

box cars and one-eyed jacks

OH THE MATH THEY'LL KNOW!

JANE FELLING

BOOST 2017

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*Please include the
conference/workshop title*



–Noodling (note taking + doodling = noodling)
(aka Sketch Noting, Visual Notes, etc.)

What do you need in your math icon library?

PRIMARY NOODLING

DICE	CARDS	DOMINOES
ADD	SUBTRACT	NUMBER LINE
TAKE TURNS	PLAYERS	SUPER MUSH
MATH TALK	MATH THINKING	GOAL
PLACE VALUE	RULE TWIST	BONEYARD

LET'S RETELL...

MATH JOURNAL PROMPTS

AT THE BEGINNING....

FIRST

☐ THEN...

☐ AFTER THAT...

☐ NEXT...

FINALLY

LAST

AT THE END

KNOTS ON A STRING...

Doubles

$$1 + 1 = 2$$

Goal Post Double (one finger each hand - goalposts like a referee)

$$2 + 2 = 4$$

Bunny Ears Double (two fingers up by the head like bunny ears)

$$3 + 3 = 6$$

Dentist Double (Kids Lose a lot of front teeth around 6 years old)

$$4 + 4 = 8$$

Spider / Octopus Double (Spiders and Octopuses have 8 Legs)

$$5 + 5 = 10$$

Ten Tickly Fingers

$$6 + 6 = 12$$

Box Cars (Rolling double 6's with dice known as Box Cars)

After the students know their first 6 doubles
then tackle the rest

$$7 + 7 = 14$$

Valentine's (February 14 is Valentine's Day)

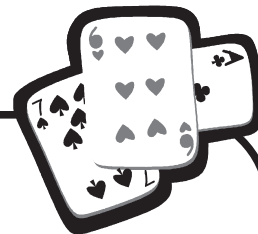
$$8 + 8 = 16$$

Driver's Double (Age when most kids can get their license to drive)

$$9 + 9 = 18$$

Adult Double (Old enough to vote – considered an adult)

Addition Face-Off



LEVEL: Grades 2 and up

SKILLS: Addition

PLAYERS: 2

EQUIPMENT: 1 deck of cards Ace – 9 (Ace = 1)

GETTING STARTED: Players divide the cards evenly between themselves. Then each player turns two cards over and adds them together. The player with the highest sum wins all the cards. In the event of a tie, players have a “face-off.” Each player deals out three more cards face down, then turns over two more cards and adds them together. The player with the highest sum wins all the cards. Play continues until decks are empty, then the player with the most cards wins the game.

EXAMPLE:

Player One

2	3
---	---

$2 + 3 = 5$

4	3

$4 + 3 = 7$

Player Two

4	A
---	---

$4 + 1 = 5$

4	5

$4 + 5 = 9$

Both players draw the same sum, so a face-off starts. Each player deals three face down cards, then draws again. Player Two wins with a sum of 9.

VARIATION:

Draw more cards and arrange them as two or three-digit numbers for more difficult math.

A	5
---	---

Three cards: a two-digit number (15) added to a single-digit number (3).

3

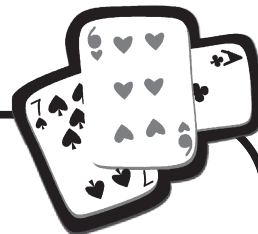
Or...

5	3	4
---	---	---

Five cards: a three-digit number (534) added to a two-digit number (23).

2	3
---	---

To Sum It Up



- LEVEL:** Grade 3 and up
- SKILLS:** Adding 3 digit numbers
- PLAYERS:** 2 or more
- EQUIPMENT:** 1 deck of cards Ace – 10 (Ace = 1, 10 = zero), paper and pencil

GETTING STARTED: Each player draws a 3 by 3 grid as a gameboard and the cards are shuffled. Then a card is drawn and placed face up. All players write the number on the card into a space on their gameboard. Eight more cards are drawn and players fill in the rest of their gameboards. Once all nine spaces are full, players add the three numbers they've made together. The player with the greatest sum scores a point. Play to 10 points.

