

# July

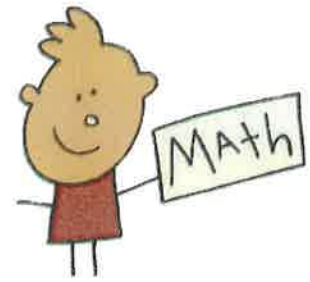
<p><b>Week 1</b></p>	<p>Practice your (x) fact cards with someone. Make "Facts I Know" and "Facts I Still Need to Work On" piles. Which facts do you still need to work on? Write these in your journal. What strategies can help you figure these out?</p>	<p>Solve 15 x 21. How many different strategies can you use to find the product?  Write your strategies in your journal.</p>	<p>Practice your (+) fact cards with someone. Make "Facts I Know" and "Facts I Still Need to Work On" piles. Which facts do you still need to work on? Write these in your journal. What strategies can help you figure these out?</p>	<p>Play "Close to 7500". Directions and cards attached. Record your combinations and sums in your journal following the format of the recording sheet.</p>	<p>Compare the temperature in your hometown with that of Orlando, FL. Record the high temperature for each place over the course of 7 days. Create a double bar graph. Write 3 specific details that the bar graph tells you.</p>
<p><b>Week 2</b></p>	<p>Play "Factor Bingo". Directions attached.  What are the factors of 25? 40? 100? How do you know?</p>	<p>Practice your unknown facts from last week. What strategies or "start withs" can you use to help you find the answer?</p>	<p>Read a math book.  Draw a picture AND write a retell of your favorite part. Be sure your picture and retell includes math!</p>	<p>You and three friends go to the mall and spend \$32.40 altogether. If you each spend the same amount, how much did each of you spend? Show your work.</p>	<p>Imagine you're putting a border all around your bedroom. How much border would you need to buy? Make a drawing, including all of your measurements and solution.</p>
<p><b>Week 3</b></p>	<p>Play a game on multiplication.com. Are there any facts that you are still working on? What strategies can you use to help you?</p>	<p>Your summer camp is going to a Rock Cats game. Each van carries 20 people. If 149 people are attending the game, how many vans will you need? How do you know?</p>	<p>If 10,000 is the answer, what could the question possibly be? Think of at least 10 combinations where the answer is 10,000.</p>	<p>Find the times of today's sunrise and sunset. How many hours and minutes of sunlight were there today? Explain your answer in your math journal.</p>	<p>Starting today, create a bar graph showing the high temperatures for the next week. Be sure to label all parts of your graph correctly!</p>
<p><b>Week 4</b></p>	<p>Draw a clock to show the time that you went to bed last night. Draw another clock to show what time you got up. How much time did you sleep? Find the elapsed time in hours and minutes and then in just minutes. Can you find the number of seconds? Explain how you know.</p>	<p>Play "Multiple Turnover". Directions and cards attached. Record your work in your journal following the format of the recording sheet.</p>	<p>Practice ALL your (x) fact cards with someone. Make "Facts I Know" and "Facts I Still Need to Work On" piles. Which facts do you still need to work on? Write these in your journal. What strategies can help you figure these out?</p>	<p>Using a take-out menu, plan a dinner for your family. How much will the total cost be? (Don't worry about tax or tip!)  List your menu and strategies in your journal.</p>	<p>Practice ALL your (+) fact cards with someone. Make "Facts I Know" and "Facts I Still Need to Work On" piles. Which facts do you still need to work on? Write these in your journal. What strategies can help you figure these out?</p>

# August

<p><b>Week 1</b></p>	<p>James wants to plant a garden with a perimeter of 36 ft. What are all the possible areas for his garden? Draw arrays and label the dimensions. Find the areas for each array.</p>	<p>Practice your unknown facts from last week. What strategies or "start withs" can you use to help you find the answer?</p>	<p>Read a math book. Draw a picture AND write a retell of your favorite part. Be sure your picture and retell includes math!</p>	<p>Play "Close to 7500". Directions and cards attached. Record your combinations and sums in your journal following the format of the recording sheet.</p>	<p>Play "The Factor Game" on Illuminations. Remember to play with an adult! <a href="http://illuminations.nctm.org/ActivityDetail.aspx?ID=12">http://illuminations.nctm.org/ActivityDetail.aspx?ID=12</a> What numbers did you found all the factors for? Were there any numbers that you could not?</p>
<p><b>Week 2</b></p>	<p>Play "Factor Bingo". Directions attached. What are the factors of 55? 71? 1,000? How do you know?</p>	<p>Practice your unknown facts from two weeks ago. What strategies or "start withs" can you use to help you find the answer?</p>	<p>Jack went shopping. He spent \$3.50 on an ice cream. When he got back home, he had \$7.75 left in his pocket. How much money did he have before shopping?</p>	<p>James wants to plant a garden with a perimeter of 48 ft. What are all the possible areas for his garden? Draw arrays and label the dimensions. Find the areas for each array. Which garden will give him the smallest area?</p>	<p>Play "Tangrams". <a href="http://www.abcya.com/tangrams.htm">http://www.abcya.com/tangrams.htm</a> In your journal, record one of the puzzles you solved. Explain how geometry helps you solve this puzzle.</p>
<p><b>Week 3</b></p>	<p>Make a paper airplane. (suggestion: <a href="http://www.10paperairplanes.com/">http://www.10paperairplanes.com/</a>) Fly it and measure to the nearest ¼ in. how far it flies. Create a line plot that shows the results for at least 15 trials.</p>	<p>Figure out your age in days. Keep in mind some months have 30, 31 or 28 days! Some years are leap years too! What would be a great strategy for helping you solve this? Record your work in your journal.</p>	<p>Find a recipe for a favorite food like chocolate chip cookies. Record the fractions and mixed numbers that you see in order from least to greatest. What was your reasoning for the order?</p>	<p>You're having an end-of-summer party with 5 friends! Cut out and paste at least 5 items that you would serve your friends. Figure out the price of all the items. (Keep in mind that you may need more than 1 of an item.)</p>	<p>Play Lemonade Stand. <a href="http://www.coolmath-games.com/lemonade/index.html">http://www.coolmath-games.com/lemonade/index.html</a> Which trial did you make the most money? Explain your business strategy.</p>
<p><b>Week 4</b></p>	<p>If vowels cost \$15 each and consonants cost \$50 each, what person in your family has the most expensive name (use first and last names)? How can you use multiplication to help you figure it out?</p>	<p>Flip a coin 25 times and record the number of heads and tails. What fraction of the trials did you get heads? Tails? Can you write each in a simpler fraction?</p>	<p>If a movie costs \$7.25, popcorn costs \$3.45, and a drink costs \$2.65, ABOUT how much should you bring to the movie theater? Explain your reasoning.</p>	<p>Play "Multiple Turnover". Directions and cards attached. Record your work in your journal following the format of the recording sheet.</p>	<p>Play "Kakooma" <a href="http://gregtangmath.com/Kakooma/Kakooma?gameType=Addition">http://gregtangmath.com/Kakooma/Kakooma?gameType=Addition</a></p>



