

**box cars
and
one-eyed jacks®**

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**Box Cars Math Games
Elementary K-5**

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**Get ready for some
serious FUN and games!**

Game # _____

Skills: _____

Players: _____

Equipment: _____

Rules:

Activity

Concept

Equipment

Goal/Object of the Game

Set Up and Play

Variations:

Activity

Concept

Equipment

Goal/Object of the Game

Set Up and Play

Variations:

Activity

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Activity

Concept

Equipment

Goal/Object of the Game

Set Up and Play

Variations:

Let The Games Begin

All the Box Cars games are written using the same format. As a sample, we've chosen one of our basic games to familiarize you with our style.

LEVEL: Grade 1 - 3
SKILLS: addition facts 1 - 10, 1 - 18 combinations
PLAYERS: 2
EQUIPMENT: Cards (Ace = 1) - 5, or (Ace = 1) - 9
GETTING STARTED: Players divide cards evenly between themselves. Each player turns over two cards and adds them together. The highest sum gets all the cards. In the event of a tie; (ie: each player has the same sum), WAR 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 highest sum wins all of the cards. Play continues until one player has collected all of the cards.

Cards 1 - 5 Grade 1 - 2 Sums to 10
Cards 1 - 9 Grade 2 - 3 Sums to 18

Player 1	Player 2
2 + 3	4 + 1
War is declared	
2 + 3	4 + 1
_____	_____
_____	_____
_____	_____
4 + 3	6 + 2

3 cards are turned upside down.

Player 2 collects all of the cards

Try These Variations

Place Value War
Subtraction War
3 Addend War
Multiplication War
Integer War
Fraction War

Remember: War is a traditional game. However, due to the negative connotation you may want to change the term "war" to one of your own choice. We often call these our Buzz Games (ie. Three Card Buzz).

Notes: _____

The following game boards are teacher and student favorites. Yours to copy and use.

DOUBLES + PATTERNS

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DOUBLE



$1 + 1 = 2$

$2 + 2 = 4$

$3 + 3 = 6$

$4 + 4 = 8$

$5 + 5 = 10$

$6 + 6 = 12$

$7 + 7 = 14$

$8 + 8 = 16$

$9 + 9 = 18$

DOUBLE + 1



$1 + 2 = 3$

$2 + 3 = 5$

$3 + 4 = 7$

$4 + 5 = 9$

$5 + 6 = 11$

$6 + 7 = 13$

$7 + 8 = 15$

$8 + 9 = 17$

$9 + 10 = 19$

NICKNAME

Goal Post

Rabbit, Kangaroo, Caribou

Dental

Spider, Octopus

Ten Tickly Fingers

“Box Cars”, Egg Carton, Farmers

Valentines Day

Sweetheart

Adult Double

-
- Learn doubles – cards 1-6 or 1-9, regular dice, 10 sided 0-9 dice
 - +1 Trick counting on
 - Doubles + 1 → Then transfer to symbolic work
-

PATTERNS FOR DICE PLAY

1	2	6
2	4	7
3	6	8
<u>+4</u>	<u>+8</u>	<u>+9</u>
10	20	30

SIMPLE SIXES

SUCCESSFUL SEVENS

EASY EIGHTS

NIFTY NINES

TERRIFIC TENS

ENORMOUS ELEVENS

TREMENDOUS TWELVES

NUMBER LINE WORK

--

0 1 2 3 4 5 6 7 8 9 10

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

HORSE RACE

4 LEVELS
OF
PLAY

2 DICERS
& PLAY



This is a game for two Dicers to play at one time. Players use one tray divided so that each player uses only their half.

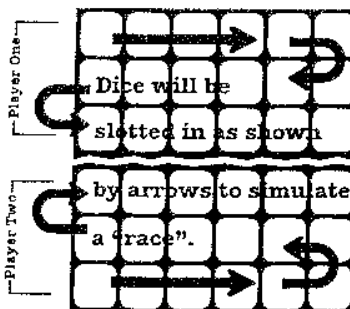
TO BEGIN

Each Dicer chooses eighteen dice of their own colour and these are removed from the tray.

