

Once Upon a Time...A Math Time

presented by Dr. Karol L. Yeatts

Experience the wonder and enchantment of fairytales, folklore and fables as these beloved tales are transformed into hands-on adventures with a mathematical context

One to Ten and One

1, 2, 3, 4, 5! I caught a hare alive; 6, 7, 8, 9, 10! I let her go again.

Two Buckle My Shoe

One, two, Buckle my shoe, Three four, knock at the door; Five, six, pick up sticks; Seven, eight, lay the straight; Nine, ten, a good fat hen; Eleven, twelve, dig and delve; Thirteen, fourteen, maids a-courting; Fifteen, sixteen, maids in the kitchen; Seventeen, eighteen, maids a-waiting; Nineteen, twenty, my plate's empty.


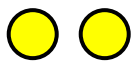

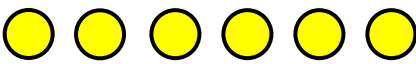
- Recite the nursery rhymes.
- Write the numerals 1-10 on large cards.
- Have children arrange the cards in order.
- Using linking cubes or blocks have children represent the sets 1-10.

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

Baa, Baa, Black Sheep

Baa, baa, Black Sheep, have you any wool? Yes sir, yes sir, 6 bags full. 3 for my Master. 2 for my Dame. And one for the little girl who lives down the lane. Baa, baa, Black Sheep, have you any wool? Yes sir, yes sir, 6 bags full.

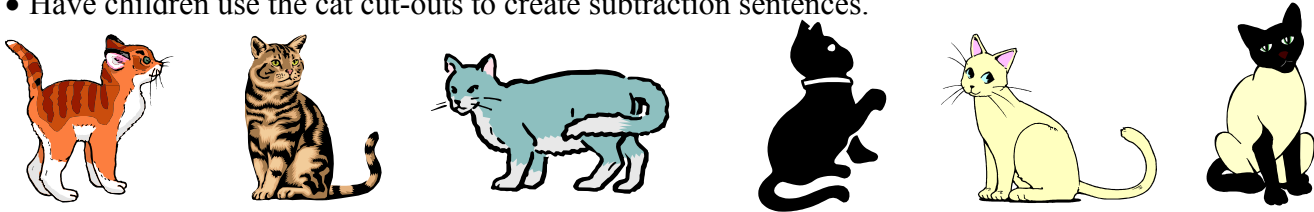
- Recite the nursery rhyme.
- Write the following character names on sentence strips: Master, Dame, Little Girl and attach the name cards to the board.
- Attach a ziplock plastic bag under each name.
- Distribute counters to children.
- Have children come to the board and drop counters into the each of the plastic bags.
- Repeat the nursery rhyme using the number of counters in each character's bag.

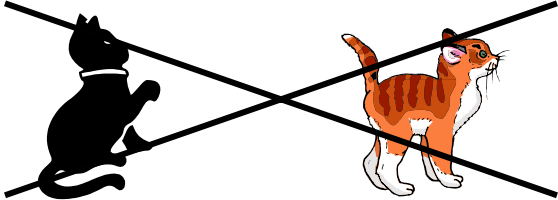
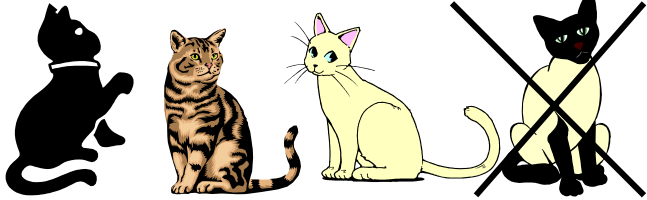
Master	+	Dame	+	Little Girl	=	Total Bags full of wool
						
3		2		1		6

The Kilkenny Cats

There were once two cats of Kilkenny. Each thought there was one cat too many; So they fought and they fit, and they scratched and they bit, Till, excepting their nails, and the tips of their tails, Instead of two cats, there weren't any.

- Recite the nursery rhyme.
- Have children use the cat cut-outs to create subtraction sentences.



