

Waltzing Through Numbers

Grade Level or Special Area: 3rd Grade

Written by: Mary Ann Canedy, Laurie Davila, Carolyn Bradley

Length of Unit: 7 lessons

I. ABSTRACT

- A. Are your students looking dazed and confused? Expand their number sense through this introductory math unit covering place value, even and odd numbers, patterns, skip counting, and expanded form of notation. Glide your learners through the math maze using these integrated literature based math lessons, which promise to energize your student's mathematical thinking.

II. OVERVIEW

A. Concept Objectives

1. The students will use place value with whole numbers, in verbal and written form, and identify mathematics in everyday situations.
2. The students will use problem-solving skills including, making a plan to solve the problem and evaluate the answer for reasonableness.
3. The students will justify why their answer is reasonable and explain the solution process.
4. The students will recognize, identify, and create rhyming patterns in poetry.

B. Content from Core Knowledge Sequence

1. Read and write numbers (in digits and words up to six digits). P.78
2. Recognize place value up to hundred-thousands. P.78
3. Order and compare numbers to 999,999 using the signs $>$, $<$, and $=$. P.78
4. Count by twos, threes, fives, and tens; count by tens from any given number. P.78
5. Write numbers in expanded form. P. 78
6. Review: even and odd numbers; dozen; half-dozen; pair. P. 78
7. *Adventures of Isabel* P. 67
8. *Jimmy Jet and His TV Set* P. 67
9. *Father William* P. 67

C. Skill Objectives

1. The student will use place value to read and write in symbols and words, and describe the value of whole numbers through 999,999. (TEKS 3.1A, Math)
2. The student will use place value to compare and order whole numbers through 9,999. (TEKS 3.1B, Math)
3. The student will learn and apply multiplication facts through the tens using concrete models. (TEKS 3.4A, Math)
4. The student will identify and extend whole-number patterns to make predictions and solve problems. (TEKS 3.6A, Math)
5. The student will identify the mathematics in everyday situations. (TEKS 3.15A, Math)
6. The student will use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness. (TEKS 3.15B, Math)
7. The student will select or develop an appropriate problem-solving strategy. (TEKS 3.15C, Math)
8. The student will write to record ideas and reflections. (TEKS 3.14A, Language Arts)

9. The student will respond to stories and poems in ways that reflect understanding and interpretation in discussion (speculating, questioning), and in writing. (TEKS 3.10A, Language Arts)
10. The student will recognize the distinguishing features of familiar genres, including stories, poems, and informational texts. (TEKS 3.11C, Language Arts)
11. The student will write in different forms for different purposes such as stories or poems to entertain. (TEKS 3.11D, Language Arts)

III. BACKGROUND KNOWLEDGE

A. For Teachers

1. Hirsch, E. D. *What Your Third Grader Needs to Know*. New York: Doubleday Dell Publications Group, Inc. ISBN#

B. For Students

1. Recognize and write numbers to 1,000 (Grade 2 CK Sequence)
2. Order and compare numbers to 1,000 (Grade 2 CK Sequence)
3. Count by 2,3,5,10 (Grade 2 CK Sequence)
4. Count by 10 from any given number (Grade 2 CK Sequence)
5. Count by 100 to 1,000; by 50 to 1,000 (Grade 2 CK Sequence)
6. Identify even and odd numbers (Grade 2 CK Sequence)
7. Recognize place value to thousands place (Grade 2 CK Sequence)
8. Write numbers to hundreds in expanded form (Grade 2 CK Sequence)
9. Produce a variety of types of writing such as poems (Grade 2 CK Sequence)

IV. RESOURCES

- A. *Listen My Children-Poems for Third Graders*
- B. *The King's Commissioners*
- C. *100 Hungry Ants*
- D. *Marvelous Math*
- E. *Even Steven and Odd Todd*
- F. *Anno's Mysterious Multiplying Jar*
- G. *Amanda Beans Amazing Dream*
- H. *Hershey's Milk Chocolate Multiplication Book*
- I. *MacMillan School Dictionary*

V. LESSONS

Lesson One: Mambo King

A. Daily Objectives

1. Concept Objective(s)
 - a. The students will use place value with whole numbers, in verbal and written form, and identify mathematics in everyday situations.
 - b. The students will use problem-solving skills including, making a plan to solve the problem and evaluate the answer for reasonableness.
 - c. The students will justify why their answer is reasonable and explain the solution process.
2. Lesson Content
 - a. Read and write numbers (in digits and words) up to six digits
 - b. Recognize place value up to hundred thousands`
3. Skill Objective(s)

