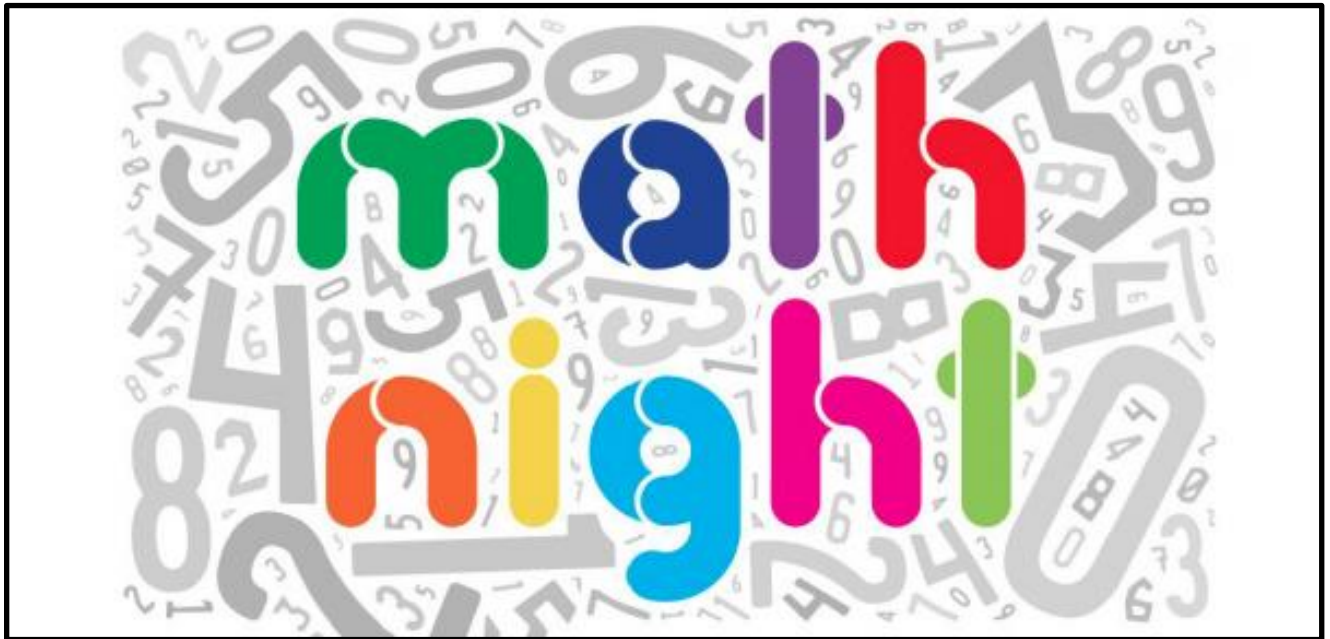# Bridgeport Public School's

November 2016

Dice Games

Number Roll: Roll several dice (you decide the number – anywhere from 5 to 10 dice) at the same time. Find numbers that match and pair

them up. Keep rolling until you have made matches/pairs and all the dice are gone.

Combinations of 10: Roll 10 dice all together (you can use any number of dice). The player who calls out or pulls out combinations of 10 first gets to keep those dice. Keep rolling and calling out combinations of 10 (for example: 5 + 5; 6 + 4; 7 + 3…) until all the dice are gone.

MAKE 10
Players: 2
Materials: 1 or 2 dice, scratch paper (for keeping score)
Object: Make a 10 from the number rolled

One Die Version: One die is rolled. Players try to be the first player to shout what number needs to be added to the number on the die to make a ten. The number needed to make ten becomes the player's score for that round. For example, if a 3 is rolled, players would shout 7, because 3 and 7 make 10. The first player to answer correctly earns 7 points.

Two Die Version: Two dice are rolled. Players must now add or subtract to make ten. For example, if two 6s are rolled, players would shout 2, because 6 + 6 = 12 and 12 - 2 = 10. Players can use the ten-frames below for additional support.

Addition Dice War: Using 2 dice each, player rolls to find the greatest sum. Keep track of points using tally marks. The first player to 10 tallies wins! *Variations*: Play to find the lowest sum; use 3 dice instead of 2.