	
$2 \text{ Cats} - 2 \text{ Cats} = 0 \text{ Cats}$	$4 \text{ Cats} - 1 \text{ Cat} = 3 \text{ Cats}$

Hickory Dickory Dock

Hickory Dickory Dock, the mouse ran up the clock.
The clock struck one, the mouse ran down. Hickory Dickory Dock.
Hickory Dickory Dock, the mouse ran up the clock.
The clock struck two, the mouse cried "Boo Hoo!" Hickory Dickory Dock.
Hickory Dickory Dock, the mouse ran up the clock.
The clock struck three, the mouse cried "Whee!" Hickory Dickory Dock.
Hickory Dickory Dock, the mouse ran up the clock.
The clock struck four, the mouse fell on the floor. Hickory Dickory Dock.
Hickory Dickory Dock, the mouse ran up the clock.
The clock struck five, the mouse ran down, Hickory Dickory Dock.

- Recite the nursery rhyme.
- Make paper plate clocks with the children.
- Recite the nursery rhyme.
- Have children move the hands on the clock to show the time.



Play Days

How many days has my baby to play? Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, Monday...

- Recite the nursery rhyme.
- Make a list of the days of the week.
- Identify various activities or events that will occur on each day.

Thirty Days Hath September

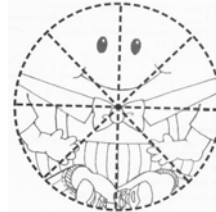
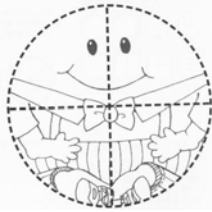
Thirty days hath September, April, June, and November; All the rest have thirty-one, Except February that has twenty-eight, And Leap year makes it twenty-nine.

- Recite the nursery rhyme.
- Construct a birthday graph noting each child's birth month.

Humpty Dumpty

Humpty Dumpty sat on a wall, Humpty Dumpty had a great fall. All of the king's horses And all of the king's men, Couldn't put Humpty together again.

- Recite the nursery rhyme.
- Give children Humpty Dumpty fraction puzzle pieces.
- Have children put the Humpty Dumpty fraction pieces back together again.
- Have children identify how many pieces are used to make Humpty Dumpty.



Nursery Rhymes with mathematics connections

A Week of Birthdays

Baa, Baa, Black Sheep

Going to St. Ives

Hickory Dickory Dock

Humpty Dumpty

One, Two BUCKLY My Shoe

One, Two, Three

One, He Loves

One to Ten

Play Days

Sneezing

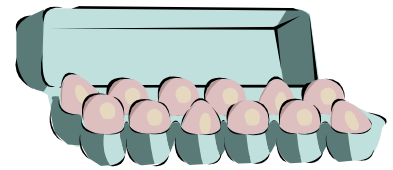
The Clock

The Kilkenny Cats

Counting Your Chickens- A Fable by Jane Yolen

From market, from market the farm girl did trot, Counting twelve chickens she had not yet got. From market, from market with one dozen eggs, that farm girl skipped dreamily on careless legs. She stepped in a pothole, she stumbled and fell, and all of her chickens leaked out of the shell. Moral: Girls and chickens were quite a match. Eggs and dreams take time to hatch.

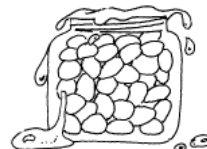
- Read aloud the fable: *Counting Your Chickens* by Jane Yolen.
- Use twelve plastic eggs and have children practice counting each egg as they place the eggs into the egg carton.
- Place pennies inside each plastic egg that corresponds with the numeral on the egg.
- Have children count the pennies.
- Remove all of the pennies from the plastic eggs and children count the pennies and place them back into their corresponding egg.



The Crow and the Pitcher - An Aesop Fable

“I am so thirsty,” whispered the crow, “that I will surely die if I don't get a drink of water soon.” The crow was dragging itself along when it spotted a pitcher holding a little water. The crow placed its beak inside the pitcher in order to try to drink the water. But the crow could not reach the water because the pitcher was tall and had a narrow neck. The crow was weak, but it did not give up. The crow thought for a few minutes. Then the crow picked up a pebble and dropped it inside the pitcher. The crow dropped in another pebble and another. It continued adding pebbles until the water had risen near the top of the pitcher. Happily, the crow drank the water. The patient crow knew that Necessity is the mother of invention.

