

## OVERVIEW

Decimal numbers occur in many data sets, and it is often challenging for students to interpret them. In this activity, students play games in which they are asked to guess a mystery decimal. They complete six games, each of which has a mystery number between two values, attempting to guess the number in as few guesses as possible. The activity is designed to help build students' skills in interpreting decimals.

**Activity Time:** One class period

### Objectives

- Compare decimals and be able to identify a decimal between two others.
- Develop a strategy for guessing numbers in as few guesses as possible, regardless of what the number is.

### Prerequisites

None

### Common Core Standards Addressed

Read, write, and compare decimals to thousandths.

*Grade 5, Number and Operations in Base Ten, Standard 3*

### Materials

- Guess My Decimal worksheet (one copy per student)
- [Guess My Decimal.tp](#)

## LESSON PLAN

### Introduction (5 minutes)

Introduce students to the game. You may wish to do the example together as a class, or have students do it at their computers.

### Student Work at Computers (10 minutes)

Have students open the document [Guess My Decimal.tp](#). There are six mystery number games, in addition to the example. Remind students that their goal is to guess each mystery number in as few guesses as possible.

As students work, walk around the room. For students who finish quickly, you may want to suggest they try to guess the number in fewer guesses. *Note:* The mystery numbers do not change, so this may not work if students remember the correct answers.

**Wrap-Up (10 minutes)**

As students finish guessing the numbers, bring them back together as a class, and briefly discuss the strategies they used to guess the numbers. Were there some that worked well?

You might also have a discussion about decimals. Write examples on the board and have students decide which decimal is greater. For example, is .25 greater than .241, or is .241 greater than .25? (Students who struggle to understand decimals will often say that .241 is greater than .25.)

**ANSWERS**

3. Number of guesses will vary.

Game	Mystery Number	Number of Guesses
Example	18	
1	0.25	
2	0.86	
3	0.05	
4	2.95	
5	0.525	
6	0.344	

4. Students may use a variety of strategies. One strategy that works well is to guess a number halfway between the most recent “over” guess and the most recent “under” guess. This will help students find the number quickly, independent of whether the number is high or low.
5. If students use the preceding strategy, it will work for all games. However, students may have come up with other strategies that also worked.