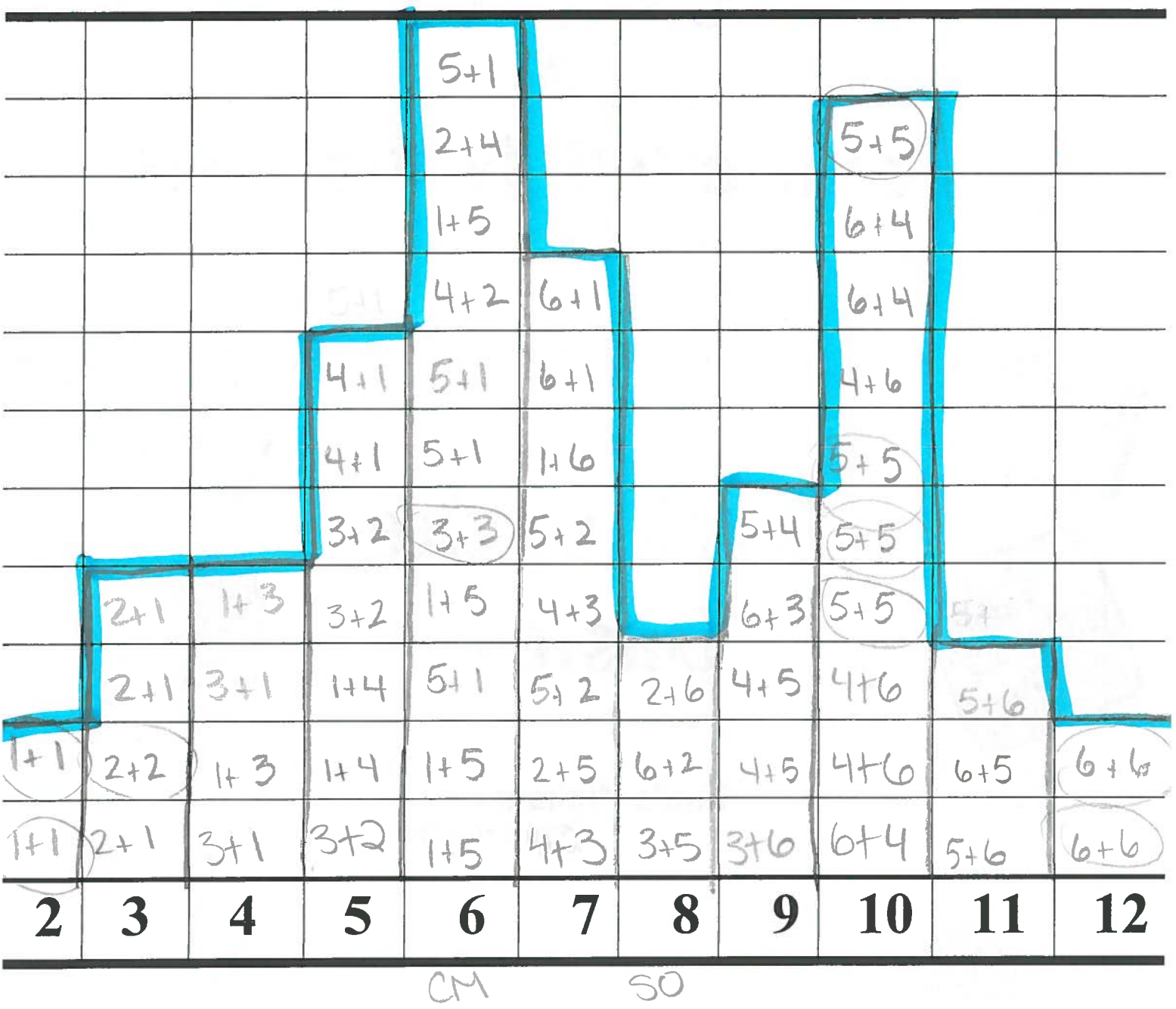
Race to the Top



Race to the Top Questions

1. Which number won your race?

2. Look at the numbers you wrote down for your winning number. How many different ways did you get the winning number? In your journal write all the different combinations you used to get your winning number (equations).

3. Count all the times that you rolled the dice. How many times did it take before you got a winning number? Do you think the others in the class took more rolls, less rolls or the same number of rolls your team took?

4. Find all the times you rolled a double. Circle the doubles. How many times were doubles rolled? Write down each pair of doubles and how many times you rolled that pair.