THE GOAL

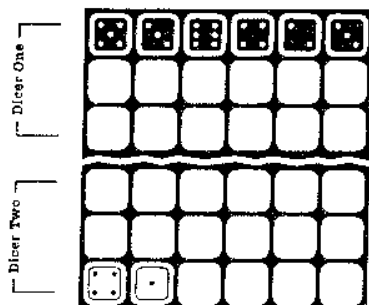
The goal of the game is to have the most dice in your side of the "horse race track" after all dice have been rolled out for the round. Dicers roll two dice at one time.

Dicers add their two dice and compare their sums. The Dicer with the greatest sum places them into their side of the "horse race track". Their opponent places their two dice into the lid (losing side). Dicers pick up two new dice, roll, add and compare their sums. The Dicer with the greatest sum places them into their side of the "horse race track" and their opponent places them into the lid. In the event of a tie sum, both Dicers place their dice into their own side of the "horse race track". Dicers roll out all remaining dice. The Dicer with the most dice on their side of the "horse race track" after nine tosses, is the winner.



The tray is divided between the two players as shown.

EXAMPLE



Play After 3 of 9 Rounds.

Toss 1

Dicer One + = 8 → WINS and places dice in tray

Dicer Two + = 5 → Tosses dice into lid

Toss 2

Dicer One + = 10 → WINS and places dice in tray

Dicer Two + = 3 → Tosses dice into lid

Toss 3

Dicer One + = 5 → TIE both players place dice in tray

Dicer Two + = 5

LEVEL 1

Play is outlined above, Dicers roll two dice and add.

LEVEL 2

Play as described in above rules, but now Dicers roll three dice and add for the greatest sum. The Dicer with the greatest sum (answer) places them into their side of the "horse race track".

$$\begin{matrix} \blacksquare & + & \blacksquare & + & \blacksquare & = & 9 \end{matrix}$$

LEVEL 3

Play as described in above rules, but now Dicers roll two dice and multiply $\begin{matrix} \blacksquare & \times & \blacksquare & = & 20 \end{matrix}$ for the greatest product. The Dicer with the greatest product (answer) places them into their side of the "horse race track".

LEVEL 4

Play as described in above rules, but now Dicers roll three dice, add two, and multiply by the third for the greatest product. See example.

The Dicer with the greatest product places them into their side of the "horse race track".



$$(5 + 3) \times 6 = 48 \rightarrow \text{Best Choice}$$

$$(6 + 3) \times 5 = 45$$

$$(6 + 5) \times 3 = 33$$

You will have to do some thinking here to create the best possible answer for your roll. Will there always be 3 possible answers?

GOOD LUCK!

TIC TAC TEN

0 1 2 3 4 5

0

0 1 2 3 4 5

1

1 2 3 4 5 6

2

2 3 4 5 6 7

3

3 4 5 6 7 8

4

4 5 6 7 8 9

5

5 6 7 8 9 10

0	0	1	2	3	4	5
1	1	2	3	4	5	6
2	2	3	4	5	6	7
3	3	4	5	6	7	8
4	4	5	6	7	8	9
5	5	6	7	8	9	10

Hundred Board

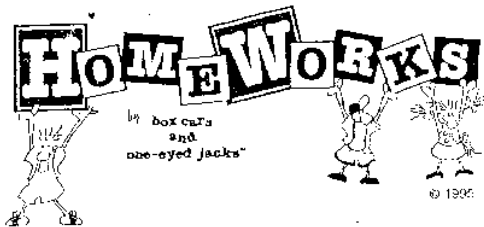
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Addition Tic Tac Toe

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

Blank - Addition Tic Tac Toe

	0	1	2	3	4	5	6	7	8	9
0										
1										
2										
3										
4										
5										
6										
7										
8										
9										



