



## Math Games to Encourage Logic and Numeracy

### *MAKE THE MOST OF IT:*

Remove kings and jacks from the deck. Ace is one and Queen is zero. Players take turns drawing one card at a time, trying to create the largest 5-digit number possible. As each card is drawn it is placed (and cannot be moved) into the ones, tens, hundreds, thousands, or ten-thousands place. When the sixth card is drawn, the player can choose one of the cards on the table to discard and replace it with the sixth card. Largest 5 digit number wins. Make this game easier or harder by varying the number of digits.

### *MAKE 100:*

In this game Aces are one, Queens are zero, and Kings and Jacks are wild cards. Each game has 5 rounds. To play deal six cards to each player. Players choose any four of the cards to make two double-digit numbers that when added come as close as possible to the total of 100. Wild cards can be assigned any value. Players record their numbers and the sums on the score sheet. The player's score for each round is the difference between the sum and 100 (for example sums of 95 and 105 both score 5 points). The used cards are discarded and the two cards remaining in each hand are kept for the next round. For rounds 2 to 5, deal out four cards to each player and make two double-digit numbers, add them, and score your points. At the end of five rounds, the player with the lowest value wins.

- Scoring variation: Play is the same, but when you score use positive numbers for sums above 100 and negative numbers for score below 100. The player then adds up positive and negative numbers and the one with the grand total closest to zero after five rounds wins.

### *NIM:*

Place the pile of tokens (pebbles, toothpicks, beans, pennies, dry cereal, etc.) on the table between two players. Allow the youngest player choice of moving first or second; in succeeding games, allow the loser of the last game to choose. On your turn, remove one or two tokens from the pile. You must take at least one token on your turn, but you may not take more than two. Whoever takes the last token is the winner.

Variations:

- Change the number of tokens in the starting pile.
- Allow players to take one, two, or three tokens per turn.
- Make the last token "poison." Whoever takes it loses the game.

## Websites with Math Activities

- Academic Skill Builders - <http://www.arcademics.com/games/>
- Conceptis Puzzles - <http://www.conceptispuzzles.com/index.aspx>
- Fun Brain - <http://www.funbrain.com/>
- Set Game - <http://www.setgame.com/>
- Puzzle Parlor - <http://www.gamepuzzles.com/pparlor/puzzleparlmm.html>
- Illuminations - <http://illuminations.nctm.org/Games-Puzzles.aspx>
- Khan Academy - <https://www.khanacademy.org/>
- Annenberg Learner - <http://www.learner.org/interactives/>
- Virtual Manipulatives - <http://nlvm.usu.edu/en/nav/vlibrary.html>
- Robert Kaplinsky - <http://robertkaplinsky.com/lessons/>
- Math Maven - <http://teacher.scholastic.com/maven/>
- Chess Kids - <https://www.chesskid.com/?m=chesskids>



- Online Math Dictionaries - <http://www.amathsdictionaryforkids.com/>

## Questions to Dig Deeper With Math

### Details

- What is the important information in this problem?
- What is the extra information in this problem?



### Language

- What are the key math terms you need to know to solve this problem?
- Retell how to solve this problem without using any math terms.



### Multiple Perspectives

- How would you explain the solution of this problem to a student younger than you? Older?
- What does the information in this chart/graph mean to someone in a different type of career?
- How could you solve this problem using a different method?



### Patterns

- What patterns did you notice in how the numbers work together or in the problem itself?
- How can you use the number patterns to help you solve the problem?
- Can you continue the pattern?
- What counting pattern do you use to count different coins?



### Trends

- What do you notice about how the data changes in this chart or graph?
- What do you think influences how the data is portrayed?



### Changes Over Time

- What changes occur in the data in the chart or graph over time?
- What caused changes in data?
- How has the cost of \_\_\_ changed over time? How does that impact a budget?



### Big Idea

- What is the big idea or theme of the story?
- Is there a lesson in the story/chapter?
- Can you think of another story that has the same big idea?



### Rules

- What steps do you need to follow to solve this problem?
- What happens if you follow the steps out of order? How does the answer change?
- How could you sort these shapes? What rules did you follow to sort them that way?



### Connections Across Disciplines

- How would this problem/shape/measurement occur in real life?
- Explain the data in this graph from the perspective of someone in a different role (a career, a resident somewhere else, someone older/younger, etc.)
- Create a story problem that applies this type of math to daily life.
- What kind of career person would use this? In what way?



### Unanswered Questions

- What information do you still need to know to solve the problem?





## Columbus City Schools Gifted & Talented Division

[www.ccsdh.us/gifted](http://www.ccsdh.us/gifted)

- What information is missing from the story behind the chart or graph that would tell you more about what is really happening?