Subtraction Dice: Using 3 dice (2 are red and 1 is white -- or any color combination you want) roll the two red dice to create a number: say you roll a 4 and 7 – this can be 47 or 74 – player's choice. Roll the white die and subtract that number from the "red" number created. Encourage this to be done mentally, even if children need to regroup. We want to encourage mental math and build confidence even with large numbers.

Multi-step Dice: Use 3 or more dice with different colors – the players decide the rules ahead of time. If using 3 dice, try 2 green and 1 blue. Each player rolls all 3 dice at once, and has to add the 2 green and subtract the 1 blue mentally. If you get an answer less than 0 (negative number) just call that answer "a number less than zero" which has 0 points. Keep score depending on the larger or smaller answer.

Odd/Even Dice: Decide ahead of the game who is "odd" and who is "even." Each player rolls 1 die, and adds them to find the sum. If the sum is even, the "even" player gets a point; if it's odd, the "odd" player gets a point. Next time, roll 2 dice each. Add to find the sums individually. If there are 2 odd numbers the "odd" player get 2 points; if there is 1 odd and 1 even, each player gets 1 point; and so on. The first player to 10 (set any goal) is the winner!

Factor Dice: Roll 2 (or more) dice and multiply to find the product. Decide whether the product is composite (has more than 2 factors) or prime (has exactly 2 factors, 1 and the number itself). If it's composite, find all the other factor pairs of the number. Record all the factor pairs for each roll, whichever player has the most factor pairs after 5 turns wins! For example: roll a 6 and 3: multiply 6 x 3 = 18. 18 is composite and its other factor pairs are 18 x 1 and 9 x 2.

Multiple Dice: Roll 2 (or more) dice and add them to find the sum. Say and/or record the next 10 consecutive multiples of that number. For example: roll a 6 and 2 so add 6 + 2 = 8. Find 10 multiples of 8: 8, 16, 24, 32….

Multiplication Dice War: Using 2 dice each, players roll to find the greatest product. Keep track of points using tally marks. The first player to 10 tallies wins (or set whatever goal you would like)! Variations: Play to find the lowest product; use 3 dice instead of 2.

Fraction Dice: Using 2 different colored dice, designate which colors are the numerator and denominator. Roll the dice to create your fraction. For example, if a player rolls a 4 and 5, the fraction is 4/5 or 5/4 depending on the rules established. From this fraction you can:
- Convert it to a decimal
- If it's improper (like 5/4), convert it to a mixed number
- Compare with a partner's fraction to find the greatest or least fraction
- Roll 6 dice and make 3 fractions, in order from least to greatest

Beat That!

This is an easy game to learn, but one which is very popular with kids (and not too bad at keeping the odd grown up amused, too!). Great for learning the concept of place value.

Equipment:

2 dice (up to 7 dice for older players)

Paper and pencil for scoring

How to play:

Roll the dice and put them in order to make the highest number possible. If you roll a 4 and an 6, for example, your best answer would be 64. Using 3 dice, a roll of 3, 5 and 2 should give you 532, and so on. Write down your answer, pass the dice, and challenge the next player to "Beat That!"

Play in rounds and assign a winner to each round.

For a change, try making the smallest number possible! This is a great game for reinforcing the concept of place value. If you are playing with younger children, explain your reasoning out loud and encourage them to do the same.

Cover Up! – A Perfect Game for Kindergarteners

Kindergarteners will work on number recognition from 1-6 in this game. When they have mastered this, try the variation which involves number recognition to 12 and simple addition.

What you need:

– 2 players

– 1 die

– paper and pencils

– Numbers 1-6 written on a piece of paper

– 6 counters (buttons, tiles, beans, pennies, etc.) for each player

The winner of Cross Out is the first person to put a marker on all six numbers.

Players take turns rolling the die and putting a marker on the corresponding number on his/her number line. If a number already has a marker on it, that player loses his/her turn.

Variation: Roll two dice and add them together. Each child will need a 2-12 number line.

This game seems simple, but it really helps young children recognize the dots on the dice. When they begin, they may need to count the dots each time, but soon they ought to learn what number the dots represent without counting them.