- Read the *Crow and the Pitcher* fable by explaining to the students that the crow had to find out how many pebbles would be needed to raise the water level.
- Show students a container. Ask them to estimate how many pieces of cereal would fill the container.
- Have students record their estimates on a post-it.
- Place the post-its in ascending order on the chalkboard.
- Discuss the range of the estimate from the lowest to the highest number.
- Find the mode of the estimates (the most frequently occurring estimate).
- Decide on a strategy that could be used to count the cereal. For example, the cereal could be counted one piece at a time or grouped by two, fives or tens for faster counting.
- Ask for a volunteer to count the actual number of cereal pieces in the container.
- Have students check to see how close their estimated were to the actual number of pieces counted.
- Repeat the activity using the same cereal placed in a different container.



The Ostrich in Love - A Fable by Arnold Lobel

On Sunday the Ostrich saw a young lady walking in the park. He fell in love with her at once. He followed behind her at a distance, putting his feet in the very places where she had stepped.

On Monday the Ostrich gathered violets as a gift to his beloved. He was too shy to give them to her. He left them at her door and ran away, but there was a great joy in his heart.

On Tuesday the Ostrich composed a song for his beloved. He sang it over and over. He thought it was the most beautiful music he had ever heard.

On Wednesday the Ostrich watched his beloved dining in a restaurant. He forgot to order supper for himself. He was too happy to be hungry.

On Thursday the Ostrich wrote a poem to his beloved. It was the first poem he had ever written, but he did not have the courage to read it to her.

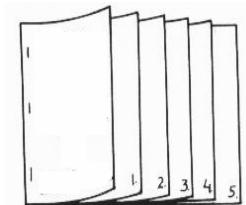
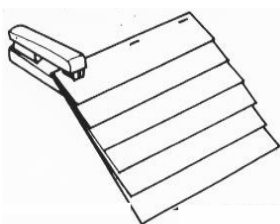
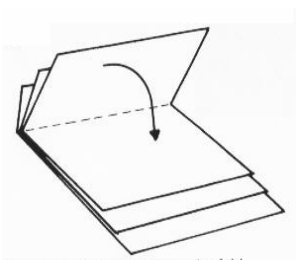
On Friday the Ostrich bought a new suit of clothes. He fluffed his feathers, feeling fine and handsome. He hoped that his beloved might notice.

On Saturday the Ostrich dreamed that he was waltzing with his beloved in a great ballroom. He held her tightly as they whirled around and around to the music. He awoke feeling wonderfully alive.

On Sunday the Ostrich returned to the park. When he saw the young lady walking there, his heart fluttered wildly, but he said to himself, "Alas, it seems that I am much too shy for love. Perhaps another time will come. Yet, surely, this has been a week well spent."

Love can be its own reward

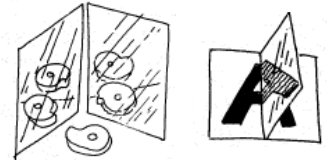
- Read aloud the fable: *The Ostrich in Love* by Arnold Lobel.
- After reading the fable, discuss different the things that the Ostrich did each day.
- Have student discuss what they do each day of the week during school, after school or on the weekends. Examples may include going to soccer practice on Tuesday or dance class on Saturdays.
- Demonstrate how to make a step book
- Have students write the days of the week on each page.
- Have students illustrate an activity that they do on each day of the week.
- Provide an opportunity for students to share their Days of the Week Step Books.



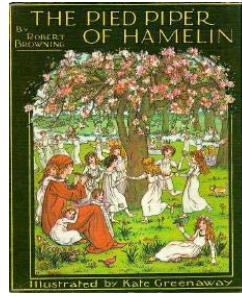
The Dog and the Bone - An Aesop Fable

Crossing a bridge with a bone in his teeth, a dog stopped to stare at the river beneath. And what did he see in that watery shine? There's a dog right below with a bone just like mine. "If I could get that bone, then I would have two, a much nicer number on which I can chew." He snatched for that second, but opening his mouth, his barks all flew northward, his bone – it went south. It splashed in the river quite dousing our Hero, and sunk. So he slunk home, a bone count of zero. The dog learned a lesson: *Be satisfied with what you have!*

- Read the *Dog and His Reflections* fable.
- Have students create a simple design with pattern blocks.
- Place a mirror upright next to the pattern block design and observe the mirror image.
- Remove the mirror and have students make the mirror image.
- Check the image by placing the mirror back next to the original design.



