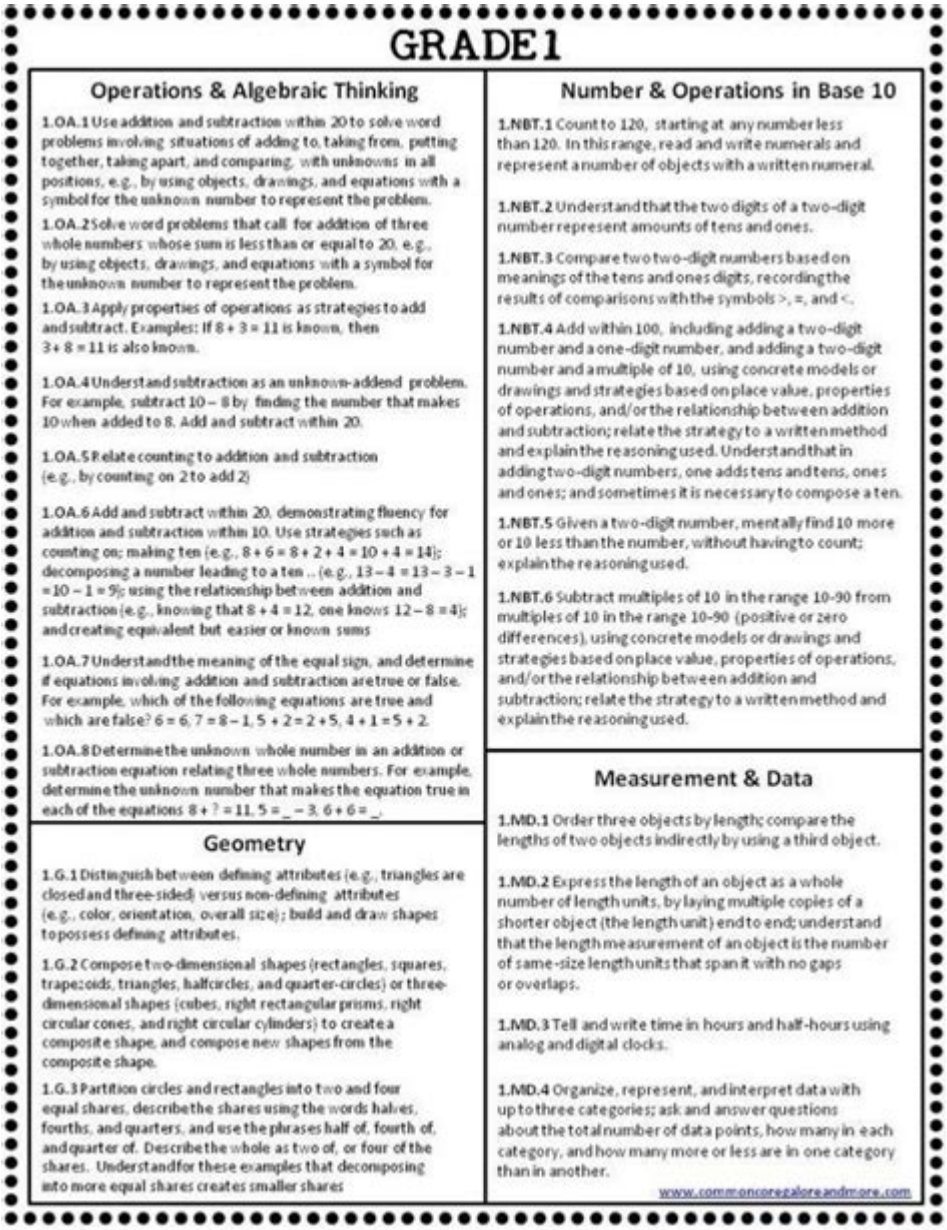
Common Core Standards 1st Grade Math



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 1st Grade Math provide a comprehensive framework aimed at ensuring that all students achieve a solid understanding of mathematical concepts and skills by the end of their first-grade year. These standards were developed by the National Governors Association Center for Best Practices and the Council of Chief State School Officers in 2010 and have since become a significant part of the educational landscape in the United States. This article will explore the key components of 1st grade math under the Common Core Standards, emphasizing the skills and knowledge students are expected to attain.

Overview of Common Core Standards in Math

The Common Core Standards in mathematics are divided into two primary categories: the Standards for Mathematical Practice and the Standards for Mathematical Content.

Standards for Mathematical Practice

These standards focus on the ways in which students should engage with math. They include:

1. Make sense of problems and persevere in solving them: Students should learn to understand problems deeply and continue working through challenges.
2. Reason abstractly and quantitatively: This encourages students to represent problems using numbers and symbols while understanding their real-world implications.
3. Construct viable arguments and critique the reasoning of others: Encouraging discussion and debate among peers helps students solidify their understanding.
4. Model with mathematics: Students should learn to apply math to solve real-life problems.
5. Use appropriate tools strategically: This involves selecting suitable tools (like rulers and calculators) to help in problem-solving.
6. Attend to precision: Students should be encouraged to communicate their mathematical reasoning clearly and precisely.
7. Look for and make use of structure: Recognizing patterns in math helps students understand broader concepts.
8. Look for and express regularity in repeated reasoning: This involves recognizing and using repeated processes to solve problems.

