



The Number System: Exponents

By: Jessica Shaffer

5th grade teacher; M.A. in Administration and Leadership, Georgian Court University, NJ

Math
Grades 6–8



Introduction

In fifth grade, students learn about exponents and have limited exposure. Students learn how to take a number written in exponential notation and write it in expanded form and standard form. When studying algebra, students may see an occasional exponent in a problem that requires the use of order of operations. In sixth grade and beyond, students use exponents much more heavily and you start to see exponential notations such as 85^2 . Exponents are also used much more regularly in algebraic expressions and word problems. It is a common way for students to see numbers expressed, so having a clear understanding of this is important to develop.

Learning Objectives

Students will evaluate numerical expressions using whole number exponents.

Materials Needed

- Exponent resources page
- [Exponent Scoot Activity and Answer pages](#)
- Chromebook/tablet/computer

Procedure

1. Review what exponent and base numbers are.
2. Review number names, numbers, and the scientific notation of numbers up to one trillion. Remind students that the number of zeros in the standard form of the number is what the exponent will be in the exponential notation. [This is a good anchor chart](#) to display in class. This chart is a good item to use in an interactive notebook if you make one with your students.
3. Have students work in small groups to brainstorm for about two or three minutes about how exponents may be used in real life, then come back and discuss as a class.
4. Students will work on whiteboards to complete practice problems that the teacher puts on the board. Teachers can informally assess progress by observing answers on the student whiteboards and check for understanding.

Continued on page 2



The Number System: Exponents

By: Jessica Shaffer

5th grade teacher; M.A. in Administration and Leadership, Georgian Court University, NJ

Math
Grades 6–8



Continued from page 1

5. Instruct students about the Exponent Scoot Activity that they will be participating in. Students can work individually or in pairs/small groups (you can give students choice). There will be eight questions posted at various locations throughout the classroom in which students will move around to answer them. Each student will turn in their own Exponent Scoot Activity Packet. Depending on your class, there are options with this activity. If you require the students to work in groups, you can have the students choose their own or you can choose the groupings prior to the activity. You can have students move around to the stations on their own, or you can assign stations for the students to start at and have a timer on where students move when the timer goes off. This activity will take about thirty minutes or so to complete. Remind students to make sure they put the answers in the correct spot on the answer sheet.
6. This is an [Edpuzzle video](#) to help reinforce exponents. There are many video available on sites such as Khan Academy, Youtube.etc., so if you do not have an Edpuzzle account, there are plenty of videos you can access on other sites. This video is about five minutes long.
7. Go over the activity with the class as a whole, in small groups, or go through the packets individually. Use whatever method works best for your specific class while keeping timelines and pacing guides in mind.

Evaluation

This is a classwork activity to check for understanding and to guide instruction. If you wish to use this as a grade, there are ten questions, so each would be valued at ten points.