The Pied Piper of Hamelin by the Brothers Grimm
and poem by Robert Browning (1888)
<http://www.indiana.edu/~librcsd/etext/piper/>



Activity 1: Rats in a Row

- Read *The Pied Piper of Hamelin* to the students.
- Display six rats on the overhead projector.
- Tell students that the rats are trying to decide on the best marching formation and that they have decided to march in rows and in groups that are equal.
- Using the six rats, show the different marching formations. For example: 1×6 , 6×1 , 3×2 , and 2×3 .
- Now show the children a set of twelve rats on the overhead projector.
- Give students some linking cubes and tell them to count out only twelve cubes.
- Challenge students to arrange the twelve rats in rows and groups that are equal.
- Have the students share their different formations.
- Write the numerical name of the array next to each arrangement while saying it, “Three rows of four” “Four rows of three”. Explain that the numbers represent how many rats there are in each of the rows and in each of the columns.
- Have the students work with a partner to discover how many different formations can be created if there are 18 rats, 24 rats, 50 rats, 100 rats.
- Provide the students with paper to draw and label all the ways that rats can march in equal groups.

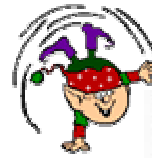
Activity 2: Paying the Piper

- Read *The Pied Piper of Hamelin* to the students.
- Explain to the students that the Pied Piper was promised to be paid for leading the rats out of town
- The job is to help figure out how much money the Pied Piper should be paid.
- Model several situations for the students. For example:
 - How much would the town need to pay the Pied Piper if he asked for nickel for each rat?
 - How much would the town need to pay the Pied Piper if he asked for a dime for each group of 5 rats led out of town.
 - How much would the town need to pay the Pied Piper if he asked for twenty-five cents for each pair of rats that he lead out of town?
- Encourage students to write their own questions for the class.
- After students have had an opportunity to write their own questions, set up a banking center.
- Students take their completed questions to the bank and collect the amount of money promised to the Pied Piper for leading the rats out of town.
- On a large class chart, have students record the amount of money the Pied Piper received for each problem. When all amounts are recorded, find the total amount of money paid to the Pied Piper for leading all the rats out of town.



The Elves and the Shoemaker by the Brothers Grimm

<http://www.shoemakerandtheelves.com/en/story>



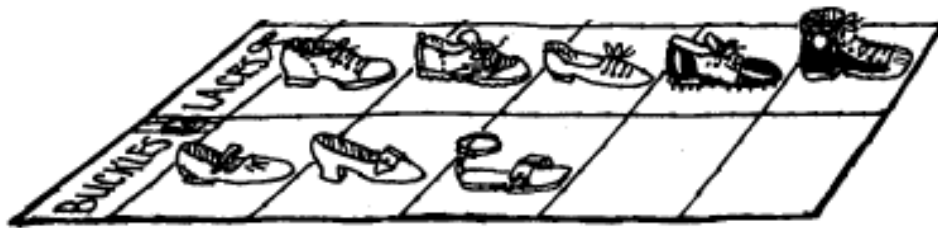
Activity 1: Pairs of Shoes

- Read *The Elves and the Shoemaker*.
- Make a large T-Chart on the chalkboard.
- Label the T-chart: Number of Children - Number of Shoes
- Have one child stand up and count his/her shoes.
- Record the number on the chart. 1 child - 2 shoes
- Ask another child to stand up and count the total number of children and shoes and record the information on the T- chart. 2 children - 4 shoes.
- Continue counting children and shoes and filling in the chart.
- Discuss the relationships between the number of children and the number of shoes. (counting by 2s)

Number of Children	Number of Shoes
1	2
2	4
3	6
4	8
5	10

Activity 2: All Sorts of Shoes

- Read *The Elves and the Shoemaker*.
- Have children remove one of their shoes and place in the center of the room.
- Have children sort the shoes according to different shoe attributes such as shoes with laces, shoes with Velcro, sneakers, slip-ons.
- Explain to children that you can organize the shoes by placing the shoes on a floor graph.
- Have children place the shoes on the graph.
- Discuss the graph. Which type has the most? Which has the least number of shoes?



