



QPAT 2023 Preconference

**Buddy Teachers
+ Buddy Classrooms
= Math Success**

Jane Felling

Thursday, October 12th, 2023
9:00 AM - 3:00 PM



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MATH JOURNAL

TABLE OF CONTENTS

GAME NUMBER	GAME NAME	CONCEPTS COVERED

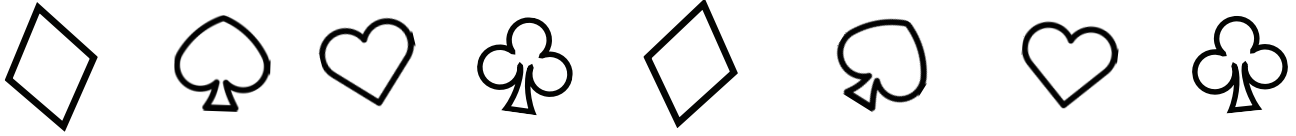


MATH JOURNAL

MATH GLOSSARY	
WORD	MEANING OR EXAMPLE



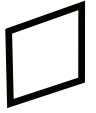
MATH JOURNAL



Game Number : _____



Name of Game: _____



Players: _____



Skills: _____





Goal: _____





How To Play: _____

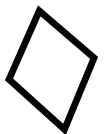
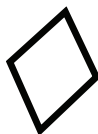




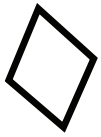




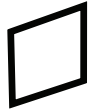




MATH JOURNAL



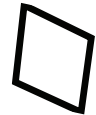
Strategies I've Learned:











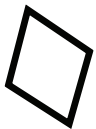


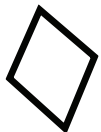
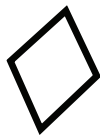


Math Words I've Learned:









LET'S NOODLE...

VISUAL NOTETAKING IDEAS

DICE	CARDS
GOAL	TAKE TURNS
RULE TWIST	PLAYERS
BONEYARD	MATH TALK
MATH THINKING	OTHER...

HORSE RACE

Each player takes 18 dice of own color.

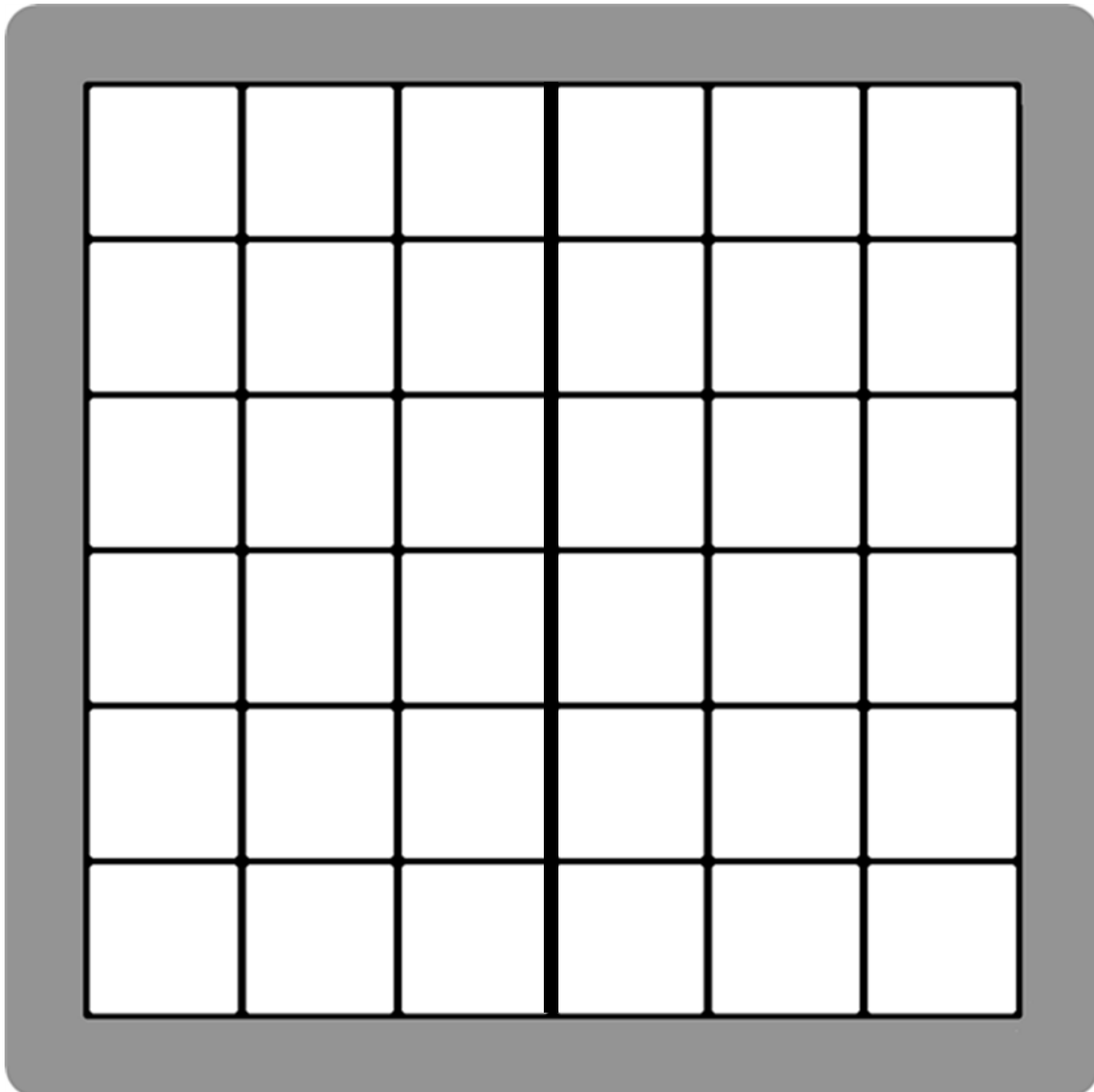
Each player rolls two dice and adds.

Player with the greatest sum places them into their side of the tray, least sum places in lid.

Player with the most dice on their side of the tray at the end of the game wins.