Standards for Mathematical Content

The content standards outline the specific skills and knowledge that students must master. In 1st grade, these standards are organized into five critical domains:

1. Operations and Algebraic Thinking
2. Number and Operations in Base Ten
3. Measurement and Data
4. Geometry
5. Mathematical Practices

1st Grade Math Content Standards

Let’s delve deeper into each of the content domains to understand what students are expected to learn.

1. Operations and Algebraic Thinking

In the Operations and Algebraic Thinking domain, first graders are encouraged to:

- Represent and solve problems involving addition and subtraction: Students should be able to use objects, drawings, and equations to show their understanding of addition and subtraction.
- Understand and apply properties of operations: They will learn about the commutative and associative properties of addition.
- Add and subtract within 20: Students should be proficient in basic addition and subtraction facts within this number range.
- Work with addition and subtraction equations: They should be able to identify and represent equations and understand the concept of the equal sign.

2. Number and Operations in Base Ten

This domain focuses on understanding the place value system. Key skills include:

- Extend the counting sequence: Students should be able to count to 120, starting at any number less than 120.
- Understand place value: They should learn to understand that the two digits of a two-digit number represent amounts of tens and ones.
- Use place value understanding and properties of operations to add and subtract: This includes adding and subtracting within 100 and understanding how numbers can be composed and decomposed.

3. Measurement and Data

In the Measurement and Data domain, students learn to:

- Measure lengths indirectly and by iterating length units: This involves using non-standard units (like paper clips) to measure objects.
- Tell and write time: Students will learn to tell time to the hour and half-hour.
- Represent and interpret data: They will collect data and display it in simple graphs (like picture graphs and bar graphs).

4. Geometry

The Geometry domain covers the understanding of shapes and spatial reasoning. Students will:

- Identify and describe shapes: This includes recognizing and naming 2D shapes (like circles, squares, and triangles) and 3D shapes (like cubes and spheres).
- Analyze, compare, and compose shapes: They should learn to compare shapes and understand how different shapes can be combined to form new shapes.

Implementation of Common Core Standards in 1st Grade Math

To ensure that students meet these standards, teachers employ various instructional strategies:

1. Hands-On Learning Activities

Using manipulative materials, such as blocks, counters, and geometric shapes, helps students visualize and grasp mathematical concepts. For instance, using blocks to demonstrate addition and subtraction allows students to physically manipulate objects, making abstract concepts more concrete.

2. Integrating Technology

Many educators utilize educational software and online resources that align with Common Core Standards. These tools often incorporate interactive games and activities that reinforce math skills in an engaging way.

3. Collaborative Learning

Group work and peer discussions encourage students to explain their reasoning and learn from one another. Collaborative activities foster a deeper understanding of mathematical concepts and promote social skills.

4. Continuous Assessment

Formative assessments, such as quizzes and observational assessments, are vital in measuring student progress. These assessments help teachers identify

areas where students may need additional support or enrichment.

Challenges and Considerations

While Common Core Standards aim to provide a clear and consistent framework for math instruction, there are challenges to their implementation:

- Diverse Learning Needs: First-grade classrooms often include students with varying levels of understanding and different learning styles. Teachers must differentiate instruction to meet these diverse needs.
- Parental Involvement: Engaging parents in their children's education is crucial. Providing resources and guidance on how parents can support math learning at home can help bridge gaps.
- Curriculum Alignment: Schools must ensure that their curricula align with the Common Core Standards, which may require professional development for educators.

Conclusion

The Common Core Standards for 1st grade math provide a structured approach to developing essential mathematical skills and concepts in young learners. By focusing on operations and algebraic thinking, base ten understanding, measurement, data interpretation, and geometry, these standards aim to prepare students for future academic success. Through hands-on learning, technology integration, collaborative activities, and continuous assessment, educators can effectively implement these standards, ensuring that all students achieve proficiency in essential math skills. As education continues to evolve, understanding and embracing these standards will remain crucial for educators, students, and parents alike.

Frequently Asked Questions

What are the main goals of Common Core Standards for 1st grade math?

The main goals are to develop students' understanding of addition and subtraction, to introduce them to place value, and to help them recognize and create patterns using numbers.

How does Common Core Standards approach teaching addition and subtraction in 1st grade?

Common Core Standards emphasize the use of various strategies, including counting on, making ten, and using number lines, to help students understand

the concepts of addition and subtraction.

What types of math problems can 1st graders expect to solve under Common Core Standards?

1st graders can expect to solve word problems that involve addition and subtraction, as well as simple problems related to understanding the concept of the whole and parts.

How do Common Core Standards for 1st grade math support the development of number sense?

They support number sense by encouraging students to explore numbers through various activities, including grouping, comparing, and finding patterns among numbers.

What role do manipulatives play in 1st grade math under Common Core Standards?

Manipulatives, such as counters, blocks, and number lines, are used to help students visualize mathematical concepts and develop a deeper understanding of addition, subtraction, and place value.

How are assessments aligned with Common Core Standards for 1st grade math?

Assessments are designed to evaluate students' understanding of mathematical concepts and their ability to apply various strategies in solving problems, ensuring that they meet the learning objectives of the standards.

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