## Grade 4 Summer Math Resources



### Math Books to Read:

*The Lemonade War Series*, Jacquelin Davies  
*Math Curse* by Jon Scieska and Lane Smith  
*Multiplying Menace: The Revenge of Rumpelstiltskin and the Multiplying Menace Divides* by Pam Calvert & Wayne Geehan  
*A Remainder of One* by Elinor Pinczes  
*Pi: A Math Adventure*, by Elinor Pinczes  
*Sir Cumference Series* by Cindy Neuschwander and Wayne Geehan  
Greg Tang Books

### Fun Websites to Explore:

BBC Bitesize Math  
Fun Brain Math Arcade  
Mr. Nussbaum's Math Lab  
Cool Math  
Illuminations (click on 3-5 activities)  
Bedtime Math  
Math Moves  
Adapted Mind  
Greg Tang's World of Math

### IPad/Android Apps:

Dreambox  
Math Party  
King of Math  
Numbler  
Math Evolve  
Prime Smash  
Ninja Prime

### Other Great Games:

Monopoly  
Yatzee  
Farkle  
Equate  
Shut the Box

# Multiple Turn Over

## You need

- Deck of Multiple Cards (attached)
- Calculator
- Journal
- Multiple Turn Over Sheet sample recording sheet for recording in your journal.

**Basic Game:** Numbers 2-50

**Intermediate Game:** Numbers 2-80

**Advanced Game:** Numbers 2-113

## Play with a partner or small group.

1. Shuffle the deck then deal out 10 Multiple Cards to each player.
2. Players arrange their Multiple Cards face-up in front of them. Each player should be able to see his/her partner's cards.
3. The player with the smallest multiple begins. This player calls out any number (except 1). Each player records that factor in his or her journal. (see recording sheet example)
4. All the players, including the player who called out the number, search for cards in their set that are multiples of that number. They write those multiples in the journal (see recording sheet) and turn those cards facedown. If a player has no multiples of a number called, the player writes "none" under "Multiples that I Turned Over" (see recording sheet).
5. Players take turns calling out numbers. The game is over when one player turns over all ten Multiple Cards.

## More ways to play:

- Play the Intermediate or Advanced games
- Deal out 15 or 20 multiple cards.

## Sample of Recording Sheet

### **Multiple Turn Over Recording Sheet**

Write the numbers of your ten Multiple Cards on the blank cards. As each factor is called, record it in the factor list. Then write which multiples of that number you have among your cards.

#### **Game 1 Multiple Cards**

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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#### **Factor**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

#### **Multiple Cards I Turned Over**

_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Multiple Cards (page 1 of 4)



2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

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Multiple Cards (page 2 of 4)



30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

### Multiple Cards (page 3 of 4)



58 59 60 61

62 63 64 65

66 67 68 69

70 71 72 73

74 75 76 77

78 79 80 81

82 83 84 85

### Multiple Cards (page 4 of 4)



86 87 88 89

90 91 92 93

94 95 96 97

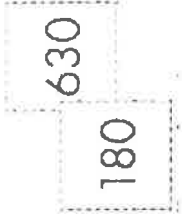
98 99 100 101

102 103 104 105

106 107 108 109

110 111 112 113

## Factor Bingo



### **You need**

- Number Cards for *Factor Bingo* (1 deck per pair – you will need to make a copy of attached cards)
- *Factor Bingo* Game boards (1 per player)
- Journal
- Counters such as pennies to cover the numbers.

### **Play with a partner.**

1. Each player chooses one for the four *Factor Bingo* game boards. Players play on different game boards.
2. The first player draws a card from the deck of Number Cards for *Factor Bingo*. Each player looks at his or her game board and chooses one number that is a factor of the number on the card. Players cover that factor with a counter. Players can choose different factors.
3. The second player draws a card, and again players choose a factor of that number on their own game boards and cover the factor with a counter.
4. If a player draws a Wild Card, the player says any number that is a multiple of 10, and all players must then find a factor on their game boards.
5. The game is over when one player has covered five numbers in a row, column, or diagonal.

