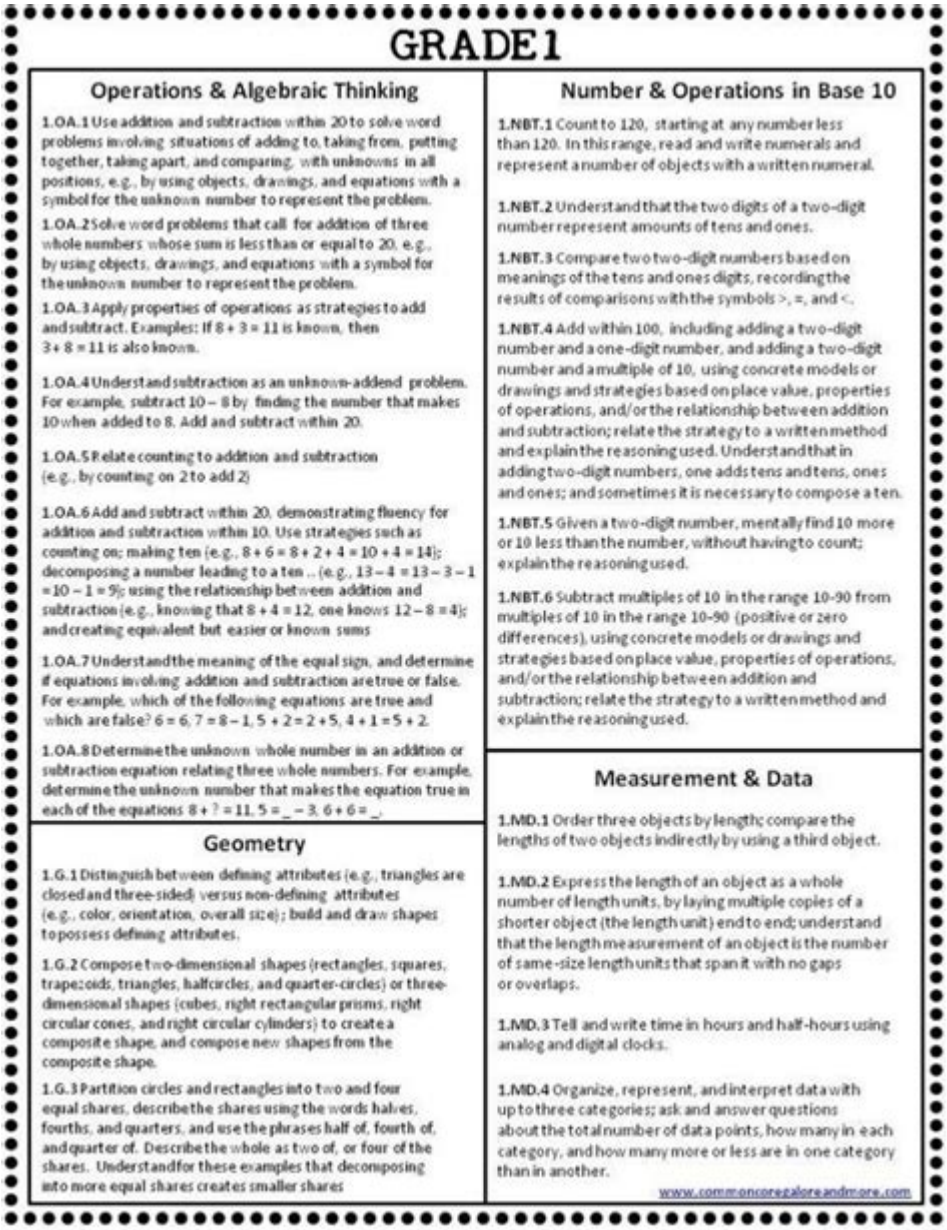
Common Core Standards Math First Grade



GRADE1

Operations & Algebraic Thinking

1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.3 Apply properties of operations as strategies to add and subtract. Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known.