100

Players: 2

Materials: 2 dice, 120 chart (optional), scratch paper for keeping score
Object: Score as close to 100 as possible after 5 rounds

How to Play: Roll two dice and create a 2-digit number. For example, if a 3 and 5 are rolled, you can make 35 or 53. Mentally calculate the difference between the 2-digit number and 100. One way to find the difference is to count up. For example, if the number rolled is 53, count up by 10s and then add the 1s needed to get to 100. So, in the example below, the difference is 47. Scoring: Play 5 rounds. For each round, players calculate their score as the difference from 100. The player with a score closest to 100 after 5 rounds wins. This introduces the element of strategy as players decide how to combine their numbers rolled to create a difference that gets their total score as close to 100 as possible!

ODD SQUAD

Players: 2

Materials: 2 dice, scratch paper

Object: Have the largest score after 5 rounds

How to Play:

Alternate turns. On a turn, a player rolls both dice. If the number rolled is even, it is used at face value. If the number rolled is odd, it is multiplied by 10. Both numbers are then multiplied together, and the product is the player's score for that round. Examples: 1. A player rolls a 2 and a 3. The 2, which is even, is used at face value. The 3, which is odd, is multiplied by 10 to get 30. The player then multiplies 2 x 30 for a total of 60 on the round.

2. A player rolls a 3 and a 5. The player would multiply 30 x 50 for a total of 1,500 for the round.

3. A player rolls a 4 and a 4. The player would multiply 4 x 4 for a 16 on the round. Play continues for 5 rounds, and the player with the highest score wins.

Variation: Play by multiplying even numbers by 10 and odd numbers by 100.

Build a Tower

Use Lego, pennies, wooden blocks, popsicle sticks or any basic building material you can find. Have players roll a pair of dice and add the two

numbers. The player gets that number in building materials if the dice are added correctly and uses them to build a tower. Go through 10 or 15 rounds. The player with the tallest or most creative tower at the end wins.

Number Line Race

- Clothespins
- Feathers
- Googly eyes
- Red and orange construction paper
- Tape Measure Number Line (pick a number as your target for the end of the game)
- Black permanent marker

You could also skip the googly eyes and construction paper and just use colored markers to draw the eyes, beak and wattle on. Not sure why I didn't think of this before doing it the other way!

1. Put the eyes, beak and wattle on the clothespins.
2. Tape or glue the feathers to the clothespins.

To begin,roll the die and identified the number represented by the dots. Then move the first player's clothespin turkey that many numbers on the number line.

Then Player 2 rolls the die and moves his/her turkey along the number line. Play continues until one player reaches the number that was determined at the beginning.

Teaching Addition Math Facts to Kids With Go Fish!

This new twist on the old classic Go Fish! helps kids to learn addition by mentally working out simple math problems. Each round played practices math facts for a specific number, making it easy to stick with one set of facts for as long as needed to solidify them in the players' mind. All that's needed to play this game is a standard deck of playing cards. It is best enjoyed with 2-4 players.

How to Play Go Fish!

1. Sort through the deck to remove all cards that are higher than that featured number for the math game. For example, if the goal is to learn addition facts for the number seven, the game will be played with ones (aces) through sevens.

2. Deal out five cards to each player and place the remaining cards in a draw pile.

3. Have each player look through his or her hand of cards to find any pairs that add up to the featured number and place them face up in their discard pile. For example, if learning addition facts for the number seven, appropriate pairs would be 6+1, 5+2 or 4+3. The 7 card would also be laid aside as a correct solution that doesn't require a pair.

4. The person to the left of the dealer may now ask any other player for a card that will help create the sum required. If the person asked

has the card in his hand, he must give it up to the player that made the request. A player can keep asking for cards until no further matches are able to be made, at which point he is told to Go Fish! from the draw pile and the next player takes a turn trying to make a match.

5. If a player runs out of cards he can choose five more cards from the draw pile to stay in the game. 6. Continue playing until all the cards in the deck have been matched into pairs. The player with the highest number of pairs at the end of the game is the winner.

Learning Addition Facts by Playing Memory

The card game Memory, or Concentration, is another great game that can be modified to teach addition facts to kids. As with the instructions for Go Fish! above, each game focuses on math facts for a specific number. All that's needed to play this game is a standard deck of playing cards. It can be played alone or with a group.