# Number Cards for *Factor Bingo*



100

180

200

60

360

450

720

150

770

630

420

300

240

550

750

400

330

810

Wild  
Card

Wild  
Card



# Factor Bingo

Gameboards A and B

Gameboard B				
10	3	110	8	40
70	5	20	100	2
4	20	50	120	12
30	60	7	30	6
9	40	90	11	80

Gameboard A				
40	7	10	2	50
11	3	60	110	9
120	20	100	4	20
5	30	8	30	6
40	70	90	12	80

# Factor Bingo

Gameboards C and D

Gameboard D				
40	20	60	12	20
11	50	6	90	5
80	4	30	7	70
8	120	3	40	10
30	9	110	100	2

Gameboard C				
30	2	11	30	3
7	90	120	9	20
60	8	40	6	12
20	10	50	80	4
40	110	100	5	70

# Close to 7,500

## You need

- Deck of Digit Cards
- Math journal
- Recording Sheet example(attached)

## Play with a partner.

1. Deal 10 cards to each player.
2. Choose 7 or 8 cards that make a total as close to 7,500 as possible. Be sure that you are using MENTAL strategies. For example,  $3,108 + 4,386 = 7,494$  or  $7,130 + 372 = 7,502$ . Wild cards can be used as any digit.
3. Write these numbers and their total in your journal (following the Close to 7,500 Recording Sheet).
4. Find your score. Your score is the difference between your total and 1,000. For example, if your total is 7,502, your score is 2.
5. Put the cards you used in a discard pile. Keep the two or three cards you did not use for the next round.
6. For the next round, deal out seven or eight cards to each player, so that each player has ten cards, and play as before.
7. When you run out of cards, mix up the discard pile and use them again.
8. After five rounds, the player with the lower final score wins.

## More Ways to Play

- Play Close to 0. Use the same number of cards (6) but find the difference. Your score is the difference between 0 and your answer.
- Play Close to 10,000 following the directions above.
- **CHALLENGE!** Write the score with + or - signs to show whether your total is less than or greater than 7,500. For example, if your score is 7,498, your score is -2. If your total is 7,505, your score is +5. The total of these two scores is +4. Your goal is to get to a final score for five rounds that is as close to 0 as possible.

## Sample Recording Sheet

### Close to 7,500 Recording Sheet

Game 1	Score
Round 1: _____ + _____ = _____	_____
Round 2: _____ + _____ = _____	_____
Round 3: _____ + _____ = _____	_____
Round 4: _____ + _____ = _____	_____
Round 5: _____ + _____ = _____	_____
	<b>Final Score:</b> _____

# Digit Cards (page 1 of 3)



0

0

1

1

0

0

1

1

2

2

3

3

2

2

3

3

# Digit Cards (page 2 of 3)



4

4

5

5

4

4

5

5

6

6

7

7

6

6

7

7

# Digit Cards (page 3 of 3)



8

8

9

9

8

8

9

9

WILD  
CARD

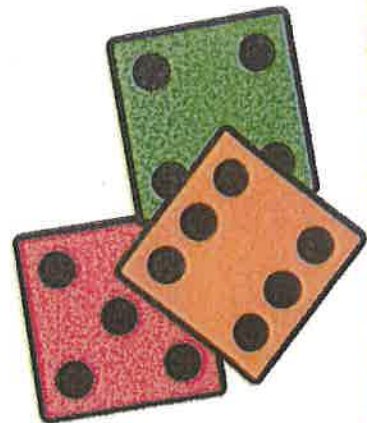
WILD  
CARD

WILD  
CARD

WILD  
CARD

# Dice Games

Created by Lacey Yates  
[Wild About Teaching!](#)



