box cars and one-eyed jacks

YOUR GAME PLAN:
IT'S ALL ABOUT THE QUESTION

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Standards for Mathematical Practice

COMMON CORE STATE STANDARDS for MATHEMATICS

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Why Games are an Excellent Way to Connect Mathematical Content to Mathematical Practice:

- ☐ Students are engaged with subject matter.
- ☐ Students must communicate their thinking with other players.
- ☐ Students use flexibility in operations during play.
- ☐ Students analyze their own choices and those of their opponents.
- ☐ Students reason inductively using the generated data in play.
- ☐ Students must record their mathematical expressions.

It's All About the Question

- What have you noticed about...
- What would result if...
- What is the relationship between...
- How can you increase the likelihood of...
- What do you predict will happen...
- How has your play differed from your partner's play?

Questions to encourage critical thinking

- What did you enjoy about this game?
- Describe your favorite round.
- What strategy did you use to help you?
- What did you notice?
- What surprised you during play?
- How would you change this game? Why?

Questions for post-game analysis

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

- _____ → _____
- _____ → _____
- _____ → _____
- _____ → _____

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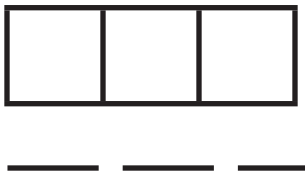
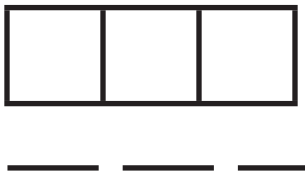
HOCKEY SHAKERS RECORDING SHEET

Player One

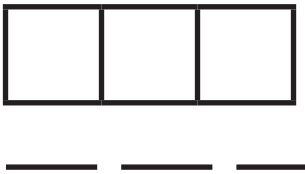
Period One =

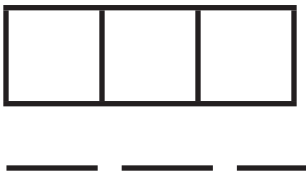
Period Two  =

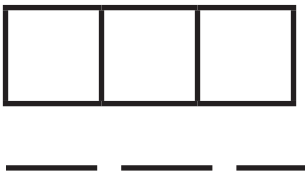
Period Three  =

TOTAL SUM =

Player Two

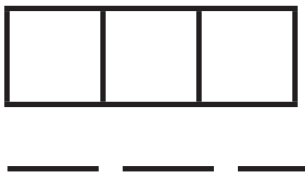
Period One  =

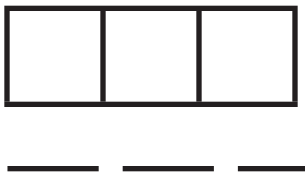
Period Two  =

Period Three  =

TOTAL SUM =

Player One

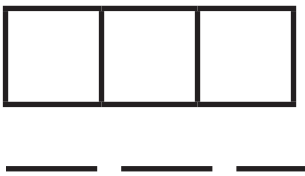
Period One  =

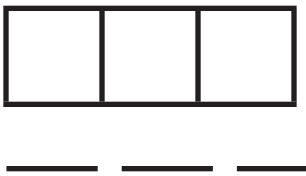
Period Two  =

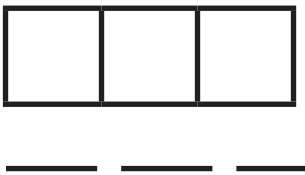
Period Three =

TOTAL SUM =

Player Two

Period One  =

Period Two  =

Period Three  =

TOTAL SUM =

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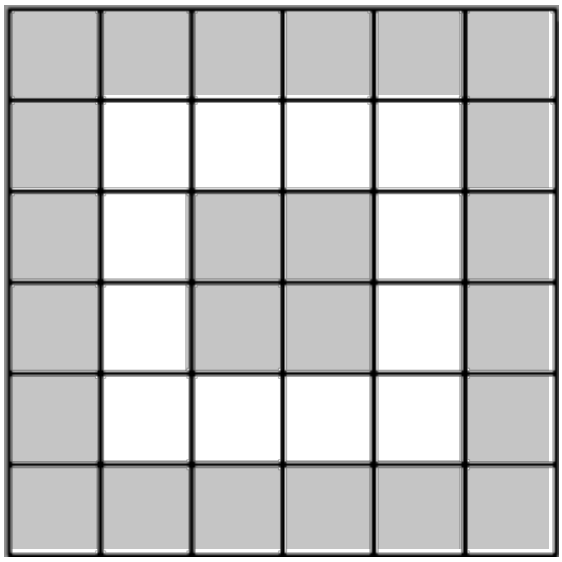
SQUARE DOUBLING - ADDITION