5. Why are there no doubles in row 5 or 9?

6. Find another group with a graph similar to yours. In what ways are they similar and how do they differ?

7. What will be your strategy when you play next time? What advice would you give to someone who is playing this game for the first time?

8. Which number came in second? Which number came in third?

Probability and Statistics

Addition 6 sided Dice

+	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9		11	12

Questions to consider

1.How many times does the number 12 occur?

2.How many times does the 5 occur?

3. Which number is rolled the most frequently? Why do you think that happens?

4. Which number is rolled the fewest number of times? Why do you think that happens?

Basic Box Cars Workshop Games

I have listed the games that we will use and which book they are from. Take the time to jot some simple notes for yourself.

What Time Is It Mr. Wolf / Adding Mr, Wolf and Upside Down Mr. Wolf
Use the cards to make the face of the clock.

- Beginners roll 12 sided dice and put a counter on each number they roll.
- Next level roll 2 six sided dice and find the sum. Put a counter on each sum, Keep playing until at least 1 counter on each number. Find the number with the most counters.
- Up Side Down Mr Wolf. The goal is go get all the cards turned face down. Roll 2 sided dice and turn down the card that is either the sum or the difference. Continue to play if you roll an answer that is already turned down then you must turn one of the two answers back up.

Race to the Top

After play the games above have students continue to roll 2 dice and use only the sum fill in the graph. They must write the equation and have them write the white dice first.

Addition/Multiplication Snap (pages 35 & 60 Vol. 2) as with any snap or war game but instead of each player playing 1 card, they pay 2 find the sum or the product. The greatest takes the cards or with snap the first to say the correct answer takes the cards.

What's Your Number (pg 24 Vol2) Each pair has a sheet. Teacher rolls 1 number. Students decide with column to put that number in to try to make the greatest number possible. Roll numbers 1 at a time, write that number down and then roll the next number.

Sum It Up (pg 47 Vol 2) similar in play to the game above. Die is rolled and students decide with place to put the number in to create the greatest number possible.

Roll to 100 (pg 58 Vol 5) similar to above. The die is rolled once and players decided if they want to use that number to help them get to 100 (written in the accept column) or not (written in the reject column. After the number is written by everyone a second number is rolled. Continue until 10 number have been rolled.

Salute __(Volume 1)_In pairs each person is given a card that they don't look at. They put the card number side out on the forehead. The sum of their number and their partner's number is given to them and they work to figure out their own number.

Hot Cards (Volume 1) Each player get 5 cards. One person rolls the 12 sided dice and looks at the cards to see if it is in the hand. If it is player puts the card down and draws a replacement card. If that number is not among the 5 cards he

says "hot Cards" and anyone else with that number gets to play it and take a new card. If a player has 2 of any number both may be played at the same time.

Mystery Roll (pg 73 Vol 5)__ Tweenies (pg. 50 Vol. 9) in groups of 3 each player has a 30 sided die. They roll the die and cover it so the others can see. Player 1 declares whether his number is the greatest least or in-between number. After each person has declared, they go around a second time and many stay with the original answer or change.

Tic Tac Toe (Vol.) Chip Tac Toe (pg 57 Vol 9) Using a hundreds board player rolls 2 ten sided dice and creates a 2 digit number (rolls 2 and 9 can be 2 tens and 9 ones or 9 tens and 2 ones. Puts their color chips on the number they select trying to get 3 in a row.

Range Game (pg 70 Vol 9) 2 deca dice are rolled to set the target numbers. Player 1 rolls 1 die and fills in under player 1. Player 2 rolls and fills in player 2. If the number rolled is one of the 2 target numbers it is worth 2 points and player circles that number twice. If the number is between the 2 target numbers it is worth 1 point and player circles it once. Go on to the next round and play continues. When finished they use the collection sheet to color each turn as indicated and then collect the data to graph.

Red Racer (pg 155 Vol 9) _____

_____

Sweet Sixteen (pg Vol) _Player makes a 4 x 4 grid with cards and then rolls a target number. They remove 2, 3 or 4 cards that equal the target number. The count the remaining cards as score. The goal is to get the lowest score.