1.OA.4 Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8. Add and subtract within 20.

1.OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2)

1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten .. (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums

1.OA.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.

1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ – 3, 6 + 6 = _.

Geometry

1.G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, halfcircles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

1.G.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares

Number & Operations in Base 10

1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones.

1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

1.NBT.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

1.NBT.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Measurement & Data

1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.

1.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.

1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.

1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

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Common Core Standards Math First Grade has become a critical framework for educators in the United States, aiming to ensure that students acquire essential mathematical skills at an early age. First grade represents a crucial period in a child's academic development, where foundational concepts in mathematics are introduced and established. The Common Core State Standards (CCSS) for Mathematics provide a structured approach to teaching math, helping students grasp the concepts they will build upon in later grades. This article will explore the main components of the Common Core Standards for first-grade math, the significance of these standards, teaching strategies, and practical activities to engage students.

Overview of Common Core Standards for First Grade Math

The Common Core Standards for Math are organized into two main categories: Standards for Mathematical Practice and Standards for Mathematical Content.

Standards for Mathematical Practice

These standards focus on the skills and habits of mind that students should develop as they engage with mathematics. They include:

1. Problem Solving: Students are encouraged to solve problems using a variety of methods and to analyze the results.
2. Reasoning and Proof: Children learn to explain their reasoning and understand the reasoning of others.
3. Communication: Students are taught to communicate their mathematical ideas clearly and effectively.
4. Connections: They make connections between mathematical concepts and real-world applications.
5. Representation: First graders learn to represent mathematical ideas in multiple ways, such as through drawings or manipulatives.

Standards for Mathematical Content

The content standards outline the specific skills and knowledge that first graders are expected to acquire. These are divided into several domains:

1. Counting and Cardinality: Understanding numbers, counting, and the relationship between numbers and quantities.
2. Operations and Algebraic Thinking: Developing addition and subtraction skills and understanding the relationship between these operations.
3. Number and Operations in Base Ten: Learning about place value and the properties of numbers.
4. Measurement and Data: Introducing concepts of measuring objects and understanding data through simple graphs.
5. Geometry: Recognizing shapes and understanding their attributes.

Key Concepts in First Grade Math

To align with the Common Core Standards, first-grade math instruction focuses on several key concepts that are essential for student success.

Counting and Cardinality

In first grade, students are expected to:

- Count to 120, starting at any number less than 120.
- Understand the relationship between numbers and quantities, demonstrating that each successive number represents a quantity that is one more than the previous number.
- Compare two-digit numbers and understand the concepts of greater than, less than, and equal to.

Operations and Algebraic Thinking

First graders learn to:

- Add and subtract within 20, using various strategies such as counting on, making ten, and using related facts.
- Understand the relationship between addition and subtraction, recognizing that subtraction is the inverse of addition.
- Solve word problems that involve addition and subtraction.

Number and Operations in Base Ten

Students in first grade focus on:

- Understanding place value for two-digit numbers, recognizing that the first digit represents the number of tens and the second digit represents the number of ones.
- Adding and subtracting within 100, using strategies such as grouping and breaking apart numbers.

Measurement and Data

In this domain, students learn to:

- Measure lengths using non-standard units (like paper clips or blocks).
- Tell and write time to the hour and half-hour.
- Organize and represent data using simple graphs and charts.

Geometry

First graders explore:

- Recognizing and naming shapes such as triangles, squares, rectangles, and circles.
- Understanding the attributes of these shapes and how they can be combined or compared.

Teaching Strategies for First Grade Math

Effective teaching strategies are vital for helping first graders grasp mathematical concepts outlined in the Common Core Standards. Here are some approaches that educators can use:

Hands-On Learning

Utilizing manipulatives like counting blocks, number lines, and geometric shapes helps students visualize mathematical concepts. Engaging students in hands-on activities allows them to explore and understand abstract ideas concretely.

