

■ Math in first grade focuses on building an understanding of addition and subtraction. Based on national curriculum recommendations and reflecting Ohio Academic Content Standards, the following describes some of the central mathematical skills and understandings that students should acquire by the end of first grade.

■ Number and Operations

Represent Numbers

1. Count to 110 by 1s, 2s, 5s, and 10s, starting from any number in the sequence (e.g., start with 16 and count by 2s); count backwards by 1s; count to 500 by 100s and 10s
2. Identify position in a sequence (e.g., 1st, 2nd, 3rd)
3. Read and write numbers to 110 and match them to the amount they represent
4. Compare numbers to 110 using phrases such as “same as”, “more than”, “greater than”, “fewer than”, use the symbol for “is equal to” (e.g., $5 = 4 + 1$), and order small sets of numbers (e.g., write from smallest to largest: 18, 35, 42, 61)
5. Break numbers apart (e.g., $24 = 10 + 10 + 4$) and put them together (e.g., $20 + 4 = 24$) using numbers through 30, including using bundles of tens and ones (e.g., 24 has 2 tens and 4 ones or 24 ones)

Addition and Subtraction

6. Know all the addition facts up to $10 + 10$, and solve the related subtraction problems (e.g., $3 + 5 = 8$, $8 - 3 = 5$, $8 - 5 = 3$)
7. Find pairs of numbers that sum to numbers 2 through 10 (e.g., $5 = 1 + 4 = 2 + 3 = 3 + 2 = 4 + 1$)
8. Use fact families to solve simple open sentences for addition and subtraction (e.g., $3 + 4 = 7$, $7 - 4 = 3$, and $7 - 3 = 4$ is a fact family, which can be used to solve $\square + 3 = 7$ and $7 - \square = 4$)
9. Add three one-digit numbers (e.g., $4 + 7 + 3 = 14$)
10. Solve addition and subtraction story problems for numbers through 30 using objects or pictures; explain in words; record using numbers and symbols
11. Add and subtract numbers through 30 using number facts and other strategies (e.g., doubling, counting on, counting back, and making tens)
12. Add and subtract a two-digit number and a one-digit number mentally without regrouping (e.g., $23 + 4 = 27$) and a two-digit number and a multiple of 10 (e.g., $23 + 20 = 43$)

(continued on inside)

Mathematics — Grade 1 (cont.)

■ Geometry and Measurement – Shapes and Geometric Patterns

13. Create and describe common two-dimensional (e.g., triangle) and three-dimensional shapes (e.g., a cardboard box)
14. Describe the relative position of objects using words (e.g., above, below, behind, in front of)
15. Create and describe repeating patterns and growing patterns using number, shape, and size; predict what might come next in repeating patterns

■ Measurement – Time and Money

16. Tell time on a twelve-hour clock face to the hour and half-hour
17. Match one coin or bill of one denomination to an equivalent set of coins/bills of other denominations (e.g., 1 quarter = 2 dimes and 1 nickel)
18. Tell the amount of money in cents up to \$1; in dollars up to \$100; use the symbols for dollar (\$) and cents (¢)
19. Add and subtract money in dollars only or in cents only
20. Solve one-step word problems involving length, money, and time using addition and subtraction



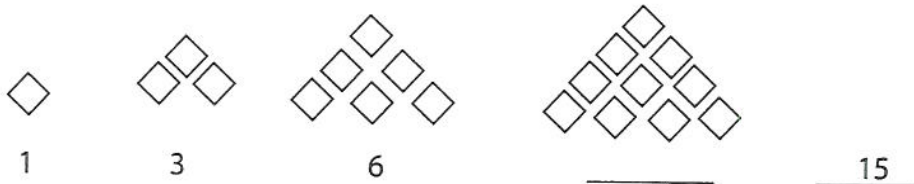
■ Data and Probability – Graphs

21. Collect and organize data to use in pictographs and read, interpret, and make graphs using pictures

Glossary — Grade 1

- **Attributes** – words that describe an object; characteristics like size (e.g., length, width, weight, capacity), time, shape, etc.
- **Digit** – one of the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
- **Growing Geometric Pattern** - shapes in a pattern that grow by a rule

Example: What comes next in the pattern?



- **Pictograph** – a graph constructed with pictures or icons used to represent numbers

Example: Which child received the most stars for completing homework?

Bob	★ ★ ★ ★
Mia	★ ★
Juan	★ ★ ★ ★ ★

★ Represents 1 homework assignment

- **Simple Repeating Pattern** – shapes repeat in “units”

Example: The unit ○ ○ ▱ ▽ is repeated 3 times in the following:



Tips and Activities for Parents

- Play number games and do mathematics activities with your child. When you empty a grocery bag, count the number of items or the number of apples in a bag. Count the number of steps from the door to a chair.
- Ask your child to find triangles and rectangles on signs and everyday objects.
- Ask your child questions like "Which object is bigger or smaller?" "Which person is taller or shorter?" "Which object is heavier?"
- Put things into groups. For example, when sorting laundry have your child put all the socks in one pile, all the shirts in one pile and all the pants in another pile. Sort and count the socks by color. For example, 4 red socks, 10 blue socks and 8 white socks.
- When taking a walk or while shopping, ask your child to point to objects that are the same shape, ones that are shaped like a cone or ones that are shaped like a square.
- Play card games with your child, such as fish, crazy 8's, Uno and Skip-bo.

Internet Resources for First Grade Math

First Grade Math Practice is a comprehensive, award-winning site that makes math practice a joy!
www.ixl.com

Here are great sites for first grade students - Numbertime and some fun math games for practice. There are more math games and many worksheets from which to choose.
www.geocities.com/enchantedforest/tower/1217/math1.html

ToonUniversity.com is an elementary education portal for K-8 students.
www.toonuniversity.com/aol/aol_math_k2.asp

This site contains 1st grade math games for enrichment including addition and a basic addition game - count bugs and worms to add; addition facts and a memory game.
<http://teach.fcps.net/trt2/links/1stmath.htm>

Fun interactive math games for kids. www.iknowthat.com

This is a great site for first graders to sharpen their math skills. Timed practice for addition, subtraction, multiplication and division. www.playkidsgames.com/mathGames.htm

Visit "Mathematics Counts & Science Matters" at www.promse.msu.edu

Local Partner: SMART Consortium www.smartconsortium.org

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"Mathematics Counts & Science Matters" provides parents of children in grades K-8 with helpful resources they can use to support their child's math learning. The content of this guide is based on grade-level recommendations from the National Council of Teachers of Mathematics, the National Mathematics Panel, and PROM/SE: Promoting Rigorous Outcomes in Mathematics and Science Education.

These recommendations may be more advanced than state guidelines. Mathematics Counts & Science Matters is developed by Michigan State University's PROM/SE (Promoting Rigorous Outcomes in Mathematics and Science Education).

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