

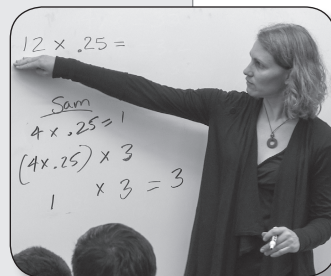
How to Use This Resource



Introduction

Watch the video clip “Introduction.”

Talk with a friend or colleague; what do you see in the introduction that makes you most excited about *Number Talks: Fractions, Decimals, and Percentages*?



To view this video clip, scan the QR code or access via mathsolutions.com/NTFDPintro

Number Talks: Fractions, Decimals, and Percentages was created in response to the requests of teachers—teachers who want to implement number talks but are unsure of how to begin and teachers who are seasoned in this art of instruction but want support in crafting purposeful problems. The primary purpose of this resource is to help teachers begin

or refine their use of number talks with fractions, decimals, and percentages. The video clips give readers the opportunity to access authentic classroom number talks with third- through sixth-grade students. The video clips also provide a visual platform for teachers to reflect on their current practices and target essential understandings from their readings.

Regardless of where you are in your number talk journey, it is important to establish a common understanding of number talks before immersing yourself in this resource. Number talks can be best described as classroom conversations around purposefully crafted problems that are solved mentally. The problems in a number talk are designed to help students focus on number relationships and number theory. Students are given problems in either a whole- or small-group setting and are asked to mentally solve them one at a time. By sharing and defending their various solutions and strategies, students have the opportunity to collectively reason about numbers while building connections to key conceptual ideas in mathematics. A typical classroom number talk can be conducted in five to fifteen minutes.

Overview of Number Talks: Fractions, Decimals, and Percentages

Number Talks: Fractions, Decimals, and Percentages is part of the Number Talks series. In this resource, we focus only on positive rational numbers. The term *rational numbers* comes from the word *ratio*. It means any number that can be made by dividing an integer by a non-zero integer. For example:

- $\frac{3}{4}$ is a rational number (3 divided by 4, or the ratio of 3 to 4)
- 0.25 is a rational number $\left(\frac{1}{4}\right)$
- 1 is a rational number $\left(\frac{3}{3}\right)$
- 6 is a rational number $\left(\frac{6}{1}\right)$
- 3.45 is a rational number $\left(\frac{345}{100}\right)$
- -5.2 is a rational number $\left(-\frac{52}{10}\right)$

Negative integers and whole numbers are rational numbers, because they can be made by dividing an integer by a nonzero integer. For example, -2 and 3 can be expressed as fractions, $-\frac{2}{1}$ and $\frac{3}{1}$ respectively.

In this resource, we focus exclusively on positive rational numbers and on parts of a whole, or fractional reasoning.

While *Number Talks: Fractions, Decimals, and Percentages* is intended to be read from cover to cover, it is designed in such a way as to meet a range of needs. To accomplish this goal, the resource is organized into the following sections.

Reference Tables

Reference tables provide ease in locating featured number talks by chapter or grade level.

Introduction

The Introduction chapter looks at research on why students struggle with fractions, decimals, and percentages, building a context for why number talks address this area are critical.

Section I: Understanding Number Talks

Chapters 1 and 2 discuss the key elements of the practice of number talks and how to establish procedures and expectations for implementation.

Section II: Number Talks to Help Students Build Fractional Reasoning

Chapters 3, 4, and 5 concentrate on the essential understandings for reasoning with fractions, decimals, and percentages and incorporate number talks to strategically target these areas.

Section III: Number Talks to Help Students Operate with Fractions and Decimals

Chapters 6, 7, 8, and 9 focus on operations with fractions. The number talk goals for third- through seventh-grade students are addressed and accompanied by addition, subtraction, multiplication, and division number talks to help students develop strategies for these operations. Examples of classroom student-teacher dialogues are also included for each operation.

Chapter 10 addresses goals for reasoning and computing with decimals, and incorporates specific number talks to help students develop computation strategies for each operation.

The Video Clips

Many of the chapters feature video clips of actual classroom number talks in grades 3–6. Each clip is accompanied by a series of guided questions and reflections crafted to address specific ideas discussed in the corresponding chapter.

How to Access Online Video Clips

Readers have several options for accessing the video clips. Either scan the QR code (with a QR code reader app of your choice) that appears within the video clip section in the text or enter the corresponding URLs in your browser. If you would like to access all the clips at once, follow these instructions:

1. Go to mathsolutions.com/myvideos and click or tap the Create New Account button at the bottom of the Log In form.
2. Create an account, even if you have created one with Math Solutions bookstore. You will receive a confirmation email when your account has been created.
3. Once your account has been created, you will be taken to the Product Registration page. Click Register on the product you would like to access (in this case, *Number Talks: Fractions, Decimals, and Percentages*).
4. Enter key code **NTFDP** and click or tap the Submit Key Code button.
5. Click or tap the Complete Registration button.
6. To access videos at any time, visit your account page.

A Note About Captions (Subtitles) for Videos

To turn on captions, click on the “CC” watermark in the upper lefthand corner of the video. Select English and play the video. To turn off captions, click on the “CC” watermark and select Off.

Guidelines for Watching Videos of Teaching

The teachers who agreed to be recorded in these videos have complex and challenging classrooms, just like you. When we watch videos of others it is easy to see things that we might do differently. It is then all too easy to move to a critical stance, focusing on what the teacher “should” have done differently. But we have found that such a stance is not helpful for learning.

These videos are not scripted or rehearsed. They are real classroom sessions. Remember that teaching is a complicated activity, in which the teacher is required to do many things at once. As you watch these videos, alone or with others, we recommend following these rules:

1. Assume that there are many things you don't know about the students, the classroom, and the shared history of the teacher and students in the video.
2. Assume good intent and expertise on the part of the teacher. If you cannot understand his or her actions, try to hypothesize what might have motivated him or her.
3. Keep focused on your observations about what students are getting out of the talk and interaction.
4. Keep focused on how the classroom discourse is serving the mathematical goals of the lesson.

Source: From *Talk Moves: A Teacher's Guide for Using Talk Moves to Support the Common Core and More, Third Edition* by Suzanne H. Chapin, Catherine O'Connor, and Nancy Canavan Anderson (Math Solutions, 2013, xxi).