**PLAYER
ONE**

**PLAYER
TWO**



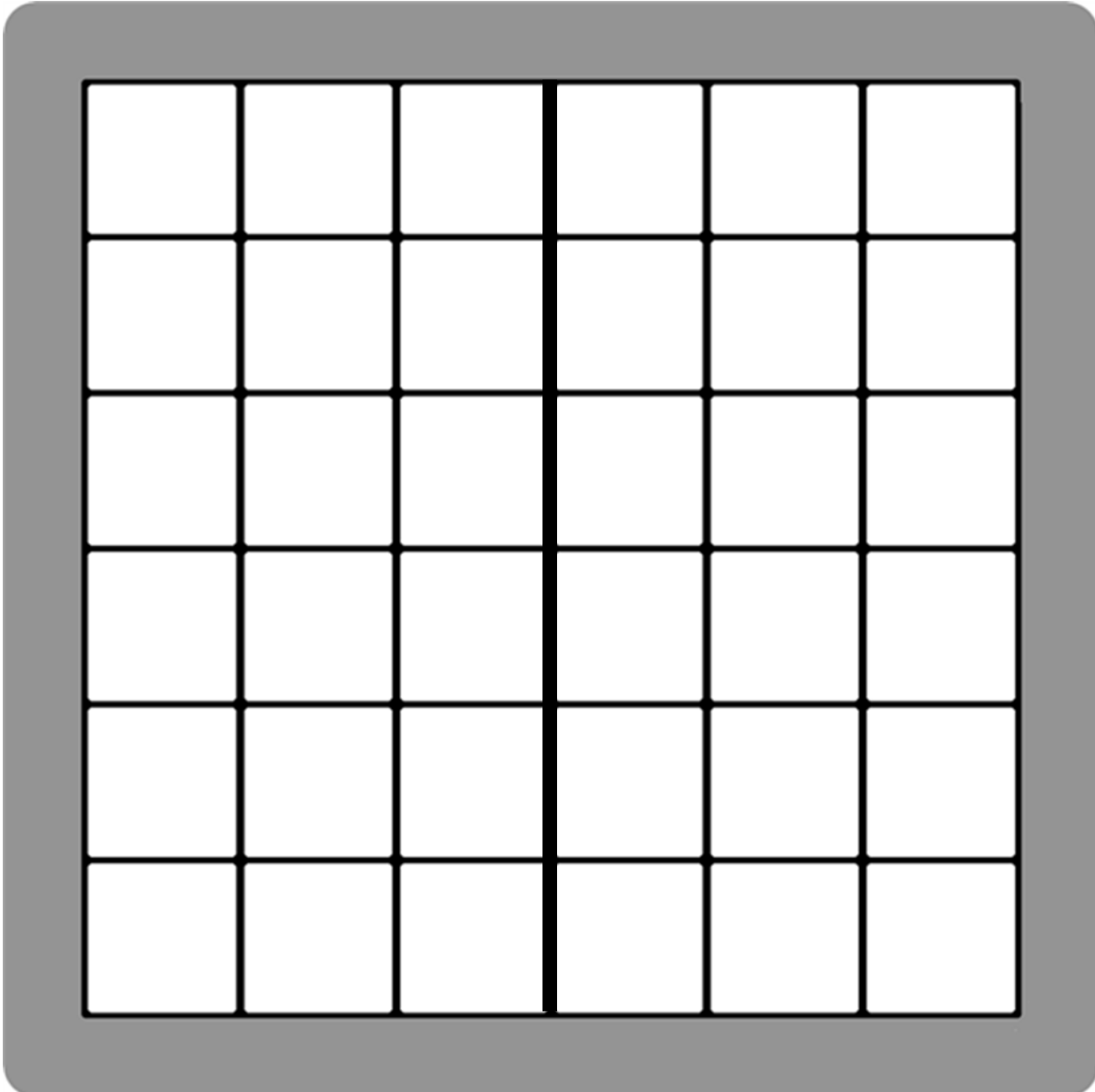
WARP 18

- ▶ Explore Associative Property of Addition.
- ▶ Each player takes 18 dice of their own color.
- ▶ Each player rolls 3 dice and adds.
- ▶ Player with the greatest sum places them into their side of the tray, least sum places in lid.
- ▶ Players need to verbalize how they calculated sums.
- ▶ Player with the most dice in their side of the tray at the end of the game wins.

Slam Dunk 36 / 72

PLAYER
ONE

PLAYER
TWO



Each player takes 18 dice of own color.

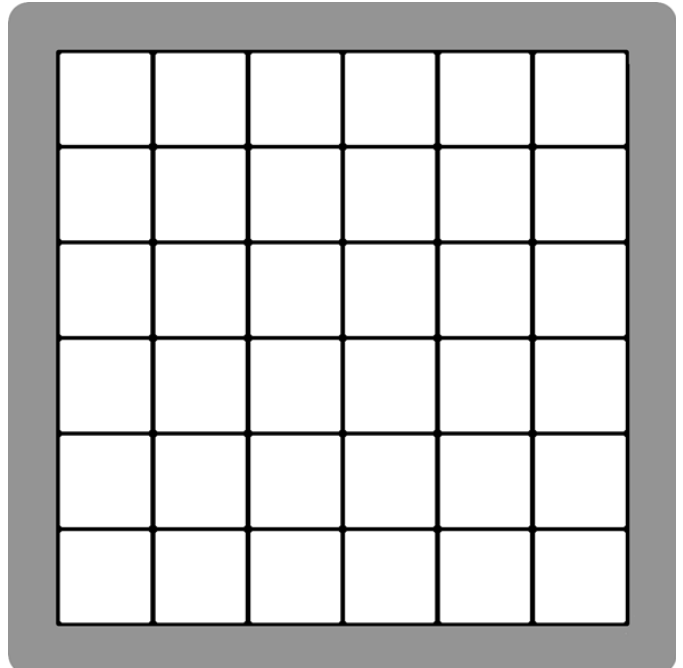
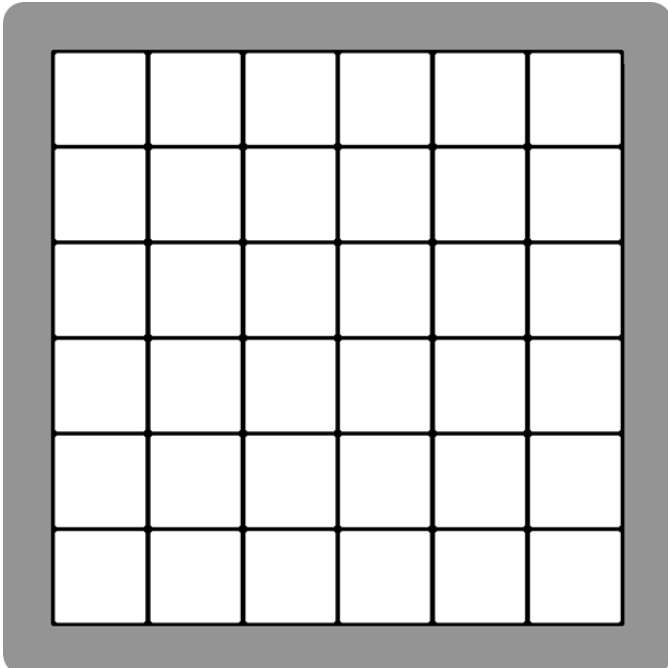
For 36 SLAM DUNK: Each player rolls 2 dice and multiplies them for a product.

For 72 SLAM DUNK: Each player rolls 3 dice, adds 2 of the dice for a sum and multiplies that sum by the third die for a product.

Player with the greatest product, places their dice into the black tray. Player with least product place their dice are into the clear lid.

Player with the most dice in their side of the black tray at the end of all the rounds, wins.

PRIMARY SUPER MUSH



_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Object of the Game: Get all the dice into the tray with no dice leftover.

Preparation: Partners "Super Mush" the dice for about 10-15 seconds, thoroughly mixing them. Next, partners choose a "Target Number" (randomly / by rolling a die / flipping over a card).

How to Play: Partners work together and use 2, 3, 4 or 5 dice to create a math sentence that equals the target number. They put the dice into the tray. Partners again use between 2 to 5 dice to create another math sentence that equals the target number and place those dice into the tray as well. Partners continue to select dice to make math sentences until all the dice are in the tray or until they can't make a math sentence that equals the target.

