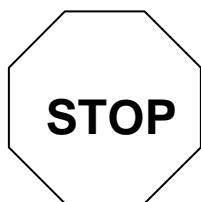


## Foundation of *Destination Math*

Students have different abilities, needs, and interests. Yet everyone needs to be able to use mathematics in his or her personal life, in the workplace, and in further study. All students deserve an opportunity to understand the power and beauty of mathematics. Students need to learn a new set of mathematics basics that enable them to compute fluently and to solve problems creatively and resourcefully.

*National Council of Teachers of Mathematics 2000*



### ***STOP and THINK***

What are the five \*NCTM Content Standards of math instruction?

(NCTM identifies 10 Standards for School Mathematics, five Content and five Process Standards. Although, the Process Standards are addressed with the Destination Math courseware and resources, the Content Standards will serve as the foundational platform for this training experience).

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_



### **NCTM Curriculum Focal Points for Mathematics in pre-K-8**

\*Three curriculum focal points are identified and described for each grade level, pre-K-8... Some curriculum focal points may address 2 or 3 Content Standards.

*-National Council of Teachers of Mathematics 2000*

## Number and Operations

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

Central to the Number and Operations Standard is the development of number sense. Number Sense is the ability to recognize numbers, identify their relative values, and understand how to use them in a variety of ways such as counting, measuring, or estimating.

Students with number sense naturally decompose numbers, use particular numbers as referents, solve problems using the relationships among operations and knowledge about the base-ten system, estimate a reasonable result for a problem, and have a disposition to make sense of numbers, problems, and results.

*National Council of Teachers of Mathematics 2000*

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

### Your Task:

1. Use the Scope and Sequence to find additional lessons which address Number and Operations.
2. Identify one skill/concept with which your students are currently struggling.
3. Navigate to and preview that lesson.

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

### **STOP and THINK**

How does this activity address Number and Operations?

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How could you utilize this lesson with your students?

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Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

What extension activities complement this lesson and activity?

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**Numbers and Operations: Instructional programs from pre-K-12 should enable all students to—**

- understand numbers, ways of representing numbers, relationships among numbers, and number systems;
- understand meanings of operations and how they relate to one another;
- compute fluently and make reasonable estimates.

*-National Council of Teachers of Mathematics*

## Operations

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

An activity or a mathematical process applied to solve a problem is called an Operation.

Addition, subtraction, multiplication, and division are the four basic operations in mathematics.

“Too many American students also have a poor grasp of many core arithmetical concepts. For example, many U.S. middle school students do not understand the concept of mathematical equality. Understanding core concepts is a necessary component of proficiency with arithmetic and is needed to transfer previously learned procedures to solve novel problems. U.S. students’ poor knowledge of the core arithmetical concepts impedes their learning of algebra and is an unacceptable indication of a substantive gap in the mathematics curricula that must be addressed.”

*National Math Advisory Panel 2008*

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

### Your Task:

1. Use the Scope and Sequence to find additional lessons which address Operations.
2. Identify one skill/concept with which your students are currently struggling.
3. Navigate to and preview that lesson.

### **STOP and THINK**

How does this activity address Operations?

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How could you utilize this lesson with your students?

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What extension activities complement this lesson and activity?

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Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

# Algebra

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

Algebra is a branch of mathematics that uses mathematical statements to describe relationships between things that vary over time. These relationships are expressed through symbols, relations, functions, and equations.

The shift from an industrialized society to the age of information has changed the mathematics that individuals need to learn. Over 75 percent of all jobs require proficiency in fundamental algebraic concepts, either as a prerequisite for advanced training, or as part of a licensure program (National Research Council, 1989). Entry into many professional fields today requires knowledge of algebra. Employees must be able to use algebraic tools to translate problem situations involved in a given field to mathematical models that can be solved (Herscovics, 1989). In addition, algebra is used in nearly every scientific discipline.

*Algebra Proficiency for All: Dr. Patricia I. Wright, Virginia Department of Education*

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

## Your Task:

1. Use the Scope and Sequence to find additional lessons which address Algebra..
2. Identify one skill/concept with which your students are currently struggling.
3. Navigate to and preview that lesson.