- a. The student will use place value to read and write in symbols and words, and describe the value of whole numbers through 999,999. (TEKS 3.1A, Math)
 - b. The student will use place value to compare and order whole numbers through 9,999. (TEKS 3.1B, Math)
 - c. The student will write to record ideas and reflections. (TEKS 3.14A, Language Arts)
- B. *Materials*
1. unifix cubes
 2. *The King's Commissioners*
 3. chart tablet for teacher
 4. large drawing paper/construction paper
 5. math spiral or journal
- C. *Key Vocabulary*
1. place value – the value of the place of a digit in a numeral
 2. commissioner – a person who is in charge of a governmental department
 3. proclamation – an official announcement of something
- D. *Procedures/Activities*
1. Focus question: Why are numbers important? Solicit responses from students. Record answers on chart paper. Discuss student responses.
 2. Teacher read aloud book, “The King’s Commissioners” by Aileen Friedman.
 3. Using the number 47, the teacher will model one way to make 47 using unifix cubes. Teacher refers back to the story, reminding students how alternate methods were used to represent the same number. Students in groups are to find an alternate method to arrive at forty-seven. Groups share with whole class.
 4. Remaining in groups, students will illustrate on drawing paper, three representations of the number fifty-three.
 5. Students will also write an accompanying explanation of their solution for each number represented. Groups share with whole class.
 6. Teacher leads class discussion tying place value with activity. Example: 53 ones, 4 tens and 13 ones, 3 tens and 23 ones, etc
 7. Students select one of the commissioners’ explanations, illustrate and justify why that solution worked in the story on manila paper.
 8. Students create or use an existing math journal for entries.
 9. Journal question: Why is it important to show numbers in different ways?
- E. *Assessment/Evaluation*
1. Activity will be graded using Math Problem Solving Rubric A.
 2. Journal graded daily or at end of unit using rubric on Appendix B.

Lesson Two: Picnic Polka

- A. *Daily Objectives*
1. Concept Objective(s)
 - a. The students will use place value with whole numbers, in verbal and written form, and identify mathematics in everyday situations.
 - b. The students will use problem solving skills including, making a plan to solve the problem and evaluate the answer for reasonableness.
 - c. The students will justify why their answer is reasonable and explain the solution process.
 2. Lesson Content
 - a. Count by twos, threes, fives, tens; count by tens from any given number. P.78
 3. Skill Objective(s)

- a. The student will identify and extend whole-number patterns to make predictions and solve problems. (TEKS 3.6A, Math)
 - b. The student will use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness. (TEKS 3.15B, Math)
 - c. The student will write to record ideas and reflections. (TEKS 3.14A, Language Arts)
- B. *Materials*
- 1. blank 100 chart - Appendix C
 - 2. *One Hundred Hungry Ants*
 - 3. colored pencils
 - 4. Manila paper
 - 5. scissors
 - 6. glue
- C. *Key Vocabulary*
- 1. patterns – the way objects are arranged or repeated in a particular order
 - 2. skip-counting – to jump or leap over numbers
 - 3. groups – a number of things that belong together or are put together
- D. *Procedures/Activities*
- 1. Discuss previous day’s lesson and journal question.
 - 2. Focus question: Tell me what you know about patterns. Teacher records answers on K-W-L chart. Teacher asks what they want to know, and records answers.
 - 3. Teacher reads *100 Hungry Ants*. Students recall various ways ants were grouped to make 100. Teacher illustrates answers on chart paper.
 - 4. Teacher distributes a blank 100 chart Appendix C. Students will color in one example from the book.
 - 5. Working individually, each student must identify two other ways to make 100 and color in its representation, NOT mentioned in the book onto the 100 chart.
 - 6. Students cut out their colored representations and glue them to a sheet of manila paper.
 - 7. Students write a brief paragraph on their paper, explaining their colored representations, and how they arrived at their solution.
 - 8. Students share charts while teacher “directs” discussion leading to include patterns and skip-counting.
 - 9. Journal Questions: What are some examples of patterns you see in everyday life? How do you use patterns? What have you learned about patterns in today’s lesson?
- E. *Assessment/Evaluation*
- 1. Journal question is graded using rubric B.
 - 2. Colored representations are graded using rubric A.