Star Traveller (pg Vol) Player makes a 4 x 4 grid and then rolls the target number. They may take 2, 3, or 4 cards to equal the target number but ONLY from the bottom row. When they are stuck and can not make an equation then they roll a new number. They may roll 5 numbers in total (make a 5 pointed star to keep track of the numbers rolled

Combo 5 players lay out 5 cards and roll a target number. They then take off 2, 3, 4 or 5 cards that equal the target number. That many cards are replaced so that they always have 5 cards and a new number is rolled. Score can be how many cards they collected or it can be based on a point system for the number of cards taken each hand plus bonus points

Hundreds Chart

1	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	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	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	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

What's My Number?

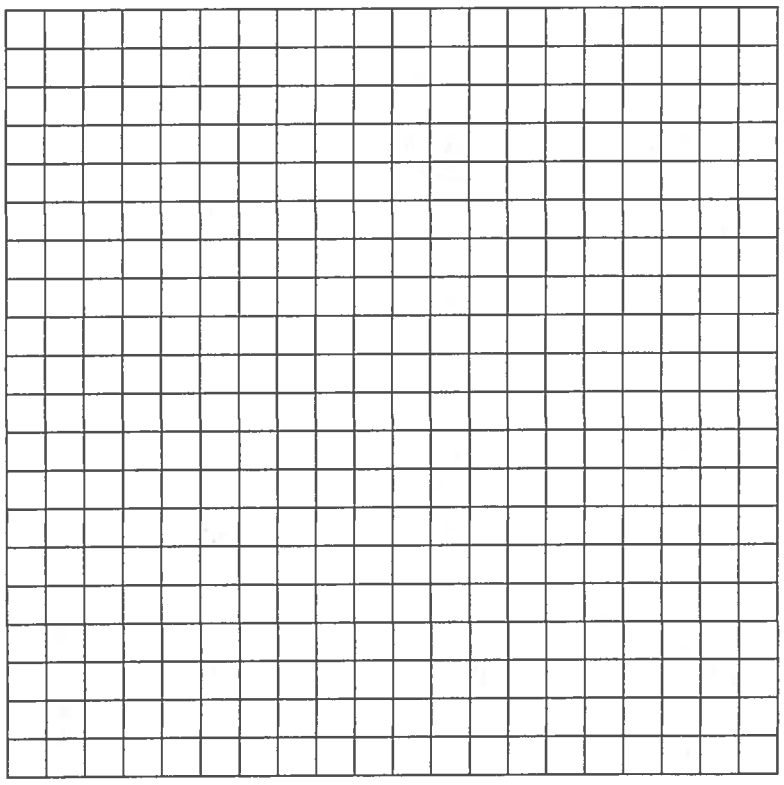
HUNDRED THOUSANDS	TEN THOUSANDS	THOUSANDS	HUNDREDS	TENS	ONES	TENTHS
4	2	7	2	3	3	1
9	7	7	5	9	4	7

My Number	Greatest Number Possible	Difference	Usual/Unusual Roll - Unusual
427 233.1	743 322.1		unusual-same #s twice
977594.7	997 775.4		Un-same #s again

1. **Now go back through all your rolls and prepare a tally for each number.**

0 –	**5 –**
1 –	**6 –**
2 –	**7 –**
3 –	**8 –**
4 –	**9 -**

2. **Construct a graph that illustrates the information collected in this activity.**



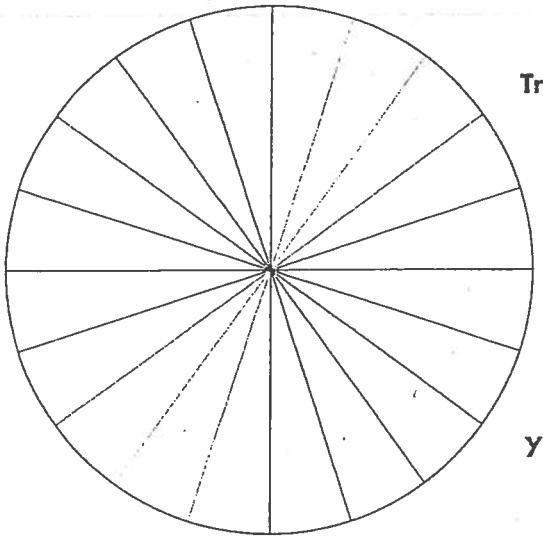
3. **Explain the strategy you will use the next time you play?**

