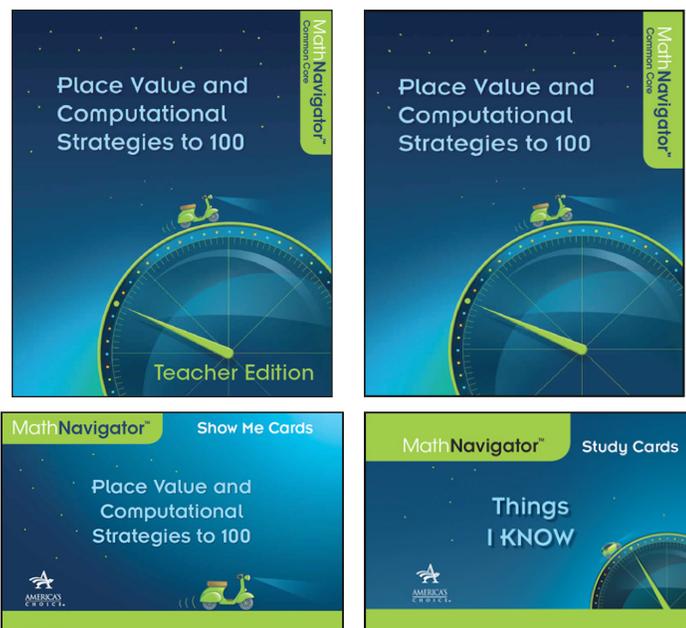


## Implementation Suggestions

### Introduction

This guide introduces various program implementation options for Math Navigator Common Core that fit the confines of school and class schedules and best meet students' needs.



### Background

Math Navigator Common Core is a supplemental program for students in Grades 1–8 (and beyond if needed). It is designed for teachers to use primarily as a Tier 2 intervention, but they can also use the program effectively as a Tier 1 solution. Math Navigator is intended to augment, not replace, students' core curriculum and teachers can implement it during school hours or in after-school, weekend, or summer programs.

Math Navigator Common Core consists of twenty-six modules that are designated by topic. Students are assigned to a module based on their needs—not their grade level. The program's flexible structure enables teachers to deliver differentiated instruction to prepare students for the Common Core State Standards.

Although students who need remediation can take any module regardless of their grade level, elementary school students typically take some combination of the modules, which are focused on students knowing facts and procedures and understanding concepts. Secondary school students take the modules focused on understanding concepts or succeeding in algebra. Each module includes problem solving and skills practice. The standard lesson structure includes whole-group, small-group, and individualized instruction.

This standard lesson structure is one of several strategies that enable teachers to match instruction to each student’s unique needs.

MODULES	SUGGESTED GRADES					MODULES	SUGGESTED GRADES			
	1	2	3	4+	5+		6+	7+	8+	HS
Using Addition and Subtraction to Solve Problems to 20	•	•	•			Decimals and Powers of Ten		•	•	
Place Value and Computational Strategies to 100	•	•	•			Operations with Fractions: Addition and Subtraction		•	•	•
Using Addition and Subtraction to Solve Problems to 100			•	•	•	Operations with Fractions: Multiplication and Division		•	•	•
Place Value and Computational Strategies to 1,000			•	•	•	Ratios and Rates		•	•	•
Using Multiplication and Division to Solve Problems				•	•	Positive Rational Numbers		•	•	•
Place Value and Computational Strategies with Larger Numbers				•	•	Expressions		•	•	•
Fractions as Numbers				•	•	Patterns and Graphs		•	•	•
Using Operations to Solve Problems					•	Equations and Inequalities			•	•
Understanding Area and Perimeter				•	•	Proportional Reasoning			•	•
Using Operations to Solve Complex Problems						Percents			•	•
Place Value and Computational Strategies to Millions					•	Positive and Negative Numbers			•	•
Geometry						Using Expressions and Equations to Solve Problems			•	•
Understanding Equivalent Fractions					•					
Unit Fractions and Operations					•					

## Selecting Math Navigator Modules

District and schools should use several pieces of evidence when selecting Math Navigator modules:

- State or district test results
- Teacher knowledge of problem areas
- The Math Navigator screener results

No single source of data can tell the whole picture; it is best to use multiple forms of evidence in making decisions. The recommendations in the table below are based on the grade levels as they align to the Standards for Mathematical Content. Students who have gaps in mathematical understanding may need to take a module that teaches concepts learned in prior years. These gaps may have resulted from past misconceptions or from the shifts in content during the transition to the Common Core State Standards.