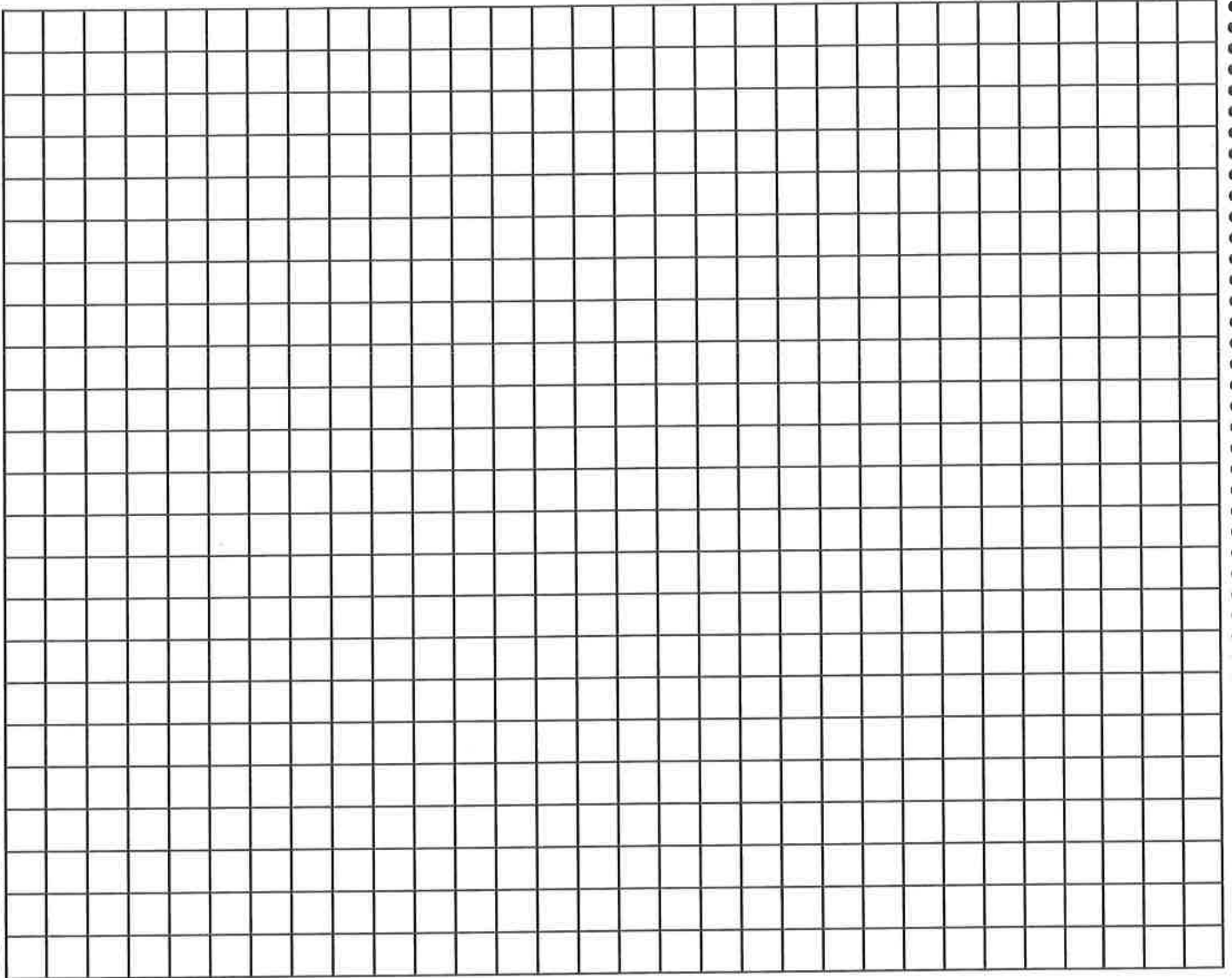
# Perimeter

- Can be used with single dice, multiple dice, or dice-in-dice.
- Students roll the dice (twice if using one die) and draw a shape with sides those lengths.
  - ex: If I rolled a 6 and a 2, I would draw a rectangle with 2 sides 6 squares long and 2 sides 2 squares long.
- Students must then identify which had the largest perimeter and which had the smallest.



Name: \_\_\_\_\_

# PERIMETER



What was the largest perimeter? \_\_\_\_\_

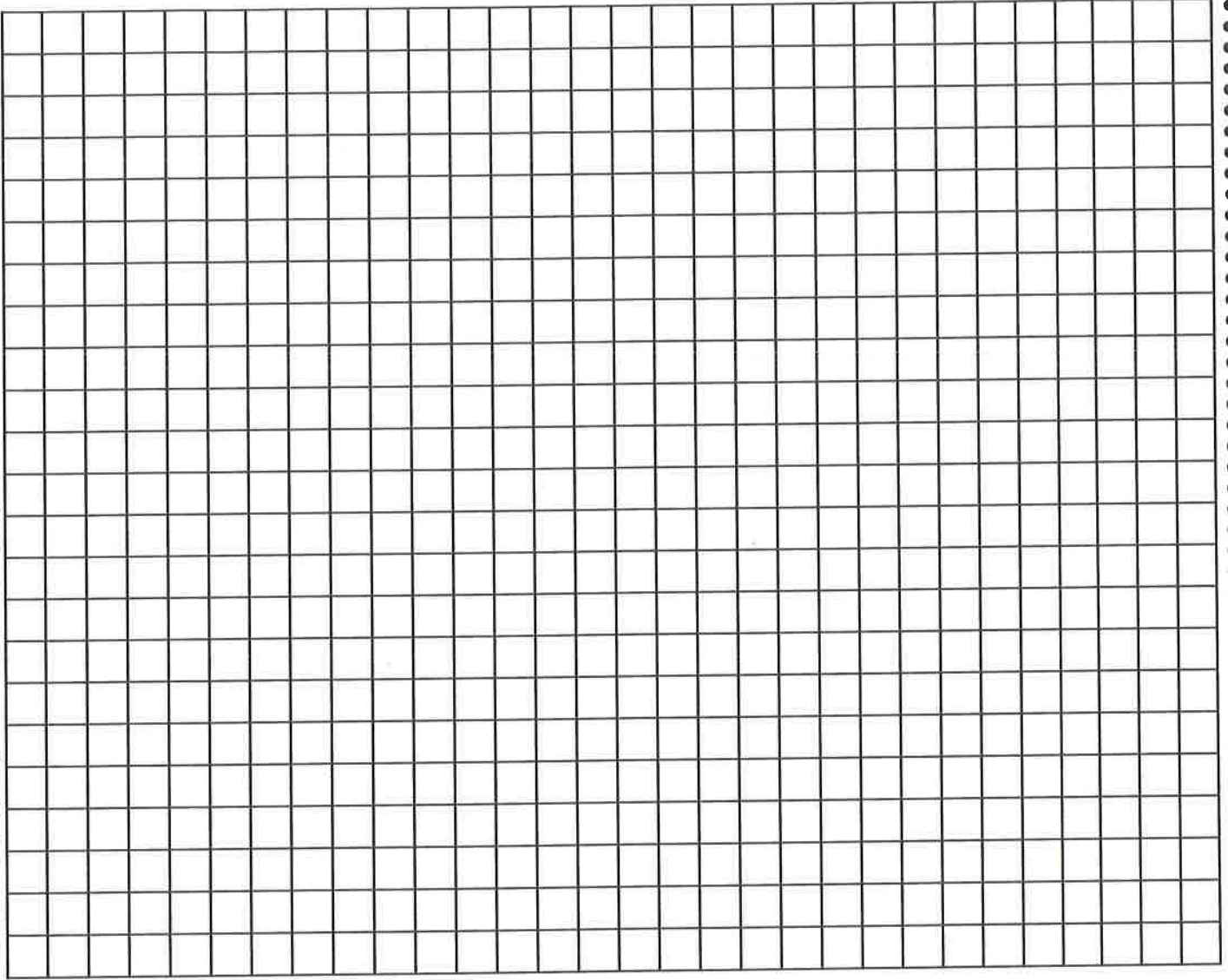
What was the smallest perimeter? \_\_\_\_\_

# Area

- Can be used with single dice, multiple dice, or dice-in-dice.
- Students roll the dice (twice if using one die) and draw a shape with sides those lengths.
  - ex: If I rolled a 6 and a 2, I would draw a rectangle with 2 sides 6 squares long and 2 sides 2 squares long.
- Students must then identify which had the largest area and which had the area.