Lesson Three: Poetry in motion

- A. *Daily Objectives*
- 1. Concept Objective(s)
 - a. The students will recognize, identify, and create rhyming patterns in poetry.
 - 2. Lesson Content
 - a. *Adventures of Isabel* P. 67
 - b. *Jimmy Jet and His TV Set* P. 67
 - c. *Father William* P. 67
 - 3. Skill Objective(s)

- a. The student will respond to stories and poems in ways that reflect understanding and interpretation in discussion (speculating, questioning), in writing, and through movement, music, art, and drama. (TEKS 3.10A, Language Arts)
 - b. The student will recognize the distinguishing features of familiar genres, including stories, poems, and informational texts. (TEKS 3.11C, Language Arts)
 - c. The student will write in different forms for different purposes such as stories or poems to entertain. (TEKS 3.11D, Language Arts)
 - d. The student will write to record ideas and reflections. (TEKS 3.14A, Language Arts)
- B. *Materials*
1. Poems selected from *Listen, My Children*
 2. Poems selected from *Marvelous Math*
 3. Colored pencils
- C. *Key Vocabulary*
1. poem – a form of writing that expresses imaginative thought or strong feeling. A poem is usually written with a rhythmic arrangement of words and often with rhyme
 2. rhyme – the repetition of similar sounds at the ends of lines of verse.
 3. stanza – a group of lines in poetry that are arranged in a particular pattern. A stanza forms one of the parts of a poem or song.
 4. pitch – a dark, sticky substance made from tar
 5. rancor – feeling bitter or hateful
 6. zwieback – hard, sweet, dry toast
 7. concocter – someone who prepares by combining different things together
 8. supple – easy to bend, not stiff
 9. ointment – a oily substance put on the skin to heal
 10. airs – showy behavior used to impress others
 11. vertical – straight up and down
 12. horizontal - flat and straight across
- D. *Procedures/Activities*
1. Focus Question: What do poems and math have in common?
 2. Teacher leads students to discuss patterns with numbers and rhymes.
 3. Teacher reads *The Adventures of Isabel* aloud to class. Teacher leads class discussion to identify the rhythmic patterns in the poem. (AA, BB, CC) etc.
 4. Students use different colored pencils to identify patterns in the poem.
 5. Divide students into groups. Selected groups of students read poem in a readers’ theater style presentation.
 6. Teacher continues the same process with *Father William*, (AB, AB) guiding students through the poem as listed in steps three through five.
 7. Students read *Jimmy Jett and his TV Set* independently, and identify pattern using colored pencils as listed in steps three through five.
 8. Teacher reads “Take a Number,” “Near the Window Tree” and “To Build a House” from *Marvelous Math*. Students identify the patterns in each poem.
 9. Students write a math poem similar to the ones read by teacher. Students must identify the pattern used in their math poem.
- E. *Assessment/Evaluation*
1. Math poem is graded using rubric (Appendix D)

