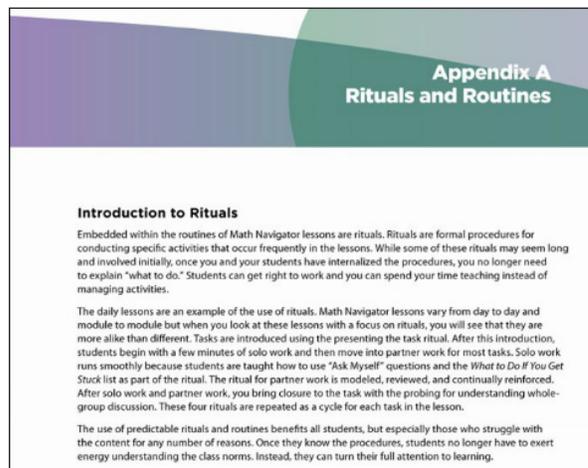


## Lesson Walk-Through

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<b>Introduction</b>	This guide explores the structure of a Math Navigator lesson.
<b>Lesson Structure</b>	<p>Math Navigator lessons are delivered across twenty-six modules; each module focuses on a critical math topic. Each lesson is organized based on a set of routines. These consistent routines enable students to engage independently with the tasks, interact purposefully with each other, and become more productive learners.</p> <p>The Teacher Edition outlines the routines so that you can easily incorporate them into your lesson. These routines include show me, setting the direction, work time, probing for understanding, and reflection.</p> <p>Lessons take about thirty to forty-five minutes and follow a structured format.</p>
<b>Math Navigator Rituals</b>	<p>Rituals are embedded within the routines of Math Navigator lessons. They are formal procedures for conducting specific activities that occur frequently in the lessons.</p> <p>Once you and your students have internalized the procedures, you no longer need to explain what to do. Students can get right to work, and you can spend your time teaching instead of managing activities.</p> <p>The rituals are listed in Appendix A of the Foundations modules.</p>
<b>Lesson Plan Components</b>	Next, look at a typical lesson. You can follow along with the images in this guide, or you can open up your Teacher Edition to the lesson you are currently teaching.

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On the first page of the lesson plan, you will find the Mathematical Goals, Misconceptions Addressed, Materials Needed, and Focus on Language features.

## Mathematical Goals

The Mathematical Goals are the most important concepts that students should learn on a particular day. You will want to emphasize these throughout the lesson. Future lessons build on these goals as well.

**Mathematical Goals**

- It is easiest to compare two fractions to see which is greater if the two fractions have the same denominator.
- If two fractions have the same denominator, the greater of the two fractions is the one with the larger numerator.
- If two fractions do not have the same denominator, it is best to find fractions equivalent to one or both of the fractions in order to get the same denominator to compare them.

Class Profile Assessment	
P6	Compares two fractions with the same numerator or same denominator
C5	Understands that comparisons of fractions make sense when the two fractions refer to the same whole or same part

## Misconceptions Addressed

The Misconceptions Addressed feature highlights the common misconceptions students have when working with a particular concept. Throughout the lesson, students have the opportunity to discover their misconceptions and correct them, which leads to more permanent learning.

Appendix B—at the back of the Teacher Edition—provides a list of all the misconceptions addressed in the module, along with examples.

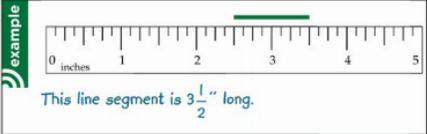
**Misconceptions and Errors**

<b>F3</b>	Does not understand how fractions or percents are represented in diagrams/models
<b>F4</b>	Writes a fraction or a probability as whole-to-part not part-to-whole
<b>F20</b>	Incorrectly converts to equivalent fractions or mixed numbers
<b>F25</b>	Thinks that whole numbers or decimals are either greater or less than fractions
<b>F29</b>	Does not understand that fractions are numbers as well as portions of a whole
<b>F34</b>	Ignores size of the whole when comparing fractional parts of two different-sized objects
<b>F36</b>	Incorrectly identifies the number of parts or the amount of the whole
<b>F37</b>	When interpreting a fraction model, thinks the fraction is part-to-part or whole-to-part
<b>F46</b>	When writing a unit fraction uses the wrong denominator

**F3 Does not understand how fractions or percents are represented in diagrams/models**

The student cannot represent or read fractions when present in diagrams—including number lines, area models, and separate figures. Student does not recognize fractions as points on a number line or as division calculations.

**example**



## Materials Needed

The Materials Needed feature lists what supplies you need to deliver the lesson.

## Focus on Language

Finally, the Focus on Language feature highlights the vocabulary words that the lesson introduces. You will also find suggestions for introducing the terms.

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## Class Profile Assessment

Along with these features, you can use the Class Profile—located in Appendix C in the back of the Teacher Edition—to take a quick assessment of students’ prior math knowledge.