MIXED OPERATION SUPER MUSH

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

DOUBLES / DOUBLES + 1 COMBINATIONS

DOUBLES



1

+



1

=

2



4

+



4

=

8



2

+



2

=

4



5

+



5

=

10



3

+



3

=

6



6

+



6

=

12

EVEN

DOUBLES + 1



1

+



2

=

3



4

+



5

=

9



2

+



3

=

5



5

+



6

=

11



3

+



4

=

7











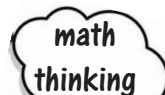
ODD

DOUBLES + 1 HUNT

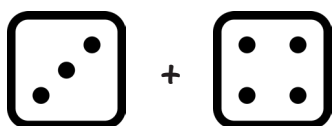
- LEVEL:** Grade 1 - 2
- SKILL:** identifying doubles + 1 for addition fact fluency to 11
- SET UP:** vertical or horizontal, 1 die in each slot, 1 shaker per student, doubles reproducible sheet for reference
- PLAYERS:** 2 (cooperative pair)
- GOAL:** to identify and call out double + 1 facts to 11

GETTING STARTED:

Introduce doubles + 1 facts/pattern to your students and have them draw or identify the following rolls:

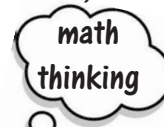
 +  = 3 1 + 2 = 3	 +  = 9 4 + 5 = 9
 +  = 5 2 + 3 = 5	 +  = 11 5 + 6 = 11
 +  = 7 3 + 4 = 7	

All doubles + 1 add to make an ODD SUM. The pattern for our doubles + 1 combination is: "Any numbers rolled in order, or that sit side by side, or touch on a number line, are doubles + 1 combinations." Have students work on doubling the least number, then adding 1 more to find their answer:



Double + 1 combination

"I can say $3 + 3 = 6 + 1 \text{ more} = 7$ "



Practice for all the above patterns.

ADDITION SHAKE UP RECORDING SHEET

MY SHAKE

SUM

COMMUTATIVE

	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	

MY SHAKE

SUM

COMMUTATIVE

	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	

MY SHAKE

SUM

COMMUTATIVE

	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	

MY SHAKE

SUM

COMMUTATIVE

	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	
	+		=		=		+	

THREE SHAKER ADDITION / THREE SHAKER "TENS" RECORDING SHEET

What I Saw				How I Grouped				SUM			
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____

What I Saw				How I Grouped				SUM			
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____

What I Saw				How I Grouped				SUM			
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____
				=	_____	+	_____	+	_____	=	_____

MULTIPLYING SHAKERS RECORDING SHEET

MY SHAKE

COMMUTATIVE FACT

	x		=		=		x		=	
	x		=		=		x		=	
	x		=		=		x		=	
	x		=		=		x		=	
	x		=		=		x		=	
	x		=		=		x		=	
	x		=		=		x		=	

MY SHAKE

COMMUTATIVE FACT

	x		=		=		x		=	
	x		=		=		x		=	
	x		=		=		x		=	
	x		=		=		x		=	
	x		=		=		x		=	
	x		=		=		x		=	
	x		=		=		x		=	

THREE SHAKER MULTIPLICATION RECORDING SHEET

What I Saw				How I Grouped				PRODUCT		
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____

What I Saw				How I Grouped				PRODUCT		
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____

What I Saw				How I Grouped				PRODUCT		
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____
				=	_____	X	_____	X	=	_____

SEVEN UP - ADD UP RECORDING SHEET

Shake # My 7 numbers _____ My Sum



How I grouped my addends

Strategy I used

• _____	→	• _____
• _____	→	• _____
• _____	→	• _____
• _____	→	• _____

Shake # My 7 numbers _____ My Sum



How I grouped my addends

Strategy I used

• _____	→	• _____
• _____	→	• _____
• _____	→	• _____
• _____	→	• _____

Shake # My 7 numbers _____ My Sum



How I grouped my addends

Strategy I used

• _____	→	• _____
• _____	→	• _____
• _____	→	• _____
• _____	→	• _____

Shake # My 7 numbers _____ My Sum



How I grouped my addends

Strategy I used

• _____	→	• _____
• _____	→	• _____
• _____	→	• _____
• _____	→	• _____

SUM FRACTION ACTION

contributed by Nancy Paulson

- LEVEL:** Grade 5-8
- SKILL:** adding proper, improper and mixed fractions
- SET UP:** horizontal, 1 die in each slot (preferably 2 different colors of dice), 2 shakers per team
- PLAYERS:** 4 (2 vs 2)
- GOAL:** to have the greatest sum of seven fractions

GETTING STARTED:

To begin, warm up and review the simpler fraction games on pages 46 to 48. Nancy loves to have her students pick their favorite baseball team and play nine INNINGS or rounds of this game.

Each team shakes their two containers until  is called.

The containers are then lined up horizontally to create seven fractions. Some fractions may be proper, mixed or equal to one. Teams must add their seven fractions and calculate their sum. The team with the greatest sum scores the point.

TEACHING TIP: Have students analyze the types of fractions rolled and look for compatible "friendly" fractions before doing their addition.

EXAMPLE:

Team One:

numerator	5	2	6	6	3	1	2
denominator	5	2	6	4	3	5	5

$$= 1 + 1 + 1 + 1\frac{1}{2} + 1 + \frac{3}{5} + \frac{2}{5}$$

$$= 5\frac{1}{2} + 1 + \frac{3}{5} + \frac{2}{5} = 5\frac{1}{10} + \frac{5}{10} = 6\frac{1}{10}$$

Team Two:

numerator	1	3	3	6	5	6	1
denominator	3	2	2	1	1	1	6

$$= \frac{1}{3} + \frac{3}{2} + \frac{3}{2} + 6 + 5 + 6 + \frac{1}{6}$$

$$= \frac{1}{3} + 3 + 20 + \frac{1}{6} = 20\frac{3}{6} + \frac{1}{6} = 20\frac{4}{6}$$

Team Two's sum is greater. They score this inning!

Teams shake new fractions for the second inning and calculate their new SUMS. The team with the most points after nine innings is the winner.