MULTIPLICATION TIC TAC TOE

LEVEL: Grade 2 - 3
SKILLS: Beginning multiplication - products to 25
PLAYERS: 2
EQUIPMENT: 2 0-5 dice, one gameboard, 2 different coloured markers

GETTING STARTED: Players select a colour of marker. The goal of the game is for players to get three bingo chips of their own colour in a row, either horizontally, vertically, or diagonally. Player one rolls the dice and multiplies them, verbalizing the product to their opponent i.e., Player rolls 2 and 4, verbalizes $2 \times 4 = 8$ and $4 \times 2 = 8$ and covers the two corresponding spaces on the gameboard. Player two now rolls and covers their corresponding spaces on the gameboard. Players continue to alternate turns trying to get TIC-TAC-TOE - THREE IN A ROW.

When this happens the player removes their markers and counts two points for each marker (six points for three in a row, eight points for four in a row, etc.)

Capturing an Opponent's Space: If a player rolls a product that is occupied by their opponent then that player removes their opponent's marker and replaces it with one of their own. Each captured marker is worth five points.

Rolling Your Own Space: If a player rolls a product that they already occupy, they may roll again to get a new product. Players continue to alternate turns for a set period of time. At the end of play, the player with the most points wins.

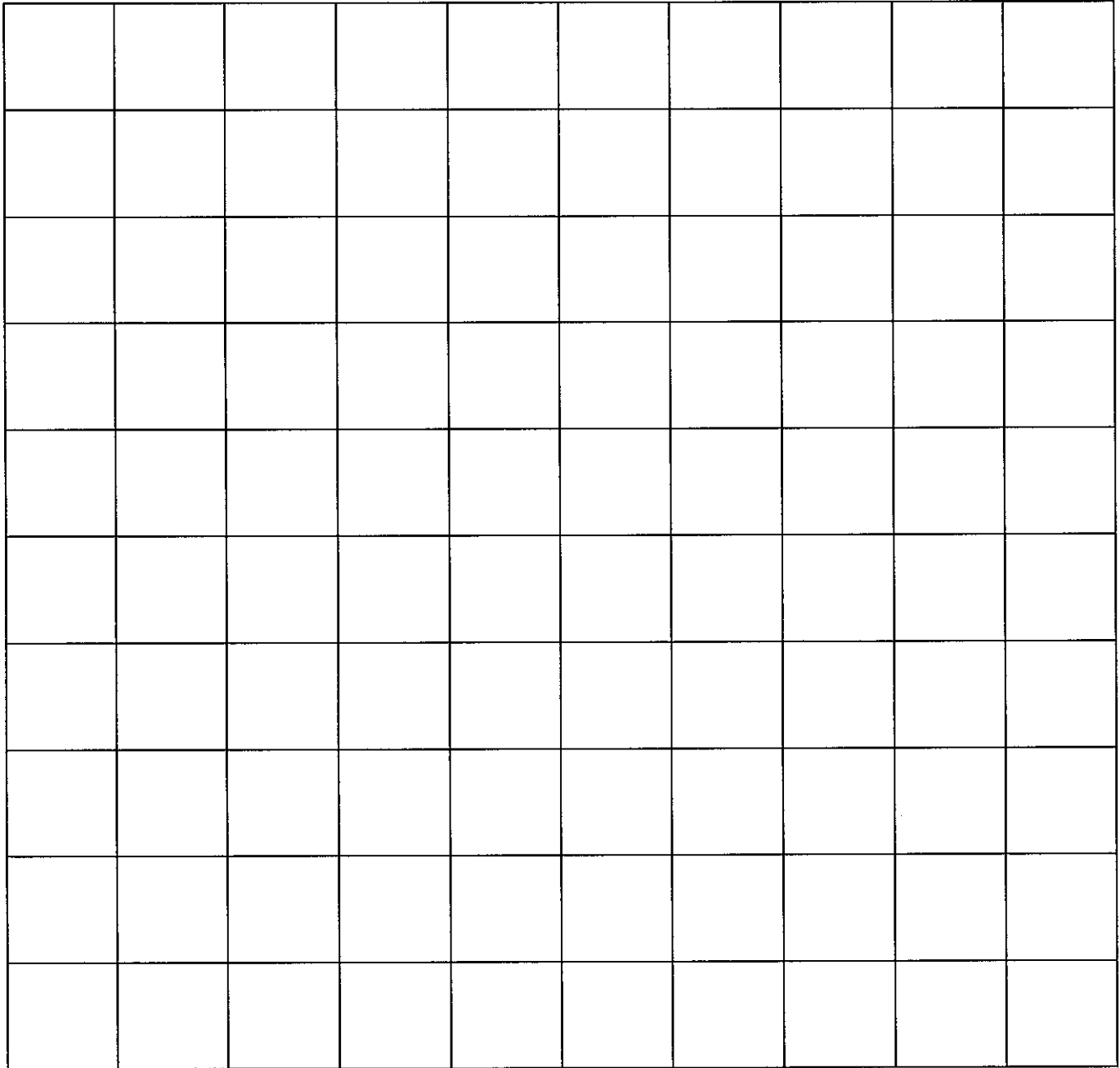
	0	1	2	3	4	5
0	0	0	0	0	0	0
1	0	1	2	3	4	5
2	0	2	4	6	8	10
3	0	3	6	9	12	15
4	0	4	8	12	16	20
5	0	5	10	15	20	25



