.htm](http://k-12.pisd.edu/currinst/elemen/math/SOL_2013/index.htm)

### *Instructional Applications for Mathematics*

<http://www.thinkport.org/ECE/technology/interactive.tp>  
<http://www.thinkport.org/ECE/technology/apps.tp>

### *Guidelines for Selection of Technological Resources*

[http://www.idonline.org/article/10\\_Tips\\_for\\_Software\\_Selection\\_for\\_Math\\_Instruction/6243](http://www.idonline.org/article/10_Tips_for_Software_Selection_for_Math_Instruction/6243)  
<http://knowledgeportal.pakteachers.org/sites/knowledgeportal.pakteachers.org/files/resources/Preparing%20Teachers%20to%20Teach%20Mathematics%20with%20Technology.pdf>  
[http://www.tcea.org/handouts/2013/Speaker10494\\_Session1928\\_1.pdf](http://www.tcea.org/handouts/2013/Speaker10494_Session1928_1.pdf)

### *Internet Resources for Mathematics Instruction*

<http://www.nctm.org/>  
<http://mathforum.org/>  
<http://www.pbslearningmedia.org/>

## *Numbers, Number Systems, and Operations:*

[www.primaryresources.co.uk/maths/mathsB4.htm#1](http://www.primaryresources.co.uk/maths/mathsB4.htm#1)  
[www.learner.org/resources/series32.html](http://www.learner.org/resources/series32.html)  
<http://education.jlab.org/placevalue/index.html>

### *Early Number Concepts and Number Sense*

<http://www.vedicsciences.net/articles/history-of-numbers.html>

### *Addition*

<http://www.abcya.com/addition.htm>

### *Subtraction*

<http://illuminations.nctm.org/unit.aspx?id=6142>

### *Multiplication*

<http://illuminations.nctm.org/unit.aspx?id=6099>

*Division*

<http://illuminations.nctm.org/Lesson.aspx?id=3807>

[http://nlvm.usu.edu/en/nav/frames\\_asid\\_193\\_g\\_1\\_t\\_1.html](http://nlvm.usu.edu/en/nav/frames_asid_193_g_1_t_1.html)

*Basic Math Facts*

<http://www.mathfactcafe.com/>

<http://everydaymath.uchicago.edu/parents/understanding-em/facts/>

<http://www.mathplayground.com/>

<http://www.sheppardsoftware.com/math.htm>

<http://www.sheppardsoftware.com/preschool/preschool.htm>

<http://www.arcademics.com/>

*Whole-Number Place Value Concepts*

<http://illuminations.nctm.org/Lesson.aspx?id=1788>

*Computation*

<http://illuminations.nctm.org/Lesson.aspx?id=1355>

*Measurement:*

[www.oercommons.org/courses/measure-me](http://www.oercommons.org/courses/measure-me)

[www.oercommons.org/courses/measuring-blocks](http://www.oercommons.org/courses/measuring-blocks)

[www.oercommons.org/courses/twizzler-measurement](http://www.oercommons.org/courses/twizzler-measurement)

[www.oercommons.org/courses/measurement-mania](http://www.oercommons.org/courses/measurement-mania)

[www.oercommons.org/courses/measurement-centers](http://www.oercommons.org/courses/measurement-centers)

[www.oercommons.org/courses/can-you-measure-quiz](http://www.oercommons.org/courses/can-you-measure-quiz)

[www.oercommons.org/courses/measurement](http://www.oercommons.org/courses/measurement)

[http://illuminations.nctm.org/Search.aspx?view=search&type=ls&st=g&gr=Pre-K-2\\_3-5](http://illuminations.nctm.org/Search.aspx?view=search&type=ls&st=g&gr=Pre-K-2_3-5)

*Geometry:*

[http://illuminations.nctm.org/Search.aspx?view=search&type=ls&st=g&gr=Pre-K-2\\_3-5](http://illuminations.nctm.org/Search.aspx?view=search&type=ls&st=g&gr=Pre-K-2_3-5)