Lesson Four: Rock and Roll Rumba

A. *Daily Objectives*

1. Concept Objective(s)
 - a. The students will use place value with whole numbers, in verbal and written form, and identify mathematics in everyday situations.
 - b. The students will use problem solving skills including, making a plan to solve the problem and evaluate the answer for reasonableness.
 2. Lesson Content
 - a. Read and write numbers (in digits and words up to six digits). P.78
 - b. Recognize place value up to hundred-thousands. P.78
 - c. Order and compare numbers to 999,999 using the signs $>$, $<$, and $=$. P.78
 - d. Write numbers in expanded form. P. 78
 3. Skill Objective(s)
 - a. The student will use place value to read and write in symbols and words, and describe the value of whole numbers through 999,999. (TEKS 3.1A)
 - b. The student will use place value to compare and order whole numbers through 9,999. (TEKS 3.1B, Math)
 - c. The student will identify the mathematics in everyday situations. (TEKS 3.15A, Math)
 - d. The student will write to record ideas and reflections. (TEKS 3.14A, Language Arts)
- B. *Materials*
1. *Even Steven and Odd Todd*
 2. Six sided dice, 4 dice per group
 3. Let It Roll, Appendix E
- C. *Key Vocabulary*
1. even number – numbers able to be divided by two without a remainder
 2. odd number – leaving a remainder of one when divided by two
 3. expanded form – the sum of each number separated into its place value to equal a number
- D. *Procedures/Activities*
1. Focus: What can you tell me about these numbers 13, 2, 7, 18, 16, 25, 4?
 2. Teacher records responses on chart paper. Teacher leads discussion to incorporate words that have been introduced or used in previous lessons, such as place value, pattern etc.
 3. Teacher reads the book, *Even Steven and Odd Todd*, reviewing the concept of even and odd numbers.
 4. Teacher introduces the concept of expanded form of numbers. Teacher asks students to name some larger odd and even numbers using place value up to the thousands place, and records them on the board.
 5. Teacher then models how to write numbers in expanded form, for instance, 1,234 would be recorded as $(1,000 + 200 + 30 + 4)$.
 6. Teacher models this on a large place value chart to illustrate the numbers in their place values, and continues modeling 4 more examples.
 7. Teacher introduces the Let It Roll Game. Teacher works with a partner, and rolls four six-sided dice. The partners make the largest possible number using all of the dice, and record the number on their score sheet, Let It Roll, Appendix E. Using the same numbers, then make the smallest possible number. Next, add both numbers together and record the sum. Then, subtract the 2 numbers and record the difference. Partners look at the largest number, and record if it is even or odd. Partners look at the smallest number, and record if it is even or odd. Finally, write the numbers in expanded form.
 8. Journal entry: Make a list of 5 things that come only in even numbers, and make a list of 5 things that come only in odd numbers.

- E. *Assessment/Evaluation*
1. Score sheet is graded using Appendix A.
 2. Journal entry is graded.

Lesson Five: Technology Tango

A. *Daily Objectives*

1. Concept Objective(s)
 - a. The students will use problem solving skills including, making a plan to solve the problem and evaluate the answer for reasonableness.
 - b. The students will justify why their answer is reasonable and explain the solution process.
2. Lesson Content
 - a. Read and write numbers (in digits and words up to six digits). P.78
 - b. Count by twos, threes, fives, and tens; count by tens from any given number. P.78
3. Skill Objective(s)
 - a. The student will learn and apply multiplication facts through the tens using concrete models. (TEKS 3.4A, Math)
 - b. The student will identify and extend whole-number patterns to make predictions and solve problems. (TEKS 3.6A, Math)
 - c. The student will write to record ideas and reflections. (TEKS 3.14A, Language Arts)

B. *Materials*

1. *Anno's Mysterious Multiplying Jar*
2. Manila paper
3. Computer work stations w/ Kid Pix2 or Kidspiration

C. *Key Vocabulary*

1. multiple –The product of a given number

D. *Procedures/Activities*

1. Focus: Explain what it means to skip count.
2. Teacher lists student responses on board or chart paper, and leads class discussion.
3. Teacher reads the book, *Anno's Mysterious Multiplying Jar*
4. After reading the story, the teacher leads a discussion of the examples from the jar. Using the computer program of KidPix2 or Kidspiration 2, the students make a picture representation of each example in the story using stamps. For example, a palm tree for the island, flags for the 2 countries, going through the number of walled kingdoms (24). Teacher prints the stamped kid pix pictures.
5. In groups of 3 or 4, the students will finish recording the rest of the corresponding number sentences on large manila paper. (If Kidpix or Kidspiration is not available, then you may use Clip Art, rubber stamps, or student illustrations.)
6. Teacher models how to write a word problem using other content areas of study. (for example, using plants, seeds, planets etc.)
5. Students create 3 word problems based on other Core Knowledge content areas being studied in the classroom. In addition to writing it in words, it must be illustrated in pictures, and recorded in the math journals.

