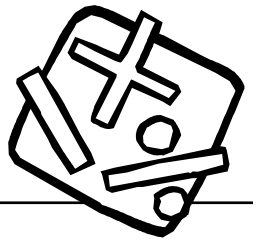
How High (or Low!) Can You Go?



Play a game using your number sense to make the highest or lowest number possible.

What you need

Number cards 0 to 9 (4 sets) One die

What to do

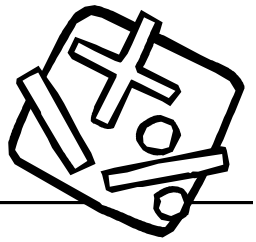
1. Deal three cards to each player.
2. On each player's turn, the player rolls the die to see if he needs to make the highest number possible or the lowest number possible.
3. If the die shows an odd number, then the player must arrange the cards in an order that makes highest number possible.
4. If the die shows an even number, the player must make the lowest number possible.
5. All players do steps 2 to 4.
6. After each person has made a number, then the die is rolled once again.
7. If the die shows an even number, the person with the lowest number wins the round, and if the die shows an odd number, the person with the highest number wins.
8. Keep playing until there are no cards left or not enough to give everyone the same number of cards.

What to ask

- Help children focus on the hundreds place first if they are having difficulty: For example, if the number is 302 and their opponent has 258, ask, which is more 300 or 200?
- Why do you think that is the best way to make the largest number?
- Would you like to have the zero card? Why or why not?

Did you know?

Numbers are written using the decimal place value system. This means that each place has a certain value depending on its place. The word decimal comes form the Latin word decem for ten, which means the value is determined by a power of ten. Comparing numbers over 100 can be challenging for younger children. To them it is not at all obvious that a number like 302 is larger than 258 since the number 258 has a 5 and 8 in it and 302, has such small digits that make up the number.



What's next?

- Play the game with a decimal card.
- Roll the dice to see how many cards each person will get before each round.
- Make up your own game of building numbers and using odd and even numbers. How does your made up game compare to the original game? Is it fair? Is it easier or harder to play?

To learn more

Piece=Part=Portion: Fractions=Decimals=Percents

by Scott Gifford

This book explains how, in the language of mathematics, fractions, decimals and percents are three different ways of describing the same parts of things.

Can You Count to a Googol?

by Robert E. Wells

Introduces the concepts of very large numbers, up to a googol, and multiples of ten.

How it helps with school

Texas Essential Knowledge and Skills (TEKS) Standards

Number, Operations and Quantitative Reasoning: 3.1A-B; 4.1A; 5.1A
Underlying Processes and Mathematical Tools: 3.15C, 3.17B; 4.14C, 4.16B; 5.14C, 5.16B

National Council of Teachers of Mathematics (NCTM) Standards

Number and Operations, Reasoning and Proof, Communication

How High (or Low!) Can You Go?

0	1	2

3	4	5	6

7	8	9

The Children's Museum of Houston

ExxonMobil Math Path EM M³ Magnificent Math Moments