EXAMPLE: The nine cards drawn, in order, are 5, 7, 4, 6, 5, 10, Ace, 3 and 9. Three players build their gameboards as follows. Player Three wins with a sum of 2,326.

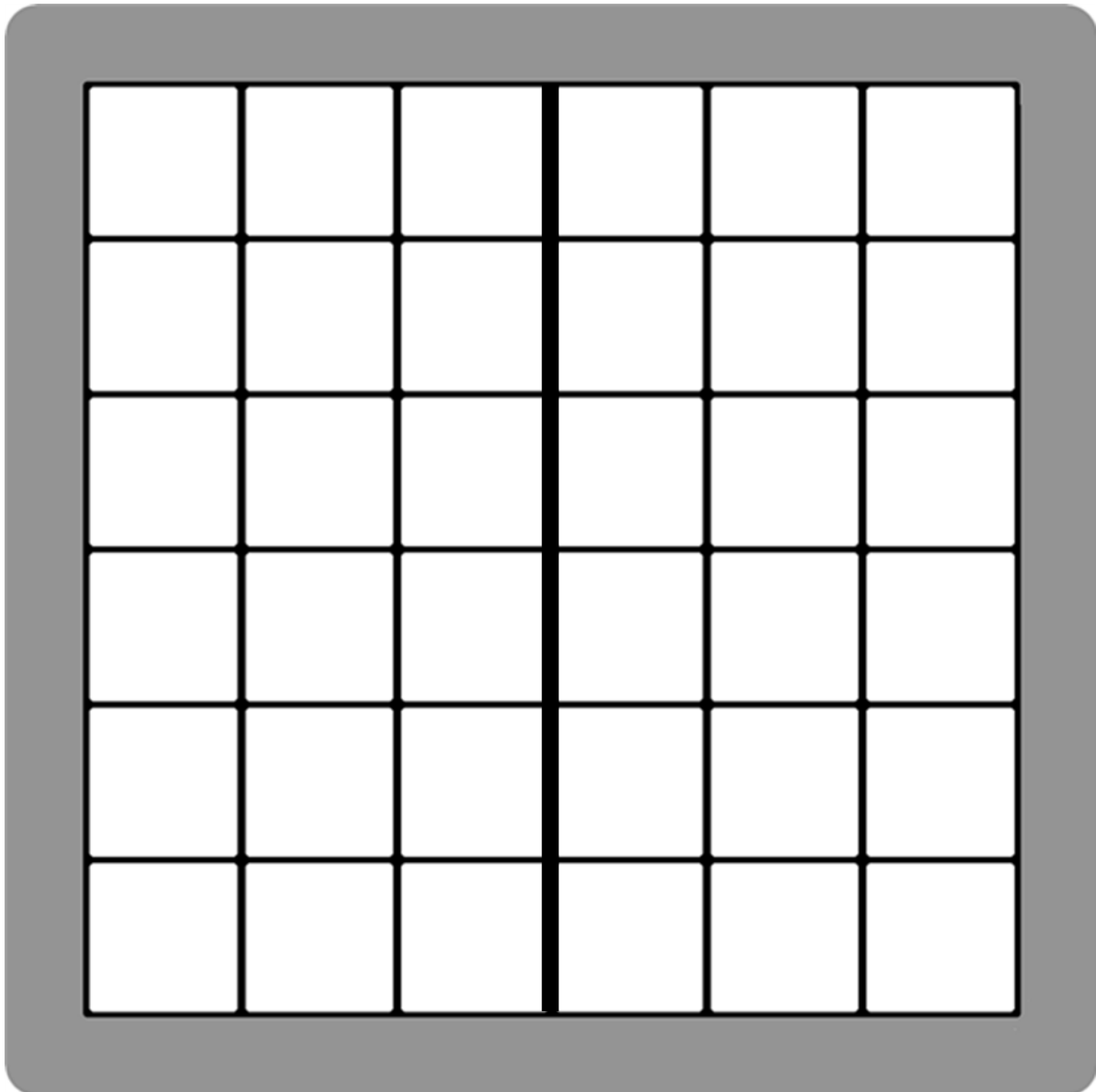
<i>Player One</i>				<i>Player Two</i>				<i>Player Three</i>			
	7	3	4		7	5	0		7	3	5
	6	5	0		6	5	1		6	4	0
+	5	9	1	+	3	4	9	+	9	5	1
= 1, 9 7 5				= 1, 7 5 0				= 2, 3 2 6			

VARIATION: For less experienced students, you can draw six cards and make two three-digit numbers, or draw only four cards and make two two-digit numbers.