Name: \_\_\_\_\_

# Area



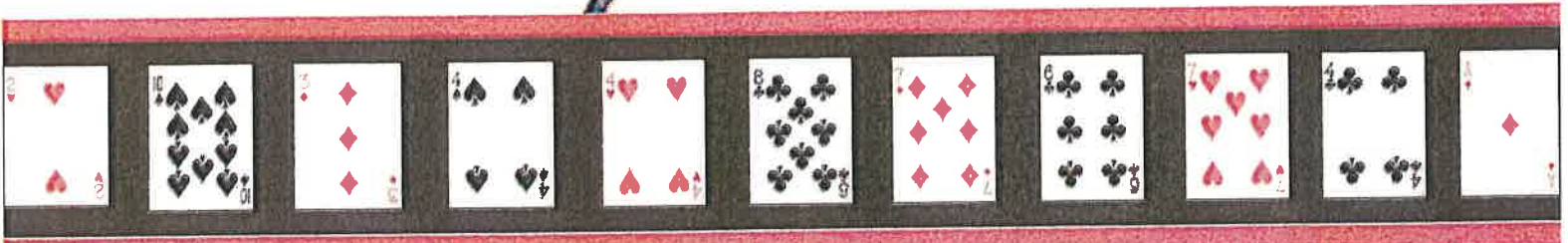
What was the largest area? \_\_\_\_\_

What was the smallest area? \_\_\_\_\_

A Collection of Math Games

# Playing Math

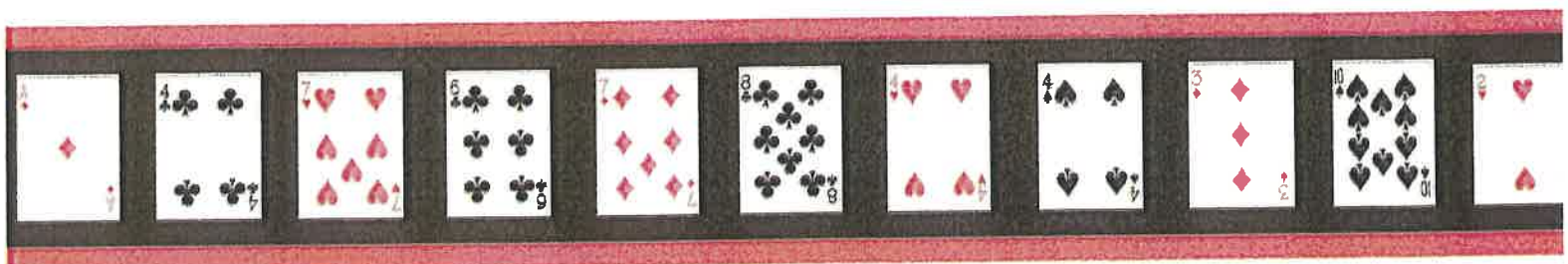
(One Deck At A Time!)



PEP

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## Advanced Addition Number Battle (Grades 1 - 6)

**Players:** Groups of two

**Materials:** Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14

**Skill:** Number recognition and addition

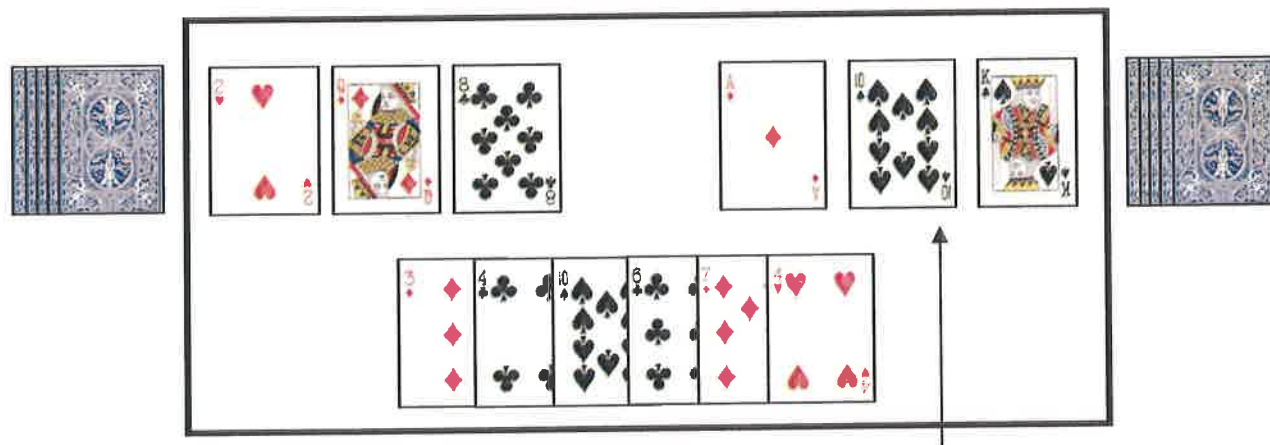
**How to Play:** Players split a deck of cards and simultaneously flip over their top three (or four) cards.



Player 1: sum is 25

Player 2: sum is 27

The highest sum wins all six (or eight) cards.



Player 1: sum is 23

Player 2: sum is 35

If the cards sums have the same value, the cards are placed in a center pile. The next hand is played normally and the winner of the next addition number battle takes the center pile as well.

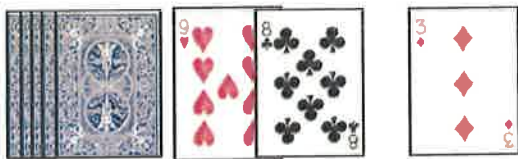
## Multi-Digit Subtraction Number Battle (Grades 1 - 3)

**Players:** Groups of two

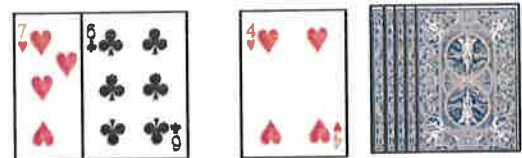
**Materials:** Deck of cards with the face cards and 10s removed, Ace worth one

**Skill:** Number recognition, place value, and subtraction

**How to Play:** Players split a deck of cards and simultaneously flip over their top three cards. Make two of them into a 2-digit number and subtract the third. Players may move the cards and place in any position of the number they wish.



Player 1:  $98 - 3 = 95$



Player 2:  $76 - 4 = 72$

The greatest difference wins all six cards.

\* Note that you can increase the number of cards to flip if you are working on larger numbers.