E. *Assessment/Evaluation*

1. Word problems in journal are graded using Appendix A.

Lesson Six: Barnyard Bop

A. *Daily Objectives*

1. Concept Objective(s)

- a. The students will use place value with whole numbers, in verbal and written form, and identify mathematics in everyday situations.
 - b. The students will use problem solving skills including, making a plan to solve the problem and evaluate the answer for reasonableness.
 - c. The students will justify why their answer is reasonable and explain the solution process.
2. Lesson Content
- a. Count by twos, threes, fives, and tens; count by tens from any given number. P.78
 - b. Write numbers in expanded form. P. 78
3. Skill Objective(s)
- a. The student will learn and apply multiplication facts through the tens using concrete models. (TEKS 3.4A, Math)
 - b. The student will identify and extend whole-number patterns to make predictions and solve problems. (TEKS 3.6A, Math)
 - c. The student will use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness. (TEKS 3.15B, Math)
 - d. The student will select or develop an appropriate problem-solving strategy. (TEKS 3.15C, Math)
 - e. The student will write to record ideas and reflections. (TEKS 3.14A, Language Arts)
- B. Materials**
- 1. *Amanda Beans Amazing Dream*
 - 2. Blank 100's chart Appendix C
 - 3. Colored transparency strips – 2 different colored strips per student to lay over the completed hundreds chart
 - 4. Blank array chart, Appendix F
- C. Key Vocabulary**
- 1. array – is a set of numbers arranged to form a grid
equation – a number sentence that expresses equality
 - 2. factors – any numbers that form a product when they are multiplied together
 - 3. product – a answer in a multiplication problem
- D. Procedures/Activities**
- 1. Focus Question: What are some different ways that we combine numbers together?
 - 2. Using the number 8, the teacher demonstrates how adding the numeral 8 seven consecutive times will equal the sum of 56. Teacher then models how multiplying 8×7 produce the same answer.
 - 3. Class practices this concept using other numbers.
 - 4. Teacher reads the *Amanda Beans Amazing Dream* aloud to students, guiding discussion.
 - 5. Teacher gives each student a blank 100's chart, and the students complete it as a multiplication chart.
 - 6. Teacher models how to use the completed 100's chart as a multiplication chart using the following problems: $2 \times 3 = 6$; $3 \times 4 = 12$; $4 \times 2 = 8$
 - 7. Students then practice using their multiplication charts with the 2 colored strip overlays, recording the multiplication facts that they have practiced on their chart.
 - 7. Distribute blank array chart, Appendix F.
 - 8. Teacher models how to make an array of $2 \times 8 = 16$ and discusses the concept of arrays. Continue to make models of $3 \times 5 = 15$, and $6 \times 7 = 42$ until students are proficient.
 - 9. Students then select 5 multiplication facts to demonstrate arrays from multiplication tables greater than fours, one fact from each time table.

10. Students glue their arrays on a sheet of manila paper, and write a word problem with an answer that demonstrates their array.
 11. Journal Question: How are multiplication and addition related?
- E. *Assessment/Evaluation*
1. Student arrays are graded using Appendix A.
 2. Journal question is graded using Appendix B.

Lesson Seven: Chocolate Cha-Cha

A. *Daily Objectives*

1. Concept Objective(s)
 - a. The students will use place value with whole numbers, in verbal and written form, and identify mathematics in everyday situations.
 - b. The students will use problem solving skills including, making a plan to solve the problem and evaluate the answer for reasonableness.
2. Lesson Content
 - a. Count by twos, threes, fives, tens; count by tens from any given number.
3. Skill Objective(s)
 - a. The student will learn and apply multiplication facts through the tens using concrete models. (TEKS 3.4A, Math)
 - b. The student will identify and extend whole-number patterns to make predictions and solve problems. (TEKS 3.6A, Math)

B. *Materials*

1. *Hershey's Milk Chocolate Multiplication Book*
 - a. Hershey's miniature milk chocolate bars (24 per group of 4-6 children)

C. *Key Vocabulary*

1. commutative property of multiplication – the product of any factors will always be the same regardless of their order
2. square number – the product of a number multiplied by itself
3. multiplicand – the first factor in a multiplication problem
4. multiplier – the second factor in a multiplication problem

D. *Procedures/Activities*

1. Focus question: What are some examples of everyday arrays?
2. Teacher records student answers on chart paper and discusses with class.
3. Teacher reads the *Hershey's Milk Chocolate Multiplication Book* aloud to students, guiding discussion.
4. Teacher distributes the Hershey bars to the groups. Students then make models of the arrays pictured in the *Hershey's Milk Chocolate Multiplication Book* as teacher reads that portion of the book again.
5. When they finish making the arrays from the book, the students may eat 1 candy bar per child. Teacher collects the remainder.
6. Students write 3 word problems using arrays in their journal. Students pair share their problems with a partner.
7. Journal question: How can arrays help you with multiplication facts? How can you use an array in your daily life?