RECORDING SHEET



Column 1: ___ + ___ + ___ + ___ = _____

Column 2: ___ + ___ + ___ + ___ = _____

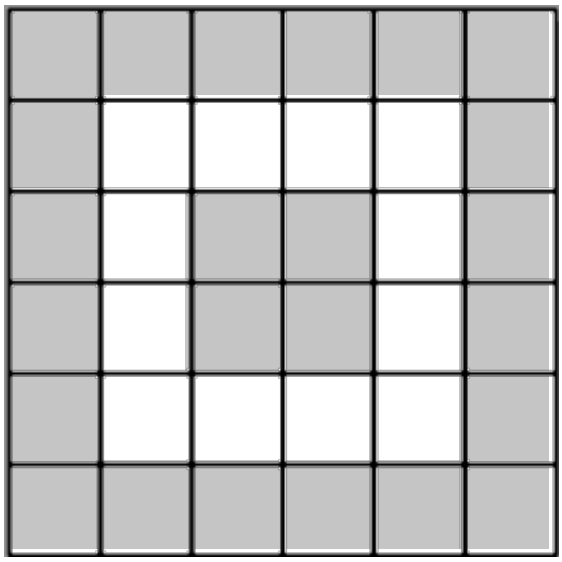
Row 1: ___ + ___ + ___ + ___ = _____

Row 2: ___ + ___ + ___ + ___ = _____

TOTAL SUM: ☐

REJECT ROLLS

☐ ☐ ☐ ☐



Column 1: ___ + ___ + ___ + ___ = _____

Column 2: ___ + ___ + ___ + ___ = _____

Row 1: ___ + ___ + ___ + ___ = _____

Row 2: ___ + ___ + ___ + ___ = _____

TOTAL SUM: ☐

REJECT ROLLS

☐ ☐ ☐ ☐

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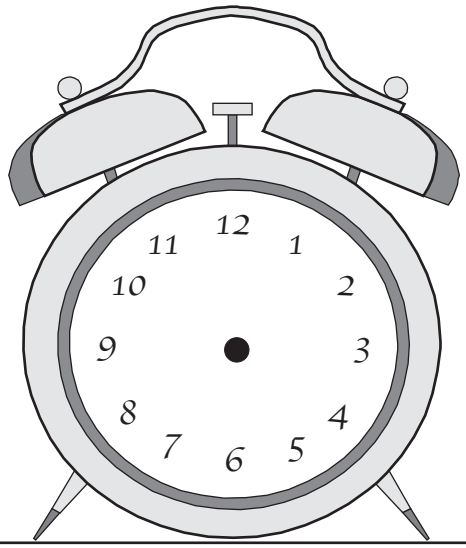
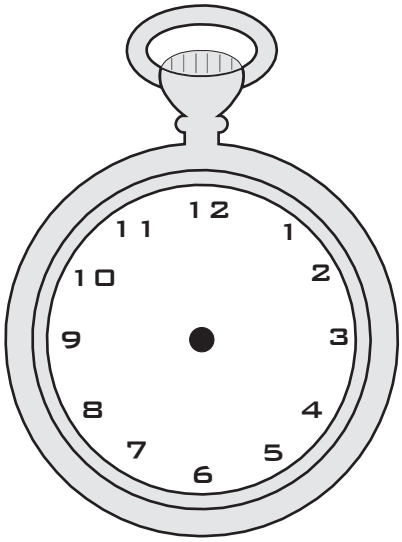
Tick Tock Roll a Clock

