Silver Pines' Math Night 2015
Resources and Activities Guide

Tell Me A Story

Every kid loves to be read to! Here are some books to cuddle up with that will be enjoyed by all and as an added bonus will promote mathematical knowledge and understanding!

Primary Books

If You Were an Odd Number, and If You Were an Even Number, Marcie Aboff
Great introduction to odd and even numbers

10 Minutes Till Bedtime, Peggy Rathmann
A countdown from 10 to 1 with the bedtime hamsters. Intricate illustrations with lots of numbers to find.

Monster Math Picnic, Grace Maccarone
Combinations of numbers that add to 10.

Domino Addition, Lynette Long
Practice of simple addition with the book or with actual dominoes.

A Second is a Hiccup, Hazel Hutchins
Explains relative lengths of time in a story-poem.

Color Zoo, Lois Ehlert
Two-dimensional shapes can be found everywhere – even in animals.

The Greedy Triangle, Marilyn Burns
An introduction to two-dimensional shapes. Back of book has section to reinforce learning.

Grandfather Tang's Story, Ann Tompert
Chinese folk tale illustrated with tangrams. Great introduction to two-dimensional geometry.

Primary/Junior Books

Math Potatoes and Math for All Seasons, Greg Tang
Mental Math Puzzles

Bees, Snails, & Peacock Tails, Betsy Franco

Patterns and shapes in nature.

One Hundred Hungry Ants, Elinor J. Pinczes

Many ways to divide 100

Junior Books

Loonies and Toonies, Mike Ulmer

A Canadian number book filled with Canadian information.

Piece=Part=Portion, Scott Gifford

Fractions=Decimals=Percents

Junior/Intermediate Books

Anno's Mysterious Multiplying Jar, Masaichiro and Mitsumasa Anno

A very visual representation of multiplication.

Fun with Roman Numerals, David A. Adler

No longer on the curriculum but interesting information to know.

Intermediate Books

Sir Cumference and the First Round Table, Cindy Neuschwander

A Math adventure to introduce circumference, diameter, and radius.

Games 'R' Us

Promote reasoning and problem solving, as well as some good ol' fashioned arithmetic with these fun board games!

Primary and Up

Monopoly Junior
Snakes and Ladders
Blokus
Chess

Junior and Up

Smash Up
Monopoly Deal
Ticket to Ride
7 Wonders
Settlers of Catan

Intermediate and Up

Dominion
Lords of Waterdeep

Technology and Math

Technology is everywhere!!! Here are some kid-approved apps and web-sites to get your kids learning while they are playing on their tablet or computer!

Games presented tonight by our amazing Grade 7's were from this website:

www.mathplayground.com

Additional Math Apps

Hungry Fish
Quick Image
Geoboard
Slice Fractions
King of Math
Todo Telling Time
Shape Art

Math websites

nlvm.usu.edu/en/nav/vlibrary.html

www.bbc.co.uk/bitesize/ks1/maths

www.mathisfun.com

www.brainpopjr.com/games/math

www.funbrain.com

More Games to Play

Playing cards and dice are something that everyone has lying around the house. Put them to good use by incorporating these fun activities into your weekly game night!

Dice Games...

Dice games are educational in obvious ways, for example encouraging counting and numbers in little children and quick mental addition in older children. But they are also excellent at reinforcing the concept of taking turns, scoring (both mental and on paper), winning and losing gracefully, patience and so much more.

These games can be based on luck, on skill, on planning, or all the above. You can find games to play with two players or twenty, on a table or on the floor, with 3-year olds and with 70-year olds!

Game 1: SKUNK

Each letter of "skunk" represents a different round of the game.

Begins with the "S" column and continue through the "K" column. The object of "skunk" is to accumulate the greatest possible point total over the five rounds.

The rules for play are the same for each of the five rounds.

To accumulate points in a given round, a pair of dice is rolled.

A player gets the total of the dice and records it in his or her column, unless a "one" comes up.

If a "one" comes up, play is over for that round and all the player's points in that column are wiped out to “0”.

If a "one" doesn't occur, the player may choose either to try for more points on the next roll or to stop and keep what he or she has accumulated.

At the end of the game, the player will calculate the total of all rounds. The player with the greatest score wins the game.