SUM FRACTION ACTION RECORDING SHEET

SHAKE 1

numerator							
denominator							

SHAKE 2

numerator							
denominator							

SHAKE 3

numerator							
denominator							

SHAKE 4

numerator							
denominator							

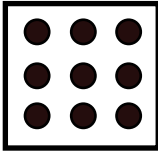
SHAKE 5

numerator							
denominator							

$2 \times 2 = 4$

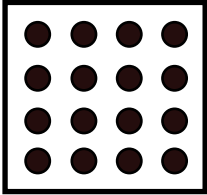


$3 \times 3 = 9$

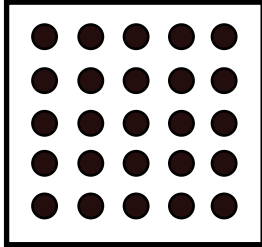


Square Facts

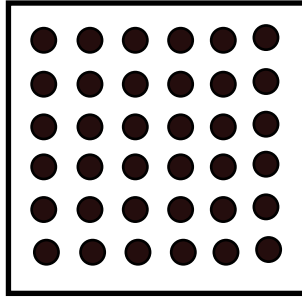
$4 \times 4 = 16$



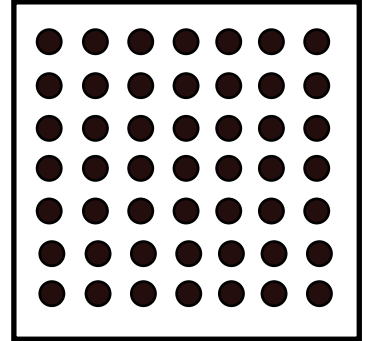
$5 \times 5 = 25$



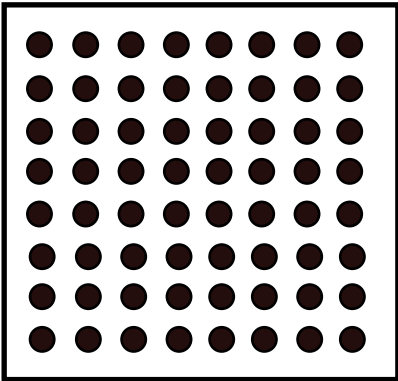
$6 \times 6 = 36$



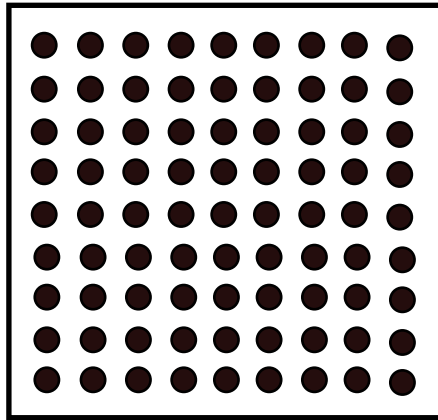
$7 \times 7 = 49$



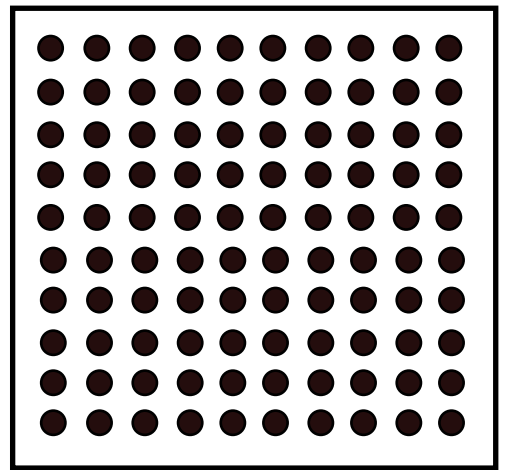
$8 \times 8 = 64$



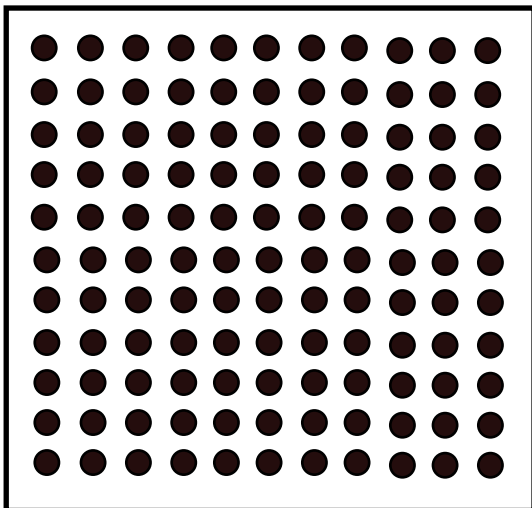
$9 \times 9 = 81$



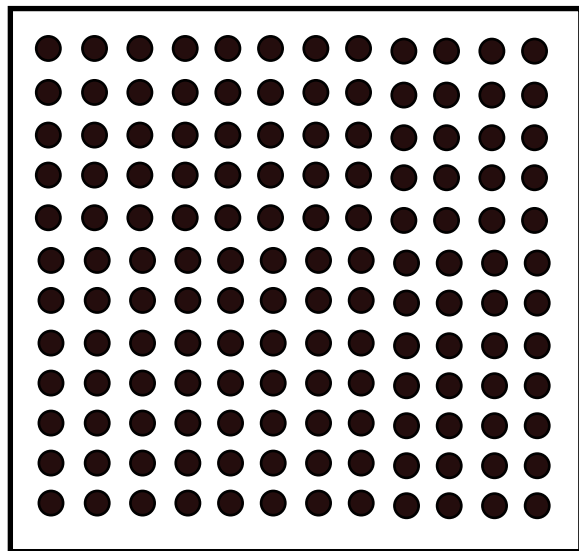
$10 \times 10 = 100$



$11 \times 11 = 121$



$12 \times 12 = 144$



NUMBER FACE OFF

LEVEL: Pre-Kindergarten - Grade 1

SKILLS: count using one-to-one correspondence, identify objects in a group as $>$ $<$ or $=$ to

PLAYERS: 2 1 vs 1

EQUIPMENT: deck of cards (Ace=1)-5 to start or (Ace=1)-10, (remove Jokers, Jacks, Queens and Kings)

GOAL: to have the greatest number and to collect the most cards by the end of the game

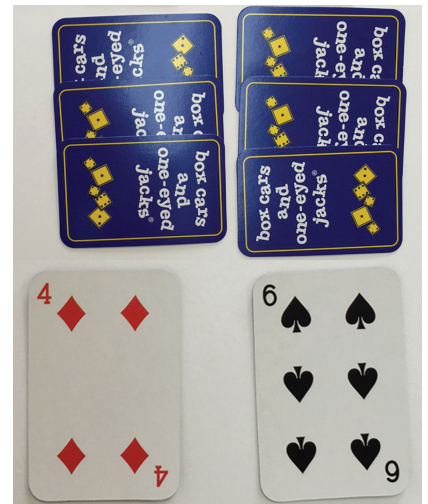
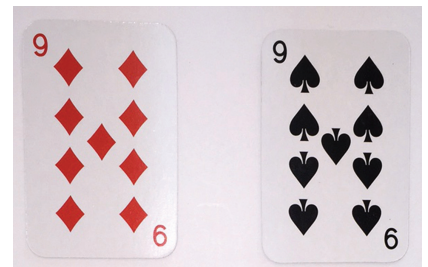
GETTING STARTED:

Players divide cards evenly between themselves. Each player turns over one card, counts and says the number out loud. The player with the greater number wins both cards. In the event of a tie, where each player has the same number, players declare a "Face Off".

Each player deals out three cards upside down and turns over one new card.

"TIE-BREAK"

The new cards are compared for greatest. The greater number collects all the cards. Player Two would say "6 is greater than 4" and put all ten cards into their points pile. Play continues for a set period of time. The player with the most cards is the winner.



MATH TALK

Make sure students are using correct math vocabulary as they play, for example "6 is a greater number than 4". As they mature they can verbalize part-whole relationships such as "6 is greater than 4 ... by 2".

VARIATION:

1. Play for least number as the winner of the cards, verbalizing "4 is less than 6" before putting cards into the point pile.