## Multiplication Number Battle (Grades 3 - 6)

**Players:** Groups of two

**Materials:** Deck of cards, face cards worth ten, Ace worth 1 or 11 (teacher decides)

**Skill:** Number recognition and multiplication

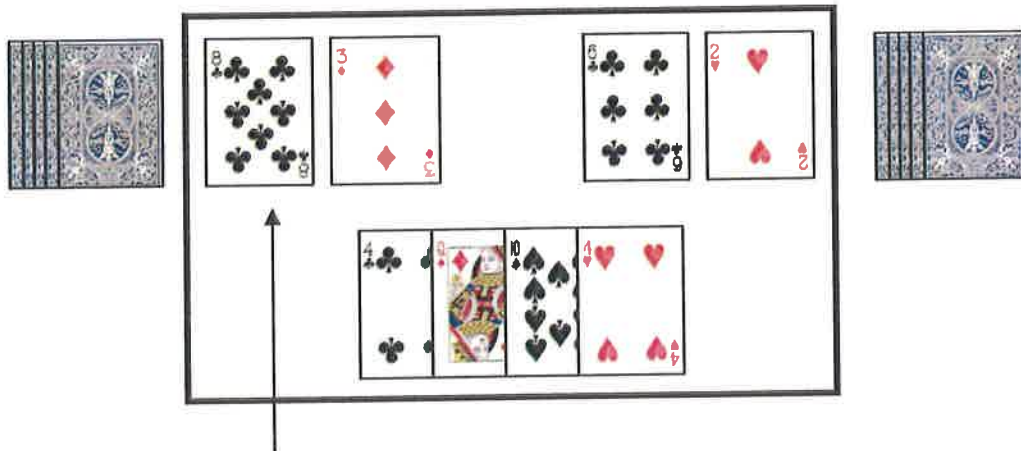
**How to Play:** Players split a deck of cards and simultaneously flip over their top two cards.



Player 1: product is 30

Player 2: product is 80

The highest product wins all four cards.



Player 1: product is 24

Player 2: product is 12

If the cards products have the same value, the cards are placed in a center pile. The next hand is played normally and the winner of the next multiplication number battle takes the center pile as well.

## Advanced Multiplication Number Battle (Grades 3 - 6)

**Players:** Groups of two

**Materials:** Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

**Skill:** Number recognition and multiplication

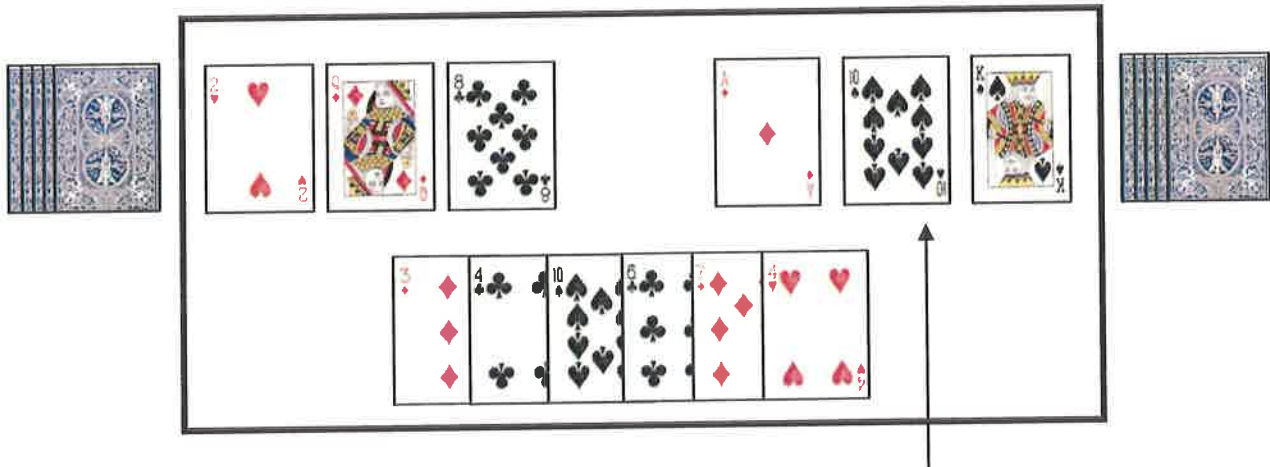
**How to Play:** Players split a deck of cards and simultaneously flip over their top three (or four) cards.



Player 1: product is 336

Player 2: product is 520

The highest product wins all six (or eight) cards.



Player 1: product is 208

Player 2: product is 1,540

If the cards products have the same value, the cards are placed in a center pile. The next hand is played normally and the winner of the next multiplication number battle takes the center pile as well.



## Multi-Digit Multiplication Number Battle (Grades 3 - 6)

**Players:** Groups of two

**Materials:** Deck of cards with the face cards and 10s removed, Ace worth one, scratch paper

**Skill:** Number recognition and multiplication

**How to Play:** Players split a deck of cards and simultaneously flip over their top three (or four) cards. Make two of them into a 2-digit number and multiply by the third. Players may move the cards and place in any position of the number they wish.



Player 1: product is 261

Player 2: product is 384

The highest product wins all six (or eight) cards.

\* Note that you can increase the number of cards to flip if you are working on larger numbers.

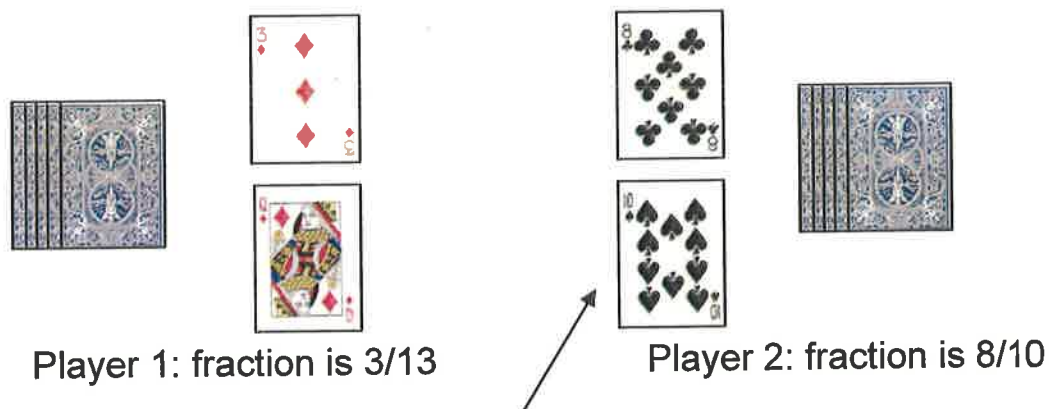
## Fraction Number Battle (Grades 4 - 6)