Range

Round	Target Numbers	Player 1	Player 2	Color
1	50 - 80	30 40	40	G
2	70 - 70	0 70	90	R
3	40 - 50	10 60	0	G
4	10 - 50	40 20	20	B
5	0 - 20	20 0	20	P
6	20 - 40	20 40	40	P
7	60 - 90	30 80	30	Y
8	50 - 70	20 20	30	G
9	20 - 60	40 10	50	Y
10	0 - 60	60 0	30	O
11	10 - 70	60 10	10	P
12	30 - 40	10 50	0	G
13	30 - 80	50 50	80	O
14	10 - 10	0 50	80	G
15	50 - 70	20 90	10	G
16	10 - 20	10 10	60	R
17	0 - 30	30 90	50	G
18	0 - 60	60 40	30	B
19	10 - 30	20 70	0	G
20	30 - 80	50 90	80	R

Range Game	
If one person got 1 point color it yellow.	/20
If both people got 1 point color it blue.	/20
If one person got 2 points color it red	/20
If both people got 2 points color it purple.	/20
If neither person got a point color it green.	/20
If one person got 1 point and the other got 2 points color it orange.	/20

Range Game - Graphing Activity



Transfer your findings to the pie graph using the colour legend. Remember to label your graph to match the categories. Compare your results with at least 3 other groups and explain your findings.

Thought Provokers

Once completed, use the highlighted chart to answer the following questions (answer in complete sentences):

1. How many rounds did you complete?
2. How often did a range of 0 happen?
3. How often did both players score one point?
4. How often did both players score a bullseye?
5. Are there any rolls that guarantee players points?
6. Design a question for other players to answer about their data. Underline the math words you used in the question.
7. **Brain Challenge!** What percent of the time did both players score a point? What percent did neither player score?

Mystery Roll

You will need to play either 50 or 100 rounds. Play in Groups of 3. With every round record the Least, Between and Greatest number rolled. Figure out the RANGE between the Greatest and Least. When you are playing highlight any unusual rolls (tie rolls, sequences, unusual wining rolls, etc. If your prediction was correct, circle that number.

Round	Least	Between	Greatest	Range	Analyze
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Continue on another page Finish either 50 rolls. When you have finished work together to answer these questions:

1. What is the average range of the rolls?
2. What percentage of the time does a tie roll happen?
3. What percentage of the time did you score a point? What percentage of the time did all 3 of you score a point?
4. Describe your most unusual round. Remember there is a 1/30 chance of rolling any number. Try to interpret the probability of that round happening.

ROLL TO 100

Rolls Accepted	Rolls Rejected	Rolls Accepted	Rolls Rejected
23	6		
11	4		
28	1		
17	26		
06	27		

Closest Sum to 100

BULLSEYE

Target number	*Team 1*	*Team 2*

Combo 5

Here's the score

2 cards	=	2 points
3 cards	=	6 points
4 cards	=	10 points
5 cards	=	15 points

5+3=8
5-3+4=8
9÷3=3+5=8
(5-3)×4=8, 9-8=1,
8×1=

Bonus every time you use the operation you roll

Bonus	**=**	**5 points**

ROLLING ALONG

Rolls Accepted	Rolls Rejected	Numbers Rolled Equations/Number Sentence
		1) 6)
		2) 7)
		3) 8)
		4) 9)
		5) 10)

Closest Sum to 100

Rolls Accepted	Rolls Rejected

Closest to 10 using a six sided dice

Rolling A "Round"
Thought Provokers

1. What was the number you predicted? Was there any reason why you chose this number? Explain.

AFTER COMPLETING YOUR GAME:

2. a) Total the number of rolls it took to complete the game.
   b) Go back through and highlight the numbers that were rounded up. How many of your total rolls were rounded up, rounded down?
   c) Was there a significant difference between these two totals?

3. What are the possible outcomes for the rounding up and rounding down on your 0-9 die? Are there more for up, down, or are they equally the same? Explain.