Multiplication Board

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Blank 100 Board





TICK TOCK ROLL A CLOCK

2
Double Dicers
to Play

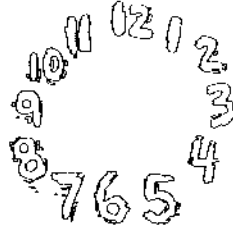


WHAT YOU'LL NEED

Each Double Dicer needs one Three-In-A-Cube Die, paper, pencil.

TO BEGIN

Each player needs to draw a clock as follows:

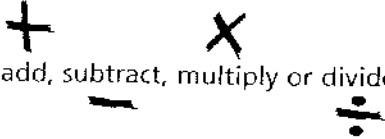


THE GOAL

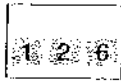
To be the first Double Dicer to circle all numbers on their clock.

LET'S ROLL

Player One rolls the die and may now add, subtract, multiply or divide the three numbers to target any number between 1 - 12.



EXAMPLE



Player One can circle on their clock, either:

$6 \times 2 \times 1 = 12$ OR $6 + 2 + 1 = 9$ OR $(6 \div 2) + 1 = 4$ etc.

Players can circle only one number per roll. Players alternate rolling the die, analyzing their combinations, trying to be the first player to circle all the numbers on their clock. If a player is unable to find a combination for any of the remaining numbers, play continues to their opponent.



Do you think there are certain numbers that will be more difficult to circle?



Play & Discover!

Hundred Board

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

Flippin' Out



Ones

A large, empty, rounded rectangular box with a thin black border, intended for Player Two to write a digit in the ones place.

Tens

A large, empty, rounded rectangular box with a thin black border, intended for Player Two to write a digit in the tens place.

Player Two

Ones

A large, empty, rounded rectangular box with a thin black border, intended for Player One to write a digit in the ones place.

Tens

A large, empty, rounded rectangular box with a thin black border, intended for Player One to write a digit in the tens place.

Player One

ROLL'N ON PLACE VALUE

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TO BEGIN

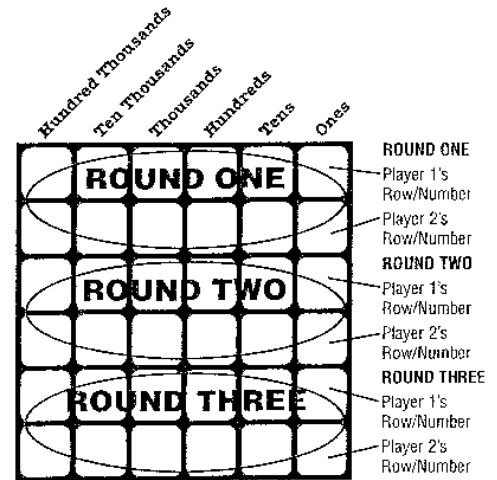
Dicers select their own colour of dice. The dice will be rolled alternately one at a time by the players throughout the game. A total of three rounds will be played (see example 7).