MODULES	SUGGESTED GRADES									
	1	2	3	4+	5+	6+	7+	8+	HS	
Using Addition and Subtraction to Solve Problems to 20	•	•	•							
Place Value and Computational Strategies to 100	•	•	•							
Using Addition and Subtraction to Solve Problems to 100			•	•	•					
Place Value and Computational Strategies to 1,000			•	•	•					
Using Multiplication and Division to Solve Problems				•	•	•				
Place Value and Computational Strategies with Larger Numbers				•	•	•				
Fractions as Numbers				•	•	•				
Using Operations to Solve Problems					•	•				
Understanding Area and Perimeter					•	•				
Using Operations to Solve Complex Problems						•	•			
Place Value and Computational Strategies to Millions						•	•			
Geometry						•	•			
Understanding Equivalent Fractions						•	•			
Unit Fractions and Operations						•	•			
Decimals and Powers of Ten							•	•		
Operations with Fractions: Addition and Subtraction							•	•	•	•
Operations with Fractions: Multiplication and Division							•	•	•	•
Ratios and Rates							•	•	•	•
Positive Rational Numbers							•	•	•	•
Expressions							•	•	•	•
Patterns and Graphs							•	•	•	•
Equations and Inequalities							•	•		
Proportional Reasoning							•	•		
Percents							•	•		
Positive and Negative Numbers							•	•		
Using Expressions and Equations to Solve Problems							•	•		

## Screener

The Math Navigator screeners assist teachers and administrators in selecting appropriate modules for groups of students. A Math Navigator screener includes a limited sample (usually four to six items) of the content from several modules to gain a quick evaluation of the mathematics needs. The data from the screener results indicate general strengths and deficiencies at a classroom, school, or district level, rather than at an individual student level.

Elementary Screener Test 2

**1.** Which is closest in value to 0.47?

**A**  $\frac{1}{5}$

**B**  $\frac{1}{4}$

**C**  $\frac{1}{3}$

**D**  $\frac{1}{2}$

**2.** What number does Point B represent?



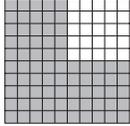
**A** 3.2

**B** 3.25

**C** 3.4

**D** 3.24

**3.** Which part of the large square is shaded?



**A** 7,500

**B** 75,100

**C** 0.075

**D** 0.75

**4.** Maria lives  $\frac{2}{3}$  of a mile from school.  
Amir lives  $\frac{4}{5}$  of a mile from school.  
Gabby lives  $\frac{6}{9}$  of a mile from school.  
Which two students live the same distance from school?

**A** Maria and Amir

**B** Maria and Gabby

**C** Amir and Gabby

**D** All of the distances are different.

**5.** Miguel had the right answer for eight-fifteenths of his homework problems.  
Which statement best describes his work?

**A** Miguel got all of his homework right.

**B** Miguel got almost all of his homework right.

**C** Miguel got about half of his homework right.

**D** Miguel got almost none of his homework right.

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## Selecting Students for Math Navigator Modules

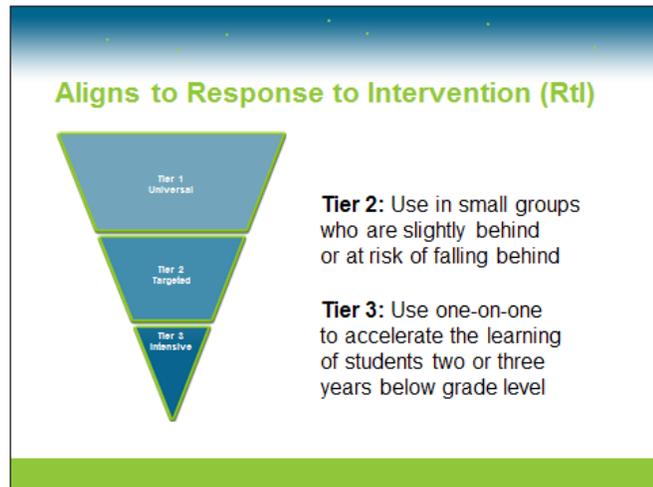
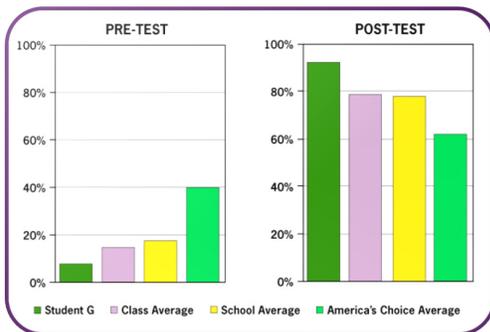
Math Navigator modules are appropriate for many different types of students. Teachers may use the modules with small groups of students, including English language learners or students with special needs. Determining which modules to select for which students is a critical step in the implementation of the program.