ADDITION FACE OFF

LEVEL: Grade 1

SKILLS: solve and add within 10, understand addition as putting together and adding to, fact families

PLAYERS: 2

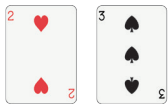
EQUIPMENT: cards (Ace=1) - 5

GOAL: to have the greatest sum of two cards

GETTING STARTED: Players divide cards evenly between themselves. Each player turns over two cards and adds them together. The greatest sum gets all of the cards. In the event of a tie (ie. each player has the same sum), FACE OFF is declared. Each player deals out three more cards face down and then turns over two more cards. These two cards are added together. The greatest sum wins all of the cards. Play continues until one player has collected all of the cards.

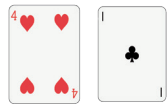
EXAMPLE:

PLAYER ONE



$2 + 3 = 5$

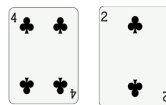
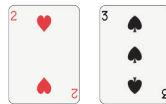
PLAYER TWO



$4 + 1 = 5$

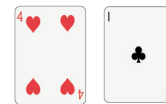
FACE OFF IS DECLARED

PLAYER ONE

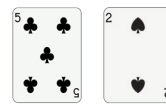


$4 + 2 = 6$

PLAYER TWO

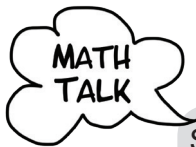


"TIE BREAK"

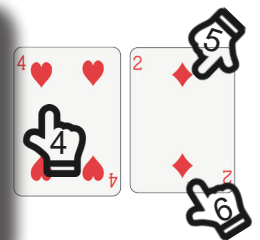


$5 + 2 = 7$

Player 2 collects all of the cards.



Students who are having difficulty adding the numbers can use the strategy of using the symbols on the cards (ie. hearts, spades, diamonds or clubs) to count on from the higher numbered card. For example, if a 4 of hearts and 2 of diamonds are turned over, students start at 4, saying "4" and then touch the symbols on the second card counting on "5", "6".



VARIATIONS:

1. Increase the value of cards used : (Ace=1) - 6 for addition to 12 ; (Ace=1) - 9 for addition to 18.
2. Divide cards evenly between two players. Each player turns over two cards, creates a two-digit number and verbalizes the number. Players each turn over a third card and add it to their two-digit number. The player with the greater number wins all the cards.

ADDITION FACE OFF

LEVEL: Grade 1

SKILLS: solve and add within 10, understand addition as putting together and adding to, fact families

PLAYERS: 2

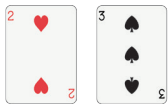
EQUIPMENT: cards (Ace=1) - 5

GOAL: to have the greatest sum of two cards

GETTING STARTED: Players divide cards evenly between themselves. Each player turns over two cards and adds them together. The greatest sum gets all of the cards. In the event of a tie (ie. each player has the same sum), FACE OFF is declared. Each player deals out three more cards face down and then turns over two more cards. These two cards are added together. The greatest sum wins all of the cards. Play continues until one player has collected all of the cards.

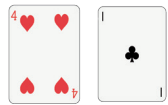
EXAMPLE:

PLAYER ONE



$2 + 3 = 5$

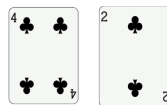
PLAYER TWO



$4 + 1 = 5$

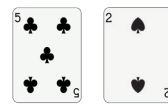
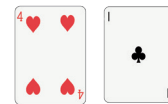
FACE OFF IS DECLARED

PLAYER ONE



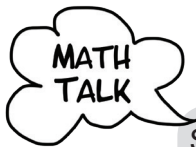
$4 + 2 = 6$

PLAYER TWO

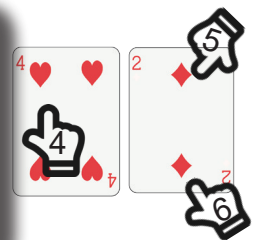


$5 + 2 = 7$

Player 2 collects all of the cards.



Students who are having difficulty adding the numbers can use the strategy of using the symbols on the cards (ie. hearts, spades, diamonds or clubs) to count on from the higher numbered card. For example, if a 4 of hearts and 2 of diamonds are turned over, students start at 4, saying “4” and then touch the symbols on the second card counting on “5”, “6”.



VARIATIONS:

1. Increase the value of cards used : (Ace=1) - 6 for addition to 12 ; (Ace=1) - 9 for addition to 18.
2. Divide cards evenly between two players. Each player turns over two cards, creates a two-digit number and verbalizes the number. Players each turn over a third card and add it to their two-digit number. The player with the greater number wins all the cards.

SALUTE

- LEVEL:** Grade 1-2
- SKILLS:** missing addend, problem solving (for missing factor)
- PLAYERS:** 3 cooperative - 1 general/referee, 2 players
- EQUIPMENT:** cards (Ace=1) - 12 (Jack =11, Queen=12, King=0)
- GOAL:** to identify the missing addend (card) on your head

GETTING STARTED: One player is designated as the "General" and will be providing the SALUTE signal and calling the sums for players. The other two players divide the cards and place them face down. The General calls "SALUTE!" and both players take a card from the top of the deck and, without looking at it, place it on top of their heads so that the other player can see it. The general must add the two cards and call the sum out loud.

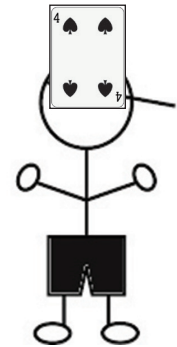
EXAMPLE:

Players "Salute" - both players draw a card and place on their heads. The General says "Your sum equals 10, what's on your head?"

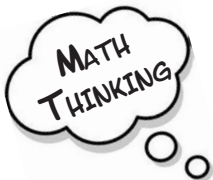
The players then use the SUM and the number on the card they can see on the other player's head to try and figure out their own card.



PLAYER ONE



PLAYER TWO



Player One "The sum is 10, I see 4. $10 - 4 = 6$, I think 6 is on my head."

Player Two "The sum is 10. I see 6. I am going to count on from 6...7-8-9-10. I had to count on 4 more, I must have a 4. $6 + 4 = 10$."

Players should let the group know the strategy they used to figure out the number on their head.

The General calls "Salute" again, and without looking, both players draw a new card and place them on their heads. The General says the sum out loud and players again try to figure out their card value. Have players change roles so that each will have a chance to be the General.

JOURNAL WORK AND EXTENSIONS:

1. After practicing several rounds have students complete the Salute Recording Sheet (see page 68).
2. Have students describe three strategies they could use to figure out their number. They can write or illustrate their answers.
3. Use the skills checklist found on page 69 to help you assess student's understanding.

