



## *Simply Great Math Activities: Number Sense*

These conceptually rich activities assist your students in learning number sense in all operations. They will find help with order of operations, properties of arithmetic, problem solving, mental math and estimation, and work with fractions, decimals, and integers. You'll receive 111 pages of useful information, including...

- extremely simple instructions for teaching with the activities
- 11 enjoyable and effective math activities
- 26 journal prompts
- 72 activity and transparency masters
- 16 suggested homework assignments
- 25 extension suggestions

# Simply Great Math Activities: Number Sense Contents

Activity	Page
1 Pyramid Math ..... This creative practice activity facilitates discovery of number patterns and develops number sense. The activity works with fractions, decimals, percents, positive and negative numbers. Because it is easy to create and self-checking, it is easy for the teacher and engaging for the students.	8
2 Four Square Addition ..... This creative activity promotes problem-solving skills in a self-assessing practice format. It works with positive and negative numbers, fractions, and decimals. It	24

validates the commutative property and provides an easy transition to working with variable expressions. Here is an activity that is motivating for the student and easy for the teacher!

**3 Kaprekar’s Constant ..... 36**

Are you looking for a way to have students practice a basic skill without boring them? Students will practice subtracting four-digit numbers with regrouping as they search for a magical number! As students see similarities in problems, they will extend their number sense.

**4 Take your Places ..... 42**

Here is a way to “drill without kill”. Here is a way to practice new skills without boring your students to death. They can even increase their number sense as they explore the possible solutions, or use the activities to study probability. What a bargain! The activity design promotes mathematical thinking, provides for multiple solutions and entry points, and develops fraction understanding and fluency in computation.

**5 Area Multiplication ..... 52**

This activity illustrates multiplication as an area model. Students can see what multiplication means and why it works. The design of the activity forges a natural link between place value and number sense. The model also serves as a sense-making alternative to the more common multiplication algorithm.

**6 Mental Multiplication ..... 60**

With very little practice, you can multiply a pair of two-digit numbers in your head! Eventually your students will demand that you show them the trick, even though it requires them to do math! This activity hones estimation skill, builds confidence and competence, and fosters an understanding of place value and the size of numbers. Students make fewer (and smaller) errors using this method and can see the relationship between arithmetic and the algebra of polynomial multiplication.

**7 The Ultimate Magic Square ..... 64**

You haven’t played with magic squares until you’ve explored the Ultimate Magic Square! Is there no end to patterns in this puzzle? Challenge your students to find out. Your students can make similar puzzles and find the patterns in them. Simple modifications allow students to see the structure and relationship to algebra behind the magic in the square.

**8 Search for Zero ..... 68**

Here is another activity that can appeal to a spectrum of grade levels and abilities. Students can practice subtraction as they work with whole numbers, decimals, and fractions. The patterns that emerge will help develop number sense.

9 Leo’s Patterns ..... 74

This activity visits the famous Fibonacci sequence, and students find algebra in the patterns, formulas, and equations. It’s nice for the teacher since much of the work is self-correcting! Students build guess and check skills, develop the problem solving skill of working backward, and learn to combine like terms. The structure of the activity works with positive, negative, decimal, and fraction numbers, promotes a sense of number magnitude and estimation, and leads into algebraic thinking.

10 “X” Marks the Spot ..... 88

The rules are so simple, yet the math is rich and abundant. You can use these simple drills to reinforce practice in all four operations with positive and negative numbers. Students will develop number sense, deepen their understanding of the number system and its properties, and gain skill in factoring polynomials using this simple method!

11 Backwards Math ..... 102

This activity provides an excellent format for practicing operations. Students will not only work intently for long periods of time, they will want to learn even more advanced operations!

Appendix:

Spinner Masters ..... 106

1/4 inch grid paper ..... 110

Centimeter grid paper ..... 111