THE GOAL

The goal of the game is to be the player who creates the largest six-digit number in each round.

TO WIN

A Dicer must be the first one to win two out of three rounds. To start the first round player number one rolls a die and selects the best place value position in their row. For example, if player one rolls a two, the "tens" position might be selected. Player two now might roll a five and place it in the "ten thousands" position of their row. Once a die is placed in any place value position it cannot be moved. Remember, this is a game of chance. It depends on chance whether you throw the number you want on the die. Be a risk-taker and make a calculated guess. The more you play, the better you'll play. Players alternate taking their remaining five rolls, each building their own hundred thousands number - keeping in mind the goal of the game is to create the largest number possible.



Example 7



ROLL'N ON PLACE VALUE (CONTINUED)

Player 1 rolls a 5
 Player 2 rolls a 4
 Player 1 rolls a 3
 Player 2 rolls a 4
 Player 1 rolls a 6
 Player 2 rolls a 5
 Player 1 rolls a 4
 Player 2 rolls a 5
 Player 1 rolls a 2
 Player 2 rolls a 1
 Player 1 rolls a 4
 Player 2 rolls a 3



Example 8

Once all dice have been placed, players say their numbers out loud and compare them to determine which player has made the greatest hundred thousands number. This Dicer wins that round. In example 8, player one wins round one. Play continues into round two and if necessary a third round is played to determine the overall winner.

VARIATION I

To decrease the level of difficulty players may roll less dice i.e., only four dice per player to build a thousands number or three dice each to build a hundreds number.

VARIATION II

Dicers can agree to change the goal of the game and now attempt to build the smallest six-digit number in each round. A roll of 1 or 2 is now considered a "nice dice" roll! The lowest number you could possibly roll would be 111,111. What would the probability of that be?

Player one's number is 645,342 which beats player two's number 315,445.

Batters Up!

Skills: Place Value to 100 000s, Addition with Expanded Notation

Equipment: Cards 0-9, Place Value System die, paper/pencil

Goal: Greatest total sum after ten rounds wins

Getting Started:

Each player builds a number in the 100 000s with their cards

Build in order from 100 000s place to 1s place (Example 230 516)

Each player reads their number to the other players.

One player rolls the PV System die and calls out the place value

Players identify the value at that place value in their number (this is their score for the round) and record their score for that round. Example: **ten thousands** is rolled, 3 is in the 10 000s place, score for that round is 30 000

Play 10 rounds, (rotate roller) then total your score.

BATTERS UP!

Round	Number	Roll	Value/Points/Score
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Total Score =

BOX CARS & ONE-EYED JACKS

Games & Strategies In Your Classroom

- To Teach or Introduce Concepts
- Quick Math Warm Ups / Practice & Review Concepts
- Math Back Packs / Newsletters / Family Math / Home Connections
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- Cross-Graded Groupings - Mix Up Time With Reading Buddies
- Inside Days / Full Moon Fridays
- Centers
- Kids Teaching Kids - Peer & Cross-Graded Support
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- Tutoring
- Math Clubs / Inventing Games
- Math Themes - Probability, Graphing ...
- Don't Lose 5-10 Minutes - Educational Play

MATH GAMES = POWERFUL TEACHING STRATEGY

Implementation Plan

List 3 ways you can incorporate the Box Cars strategies into your classroom, program or school.

- 1.
- 2.
- 3.

Identify the game/activity that you will try first, when you get back later this week.

Find a colleague in this room whom you will contact at the end of the week. The two of you will be agreeing to hold a conversation regarding what you did to start implementing what you learned today.

Who:

From:

Phone:

Email:

You can reach me at:

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