E. *Assessment/Evaluation*

1. Journal question is graded using Appendix B.
2. Word problems are graded using Appendix A.

- VI. *CULMINATING ACTIVITY- Math Macarena*
- A. The culminating is a center based celebration of five games to reinforce the skills taught in the unit.
 1. Center 1 What's my number? (Appendix G)
Pencils
 2. Center 2 Give Me Five game (Appendix H)
Dice
Chips, beans, or anything that can be used to cover a number on the game
 3. Center 3 Pattern art (Appendix J)
Colored pencils
 4. Center 4 Master Detective Game (Appendix I)
Colored pencils
Chips, beans, or anything that can be used to cover a number on the game
 5. Center 5 Multiplication Magic (Appendix K)
Playing Cards (2-3 decks)
Completed multiplication table to the tens
- VII. *HANDOUTS*
- A. Math Problem Solving rubric
 - B. Journal rubric
 - C. Blank 100 chart
 - D. Poem rubric
 - E. Let It Roll
 - F. Blank Array Chart
 - G. What's My Number?
 - H. Give Me Five Game Board
 - I. Master Detective
 - J. Pattern Art
 - K. Multiplication Magic
- VIII. *BIBLIOGRAPHY*
- A. Cristaldi, Kathryn. *Even Steven and Odd Todd*. New York: Scholastic, 1996, ISBN 0-590-22715-7
 - A. Friedman, Aileen. *The King's Commissioners*. New York: Scholastic, 1994, ISBN 0-590-48989-5
 - B. Hirsch, Jr. E. D. *Listen My Children-Poems for Third Grades*. Charlottesville, Virginia: Core Knowledge Foundation, 2001, ISBN1-890517-31-3.
 - C. Hopkins, Lee Bennett. *Marvelous Math*. New York: Simon & Schuster, 1997, ISBN 0-689-80658-2 (hardback) New York: Aladdin Paperbacks, 2001, ISBN 0-689-844425
 - D. Levey, Judith S. editor, *MacMillan School Dictionary*. New York: Macmillan Publishing Company, 1990, 0-02-195003-2
 - E. Masaichiro, Anno. *Anno's Mysterious Multiplying Jar*. New York: Philomel Books, 1983, ISBN 0-399-2095-4
 - F. Neuschwander, Cindy. *Amanda Beans Amazing Dream: A Mathematical Story*. New York: Scholastic Press, 1998, ISBN 0-590-30012-1
 - G. Pallotta, Jerry. *Hershey's Milk Chocolate Multiplication Book*. New York: Scholastic, 2002, ISBN 0-439-23623-1
 - H. Pinczes, Elinor J. *100 Hungry Ants*. Boston: Houghton Mifflin, 1993, ISBN 0-395-63116-5

Appendix A

Math Problem Solving Rubric

Category	4	3	2	1
Mathematical Concepts	The explanation shows complete understanding of the mathematical concepts used to solve the problem.	The explanation shows substantial understanding of the mathematical concepts used to solve the problem.	The explanation shows some understanding of the mathematical concepts to solve the problem.	The explanation shows very limited understanding of the underlying concepts needed to solve the problem OR is not written.
Mathematical Reasoning	Student uses complex and refined mathematical reasoning.	Student uses effective mathematical reasoning.	Student shows some evidence of mathematical reasoning.	Student shows little evidence of mathematical reasoning.
Strategy/ Procedure	Student typically, uses an efficient and effective strategy to solve the problem.	Student typically uses an effective strategy to solve the problem.	Student sometimes uses an effective strategy to solve problems, but not consistently.	Student rarely uses an effective strategy to solve problems.
Explanation	The explanation is detailed and clear.	The explanation is clear.	The explanation is a little difficult to understand, but includes critical components.	The explanation is difficult to understand and is missing several components OR was not included.
Diagrams and Sketches	Diagrams and/or sketches are clear and greatly add to the understanding of the procedures.	Diagrams and/or sketches are clear and easy to understand.	Diagrams and/or sketches are somewhat difficult to understand.	Diagrams and/or sketches are difficult to understand or are not used.
Neatness and Organization	The work is presented in a neat, clear, and organized fashion that is easy to read.	The work is presented in a neat, and organized fashion that is usually easy to read.	The work is presented in an organized fashion but may be hard to read at times.	The work appears sloppy and unorganized. It is hard to know what information goes together.