## STOP and THINK

How does this activity address Algebra?

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How could you utilize this lesson with your students?

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What extension activities complement this lesson and activity?

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Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

**Algebra:** Instructional programs from pre-K-12 should enable all students to--

- understand patterns, relations, and functions;
  - represent and analyze mathematical situations and structures using algebraic symbols;
  - use mathematical models to represent and understand quantitative relationships;
  - analyze change in various contexts
- National Council of Teachers of Mathematics 2000*

# Geometry

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

Geometry is the study of geometric figures in two dimensions and three dimensions. Geometry deals with the properties, measurements and relationships of points, lines, angles, surfaces, and solids that appear in the world around us.

Geometry and spatial sense are fundamental components of mathematics learning. They offer ways to interpret and reflect on our physical environment and can serve as tools for the study of other topics in mathematics and science.

*National Council of Teachers of Mathematics 2000*

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

## Your Task:

1. Use the Scope and Sequence to find additional lessons which address Geometry.
2. Identify one skill/concept with which your students are currently struggling.
3. Navigate to and preview that lesson.

## STOP and THINK

How does this activity address Geometry?

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How could you utilize this lesson with your students?

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What extension activities complement this lesson and activity?

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Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

### **Geometry:** Instructional programs from pre-K-12 should enable all students to—

- ☑ analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships;
- ☑ specify locations and describe spatial relationships using coordinate geometry and other representational systems;
- ☑ apply transformations and use symmetry to analyze mathematical situations;
- ☑ use visualization, spatial reasoning, and geometric modeling to solve problems.

*-National Council of Teachers of Mathematics 2000*

## Measurement

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

Measurement is the assignment of a numerical value to an attribute of an object.

The study of measurement is crucial in the pre-K–12 mathematics curriculum because of its practicality and pervasiveness in so many aspects of everyday life. The study of measurement also provides an opportunity for learning about other areas of mathematics, such as number operations, geometric ideas, statistical concepts, and notions of function.

*National Council of Teachers of Mathematics 2000*

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

### Your Task:

1. Use the Scope and Sequence to find additional lessons which address Measurement.
2. Identify one skill/concept with which your students are currently struggling.
3. Navigate to and preview that lesson.

### **STOP and THINK**

How does this activity address Measurement?

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How could you utilize this lesson with your students?

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What extension activities complement this lesson and activity?

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Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

**Measurement:** Instructional programs from pre-K-12 should enable all students to--

- understand measurable attributes of objects and the units, systems, and processes of measurement;
- apply appropriate techniques, tools, and formulas to determine measurements.

*-National Council of Teachers of Mathematics 2000*

## Data Analysis and Probability

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

Data analysis is a process of gathering, modeling, and transforming [data](#) with the goal of highlighting useful [information](#), suggesting conclusions, and supporting decision making. Probability predicts the chance or likelihood that something may or may not happen and is an integral part of data analysis.

The amount of statistical information available to help make decisions in business, politics, research, and everyday life is staggering. Consumer surveys guide the development and marketing of products. Experiments evaluate the safety and efficacy of new medical treatments. Statistics sway public opinion on issues and represent – or misrepresent – the quality and effectiveness of commercial products. Through experiences with the collection and analysis of data, students learn how to interpret such information.

*National Council of Teachers of Mathematics 2000*

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

### Your Task:

1. Use the Scope and Sequence to find additional lessons which address Data Analysis and Probability.
2. Identify one skill/concept with which your students are currently struggling.
3. Navigate to and preview that lesson.

### STOP and THINK

How does this activity address Data Analysis and Probability?

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How could you utilize this lesson with your students?

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What extension activities complement this lesson and activity?

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Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

Get Ready  
Learn &  
Practice  
Apply  
Wrap Up

**Data Analysis and Probability:** Instructional programs from pre-K-12 should enable all students to--

- formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them;
- select and use appropriate statistical methods to analyze data;
- develop and evaluate inferences and predictions that are based on data;
- understand and apply basic concepts of probability.

*-National Council of Teachers of Mathematics 2000*