The Emperor's New Clothes by the Hans Christian Anderson (1837)

<http://www.mindfully.org/Reform/Emperors-New-Clothes.htm>

- Read *The Emperor's New Clothes*.
- Provide children with cut-outs of shirts and pants.
- Have children color and cut out the shirts and shorts.
 - Shirt colors: 1 red, 1 blue, 1 white, 1 yellow.
 - Shorts colors: 1 red, 1 blue, 1 white, 1 green
- Have children mix and match the shirts and shorts to create as many different outfits as possible.
- Record all of the combinations.



Jack and the Beanstalk an English Folktale

<http://www.ongoing->

[tales.com/SERIALS/oldtime/FAIRYTALES/beanstalk.html](http://www.ongoing-
tales.com/SERIALS/oldtime/FAIRYTALES/beanstalk.html)

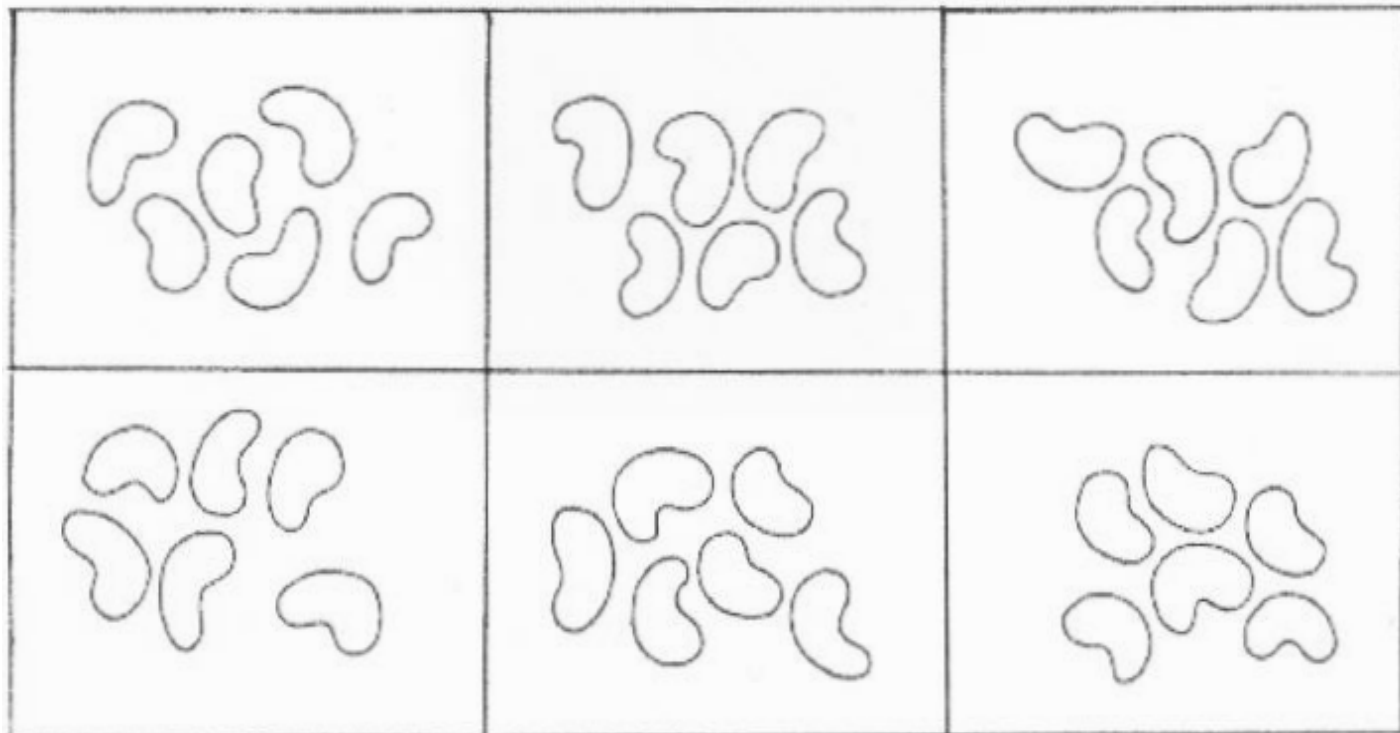


Activity #1: Making a Beanstalk

- Read *Jack and the Beanstalk*.
- After reading the story the classes retell it in their own words while one of us writes everything on the board. (This is a great activity for summarization and identifying the main idea.)
- After we read "our version" of Jack and the Beanstalk the children get together in "beanstalk committees."
- Some will be responsible for making leaves; others for stapling the paper "stalks" together.
- While the class is making the beanstalk, transfer the story from the board to sentence strips.
- Once the bean stalk is finished, hang it in the room.
- Then hot- glue the sentence strips in place and read it.

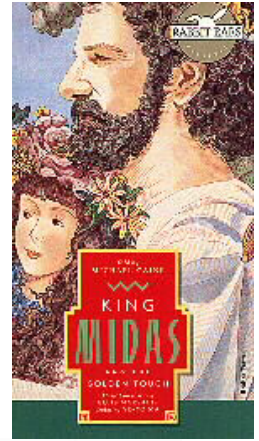
Activity #2: Spill the Beans

- Read *Jack and the Beanstalk*.
- Give children six two-color colored beans, a small paper cup and the Spill the Bean recording sheet.
- Have children shape the cup of beans and spill the beans onto their work mat.
- Have children separate the beans into the two color groups.