How to Play Memory

1. Sort through the deck to remove all cards that are higher than that featured number for the math game. For example, if the goal is to learn addition facts for the number six, the game will be played with ones (aces) through sixes.

2. Shuffle the deck and turn all the cards face down in a grid pattern.

3. Taking turns, have each player flip two cards to look for a matching pair. For example, if learning addition facts for the number six, appropriate pairs would be 5+1, 4+2 or 3+3. The 6 card would also be laid aside as a correct solution that doesn't require a pair.

4. Continue playing until all the cards in the deck have been matched into pairs. The player with the highest number of pairs at the end of the game is the winner.

Subtraction "War"

Play this fun card game with your child and before long those challenging subtraction math facts will be part of her mathematical skill set. Besides strengthening subtraction skills, this game also provides practice in comparing numbers.

What You Need: Deck of cards Kitchen timer

What You Do:

1. Shuffle the deck of cards and deal them face down, giving each player an equal number of cards until the deck runs out. Each player keeps his cards in a stack. Assign picture cards, such as jacks, queens, and kings, a value of 10. Give aces a value of 1.

 2. Demonstrate to your child how to play the game: Each player turns two cards face up, reads the number sentence and supplies the answer. For example, if your child draws a 5 and a 4, he says 5 - 4 = 1. If you draw a 7 and an 2, then your number sentence is 7-2 = 5. Because your result is larger, you win the four cards and you put them at the bottom of your pile.

3. If each of you has a number sentence with the same answer, then it's war! At this point, you'll reverse the math "operation" and do an addition problem. Each player puts four cards face down and turns up two of them. The player with the sum wins all eight cards.

4. Set up the timer and play the game for 10 to 15 minutes. When the bell goes off, each player counts his cards. The player with the most

cards wins. If one player runs out of cards before time is up, then the other player wins.

Ten-Twenty-Thirty

Try this single-player addition game! All you need is a deck of playing cards to get started. Try to find sums of 10, 20, or 30 in order to clear cards.

What You Need: One deck of playing cards (Print a deck.)

What You Do:

1. Shuffle the deck. Create a row of seven cards, face up. Place two cards on top of each of the seven so you have seven piles of 3 cards each. Arrange the cards so you can see the face value of every card.

2. Place the rest of the deck to the side, to be used later.

3. The object of the game is to remove a pile when the sum of all of its cards is 10, 20, or 30. All face cards equal 10. For example, if a pile has an ace, 9, and jack in it, it could be removed because its sum is 20 (1 + 9 + 10). Go ahead and remove all of the piles that equal 10 to start.

4. Deal a fourth card on top of every pile that remains. Remove any stacks that now equal a multiple of 10.

5. Deal a fifth card on top of every pile that remains. Remove any stacks possible.

 6. Continue adding cards and removing stacks until your deck is depleted or the stacks have all been removed.

 7. If you remove all the stacks first, you have won! If your deck is emptied first, try again. Variations: Remove two sets of cards at once

if their combined sum is a multiple of 10. Look for different sums, let's say 9, 19, and 29. Or multiples of 6

Pile it On: A Multiplication Game

Introduce multiplication to your child using a deck of playing cards and a die. This game provides an excellent demonstration of how multiplication works.

First, players roll the die twice to find numbers for their multiplication fact. Then, they place cards in piles to create a visual representation of each fact. When solving their problem, players can count the cards or use the multiplication facts they already know. As patterns appear within the game, players will gain a better grasp on multiplication.

What You Need: One deck of cards (Print a deck.) One die (Make your own.) A score sheet for every player (Print these out.) Pencils
What You Do:

1. On a player's turn, they roll the die twice. Their first roll indicates how many piles they must make. Their second roll tells how many cards to place face down in each pile.

2. The player will then create those piles, add up the total number of cards used (either by counting them or by using multiplication), and record their score.

3. Play for ten rounds. The person who uses the most cards total is the winner.

Close Call: An Addition Game Give this fun addition game a try! Challenge your child to create sums as close to 100 as he can, without going over. This requires him to evaluate all possible sums, based on the numbers he is given. He'll learn common patterns in addition as he works out the best plays. Try talking through the game with your child, asking him what he's thinking as he selects cards, and making discoveries together!

