

MTTC Lower Elementary (PK-3): Mathematics

Below is a list of resources based on the [objectives](#) for the Elementary Education MTTC Lower Elementary (PK-3) test. These resources are created to give background information and practice for each of the standards. It will also be helpful to look over notes and resources from your math classes and to use the materials provided by Mometrix and the MTTC.

001 - Build Relationships to Support Mathematics Learning

- [Article - "Building Productive Parent-Teacher Relationships for Math Learning"](#)
- [Article - "Mathematics and Numeracy at Home"](#)

002 - Mathematics Lesson Planning

- [Article - "Early Childhood Mathematics: Promoting Good Beginnings"](#)
- [Article - "How to Schedule Your Daily Math Block"](#)
- [Article - "The Playful Approach to Math"](#)

003 - Formative and Summative Mathematics Assessment

- [Article - "15 Math Formative Assessment Strategies that Rock"](#)
- [Article - "Maths Mastery & Formative And Summative Assessments"](#)

004 - Engaging Instruction in Mathematics

- [Article - "Engaging Students in Math"](#)
- [Tutorial - "Engaging Children in Math"](#)

005 - Mathematical Naming and Attribution

- [Video - "Spatial Reasoning"](#)
- [Article - "Making Math Activities and Vocabulary in Preschool Fun"](#)
- [Article - "5 Actionable Strategies to Grow Math Vocabulary"](#)
- [Article - "What Children Know and Need to Learn about Shape and Space"](#)

006 - Explanations of Mathematical Attribution

- [Video - "Patterns for Kids"](#)
- [Article - "Teaching Patterns and Patterning in Upper Grades"](#)
- [Article - "Using Questioning to Stimulate Mathematical Thinking"](#)
- [Reference Page - "Identify, Describe, Analyze, Create, and Compare 2D and 3D Shapes"](#)
- [Article - "The Secrets of Developing Shape Knowledge and Skills"](#)

007 - Representations of Attribution

- [Article - "Building Conceptual Understanding through Multiple Representation, Modeling, and Manipulatives"](#)
- [Article - "2D to 3D: Working with Shapes and Representations"](#)

008 - Mathematical Thinking about Attribution

- [Article - "Using Questioning to Stimulate Mathematical Thinking"](#)
- [Article/Video - "Partitioning Shapes Into Equal Shares"](#)
- [Video - "Teaching Students to Prove Their Mathematical Thinking"](#)

009 - Counting and Whole Number Representation

- [Article - "Early Number Concepts and Number Sense"](#)
- [Video - "Place Value Activities for First Grade"](#)
- [Video - "Composing and Decomposing Numbers"](#)

010 - Explanations for Counting and Whole Number Representation

- [Video - "Number Forms"](#)
- [Article - "Counting On, Counting Back"](#)
- [Article - "6 Strategies for Teaching Skip Counting"](#)

011 - Representations for Counting and Whole Number Representation

- [Article - "Teaching Math Using the Concrete, Representational, Abstract Model"](#)
- [Article - "Concrete-Representational-Abstract Instructional Approach"](#)
- [Video/Article - "Adding and Subtracting Numbers in Context Using Base Ten Blocks"](#)

012 - Mathematical Thinking -Counting and Whole Number Representation

- [Article - "7 Addition with Regrouping Strategies and Tools"](#)
- [Article - "Do you Dread Teaching Regrouping and Exchanging? Let us Help!"](#)

013 - Early Fraction Representation

- [Video - "Teaching Fractions"](#)
- [Article - "How to Teach Fractions: 4 Strategies for Student Success"](#)

014 - Explanations of Early Fraction Representation

- [Article - "Lessons and Activities for Teaching Fractions to Kids"](#)
- [Video - "Comparing Fractions"](#)
- [Article + Videos - "Working with Fractions: Adding Fractions"](#)

015- Representations for Early Fraction Representation

- [Article - "Teaching Fractions with Appropriate Materials"](#)
- [Video - "Teaching Fractions Using Manipulatives"](#)
- [Article/Interactive - "Fractions and Their Models"](#)

016 - Mathematical Thinking about Early Fraction Representation

- [Article - Interpretations of Fractions](#)
- [Article - "Understanding Magnitudes to Understand Fractions"](#)

017 - Whole Number Operations

- [Article - "Teaching Place-Value Concepts"](#)
- [Article - "5 Ways to Represent Numbers That Our Students Must Know"](#)
- [Video - "What are the Four Basic Operations in Math?"](#)

018- Explanations of Whole Number Operations

- [Article - "Math Problem Solving Strategies That Make Students Say, "I Get It!"](#)
- [Article - "Elementary Mathematics - Computation Strategies"](#)

019- Representations of Whole Number Operations

- [Article - "The Ultimate Guide to Teaching Math with Visual Models"](#)
- [Video - "Properties of Addition and Multiplication"](#)
- [Videos - "Meanings and Models for Operations"](#)

020- Mathematical Thinking for Whole Number Operations

- [Article - "14 Effective Ways to Help Your Students Conquer Math Word Problems"](#)
- [Article - "Why I Teach Multiple Strategies to Solve Math Problems"](#)