



ISS Curriculum Document – Standards and Learning Objectives

- Grade: 1
- Subject: Math
- Text: Heath Mathematics
- Chapter: 5, 4, 1

Standard 1.1 – Numbers and Operations – Understand numbers, ways of representing numbers, relationships among numbers and number systems.

Learning Objectives

- Count with understanding and recognize “how many” in sets of objects; (Group by sets of 2, 5, and 10 up to 100)
- Use multiple models to develop initial understanding of place value and the base-ten number system; (Use manipulatives such as cubes, charts, picture graphs, tally marks, tables, calculator)
- Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connection; (Identify ordinal positions 1st through 10th. Identify cardinal numbers through 100 using number line, skip counting, and grouping)
- Develop a sense of whole numbers and represent and use them in flexible ways, including relating, composing, and decomposing numbers; (Generate combinations of numbers with sums through 10. Break down numbers to form fact families through 10)
- Connect number words and numerals to the quantities they represent, using various physical models and representations; (Recognize sets and write numbers for 0 through 100 as well as read word names 0 through 100. Understand the concept of numbers in the context of word problems. Using graphs, charts, and matching.)
- Understand and represent commonly used fractions, such as $\frac{1}{4}$, $\frac{1}{3}$, and $\frac{1}{2}$.



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- Grade:
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- Chapter: 2, 3, 4, 7, 9

Standard 1.2 – Numbers and Operations – Understand meanings of operations and how they relate to one another.

Learning Objectives

- Understand various meanings of addition and subtraction of whole numbers and the relationship between the two operations; (Solve addition and subtraction facts through 20, adding with 10, using 10 to add, using doubles, missing addends, fact families, tens frames, and counting on. Explore addition and subtraction of 2-digit numbers)
- Understand the effects of adding and subtracting whole numbers; (Understanding the inverse relationship of addition and subtraction)
- Understand situations that entail multiplication and division, such as equal groupings of objects and sharing equally; (Use word, picture problems, tables, grouping, repeated addition to show an understanding of the concept)



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- Grade:
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Standard 1.3 – Numbers and Operations – Compute fluently and make reasonable estimates.

Learning Objectives

- Develop and use strategies for whole-number computations, with a focus on addition and subtraction;
- Develop fluency with basic number combinations for addition and subtraction;
- Use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencil, and calculators.



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- Grade:
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Standard 2.1 – Algebra – Understand patterns, relations, and functions.

Learning Objectives

- Sort, classify, and order objects by size, number, and other properties;
- Recognize, describe, and extend patterns such as sequences of sounds and shapes or simple numeric patterns and translate from one representation to another;
- Analyze how both repeating and growing patterns are generated.



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- Grade:
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Standard 2.2 – Algebra – Represent and analyze mathematical situations and structures using algebraic symbols.

Learning Objectives

- Illustrate general principles and properties of operations, such as commutativity, using specific numbers;
- Use concrete, pictorial, and verbal representations to develop an understanding of invented and conventional symbolic notations.



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- Grade:
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Standard 2.3 - Algebra – Use mathematical models to represent and understand quantitative relationships.

Learning Objectives

- Model situations that involve the addition and subtraction of whole numbers, using objects, pictures, and symbols.



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- Grade:
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Standard 2.4 – Algebra – Analyze change in various concepts.

Learning Objectives

- Describe qualitative change, such as a student's growing taller;
- Describe quantitative change, such as a student's growing two inches in one year.



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- Grade:
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Standard 3.1 – Geometry – Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.

Learning Objectives

- Recognize, name, build, draw, compare, and sort two- and three-dimensional shapes;
- Describe attributes and parts of two- and three-dimensional shapes;
- Investigate and predict the results of putting together and taking apart two- and three-dimensional shapes.



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- Grade:
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Standard 3.2 – Geometry – Specify locations and describe spatial relationships using coordinate geometry and other representational systems.

Learning Objectives

- Describe, name, and interpret relative positions in space and apply ideas about relative position;
- Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance;
- Find and name locations with simple relationships such as “near to” and in coordinate systems such as maps.



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- Grade:
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Standard 3.3 – Geometry – Apply transformations and use symmetry to analyze mathematical situations.

Learning Objectives

- Recognize and apply slides, flips, and turns;
- Recognize and create shapes that have symmetry.