HORSE RACE

**PLAYER
ONE**

**PLAYER
TWO**



START

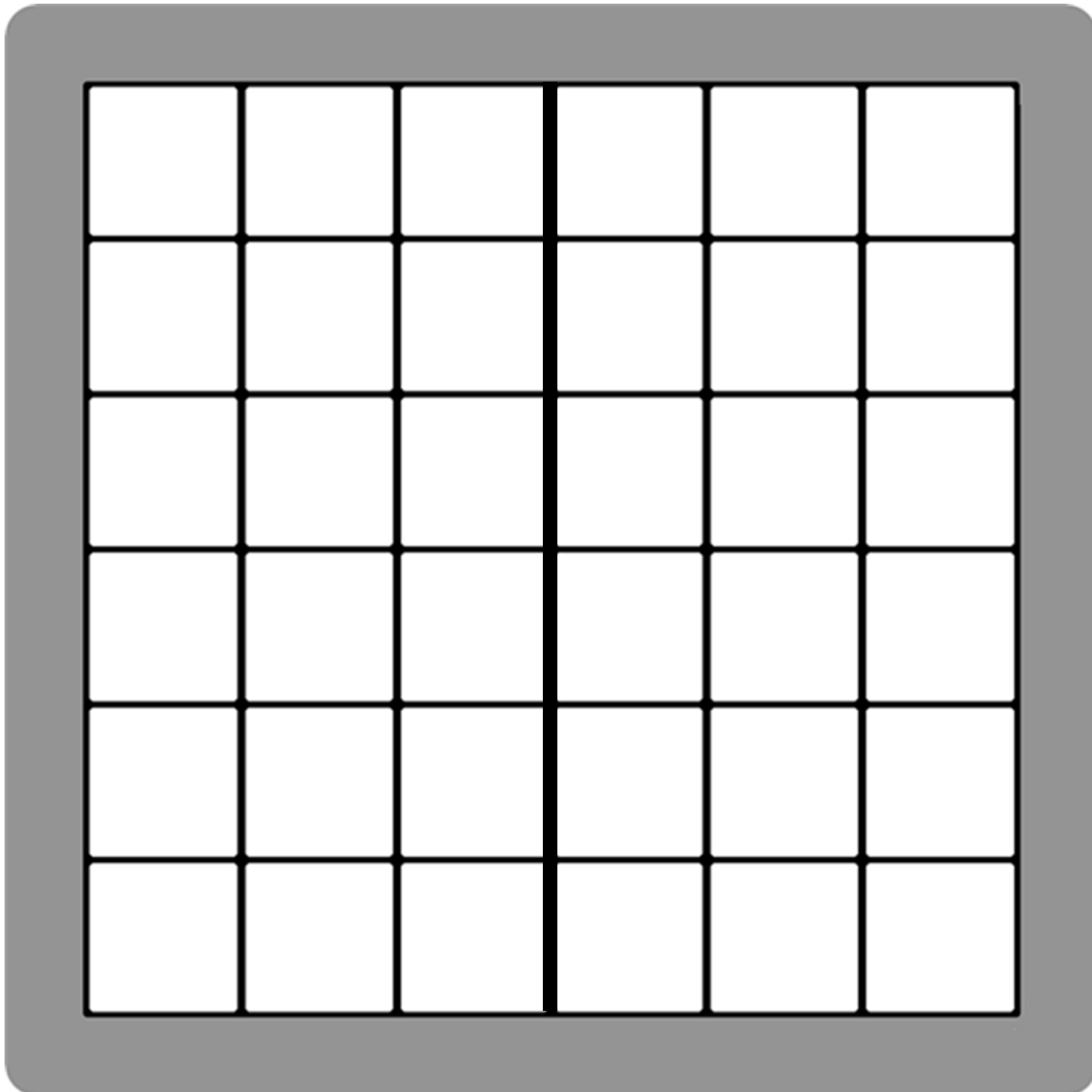
START

- ▶ 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.