Note: There will be two options to play. One game will involve multiplication (multiplying the two numbers on the pair of dice) and the other game will involve addition (adding the two numbers on the pair of dice).

Game 2: PIG (mental addition and critical thinking)

This game requires two dice

- The first player rolls the dice, calculates the sum (mentally), and then rolls again if he or she wants to. The next sum is added to the first. The player can roll as often as he/she wants before handing dice over to player 2.
- However, if a 1 comes up on one of the dice before the player decides to stop rolling, the player scores 0 for that round. The play goes to the next player.
- Worse still, if a 1 comes up on both of the dice, the turn ends and the player's entire total falls to 0
- The first player to get to 100 wins.

Pig score sheet

Record your score at the end of each turn

Round	Player 1	Player 2	Round	Player 1	Player 2
1			6		
2			7		
3			8		
4			9		
5			10		

Game 3: Going to Boston (Less than and greater than, adding)

- Have each player roll one die. The player with the highest number goes first.
- Each player in turn rolls all three of the dice.
- After the first throw, remove the die with the highest number and put it aside.
- Roll the two remaining dice and again put the highest number aside.
- Roll the last die and add up the numbers on all three dice to get the player’s score for that round.
- Record the score on a piece of paper.

- Play a number of rounds and tally winning rounds. The player with the highest winning round wins.

Variations for ‘Going to Boston’ game

- Play with two dice for younger children to learn addition skills.
- Keep the lowest numbered die rather than highest for a slightly easier game that teaches addition skills.
- Increase the number of dice in the game to 4+ to learn more complicated addition skills.
- Learn multiplication by taking the sum of the first two dice and multiplying it by the third

Game 4: Silver Pines

- Each player rolls 1, 2 or 3 dice each round depending on their grade level
- The numbers on the dice are added together to come up with an individual player’s score.
- The player with the highest scoring combination wins each round.
- If you win a round you get to write down one of the letters that spells ‘silverpines.’
- The first player to spell ‘silverpines’ wins.

‘Silver Pines’ score sheet

Player 1											
Player 2											

Game 5: Face Off!

- Students place 11 pattern blocks on the numbers 2-12
- Students toss two dice, find the sum and remove a pattern block from that number, if there is still one.

- The first player to remove all the pattern blocks wins the game.

Card Games…

Game 1: Fraction Train (equivalent fractions)

Number of Players : 3
Level: Junior

1. Each player gets 5 cards.
2. One card is left face up next to the rest of the deck.
3. Player One adds a card to create a fraction or improper fraction.
4. The other players go around the circle to build equivalent fractions until nobody can continue to build.
5. If a player cannot build they must pick up a card.
6. Whoever runs out of card the first wins.

Game 2: Comparing Decimals

Number of Players : 2
Level: Junior

1. Shuffle the cards and divide them evenly.
2. Each person turns over top four cards to create a decimal number.
3. The person with the highest number and that can add or subtract decimals the quickest wins.

Game 3: 7-Digit Numbers (place-value)

Number of Players: 3
Level: Junior

Remove all the tens and face cards from the deck.
1. Each player gets 7 cards.
2. Try to build the largest number with the cards.
3. Scoring: Odd number: 1 point
   Greater than 5 million: 2 points
   Multiples of 5: 3 points
4. The first player to 20 points wins.
5. Repeat

In the Car

On your way home from school? On your way to swimming? Soccer? Hockey? Dance? Gymnastics? Groceries? We spend more time than ever in the car with our kids, why not put the time to good use by incorporating these fun activities to get your kids thinking mathematically?

Game 1: Number Clues

Provide your child with verbal clues that will allow him or her to guess your number. For example, if the number you are thinking of is 20 you may say:
Two of my factors are four and five.
I am the sum of ten plus ten.
I am divisible by two and ten.

After each clue is provided, allow your child to guess the secret number. You may have to supply additional clues until your child is able to successfully guess the number you are describing. As an adjustment to the game, have your child provide the clues and guess the number yourself.

Game 2: Buzz

Variation 1) The leader chooses a number between 2 and 9. The leader says 1, the next player says the 2, and so on. When they reach a multiple of the number chosen, the player says "buzz" instead of the number. If a player forgets to say buzz or says it at the wrong time, he or she is out. Play continues until they group reaches the last multiple of the number times 9.
Variation 2) You can also play "Buzz" with the primary children - identify the numeral that is buzzed and so they can't say any number with that digit in it. For example, if the buzzed number is 1 - when they get to 1 or 11-19, or 21, etc. they would say buzz instead of the number.