MULTIPLICATION FACE OFF

LEVEL: Grade 3 and up

SKILLS: multiplication facts to 81

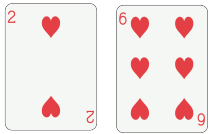
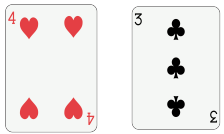


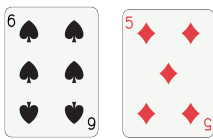

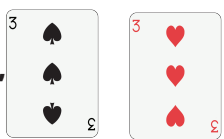
PLAYERS: 2

EQUIPMENT: cards (Ace=1) - 9, multiplication table

GOAL: to have the greatest product and collect the most cards

GETTING STARTED: Players divide cards evenly between themselves. Both players turn over two cards and multiply them together. The player with the greatest product collects all four cards. In the event of a tie, each player deals three more cards face down and then turns over two more cards and multiplies them together. The player with the greatest product collects all the cards. Play continues until one player has collected all of the cards.

EXAMPLE:

			PLAYER ONE		
PLAYER ONE	$2 \times 6 = 12$	FACE OFF IS DECLARED			PLAYER TWO
PLAYER TWO	$4 \times 3 = 12$				
					
					
	$6 \times 5 = 30$		"TIE BREAK"		$3 \times 3 = 9$
					<p>"Thirty is a greater product than nine." Player One collects all of the cards.</p>

VARIATION:

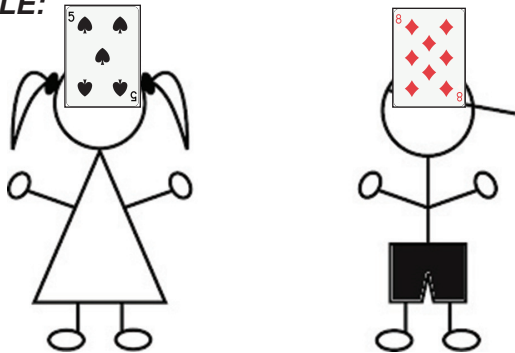
1. To increase the level of difficulty, use cards (Ace=1) - (Jack=11), (Queen=12)
2. Use (King=0) to introduce $\square \times 0 = 0$ math facts.

SALUTE ADVANCED

- LEVEL:** Grade 3 and up
- SKILLS:** missing factor, problem solving
- PLAYERS:** 3 cooperative - 1 general/referee, 2 players
- EQUIPMENT:** cards (Ace=1) - 10 ; multiplication table (see page 49)
VARIATION: (Jack=11, Queen=12)
- GOAL:** to identify the missing factor (card) on your head

GETTING STARTED: One player is designated as the "General" and will provide the SALUTE signal and call the PRODUCT for players. The other two players divide the cards and place them face down. The General calls "SALUTE!" and both players take a card from the top of the deck and, without looking at it, place it on top of their heads so that the other player can see it. The general must multiply the two cards and call the product out loud.

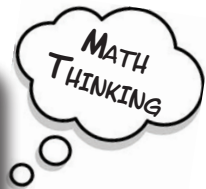
EXAMPLE:



Players "Salute" - both players draw a card and place on their heads. The General says "Your product equals 40, what's on your head?" The players then use the PRODUCT and the number on the card they can see on the other player's head to try and figure out their own card.

Player One "I know the product is 40. I see 8. $40 \div 8 = 5$, My card/factor must be a 5."

Player Two "I know the product is 40. I see 5. $5 \times ? = 40$. I know my 5 times table. $5 \times 8 = 40$. My card/factor must be 8."



Players should let the group know the strategy they used to figure out the number on their head. The General calls "Salute" again, and without looking, both players draw a new card and place them on their heads. The General says the product out loud and players again try to figure out their card value. Have players change roles so that each will have a chance to be the General.

VARIATION:

1. Include (Jack=11) and (Queen=12) for a greater challenge.

JOURNAL WORK & EXTENSIONS:

1. After practicing several rounds have students complete the Salute Recording Sheet (see page 56).
2. Have students describe and illustrate three strategies they could use to figure out their number.

PATTERN PUT AWAY

LEVEL: 3 – 8

SKILLS: developing and describing patterns, pre-algebra, operations

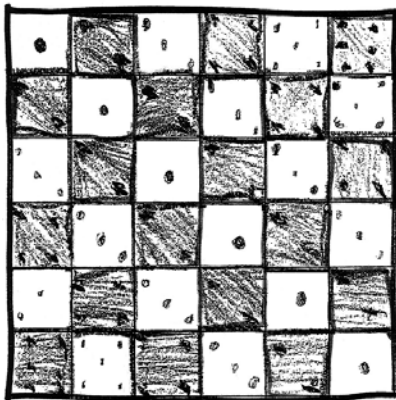
PLAYERS: 2 (cooperative team)

EQUIPMENT: 36 dice, tray, recording sheet

GOAL: to create mathematical patterns using all 36 dice

GETTING STARTED:

In this activity, students will work in pairs to fill up their trays with patterns. Students can set their dice to any number and use any combination of number and color to create their patterns. As students discuss and plan their patterns they can slot their dice into the slots of the tray to begin arranging their ideas. This activity generates a lot of opportunity for discussion, planning, and playing with patterns.



The following is an example and description of a primary pattern. The initial description is fairly basic, but as the student analyzed it more deeply, they noticed that by creating a diagonal pattern, they created others. In discussion, it was noted:

“I see 1 through 6 on all 4 sides, flipped and reversed”

“I can add diagonally like $1 + 1 + 1 + 1 + 1 + 1 = 6$

$$2 + 2 + 2 + 2 + 2 = 10$$

$$3 + 3 + 3 + 3 = 12”$$

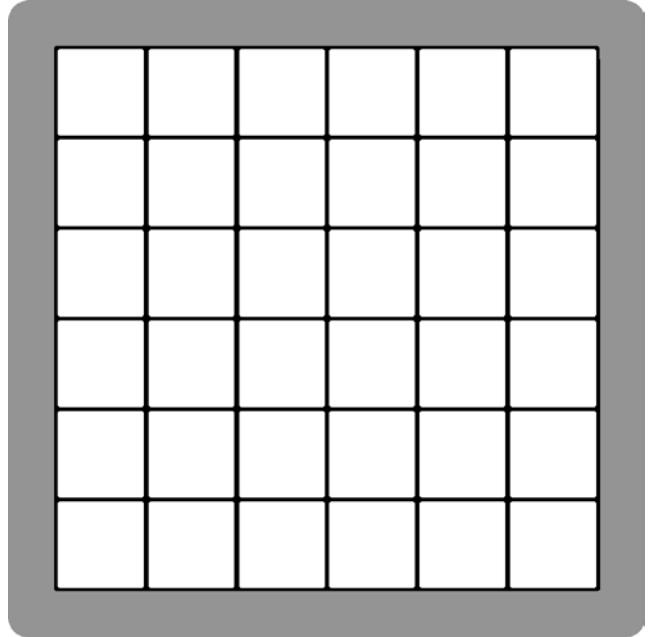
This led to an exploration of multiples and introducing multiplication: 6×1 , 5×2 , 4×3 .

This sample is from a 7 year old, beginning of grade 2.

PATTERN PUT AWAY RECORDING SHEET

Partners Names:

The name for our pattern is:



The way we would describe our pattern is:

We think our pattern is interesting because:

MYSTERY ROLL

	LEAST	BETWEEN	GREATEST	RANGE	ANALYZE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					



You will need to play either 50 or 100 rounds. Play in groups of 3. Every round record L, B and G plus figure out the RANGE between G and L. Use a calculator if you wish. When you are playing you should use your highlight pen to mark any unusual rolls - for example, tie rolls, sequences, unusual winning rolls, etc. Circle the points you score.