WARP 18

PLAYER
ONE

PLAYER
TWO

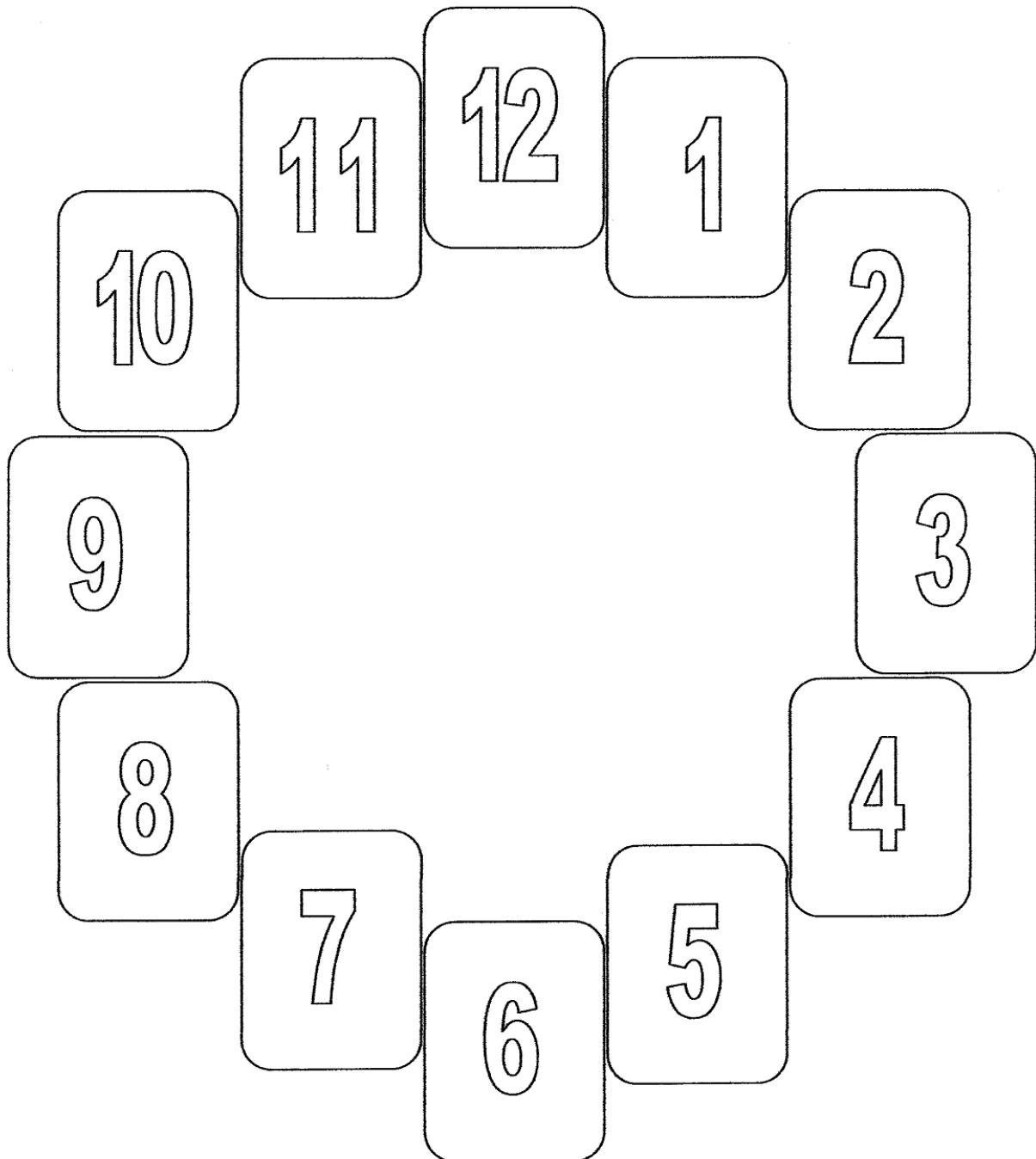


- ▶ Explore Associative Property of Addition.
- ▶ Each player takes 18 dice of their own color.
- ▶ Each player rolls 3 dice and adds.
- ▶ Player with the greatest sum places them into their side of the tray, least sum places in lid.
- ▶ Players need to verbalize how they calculated sums.
- ▶ Player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