What You Need: Deck of cards Paper and pencils (for scratch paper) Close Call score sheets (Print these out.) What You Do:

 1. Remove 10s and face cards from the deck. Shuffle the deck and deal each player 6 cards.

2. Each player selects four of their cards and creates two 2-digit numbers from them. The goal is to create two numbers that have a sum as close to 100 as possible, without going over. o (For example, a player may choose to use the cards 4, 6, 8, and 1, creating the problem 14 + 86 = 100.)
 3. After players have made their selections, they place their cards face up in front of them, arranging them so other players can see which two numbers they have created.

4. The player with the numbers closest to 100, without going over, wins a point. In the case of a tie, a point is awarded to each team.

5. Shuffle the cards before dealing another round.

6. Play continues for 5 rounds. The player with the most points after the last round wins the game. Variations: Change the number of cards dealt, the number of cards used, or the goal. For younger players,

restrict the number of cards dealt to 4 per player, allow them to use only 2 of the cards, create single-digit numbers, and set the goal to 10.

To make the game more challenging, deal 8 cards to each player, let them choose 6, create 3- digit numbers, and set the goal to 1,000.

Toss Up: Addition to 100 Take turns tossing playing cards into the air in this fun addition game!

All you need to play is a deck of playing cards, paper and pencils. You'll take turns tossing cards and adding their values onto your totals. The first player to reach 100 points wins!

What You Need: One deck of playing cards Paper and pencils

What You Do:
1. Take turns drawing 3 cards from the pack and tossing them into the air.
2. Players earn points equal to the value of every card that lands face up. (Keep in mind aces = 1, jacks = 11, queens = 12, and kings = 13.) 3. The first player to reach 100 points wins! Variations: Toss just two cards. Subtract the lesser card if both cards land face up.

Multiply cards instead of adding them. Play to 500 points "

I'm the Greatest!" A Math Card Game Grab a deck of playing cards, and let's go! Challenge your child to find the largest sums possible. Whoever can find the biggest answers gets the points!

What You Need: One deck of cards (Print a deck.) Pencil and paper (for each player) Timer (optional)

You Do:

1. The object of the game is to win points by forming the largest sum.

2. Remove tens and face cards from the deck. If you have jokers, add them into the deck. Jokers will equal zero.

3. Shuffle the cards. Give each player six cards.

4. Players have exactly one minute to make a 3-digit plus 3-digit addition problem using the numbers on their six cards. Players should experiment and double check their work to ensure they have the largest sum possible.

5. The player with the greatest sum wins the round and one point. The first player to earn 10 points wins the game. Variations: For younger players, deal two or four cards and form 1 or 2 digit sums. Adjust or remove the time limit.

Quick Stop: An Addition (or Multiplication) Card Game Add up your cards until you reach 100 points. The first one there wins! Ready for a challenge? Check out the variations at the bottom of the page!
What You Need: Deck of cards Pencil and paper for every player (to add up scores)

What You Do:

1. Place a well shuffled deck of cards, face down, in the center of the playing area.

2. Each player begins by drawing one card and placing it face up in front of themselves. Players write the value of this card down at the top of their papers. (Aces are worth 1, and face cards are all 10.)

3. When all players are ready, everyone draws a second card. They add the value of these cards to their totals.

4. Keep playing until one player reaches 100.

Variations: Play until the deck runs out. The player closest to 100, without going over, wins. Add jokers into the deck. If a player draws a joker, their score drops back to zero. Start with 100 points, and subtract your way to the finish. Need a challenge? Use multiplication to reach 1000.

Number Line Race

- Clothespins
- Feathers
- Googly eyes
- Red and orange construction paper
- Tape Measure Number Line (pick a number as your target for the end of the game)
- Black permanent marker

You could also skip the googly eyes and construction paper and just use colored markers to draw the eyes, beak and wattle on. Not sure why I didn't think of this before doing it the other way!

3. Put the eyes, beak and wattle on the clothespins.
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To begin,roll the die and identified the number represented by the dots. Then move the first player's clothespin turkey that many numbers on the number line.

Then Player 2 rolls the die and moves his/her turkey along the number line. Play continues until one player reaches the number that was determined at the beginning.