DOUBLE DICE DILEMMA

PLAYERS: 2, 1vs 1 or 4, 2 vs 2

CONCEPTS: addition, subtraction, addition with regrouping, probability, problem solving

EQUIPMENT: 1 x double regular die per player, recording sheet


GOAL: to have the greatest accumulated sum after 5 rolls

GETTING STARTED:

Player One rolls the double die and must now decide to either add or subtract the numbers and record their answer as points toward their accumulated total sum for the round. For the game, players will have to select 2 rolls for the $\boxed{+}$ and 2 rolls for the $\boxed{-}$. They also have a **FREE** roll and may use either $\boxed{+}$ or $\boxed{-}$.

Players will alternate taking turns throughout the game. The player with the greatest sum after 5 rolls is the winner.


EXAMPLE: (Player One only)

Roll 1:  Player can add $5 + 2 = 7$
OR subtract $5 - 2 = 3$

Player One **ADDS** and records $5 + 2 = 7$, places a counter on the $\boxed{+}$ square and earns 7 points.

\oplus	\ominus	\oplus	\ominus	<i>FREE</i>
----------	-----------	----------	-----------	-------------


7 POINTS - GOOD START!

Roll 2:  Player can add $3 + 2 = 5$
OR subtract $3 - 2 = 1$

Player One **ADDS** and records $3 + 2 = 5$, places a counter on the $\boxed{+}$ square and earns 5 points.

\oplus	\ominus	\oplus	\ominus	<i>FREE</i>
----------	-----------	----------	-----------	-------------

PLAYER ONE HAS 12 POINTS SO FAR!

Roll 3:  Player can add $6 + 1 = 7$ (using the **FREE** square)
OR subtract $6 - 1 = 5$

Player One **SUBTRACTS** and records $6 - 1 = 5$, places a counter on the $\boxed{-}$ square and earns 5 points.

\oplus	\ominus	\oplus	\ominus	<i>FREE</i>
----------	-----------	----------	-----------	-------------

17 POINTS SO FAR!

DOUBLE DICE DILEMMA RECORDING SHEET PRIMARY

+	-	+	-	<i>FREE</i>
---	---	---	---	-------------

	ROLL	ACCUMULATED POINTS
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	○

+	-	+	-	<i>FREE</i>
---	---	---	---	-------------

	ROLL	ACCUMULATED POINTS
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	○

+	-	+	-	<i>FREE</i>
---	---	---	---	-------------

	ROLL	ACCUMULATED POINTS
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	○

JUNIOR STAR TRAVELLER

LEVEL: Kindergarten - Grade 1

SKILLS: solve and add within 12

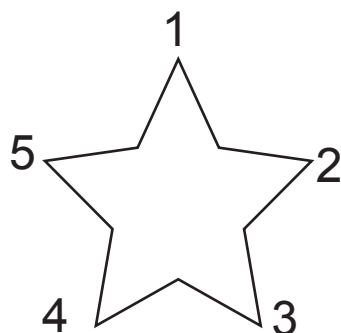
PLAYERS: cooperative groups, pairs or solitaire

EQUIPMENT: cards (Ace=1) - 6 (24 cards in all), 2 regular dice; for variation - use cards (Ace=1) - 9 or 12 sided die

GOAL: to remove all cards before getting 5 strikes

GETTING STARTED:

Players build a 6 x 4 grid with all cards face up. The object of the game is for the pairs or groups to work together to take away all of the cards before getting the five points of a star colored in.



A player rolls the dice. The player or cooperative group may then take away any card or combination of cards that equals the roll and that appears at the bottom of any column. Players on a team work together to find the best play. Addition, subtraction or a combination can be used, but a maximum of only 3 cards can be removed in one turn.

2	1	3	3
4	6	3	1
3	5	6	6
6	2	5	4
5	1	4	5
X	2	X	2

SOME SAMPLE PLAY:

Roll 1 = 5. Player takes 1 and 4 from bottom. This leaves 5, 2, 4, 2 exposed for the next roll. Another choice could have been: 1, 2 and 2.

In the event that a card or combination of cards cannot be found, players color in one point of their star. Play continues until all cards are removed or the whole star is colored in. Remember: cards must be removed from the bottom of the grid.

MATH TALK

As players gain more experience with this game, they will develop more strategies to maximize their chances. Begin with number recognition, then move to adding combinations, and subtracting combinations.

MATH JOURNAL WORK AND EXTENSIONS:

1. Have students glue their star into their math journals. As the game is played corners are colored in. Have students record the roll and numbers (cards) removed.
2. After the game is over, debrief with the students which numbered cards were the most difficult to get rid of and why? Repeat this but ask which are the easiest to get rid of and why.



I'M A STAR



ROLL
=

=

=

=

=

=

=

=

=

=

=

=

=

MY CARDS / NUMBERS



SUPER STAR TRAVELLER

LEVEL: Grade 4 and up

SKILLS: mixed operations, problem solving

PLAYERS: cooperative groups, pairs or solitaire

EQUIPMENT: 49 cards (Ace=1) - (Jack=11, Queen=12) + 1 Joker (wild), 2 dice, recording sheet

GOAL: to take away all of the cards before getting all five stars colored in

GETTING STARTED:

Players build a 7 × 7 grid with cards face up.

Player rolls the dice and adds them together for a target. Players may take away any combination of cards that equals the target and that appears at the bottom of any column. All operations or a combination may be used to a maximum of five cards taken away per roll.

In the event that a card or combination cannot be found, players color in one star. Play continues until all cards are removed or all stars are colored in. As players have more experience, they will develop more strategies to maximize their chances.

EXAMPLE:

ROLL **1**: DICE ROLLED 2,3 TARGET = 5

Take away 10♥, 2♣, 5♦, 2♠, 10♠

$$\boxed{2} + \boxed{3} = \boxed{5} \quad \underline{5 \times 10 \div 10 \times 2 \div 2 = 5}$$