<http://illuminations.nctm.org/Activity.aspx?id=3509>

[www.learner.org/interactives/geometry/index.html](http://www.learner.org/interactives/geometry/index.html)

[www.learner.org/teacherslab/math/geometry](http://www.learner.org/teacherslab/math/geometry)

*Data Analysis and Probability:*

[http://illuminations.nctm.org/Search.aspx?view=search&type=ls&st=d&gr=Pre-K-2\\_3-5](http://illuminations.nctm.org/Search.aspx?view=search&type=ls&st=d&gr=Pre-K-2_3-5)

<http://nces.ed.gov/nceskids/createagraph/>

<http://illuminations.nctm.org/activitydetail.aspx?id=204>

<http://illuminations.nctm.org/activitydetail.aspx?id=220>

[www.sciencenetlinks.com/interactives/marble/marblemania.html](http://www.sciencenetlinks.com/interactives/marble/marblemania.html)

[http://nlvm.usu.edu/en/nav/topic\\_t\\_5.html](http://nlvm.usu.edu/en/nav/topic_t_5.html)

*Algebraic Thinking and Patterns:*

[http://illuminations.nctm.org/Search.aspx?view=search&type=ls&st=a&gr=Pre-K-2\\_3-5](http://illuminations.nctm.org/Search.aspx?view=search&type=ls&st=a&gr=Pre-K-2_3-5)  
[http://nlvm.usu.edu/en/nav/category\\_g\\_3\\_t\\_2.html](http://nlvm.usu.edu/en/nav/category_g_3_t_2.html)  
[www.insidemathematics.org](http://www.insidemathematics.org)  
[www.mathwarehouse.com/algebra/linear\\_equation/linear-equation-interactive-activity.php](http://www.mathwarehouse.com/algebra/linear_equation/linear-equation-interactive-activity.php)  
[www.learner.org/resources/series140.html](http://www.learner.org/resources/series140.html)  
<http://mmmproject.org/algebra.htm>  
<http://pbskids.org/cyberchase/math-games>

*Estimation:*

<http://mathteachingstrategies.wordpress.com/2009/04/02/big-idea-estimation/>  
<http://mathforum.org/t2t/faq/gail/#estimation>  
[www.nsa.gov/academia/files/collected\\_learning/elementary/arithmetric/reasonable\\_estimates.pdf](http://www.nsa.gov/academia/files/collected_learning/elementary/arithmetric/reasonable_estimates.pdf)  
<http://www.mathsisfun.com/numbers/estimation.html>  
<http://illuminations.nctm.org/Lesson.aspx?id=837>

*Error Analysis / Error Patterns:*

[http://www.pearsonhighered.com/assets/hip/us/hip\\_us\\_pearsonhighered/samplechapter/0135009103.pdf](http://www.pearsonhighered.com/assets/hip/us/hip_us_pearsonhighered/samplechapter/0135009103.pdf)  
[http://ptgmedia.pearsoncmg.com/images/9780135009109/downloads/Ashlock\\_Ch1\\_MisconceptionsandErrorPatterns.pdf](http://ptgmedia.pearsoncmg.com/images/9780135009109/downloads/Ashlock_Ch1_MisconceptionsandErrorPatterns.pdf)  
<http://www.specialconnections.ku.edu/~speconn/page/instruction/math/pdf/patternanalysis.pdf>  
<http://k6.boardofstudies.nsw.edu.au/wps/portal/go/mathematics/support-students-special-needs/assessment/error-analysis>

*Mathematics Literature Connections:*

<http://mathwire.com/literature/literature.html>

*Glossary for Mathematics Concepts and Terminology:*

<http://www.math.com/school/glossary/glossindex.html>  
<http://www.mathsisfun.com/definitions/>  
<http://www.didax.com/mathdictionary/>  
<http://www.amathsdictionaryforkids.com/>