0-18 GRAPHICALLY SPEAKING

								18
								17
								16
								15
								14
								13
								12
								11
								10
								9
								8
								7
								6
								5
								4
								3
								2
								1
								0

WHAT TIME IS IT MR WOLF?



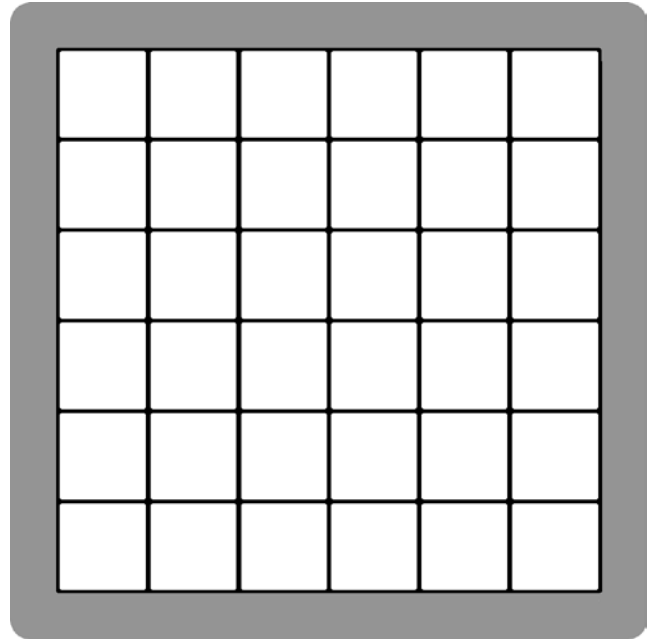
- Roll 2 regular dice and add them together.
- Use the result to fill in a time on their clock by crossing off the number on the clock, or, if playing with cards, turn over the card with the corresponding number.
- Players alternate turns until only 1 o'clock remains.

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:

PLACE VALUE FACE OFF

LEVEL: Kindergarten - Grade 1

SKILLS: read, compare and order numbers to 100

PLAYERS: 2

EQUIPMENT: cards (Ace=1) - 9, gameboard; for variation use 0-9 dice, 00-90 dice

GOAL: to be the player with the greatest number and collect the most cards by the end of the game

GETTING STARTED:

Players divide cards evenly between themselves. Each player turns over two cards and places them onto the gameboard. The first number turned over is the tens number and the second is the ones. Both players say their numbers. Have them verbalize, for example, “six tens and two ones equals sixty-two”. The player with the largest number gets all cards. In the event of a tie (ie. each player has the same number) FACE OFF is declared. First, each player places three cards face down. Then, each player turns over two cards, building a two digit number. The player with the largest number gets all of the cards. Play continues until one player has collected all of the cards.

EXAMPLE:

FACE OFF IS DECLARED!

Player One (43)
“forty-three”



Player Two (43)
“forty-three”

6 tens, 2 ones
(62)
“sixty-two”

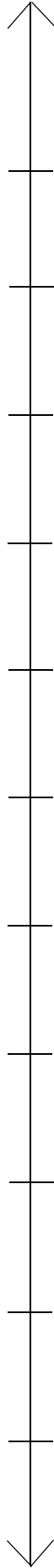
1 ten, 9 ones
(19)
“nineteen”

Player One verbalizes “sixty-two is greater than nineteen” and collects all of the cards.

