



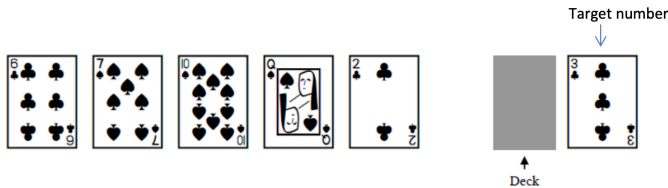
Summer Math Activities

Math Card Games Using a Regular Deck of Cards

1. Name that Number:

Set up:

Shuffle the deck and place 5 cards number-side up on the table. Leave the rest of the deck number-side down. Then turn over the top card of the deck and lay it down next to the deck. The number on this card is the number to be named. Call this number the target number.



How to Play

- Players take turns.
- When it is your turn- Try to name the target number. You can name the target number by adding, subtracting, multiplying or dividing the numbers on 2 or more of the 5 cards that are number-side up. A card may be used only once for each turn.
- Variation: limit the operations to just addition & subtraction; or make more difficult by including exponents, roots and negative numbers.
- If you can name the target number, take the cards you used to name it. Also take the target number card. Then replace all the cards you took by drawing from the top of the deck.
- If you cannot name the target number, your turn is over. Turn over the top card of the deck and lay it down on the target number pile. The number on this card becomes the new target number to be named.
- Play continues until all of the cards in the deck have been turned over.

The player who has taken the most cards wins.

2. **Top It**

Standard Top-It: Player 1 and Player 2 flip their top cards simultaneously. The player whose card has the greater value wins the round, and they take both cards. If both players flip cards with the same numbers, each player flips a new card. The player whose new card is larger wins all of the cards. Play continues until 1 player has all of the cards, or time runs out (in which case the player with more cards wins). If there are more than two players, play occurs in a circle: Player 1 and Player 2 engage, Player 2 and Player 3 engage next, then player 3 and Player 1 engage, etc.

Digit Top-It (Place Value): Each player flips two cards to make a 2-digit number. The player with the larger number takes all the cards.

Addition (Sum) Top-It : For each round, players flip two cards and add them together. The player with the greatest sum takes all of the cards.

Subtraction (Difference) Top-It: For each round, players flip two cards and find the positive difference between the two. The player with the greatest difference takes all the cards.

3. **Shut the Box**

Materials: Two 6-sided dice; Playing cards, just Ace - 9

Object: To “Shut the Box” by flipping all of your cards over before other players.

Set up: Each player lays their cards out in order from 1 (Ace) - 9 in a single line in front of themselves.

Play:

- Player 1 rolls dice and finds the sum of the cards. This is the number the player will try to “make” with their cards. (Eg. if a 5 + 4 are rolled then the player will try to make a 9)
- Player 1 then uses their cards and addition or subtraction to “make” the number they rolled. As they use a card, they flip it over. For example a player trying to make 5 could:
 - Flip over their 5 card

- Flip over 1 card and 4 card, saying
"1 + 4 = 5"
- Flip over their 2 and 3 card, saying
"2 + 3 = 5"

Play continued:

- Once Player 1 has flipped their cards and verbalized what they did, the remaining players each take a turn.
- Players continue to take turns rolling and flipping cards. If a player rolls a sum on the dice that they cannot make with their cards, they have two choices:
 - They can skip their turn and pass the dice to the next player
 - They can "make" the number rolled with cards that were already flipped over, turning the cards face up.
- The game is over when one player "Shuts the Box" by having all of their cards flipped face down.

Variations: Play collaboratively. Work together to Shut the box; Limit operations or expand operations depending on the skills of the players.

4. How Close

Materials: Deck of cards (Kings, Queens, Jacks & 10's removed). Aces worth 1; Jokers worth 0.

Object: See headings below.

ADD TO 20: Each student picks 5 cards and chooses 3 of them to write an addition expression with 3 addends. The student whose sum is closest to 20 wins a point for the round. Students pick new cards so that they have 5 cards in their hand and then start the next round.

SUBTRACT TO 20: Each student picks 4 cards and chooses 2 or 3 to subtract from 20 to get close to 0. The student whose difference is closest to 0 wins a point for the round. Students pick new cards so that they have 4 cards in their hand and then start the next round.

