Grade 4 Math Standards and Benchmarks

Standard 1: Use a variety of strategies in the problem-solving process
Benchmarks:

1.1 Use a variety of strategies to understand problem situations

1.2 Represent problem situations in a variety of forms

1.3 Understand that some ways of representing a problem are more efficient than others

1.4. Use the process of elimination to solve problems

1.5. Know the difference between relevant and irrelevant information when solving

1.6. Understand the basic language of logic in mathematical situations

1.7 Use explanations and reasoning of the methods behind a problem solution to verify results with respect to the original problem

Standard 2: Understand and apply basic and advanced properties of the concepts of numbers
Benchmarks:

2.1. Understand basic number theory concepts

2.2. Understand equivalent forms of basic percents, fractions and decimal, and when one form of a number might be more useful than another

2.3. Understand the basic difference between odd and even numbers

2.4. Understand the basic meaning of place value

2.5. Understand the relative magnitude and relationships among whole numbers, fractions, decimals and mixed numbers

2.6. Use models to identify, order, and compare numbers

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Standard 3: Use basic and advanced procedures while performing the processes of computation

Benchmarks:

3.1. Add, subtract, multiply, and divide whole numbers and decimals

3.2. Add and subtract simple fractions

3.3. Use specific strategies to compute and to check the reasonableness of computational results

3.4. Perform basic mental computations

3.5. Determine the effects of addition, subtraction, multiplication and division on size and order of numbers

3.6. Understand the properties of and the relationships among addition, subtraction, multiplication and division

3.7. Solve real-world problems involving number operations

3.8. Know the language of basic operations

Standard 4: Understand and apply basic and advanced properties of the concepts of measurement

Benchmarks:

4.1. Understand basic measures perimeter, area, volume, capacity, mass, angle, and circumference

4.2. Select and use appropriate tools for given measurement situations

4.3. Know approximate size of basic standard units and relationships between them

4.4. Understand relationships between measures

4.5. Understand that measurement is not exact

4.6. Use specific strategies to estimate quantities and measurements

4.7 Select and use appropriate units of measurement according to type and size of unit

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Standard 5: Understand and apply basic and advanced properties of the concepts of geometry
Benchmarks:

5.1. Know age-appropriate language to discuss geometric concepts

5.2. Understand basic properties of figures

5.3. Predict and verify the effect of combining subdividing and changing basic two-dimensional shapes

5.4. Understand that shapes can be congruent and similar

5.5. Use motion geometry to understand geometric relationships

5.6. Understand characteristics of angles and lines

5.7. Understand basic concepts of scale

Standard 6: Understand and apply basic and advanced concepts of statistics and data analysis
Benchmarks:

6.1. Understand that data represent specific pieces of information about real-world objects or activities

6.2. Understand that spreading data out on a plot line helps to see where the extremes are, where the data points pile up, and where the gaps are

6.3. Understand that a summary of data should include where the middle is and how much spread there is around it

6.4. Organize and display data in graphs, charts, and diagrams

6.5. Read and interpret simple bar graphs, pie charts, and line graphs

6.6. Understand that data comes in many different forms and that collecting, organizing, and displaying data can be done in many ways

Grade 4 Math Standards and Benchmarks

Standard 7: Understand and apply basic and advanced concepts of probability
Benchmarks:

7.1. Understand that the word “chance” refers to the likelihood of an event

7.2. Recognize events that are sure to happen, events that are sure not to happen, and events that may or may not happen

7.3. Understand that when predictions are based on what is known about the past, one must assume that conditions stay the same from the past event to the predicted future event

7.4. Understand that statistical predictions are better for describing what proportion of a group will experience something rather than which individuals within the group will experience something, and how many events will occur rather than exactly when they will occur

7.5. Use basic sample spaces to describe and predict events

Standard 8: Understand and apply basic and advanced properties of functions and algebra
Benchmarks:

8.1. Recognize a wide variety of patterns and the rules that explain them

8.2. Understand that the same pattern can be represented in different ways

8.3. Know that a variable is a letter or symbol that stands for one or more numbers

8.5. Solve simple open sentences involving operations on whole numbers

8.4. Understand the basic concept of an equality relationship

8.6. Know basic characteristics and features of the rectangular coordinate system

Standard 9: Understand the general nature and uses of mathematics
Benchmarks:

9.1. Understand that numbers and the operations performed on them can be used to describe things in the real world and predict what might occur

9.2. Understand that mathematical ideas and concepts can be represented concretely, graphically, and symbolically