4. Create a class graph. About how many rolls to complete a game? What percentage of rolls are rounded up, rounded down?

Rolling A "Round"

00	10	20	30	40	50	60	70	80	90	100

Total Number of Rolls

Total Rounded Up

Total Rounded Down

Decade Number Line

Player One

00	10	20	30	40	50	60	70	80	90
zero	ten	twenty	thirty	fourty	fifty	sixty	seventy	eighty	ninety

Player Two

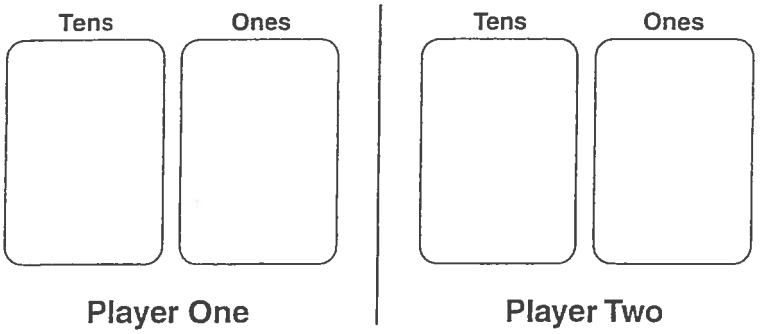
00	10	20	30	40	50	60	70	80	90
zero	ten	twenty	thirty	fourty	fifty	sixty	seventy	eighty	ninety

Tweenies

Round #	Least	Between	Greatest	Range	Analyze
1					
2					
3					
4					
5					
6					
7					
8					

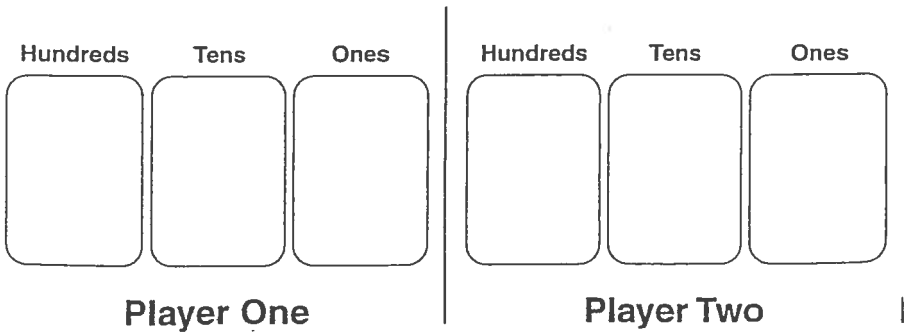
Flippin' Out

00	10	20	30	40	50	60	70	80	90	100

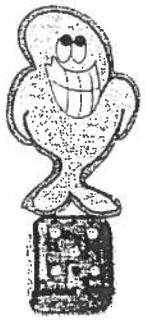


Flippin' Out Variation

000	100	200	300	400	500	600	700	800	900	1000



REGULAR DOUBLE DICE WARM-UPS



1 PULLING DICE

Each player rolls their own die, adds the inside and outside numbers, and verbalizes their sum out loud. Players compare sums. The player with the greatest sum scores 1 point. You'll practice adding to 12 this way.

4 [2] = 6

Each player rolls 2 dice, adds all 4 numbers and compares for the greatest sum. You'll practice adding to 24 this way.

5 [3] + 6 [1] = 15

Each player rolls 1 die, adds inside and outside numbers, then doubles it. Greatest sum scores 1 point.

6 [2] = 8 doubled = 16

2 PULLING DICE

Each player rolls their own die and subtracts for the LEAST difference. The player with the least difference (answer) scores 1 point. You'll practice subtracting from 6 this way.

5 [3] 5 - 3 = 2

3 PULLING DICE

Each player rolls one die and multiplies the numbers. The player with the greatest product (answer) scores 1 point. You'll practice multiplying to 36 this way.

5 [3] 5 x 3 = 15

Each player rolls two dice and adds the sum of each die, then multiplies. The player with the greatest product scores 1 point. You'll practice multiplying to 144 this way.