Activity Sheet





Name	
Number Sentence	Total
	1
	2
	3
	4
	5
	6
	7
	8
	9
	10
	11
	12

Name	
Number Sentence	Total
	1
	2
	3
	4
	5
	6
	7
	8
	9
	10
	11
	12

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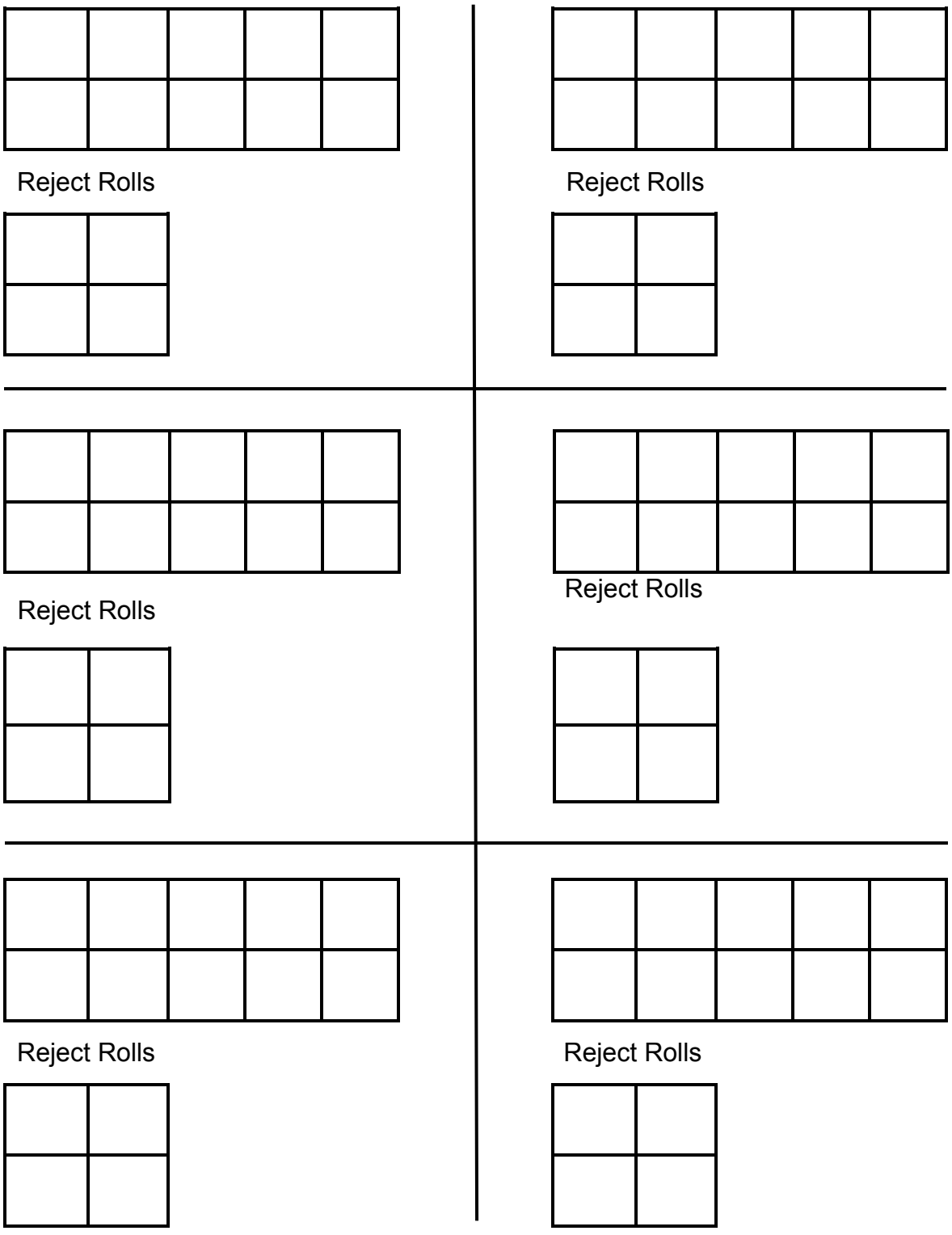
ORDER IN THE COURT



Use Double Sided Dice, 6-sided Dice, or 1-12 Dice

Goal: To get as many fractions in a row as possible

- Roll one die at a time. (Variation: You may roll all the dice at once and race your partner to line them up)
- Write the fraction into the chain or put into the reject boxes.
- Points are awarded at the end of 7 rolls. 1 point for each fraction in the chain.
- Use Fraction Circles or Fraction Bars to check accuracy.

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MYSTERY ROLL

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.

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

Once you have completed either 50 or 100 rolls
answer the following questions.
Work Together!

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? If you kept track of all winners, what percentage of the time did all 3 players score a point?
4. Describe your most unusual round. Try to interpret the probability of that event happening. Remember 1/30 chance of rolling any number.
5. Write one question for the rest of the group to use with their data.

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