The image shows a grid titled "FRACTIONS AS NUMBERS CLASS PROFILE (1 OF 3)". The grid has 10 rows labeled "Student Name" and 7 columns labeled "Concept". The concepts are: 1) Understanding what a fraction represents and a whole, 2) Understanding that the fraction represents the whole, 3) Representing a fraction on a number line, 4) Representing a fraction on a number line, 5) Understanding that a fraction is a number, 6) Understanding that a fraction is a number, 7) Understanding that a fraction is a number. The grid is used to record student performance on these concepts. A "Math Navigator" logo is visible in the bottom right corner of the grid.

By reading the Class Profile across a row, you can see where each student stands at any point in time. Reading down the columns allows you to see the strengths and needs of the entire class at a glance.

By reviewing the Class Profile, you can make decisions that target appropriate instruction to individuals, small groups, and the whole Math Navigator class.

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## Ongoing Support

Throughout each module, you will find notes to help guide your instruction. The notes include teaching strategies, strategies for English language learners (ELLs), and scaffolding for success.

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## Teaching Strategies

Within each lesson, you will find teaching strategies to help guide your instruction. Teaching strategies highlight the Standards for Mathematical Practice within a lesson.

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## Strategies for ELLs

Within most lessons, you will find notes to help you support your ELLs during specific activities. Notice how you can give ELLs a variety of scaffolded opportunities to talk and write about their mathematical thinking and learning.

**english language learners**  
This is a good opportunity for students to share ideas with each other as they play the game together. This interaction helps students develop English naturally by interacting with others.

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## Scaffolding for Success

The Scaffolding for Success notes provide useful information for modifying the activity to meet the needs of all your students.

## Math Navigator Routines

Each lesson is organized based on a set of routines, including show me, setting the direction, work time, probing for understanding, and reflection.

### Show Me

The show me portion of the lesson activates prior knowledge by asking students to demonstrate what they know. In the lesson example below, students use the Show Me Cards to demonstrate their ability to count and interpret numbers to 1,000. They write their answers on their response boards to show you what they know. Notice the icons that show how students should be grouped.

**show me**

**RESPONSE** Begin the lesson by using Show Me Cards PY1000 6-1 through 6-5. During today's show me, students will demonstrate their ability to count to 1,000 and interpret numbers to 1,000. Have students answer the following questions on their response boards.

- Show me the number that is ...
- 6-1 2 more than 376  
Answer: 378
- 6-2 1 less than 790  
Answer: 789
- 6-3 2 more than 499  
Answer: 501
- 6-4 5 more than 640  
Answer: 645
- 6-5 5 less than 900  
Answer: 895

To finish, have students complete the show me problem in the Student Book.

**Who Am I?**

show me

Write the number that is ten more than 903. 903

Student Book, page 21

### Setting the Direction

During setting the direction, introduce the topic of the lesson by presenting a problem or task. This is a great time to see what misconceptions your students have so that you can address them later in the lesson. Notice the multiple entry points to solving the problem and opportunities to model your thinking process.

### Work Time

During work time, arrange students to work in pairs or by themselves to explore the concept. At the beginning of a module, conference with your students to guide them toward improving their mathematical thinking. Continue to monitor and support them as they work to assess their understanding.

### Probing for Understanding

Probing for understanding is an important part of the lesson, because it allows you to make sure that your students exhibit the Standards for Mathematical Practice. Notice the examples of the types of prompts you might use to ascertain if your students understand the concept.

**probing for understanding**

Ask the following questions to elicit students' thinking and review what they have learned.

- Did you notice how you were making decisions about where to write the number rolled? Did your decision making change as you played the game?

**teaching strategies**

Students may be quite interested in the probability questions that occur to them as a result of playing this game. Explain that there is not time to investigate the questions now; encourage students to wonder about their questions and to investigate them on their own if they wish.

Some students may say they started out guessing, and then started deciding where to write based on whether the number rolled was a high one (5 or 6) or a low one (1 or 2). Other students may say that at first they thought that if a number, say, 6, had been rolled, it was not likely to be rolled again, but that did not seem true, so they stopped using that idea to make decisions.

**What was challenging about playing the game?**

Students may recognize that because there is an element of chance in the game—you cannot know what numbers will be rolled—you can make a decision based only on whether the number rolled is at the higher end of the numbers 1 through 6, in the middle, or at the lower end. You have to make a decision without having all the information (the six numbers that will be rolled).

Introduce or review with students how to use the symbols  $>$ ,  $=$ , and  $<$  to record the results of comparisons of three-digit numbers. Have two students read a number from their game sheets, and write the numbers for the group to see and discuss. Ask the group to write the correct symbol between the numbers. Do several more examples until students understand how to write the greater than and less than symbols correctly.

**ERROR**

Students frequently have trouble placing the greater than and less than symbols correctly. Expect to remind them that the "big" or "wide" side of the symbol goes with the greater number. Posting a chart with the symbols, words, and examples of correct usage will also be helpful.

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**Reflection**

During reflection, students demonstrate what they have learned and ask any lingering questions they may have.



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**Review**

This guide explored the structure of a Math Navigator lesson.