Interactive Games

Incorporating math games into the curriculum can make learning fun and engaging. Games that involve counting, addition, and shape recognition can motivate students and enhance their problem-solving skills. Examples include:

- Math Bingo: Students solve problems to mark off numbers on their bingo cards.
- Math Relay Races: Teams compete to solve math problems in a relay format.

Story Problems

Using real-world scenarios in story problems helps students make connections between math and their everyday lives. Teachers can create age-appropriate word problems that relate to students’ interests and experiences.

Collaborative Learning

Encouraging students to work in pairs or small groups fosters communication and reasoning skills. Collaborative activities allow students to share their thought processes and learn from one another.

Technology Integration

Incorporating technology, such as educational apps and interactive whiteboards, can enhance the learning experience. Many apps provide engaging ways for students to practice math skills in a fun, game-like environment.

Practical Activities for First Grade Math

To reinforce the concepts taught in the classroom, here are some engaging activities that parents and educators can implement:

Counting Collections

Have students create a collection of items (like buttons or coins) and count them. They can practice skip counting by grouping items in tens and ones.

Shape Scavenger Hunt

Organize a scavenger hunt where students search for different shapes around the classroom or playground. They can take pictures or draw the shapes they find.

Math Journals

Encourage students to keep a math journal where they can write about what they learn, draw shapes, or solve problems. This helps reinforce their understanding and allows for self-reflection.

Cooking Projects

Incorporate math into cooking activities by having students measure ingredients, count items, and discuss shapes of food. This hands-on experience connects math with real-life applications.

Graphing Activities

Conduct surveys in the classroom and create simple graphs to represent the data. For example, ask students about their favorite fruits and create a bar graph to display the results.

Conclusion

The Common Core Standards Math First Grade framework is designed to provide students with a strong foundation in mathematics that they will build upon in subsequent grades. By focusing on key concepts such as counting, operations, measurement, and geometry, first graders develop critical skills that will serve them throughout their educational journey. Through effective teaching strategies and engaging activities, educators can foster a love for math in young learners, ensuring they are well-prepared for future challenges in math and beyond. By adhering to these standards, teachers not only enhance student learning but also help cultivate the next generation of problem solvers and critical thinkers.

Frequently Asked Questions

What are Common Core Standards in first grade math?

Common Core Standards in first grade math outline the key skills and concepts that students should learn, including addition and subtraction, understanding place value, and developing an understanding of measurement and data.

How do Common Core Standards improve math learning in first grade?

Common Core Standards provide a clear set of expectations for what students should know, which helps teachers design effective lessons, ensures consistency across schools, and prepares students for future academic success.

What are some key math skills first graders learn under Common Core Standards?

First graders learn to solve addition and subtraction problems within 20, understand the concepts of place value, compare numbers, and work with simple measurement and data concepts.

How can parents support their first graders with Common Core math standards at home?

Parents can support their children by engaging in math-related activities, such as counting objects, playing math games, and discussing everyday math situations, which reinforce the concepts learned in school.

What resources are available for teachers to

implement Common Core Standards in first grade math?

Teachers can access a variety of resources, including lesson plans, instructional materials, online games, and professional development workshops specifically designed to align with Common Core math standards.

Are there any assessments associated with Common Core Standards for first grade math?

Yes, there are various formative and summative assessments that align with Common Core Standards, which help teachers evaluate student understanding and progress throughout the school year.

How do Common Core math standards prepare first graders for higher grades?

By focusing on critical thinking, problem-solving, and understanding foundational math concepts, Common Core Standards ensure that first graders build a solid base that supports their learning in subsequent grades.

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common，形容词，指常见的。用于形容某种事物很常见，不足为奇，不稀有。后面常接某个具体的事物，如：常见的水果，常见的工具。 general，形容词，指普遍的。我们使用 general 描 …

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