**Players:** Groups of two

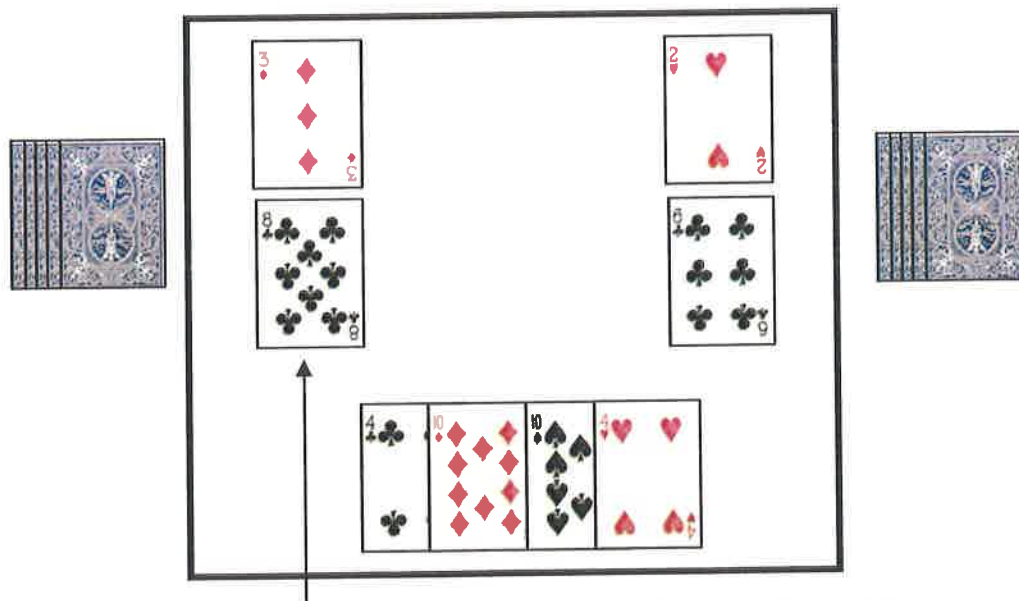
**Materials:** Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

**Skill:** Number recognition, multiplication, fractions, numerator, and denominator

**How to Play:** Players split a deck of cards and simultaneously flip over their top two cards, using the smaller card as the numerator.



The greatest fraction wins all four cards.



If the cards are equivalent fractions, the cards are placed in a center pile. The next hand is played normally and the winner of the next fraction multiplication number battle takes the center pile as well.

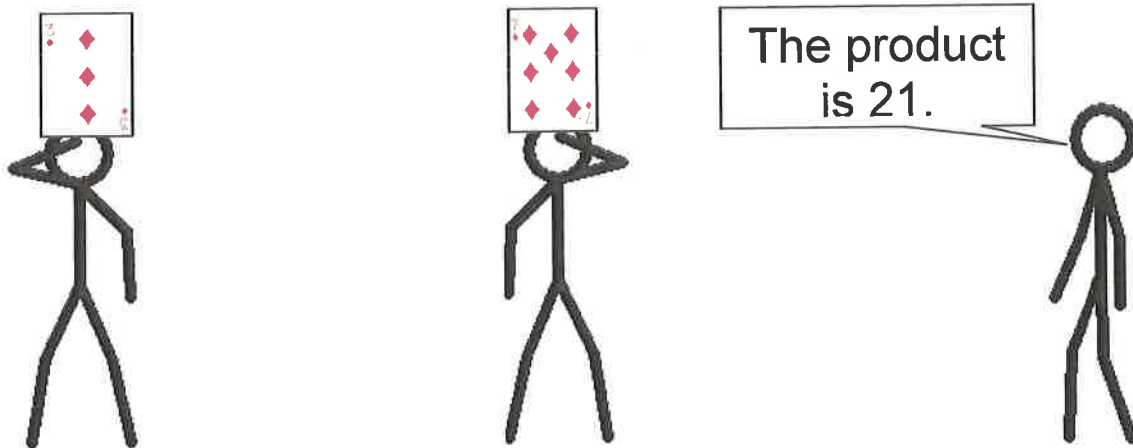
### Reading Multiplication Minds (Grades 3 - 6)

**Players:** Groups of three (groups of four or five for more advanced)

**Materials:** Deck of cards

**Skill:** Multiplication, product

**How to Play:** In this game for three players, one student is the leader and the other two are the “mind readers”.



The two players each draw a card and, without looking at it, hold it up to their foreheads so that everyone else can see it, but themselves. The leader announces the products of the two cards. Each “mind reader” must figure out which card is on his or her own forehead and say it aloud. When both “mind readers” have figured out their cards, a new leader is chosen and the game continues.

With Reading Multiplication Minds, all players get practice with products and factors in every round.

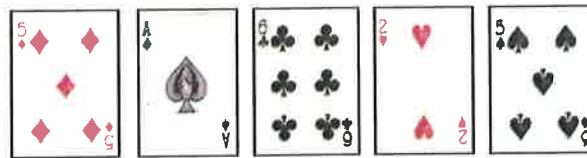
## Hit The Target (Grades 4 - 8)

**Players:** Groups of two to five players

**Materials:** Deck of cards, Ace worth 1 or 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

**Skill:** Multiplication, addition, subtraction, division, order of operations, and mathematical reasoning

**How to Play:** Each group of 2 - 5 students selects a target number from 1-30. One of the players will turn five cards from the deck face up and the object is for students to make a number sentence using all five cards with any operations to reach the target number.