- Have children record the number of each color group by coloring the beans on the recording sheet.
- Have children repeat spilling the beans for a total of 6 spills.
- Have children cut the recording sheet along the dotted lines.
- Have children post their "spills" on a large graph.
- Discuss the results of the graph.

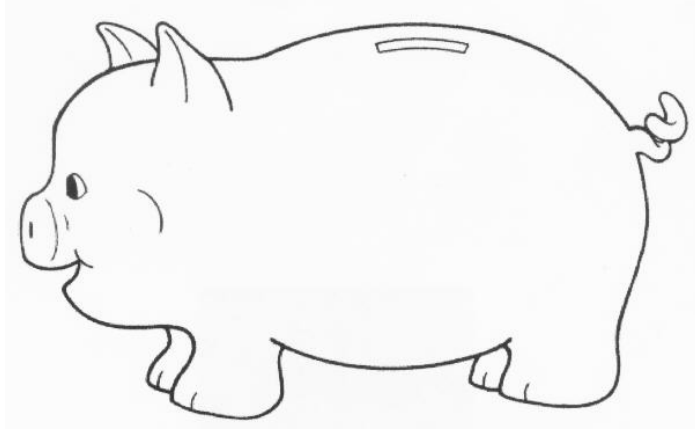


King Midas and the Golden Touch a Greek Folktale

<http://www.primaryresources.co.uk/english/cartoons/kingmidasC.pdf>



- Read *King Midas and the Golden Touch*
- Have children play the Piggy Bank Race.
- Children take turns spinning the money spinner.
- Children take the coins they spin and place them in their piggy bank.
- Children continue taking turns and spinning until each child has a total of 5 coins.
- Have children add the value of their 5 coins.
- The child with the great amount of money wins the round.



The Story of Goldilocks and the Three Bears an English Folktale

<http://www.nwlg.org/pages/resources/lox/>



Activity: A Bowlful of Porridge

- Read The Story Goldilocks and the Three Bears.
- On the chalkboard, write Papa Bear, Mama Bear and Baby Bear.
- Show children three containers/bowls that hold a pint, a quart, a gallon.
- Have children imagine that these are Papa Bear's, Mama Bear's and Baby Bear's bowls.
- Fill a cup container with water or cereal.
- Ask children to guess how many cups it will take to fill each of Bear's bowls.
- Record children's guesses on the chalkboard under the Bear's name.
- Pour the contents of the cup into Baby Bear's bowl. Refill the cup as necessary until the bowl is filled.
- Record how many cups it took to fill the container.
- Repeat for each of the other containers.
- Provide an opportunity for children to guess and figure out the capacity of different containers.