When selecting students and modules, use state and district tests, formative assessments, and teachers' evaluations. Math Navigator screeners can be used in conjunction with these other data. However, Math Navigator screeners are most reliable and valid when they are used for group decisions, such as determining the modules needed by most students. The screeners are less reliable for determining whether an individual student belongs in a particular module. Therefore, view Math Navigator screener data as supplementary to other information about individual students.

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### Pre-Tests and Post-Tests

Each module has twelve to thirty item→ pre- and post-tests. Use the pre-test to confirm a student's need for a module and quantify a starting point from which to evaluate student progress. When planning Math Navigator sessions, teachers can refer to the pre-test results to reveal the concepts with which the students will likely need the most assistance. Administering the pre-test will be helpful to gauge the appropriateness of the Tier 2 intervention and will make sure that those students who might be better served in Tier 3 interventions are identified as early as possible. Use the post-test to evaluate student progress as a result of taking the module.



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## Implementing Models

Math Navigator is not a substitute for the regular mathematics program. It is designed as an extra math session for students who need more time.

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### Scheduling

Each Math Navigator lesson is expected to be taught in sessions of thirty to forty-five minutes, depending on the number of students in the group. Because conferencing and individual feedback are an integral part of the process, a larger group is likely to require more time.

Math Navigator is written for use by intervention groups of five to nine students and an instructor. Each module provides twenty days of instruction that are designed for teachers to teach over a four-week period.

## Module Implementation Schedule

Lessons (30-45 minutes)	Week 1	Week 2	Week 3	Week 4
Pre-Test	Day 1			
Lessons to correct misconceptions	Days 2–5	Days 6–10	Days 11–12 14–15	Days 16–19
Checkpoint		Day 7	Day 13	
Post-Test				Day 20

Students can take the Math Navigator modules during the school day or in time slots outside of the regular school day, such as in after-school sessions, Saturday academies, or summer school. Students from different classes who are taking the same modules can be grouped together. For example, students in Mr. Jones’s class and Ms. Smith’s class need Ratios and Rates or Patterns and Graphs. Mr. Jones takes all the students from both classes who need Ratios and Rates, and Ms. Smith does the same for the students who need Patterns and Graphs.

**17 Every Table Tells a Story**

**work time**

1. Work with a partner. You will need scissors.
  - Tear out page 53, *Formulas and Graphs*, and cut out all of the cards.
  - Each card represents a ratio. Take turns with your partner matching a card with one or more other cards that represents the same ratio.
  - Explain to your partner how you know that the cards match. Your partner should either agree with your explanation or challenge it if your explanation is not clear and complete.
2. Write one reason that formulas can be convenient to use when solving ratio problems.
3. What is the meaning of 0.6 in the formula  $c = 0.6t$ ?

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**Generating and Interpreting Graphs 4**

**Speed vs. Time**

**Passengers vs. Time**

As students report back, ask additional questions, such as:

- Would it be possible to have a point here? (Indicate some position away from the general trend of the other points.)
- What would such an aircraft look like?

Ask if anyone created a graph of speed versus hours. (If no one did, draw one on the board.) Help students understand that this is a quantitative relationship of independent and dependent variables. The points are constrained to lie in a curved line because the hours it takes to fly 600 miles depends on the speed of the airplane.

**show me**

Show me four points that show...

- ...more snow fell every other year over four years.
- ...more increased every year.
- ...the most snow fell the year after the least snow fell.
- ...there was twice as much snow in the fourth year as there was in the second year.

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The following list describes four implementation models. Each focuses on a slightly different implementation and schedule:

- Additional class during school day
- Pull-out intervention groups
- Classes before school
- Summer school

## Review

This guide introduced various program implementation options for Math Navigator Common Core that fit the confines of school and class schedules and best address students’ needs.