6 [2] = 8 5 [4] = 9 8 x 9 = 72

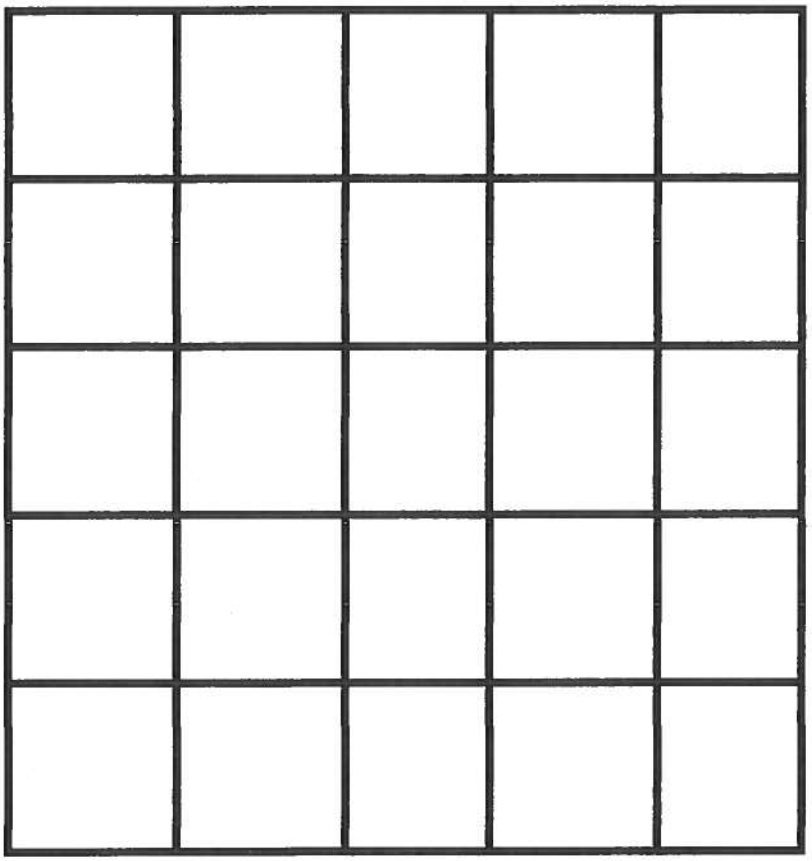
You will be very LUCKY to hit 144 - what roll will do it?

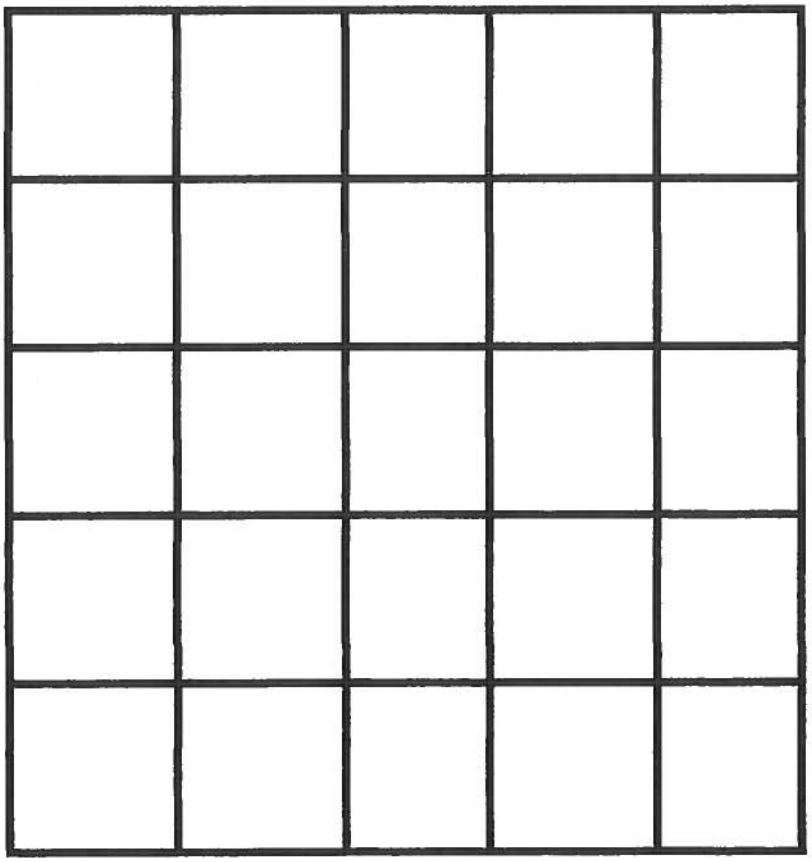
TIES In the event of a tie, in all games, both players score 1 point.

4 DOUBLE DICE SNAPS

Players can try all of the above games for speed. DOUBLE DICERS roll only one die between them (or set of dice if needed). The first player to call out the correct answer scores 1 point.

Double Up Multiplication





Got It - Closest To!

	Target	Number	Evaluate
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			

124

Multiples to the End

Round #1 Fact Family _____						***Total***
Round #2 Fact Family _____						Total
Round #3 Fact Family _____						Total
Round #4 Fact Family _____						Total
Round #5 Fact Family _____						
						Grand Total