ROUND **2**: DICE ROLLED 6,2 TARGET = 8

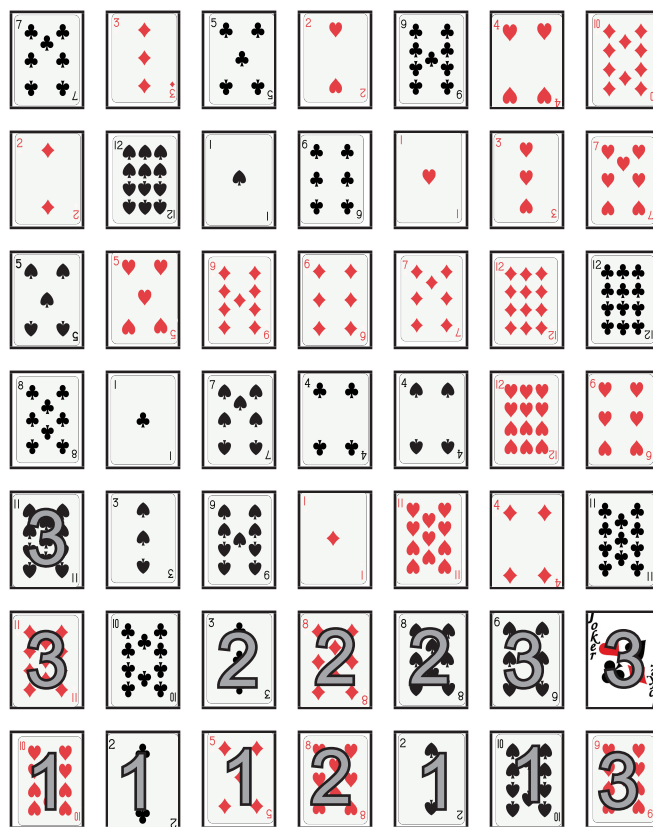
Take away 8♥, 3♠, 8♦, 8♠

$$\boxed{6} + \boxed{2} = \boxed{8} \quad \underline{(8 + 8 + 8) \div 3 = 8}$$

ROUND **3**: DICE ROLLED 5,1 TARGET = 6

Take away 9♥, Joker=5, 11♦, 6♠, 11♠,

$$\boxed{5} + \boxed{1} = \boxed{6} \quad \underline{(11 + 11 + 9 + 5) \div 6 = 6}$$



Players may want to use multiplication and division to help them remove cards. If their target number is 6, they can calculate $(9 \times 8) \div 12 = 6$.

VARIATIONS:

1. Add integer work for those students who are ready.
Red cards are negative values, black cards positive.

SUPER STAR TRAVELLER RECORDING SHEET

DICE ROLLED

TARGET

MY MATH SENTENCE

$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square + \square = \square$$

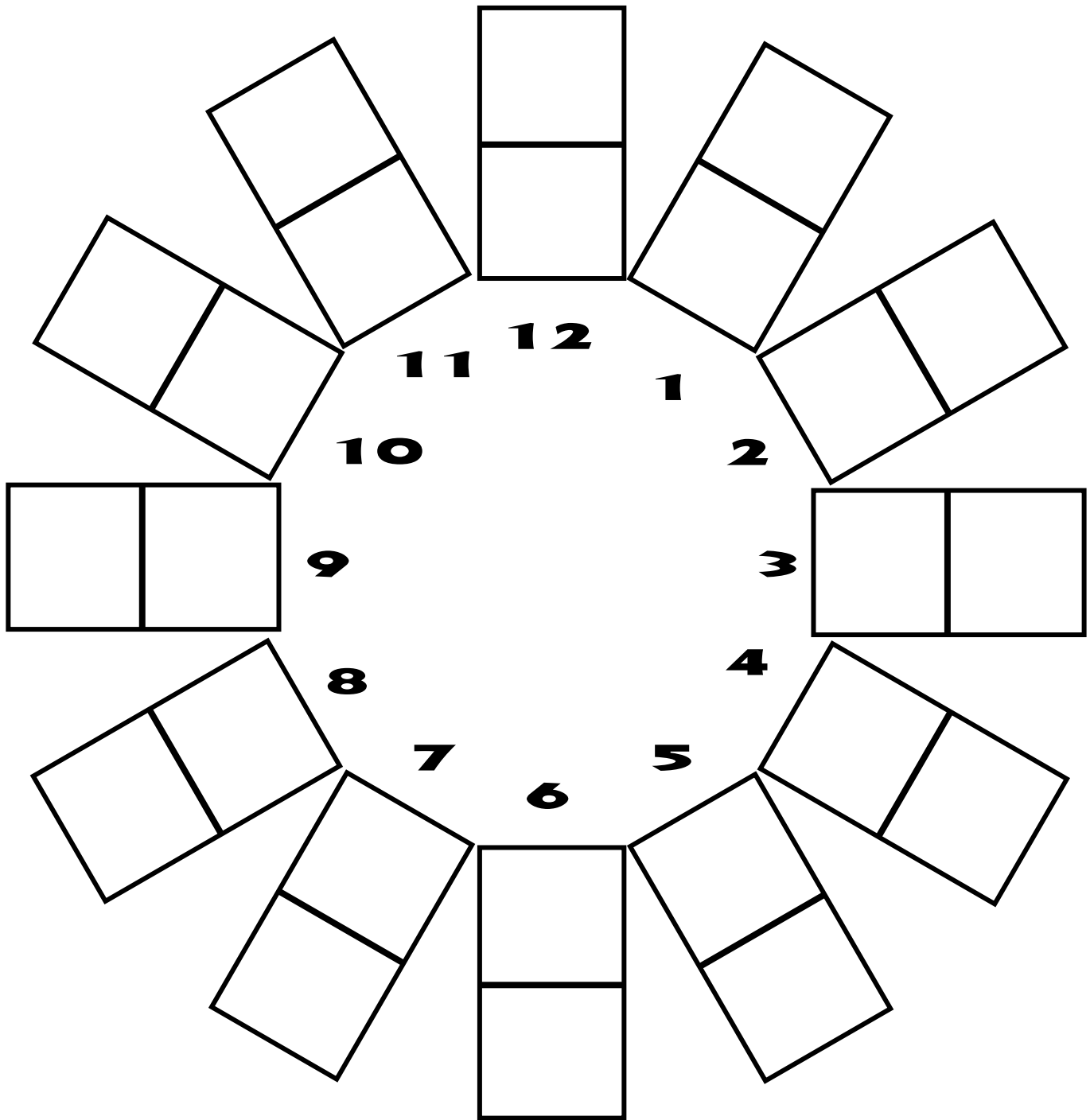
$$\square + \square = \square$$


$$\square + \square = \square$$

$$\square + \square = \square$$



CLOCKOMINOES



- ▶ 1 set dominoes per player, upside down and shuffled.
- ▶ Player One draws a domino, adds and places in correct place on clock.
- ▶ Player Two takes their turn.
- ▶ If a player draws a domino that has already been filled in on the clock, they must stack it and their opponent then plays.
- ▶ The player who completes their clockface first is the winner.
- ▶  Double blank, if drawn, goes in the middle but is not needed to win.

Place Value Line Up

Player One

Tens	Ones	Tens	Ones	Tens	Ones	Tens	Ones	Tens	Ones
<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"/>

_____ **Reject** _____ **Reject** _____ **Reject**

Least ← _____ → Greatest

Player Two

Tens	Ones	Tens	Ones	Tens	Ones	Tens	Ones	Tens	Ones
<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"/>

_____ **Reject** _____ **Reject** _____ **Reject**

Trading Places

Player One

Thousands Hundreds Tens Ones

--	--	--	--

100 Thousands 10 Thousands Thousands Hundreds Tens Ones

--	--	--	--	--	--

Player Two

Thousands Hundreds Tens Ones

--	--	--	--

100 Thousands 10 Thousands Thousands Hundreds Tens Ones

--	--	--	--	--	--

- ▶ One set of dominoes, face down, shuffled.
- ▶ Each player pulls 2 or 3 dominoes and keeps them face down.
- ▶ Player One flips a domino and can choose any space to place it. Dominoes can't be moved once placed.
- ▶ Player Two takes their turn. After all spaces are filled in, players compare numbers.
- ▶ Greater number wins.



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