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Standard 3.4 – Geometry – Use visualization, spatial reasoning, and geometric modeling to solve problems.

Learning Objectives

- Create mental images of geometric shapes using spatial memory and spatial visualization;
- Recognize and represent shapes from different perspectives;
- Relate ideas in geometry to ideas in number and measurement;
- Recognize geometric shapes and structures in the environment and specify their location.



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- Grade:
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Standard 4.1 – Measurement – Understand measurable attributes of objects and the units, systems, and process of measurement.

Learning Objectives

- Recognize the attributes of length, volume, weight, area, and time;
- Compare and order objects according to these attributes;
- Understand how to measure using nonstandard and standard units;
- Select an appropriate unit and tool for the attribute being measured.



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Standard 4.2 – Measurement – Apply appropriate techniques, tools, and formulas to determine measurements.

Learning Objectives

- Measure with multiple copies of units of the same size, such as paper clips laid end to end;
- Use repetition of a single unit to measure something larger than the unit, for instance, measuring the length of a room with a single meterstick;
- Use tools to measure;
- Develop common referents for measures to make comparisons and estimates.



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Standard 5.1 – Data Analysis and Probability – Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.

Learning Objectives

- Pose questions and gather data about themselves and their surroundings;
- Sort and classify objects according to their attributes and organize data about the objects;
- Represent data using concrete objects, pictures, and graphs.



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- Grade:
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Standard 5.2 – Data Analysis and Probability – Select and use appropriate statistical methods to analyze data.

Learning Objectives

- Describe parts of the data and the set of data as a whole to determine what the data show.



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Standard 5.3 – Data Analysis and Probability – Develop and evaluate inferences and predictions that are based on data.

Learning Objectives

- Discuss events related to students' experiences as likely or unlikely.



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Standard 5.4 – Data Analysis and Probability – Understand and apply basic concepts of probability.

Learning Objectives

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Standard 6.1 – Problem Solving – Build new mathematical knowledge through problem solving.

Learning Objectives

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Standard 6.2 - Problem Solving – Solve problems that arise in mathematics and in other contexts.

Learning Objectives

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Standard 6.3 – Problem Solving – Apply and adapt a variety of appropriate strategies to solve problems.

Learning Objectives

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Standard 6.4 – Problem Solving – Monitor and reflect on the process of mathematical problem solving.

Learning Objectives

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Standard 7.1 – Reasoning and Proofs - Recognize reasoning and proof as fundamental aspects of mathematics.

Learning Objectives

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Standard 7.2 – Reasoning and Proofs – Make and investigate mathematical conjectures.

Learning Objectives

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Standard 7.3 – Reasoning and Proofs – Develop and evaluate mathematical arguments and proofs.

Indicators

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Standard 7.4 – Reasoning and Proofs – Select and use various types of reasoning and methods and proof.

Indicators

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Standard 8.1 – Communication – Organize and consolidate their mathematical thinking through communication.

Indicators

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- Subject: Math

Standard 8.2 – Communication – Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.

Indicators

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- Grade:
- Subject: Math

Standard 8.3 – Communication – Analyze and evaluate the mathematical thinking and strategies of others.

Indicators

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ISS Curriculum Document – Standards and Learning Objectives

- Grade:
- Subject: Math

Standard 8.4 – Communication – Use the language of mathematics to express mathematical ideas precisely.

Indicators

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- Grade:
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Standard 9.1 – Connections – Recognize and use connections among mathematical ideas.

Indicators

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Standard 9.2 – Connections – Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.

Indicators

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ISS Curriculum Document –Standards and Learning Objectives

- Grade:
- Subject: Math

Standard 9.3 – Connections – Recognize and apply mathematics in contexts outside of mathematics.

Indicators

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ISS Curriculum Document –Standards and Learning Objectives

- Grade:
- Subject: Math

Standard 10.1 – Representation – Create and use representations to organize, record, and communicate mathematical ideas.

Indicators

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ISS Curriculum Document –Standards and Learning Objectives

- Grade:
- Subject: Math

Standard 10.2 – Representation – Select, apply, and translate among mathematical representations to solve problems.

Indicators

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ISS Curriculum Document –Standards and Learning Objectives

- Grade:
- Subject: Math

Standard 10.3 – Representation – Use representations to model and interpret physical, social, and mathematical phenomena.

Indicators

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