ADD TO 100: Each student picks 7 cards and chooses 4 of them to create 2 two-digit numbers. Each student adds the numbers and the student whose sum is closest to 100 wins a point for the round. Students pick new cards so that they have 7 cards in their hand and then start the next round.

ADD TO 1,000: Each student picks 8 cards and chooses 6 of them to create 2 three-digit numbers. Each student adds the numbers. The score for the round is the difference between each student's sum and 1,000. Students pick new cards so that they have 8 cards in their hand and then start the next round. The player with the lowest score wins.

5. Close to 0

Materials: Deck of cards (Kings, Queens, Jacks & 10's removed). Aces worth 1; Jokers worth 0.

Object: To use cards to make two three-digit numbers whose difference is as close to 0 as possible.

Set up

Shuffle the cards and deal 8 cards to each person.

How to Play

Player 1 uses 6 of their 8 cards to make two three-digit numbers whose difference (subtraction) will be as close to 0 as possible. Player 1 finds the difference between their two numbers. The difference that Player 1 found is the number of points he/she gets. Other players take turns, each player keeping a running total of their score after each round. After 6 rounds, the player with the lowest total points is the winner.

Variations

Play collaboratively. Work together with a partner to try to get close to 0. Instead of keeping a running total, play for a limited number of rounds (such as 10 rounds). At the end of all the rounds compare all of the differences found. The player with the round that got closest to 0 is the winner.

Online Math Games:

Below are links to free online games and other activities for your mathematician to explore. **Please note that some of these sites may have pop-up advertisements or sign-ups, so grown-ups should also visit the site with their mathematician to get started.**

Reflex Math

<https://www.reflexmath.com>

Mastering basic facts in addition, subtraction, multiplication and division for grades 2+.

Frax

<https://www.fraxmath.com>

Games all about fractions

Math Playground

<https://www.mathplayground.com/games.html>

Online math games K-6

Tang Math (high quality games)

<https://tangmath.com/games>

Free online math game site

Education.com

<https://www.education.com/games/math/>

Educational website with a large variety of on-line games that can be selected by grade. Initially you will need to join this site, but it is free for many of the games.

Math Is Fun

<https://www.mathsisfun.com/>

This site has a huge amount of topics and suggested games and activities. There are also great explanations for many math topics.

NRich Maths

<https://nrich.maths.org/9086>

More games from Cambridge University

XTra Math: (Math Fact Fluency)

<https://home.xtramath.org>

Youcubed

<https://www.youcubed.org/>

Visual, creative math tasks.

Commercial Math Games:

- Rat A Tat Cat (based on age I let people check their cards more frequently)
- Zeus on the Loose (we don't use the rule of getting to go out of turn with a duplicate card)

- SET (we play by taking turns rather than racing)
- Mastermind (This is like wordle with colors. We also call it Pico Fermi Nada when we play with digits and we do not allow for repeats)
- Shut The Box
- Racko
- Qwixx (People take turns rolling the dice and then everyone uses the same roll to choose a number so there is less waiting. Also, my rule is that the white dice can be used as wilds at any point either together on any row or with one of the colors on the row of that color.
- 7 Ate 9
- Blokkus
- Qwirkle
- Tsuru
- MULTI
- 24
- Sumoku

Investigations Math at Home:

Links to many age-appropriate games they suggest for offline and online play around the same topics we have studied during this year.

Geometry (Grades K-5)

https://investigations.terc.edu/wp-content/uploads/2020/04/Geo_FINAL-1.pdf?x74296

Measurement (Grades K-5)

https://investigations.terc.edu/wp-content/uploads/2020/03/Meas_FINAL.pdf?x74296

Multiplication & Division (Grades 2-5)

https://investigations.terc.edu/wp-content/uploads/2020/03/MultDiv_FINAL.pdf?x74296

Addition & Subtraction (Grades K-4)

https://investigations.terc.edu/wp-content/uploads/2020/03/AddSub_FINAL.pdf?x74296

Bridges in Math:

[Bridges Practice Books](#) provide activities and worksheets for additional skill review, informal paper-and-pencil assessment, preparation for standardized testing, and differentiated instruction. Each volume also includes answer keys and a complete listing of the student pages grouped by skill. Books are organized by grade level and can be downloaded and printed.