For example, suppose the target number is 20 and the cards in play are 5, 5, 6, 2, and Ace (worth 1).

$$\begin{array}{|c|} \hline 5 \\ \hline \text{♦} \\ \hline \text{♦} \\ \hline \text{♦} \\ \hline \text{♦} \\ \hline 5 \\ \hline \end{array} \times \begin{array}{|c|} \hline 2 \\ \hline \text{♥} \\ \hline \text{♥} \\ \hline \text{♥} \\ \hline 2 \\ \hline \end{array} + \begin{array}{|c|} \hline 5 \\ \hline \text{♠} \\ \hline \text{♠} \\ \hline \text{♠} \\ \hline \text{♠} \\ \hline 5 \\ \hline \end{array} + \begin{array}{|c|} \hline 6 \\ \hline \text{♣} \\ \hline \text{♣} \\ \hline \text{♣} \\ \hline \text{♣} \\ \hline 6 \\ \hline \end{array} - \begin{array}{|c|} \hline A \\ \hline \text{♠} \\ \hline \text{♠} \\ \hline \text{♠} \\ \hline \text{♠} \\ \hline A \\ \hline \end{array} = 20$$

One winning combination is:  $5 \times 2 + 5 + 6 - 1 = 20$ . Another is  $(6 \times 5) - (2 \times 5 \times 1)$ . Also,  $(6 \div 2) \times 5 + (5 \times 1)$  works, as do many more.

The first player to find a winning combination keeps the cards and chooses the next target number. If no combination is found in about a minute, flip over another card and try to make a combination using six cards.

To keep the game fair for players of different abilities, introduce the rule that if a player hasn't made a combination in three rounds, he or she may make combinations using four of the five cards until they make a winning combination; other players must use five.

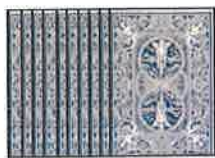
## Multiplication Zone (Grades 4 - 8)

**Players:** Two to four players

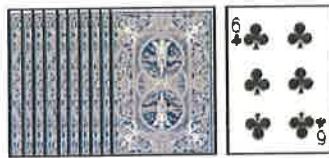
**Materials:** Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

**Skill:** Multiplication and estimation

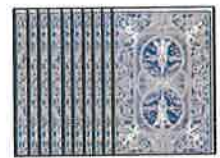
**How to Play:** Each player is dealt 10 cards. A card from the remaining stack is flipped face up.



Player 1

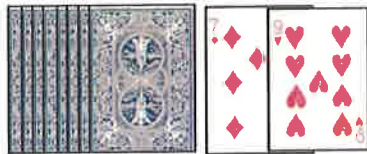


Remaining stack

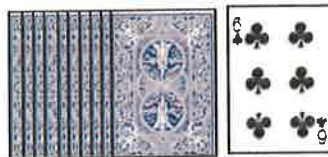


Player 2

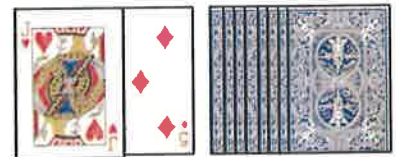
Its value is multiplied by 10, and players look at their pile of cards and try to find a pair of cards whose product is in that "decade."



Player 1: 63



Remaining stack  
Zone: 60 - 69



Player 2: 60

For example, if the flipped card is a six, then the zone is any number in the sixties (60-69), so a winning pair would be 9 and 7 (product 63) or 12 and 5 (product 60), etc.

Any player who can make a pair removes those cards from his or her hand. Flip over the next card in the remaining stack to determine the next zone. Play continues until one player's hand is empty.

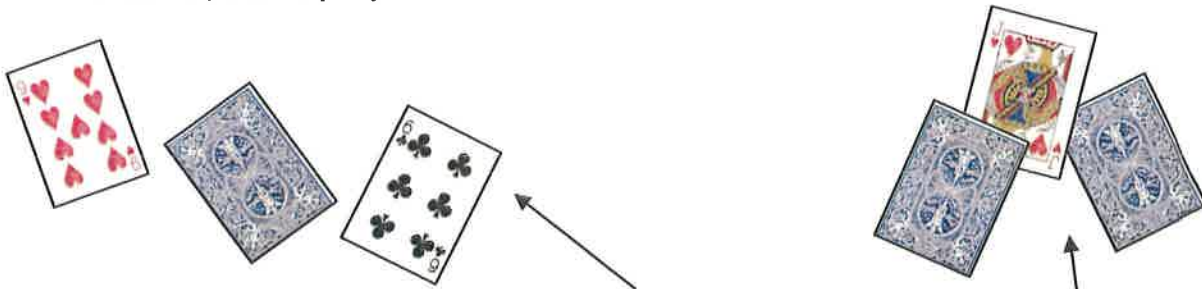
## Subtraction Toss Up (Grades 4 - 6)

**Players:** Groups of two or more

**Materials:** Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

**Skill:** Addition, subtraction, positive and negative integers

**How to Play:** Each player draws three cards from the deck. On the count of three, each player tosses their cards into the air.



Player 1: sum is 15, then subtract the face down card

Player 2: sum is 12, then subtract the face down cards

Each player adds only their own cards that land face up and then subtracts the card(s) that land face down. Points are earned for the difference of all of the cards. It is possible for answers to go into the negatives, so only play this game if students have been introduced to both positive and negative integers. The first player to reach a designated amount of points wins (50 or 100).

\* In this particular game, card color does NOT determine if a number is positive or negative.

\* Make sure students don't toss their cards too close to one another or too high.

### Multiplication Toss Up (Grades 3 - 5)

**Players:** Groups of two or more

**Materials:** Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

**Skill:** Multiplication

**How to Play:** Each player draws three cards from the deck. On the count of three, each player tosses their cards into the air.



Player 1: product is 54



Player 2: product is 12

Each player multiplies only their own cards that land face up. Points are earned for every card that lands face up. The first player to reach a designated amount of points wins (100 or 200).