FLIPPIN' OUT

000 100 200 300 400 500 600 700 800 900 1000

00 10 20 30 40 50 60 70 80 90 100



Hundreds

Tens

Ones

Hundreds

Tens

Ones

Player One

Player Two

Use cards 0-9 only, or can use place value dice 0-9, 00-90, & 000-900.

Players each deal 1 card for the Tens and 1 card for the Ones.

Players place a marker on the closest tens place on the number line.

A 00-90 die is rolled to determine a target.

The player who's marker is closest to target wins all the cards.

In the case of a tie, each player keeps their own cards.

Players can play Hundreds version by dealing 3 cards.

BETWEEN FRIENDS RECORDING SHEET

G	
B	
L	

G	
B	
L	

G	
B	
L	

G	
B	
L	

G	
B	
L	

G	
B	
L	

G	
B	
L	

G	
B	
L	

L	B	G

L	B	G

L	B	G

L	B	G

L	B	G

L	B	G

Star 99 / Two Digit Scramble

00	-	09	_____
10	-	19	_____
20	-	29	_____
30	-	39	_____
40	-	49	_____
50	-	59	_____
60	-	69	_____
70	-	79	_____
80	-	89	_____
90	-	99	_____

00	-	09	_____
10	-	19	_____
20	-	29	_____
30	-	39	_____
40	-	49	_____
50	-	59	_____
60	-	69	_____
70	-	79	_____
80	-	89	_____
90	-	99	_____

Fill in Frenzy / Three Digit Scramble

000	-	099	_____
100	-	199	_____
200	-	299	_____
300	-	399	_____
400	-	499	_____
500	-	599	_____
600	-	699	_____
700	-	799	_____
800	-	899	_____
900	-	999	_____

000	-	099	_____
100	-	199	_____
200	-	299	_____
300	-	399	_____
400	-	499	_____
500	-	599	_____
600	-	699	_____
700	-	799	_____
800	-	899	_____
900	-	999	_____

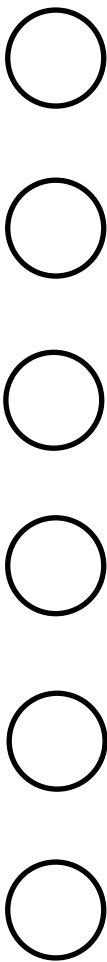
- ☆ Draw 2 (or 3) cards or roll 2 (or 3) place value dice to make a two (or three) digit number.
- ☆ Player can choose how to set their number and then write the number in the appropriate space on gameboard.
- ☆ If a player cannot use their roll, it counts as a strike and play moves to the next player.
- ☆ The first player to fill all 10 spaces is the winner.

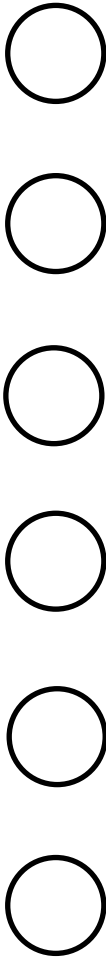
SUPER SIX SHOWDOWN

PLAYER
ONE

PLAYER
TWO

HUNDREDS TENS ONES HUNDREDS TENS ONES





DOUBLES /DOUBLES + 1 RECORDING SHEET

Record your shakes. Color in all doubles red, all doubles + 1 blue.

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

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

MAKE A TEN SHAKERS RECORDING SHEET

SEE	+	?	=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10

SEE	+	?	=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10

SEE	+	?	=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10

SEE	+	?	=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10

SEE	+	?	=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10

SEE	+	?	=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10
	+		=	10

TENS AND ONES PATTERNS RECORDING SHEET

My Number	My Pattern					
62	+2	64	,	66	,	68 , 70 , 72

My Number	My Pattern					

My Number	My Pattern					

HUNDRED HORIZONTAL SHAKE UP RECORDING SHEET

MY NUMBER				MY FRIEND'S NUMBER		
Hundreds	Tens	Ones	> = <	Hundreds	Tens	Ones

HUNDRED PATTERNS RECORDING SHEET

My Number	My Pattern					
367	+10	377	,	387	,	397 , 407 , 417

My Number	My Pattern					

My Number	My Pattern					