Game 3: Skip-Counting Challenge

To begin, choose a starting number, an ending number and two numbers to skip count by. Two or more players take turns adding one of the two skip-count choices to the number before. The player who reaches, or exceeds, the ending number first “loses” that round.
Example: Starting number: 13, ending number 45, skip count by 5 or 10. Game play: 1) Player 1 adds 5 so says “18”, 2)Player 2 adds 10 so says “28”, 3) Player 1 adds 10 so says “38”, 4) player 2 adds 5 so says “43”, 5) Player 1 is now forced to go over 45, so player 1 would “lose” that round.

Kitchen Activities

Let's turn cooking time into learning time! The kitchen is rich with fun and yummy math opportunities for your child (ren) to learn. There are many ways you can count, measure, estimate, compare, explore parts of a whole, add, subtract, multiply, divide, etc., in the kitchen. Doing math in the kitchen is an excellent way in making abstract math ideas into something visual and hands-on. Plus, it's fun!!

Here are some fun and yummy ways to bring math into the kitchen:

Primary Ideas	Junior Ideas	Intermediate Ideas
Snack necklaces-count cereal pieces and/or create repeating patterns with coloured cereal pieces (e.g. Fruit Loops)	**Cereal Boxes**-calculate the surface area of different cereal boxes found in the kitchen cupboard	**Cook something using a recipe**—grab any recipe from your cookbooks or find one on-line and follow the instructions
Gold Fish-use the fish crackers to show addition and/or subtraction (e.g., place 5 fish crackers on the table and eat two of them, ask how many fish crackers are left?)	**Measuring Cups or Spoons**-estimate different measurements; ask how many tablespoons are in a cup? How many $\frac{1}{4}$ cups are in one cup?	**Reduce a Recipe-**cut a recipe in half, reduce the amount of each ingredient; if a recipe calls for 3 cups of flour, reduce it to 1 $\frac{1}{2}$ cups of flour etc.
Measuring spoons-order the measuring spoons from smallest to largest or vice versa	**Sandwiches**-make a sandwich and cut into fractions: use sandwich pieces to show equivalent fractions	**Buying groceries for the family**—provide a budget and let your child estimate the cost of purchasing groceries for the week (you can use the grocers flyers for prices); take your child shopping and have them do the shopping with their budgets; estimate the cost of groceries in your cart

Cupcake Tins- place a variety of small items on the table (e.g., cereal pieces, grapes, blueberries, cheese pieces etc.) and have your child sort them and place in the cupcake tin	**Nutrition Labels**-calculate the number of servings in each package of food	**Price Match**-Use the weekly flyers and compare the various prices of similar items. Record the difference in price.
Sandwiches—using regular shaped bread, cut the sandwich into various fractions (e.g., in 1/ 2 , 1/4)	**Make a Cake or Cookies**-use a recipe and make a cake or cookies and follow the instructions; calculate the total baking time or elapsed baking time	**Bake a round item (cake or cookie)-**calculate the circumference, diameter or radius of your baked goods; don't forget to eat them!
Set the table-set the table with plates, cutlery and cups for a certain number of guests (e.g., each guests will need one plate, one knife, one fork, one cup)	**Liquids**-convert any liquid from ml to L or L to ml; discuss why we use liters to measure liquids and not grams	**Unit Rates**-calculate unit rates of various grocery items (e.g., if 2 kg of potatoes costs $6.77 and 350 g costs $1.99, which is the better deal?)

Check out these websites for additional Math in the Kitchen ideas and kids food recipes:

- **Bright Hub Education** http://www.brighthubeducation.com/middle-school-math-lessons/12094-cooking-measurement-math-activities/
- **About Parenting** http://childparenting.about.com/od/schoollearning/a/summer_learning_math_kitchen.htm
- **Eclectic Homeschool Online** http://eclectichomeschool.org/articles/pages/kitchen_math.asp
- **Glossary of Math Terms from Ontario Math Curriculum** http://www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf Go to Page 120 to 134 in the document for the glossary