*Rubric created using website Rubistar4teachers.org

Journal Rubric

	4	3	2	1
Prompt	Thoroughly addressed	Generally addressed	Somewhat addressed	Not addressed
Spelling	All words correct	Most words correct	Some words correct	No words correct
Capitalization	All appropriate	Most appropriate	Some appropriate	None appropriate
Punctuation	All appropriate	Most appropriate	Some appropriate	None appropriate



Appendix C
100 Chart

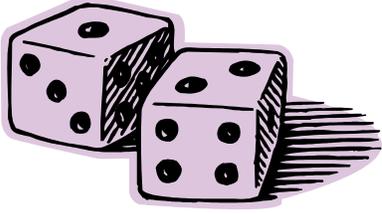


Appendix D

Poem Rubric

CATEGORY	4	3	2	1
Writing Process	Student devotes a lot of time and effort to the writing process. Student works hard on the poem.	Student devotes sufficient time and effort to the writing process. Student works hard to get the job done.	Student devotes some time and effort to the writing process, but was not very thorough.	Student devotes little time and effort to the writing process. Student doesn't seem to care.
Focus on assigned topic	The entire poem is related the assigned topic.	Most of the poem is related to the assigned topic.	Some of the poem is related to the assigned topic.	No attempt has been made to relate the poem to the assigned topic.
Creativity	The poem contains many creative details.	The poem contains some creative details.	The poem contains a few creative details.	There is little evidence of creativity in the poem.
Spelling and Punctuation	There are no spelling or punctuation errors in the final poem.	There are 2-3 spelling or punctuation errors in the final poem.	There are 4-5 spelling and punctuation errors in the final poem.	The final poem has more than 5 spelling and punctuation errors.
Neatness	The final poem is readable, clean, neat and attractive. It is free of erasures and crossed out words.	The final draft of the poem is readable, neat, and attractive. It may have 1 or 2 erasures, but they are not distracting.	The final draft of the poem is readable and has 3-5 erasures. It looks like parts of it were done in a hurry.	The final draft of the poem is not neat or attractive. It looks like the student just wanted to get finished, and didn't care how it looked.

*Rubric created using website Rubistar4teachers.org



LET IT ROLL

Instructions: Working in partners roll four six-sided dice. Make the largest possible number using all of the dice, and record it on the chart. Using the same numbers, make the smallest possible number. Add both numbers together and record the sum. Subtract the 2 numbers and record the difference. Look at the largest number. Record if it is even or odd. Look at the smallest number. Record if it is even or odd. Write the number in expanded form.

Largest number	Smallest number	Both # added	Subtract Both #	Largest # Even/Odd	Smallest # Even/Odd	Largest number e



What's My Number?

In partners, one player (*THINKER*) thinks of a two-digit number. It cannot be a double number. The other player (*GUESSER*) tries to guess the number. For each guess the *THINKER* tells how many numbers were correct and if the guess needs to be higher or lower. If only one number is correct, do not tell which place it is. Switch roles once the guess is correct.

Guess Numbers Correct Higher or Lower

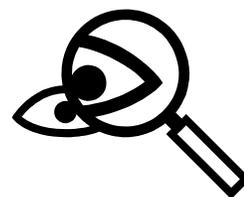
Guess Numbers Correct Higher or Lower



Give Me Five

Both players roll one die. The player with the smallest number goes first. Players take turns rolling two dice and multiplying the numbers together to find the product. That player locates the product on the game board and place a chip on it. If a player rolls a product that has already been covered, the player loses a turn. Keep playing until one player covers five numbers in a row.

6	1	81	28	56	0	14	35	12
0	36	21	5	40	4	10	24	63
25	48	30	24	9	24	6	16	18
2	10	64	15	3	27	14	32	0
27	7	45	16	81	42	0	1	25
18	24	35	42	12	72	18	36	10
49	63	1	8	24	15	9	12	20



Master Detective

Select any 6 boxes containing a three digit. Lightly color in each of the selected boxes with a colored pencil. Pulling one clue from the baggie, the detective (one student) reads aloud the clue. The players listen to the clues and try to find the mystery number on their game board. A chip is placed on their game board for that number ONLY if it is colored in. The first player to cover up all six of their numbers wins. That person becomes the next detective and will call out the clues.

659	418	396	705	503
324	745	552	303	559
875	654	114	116	217

CLUES

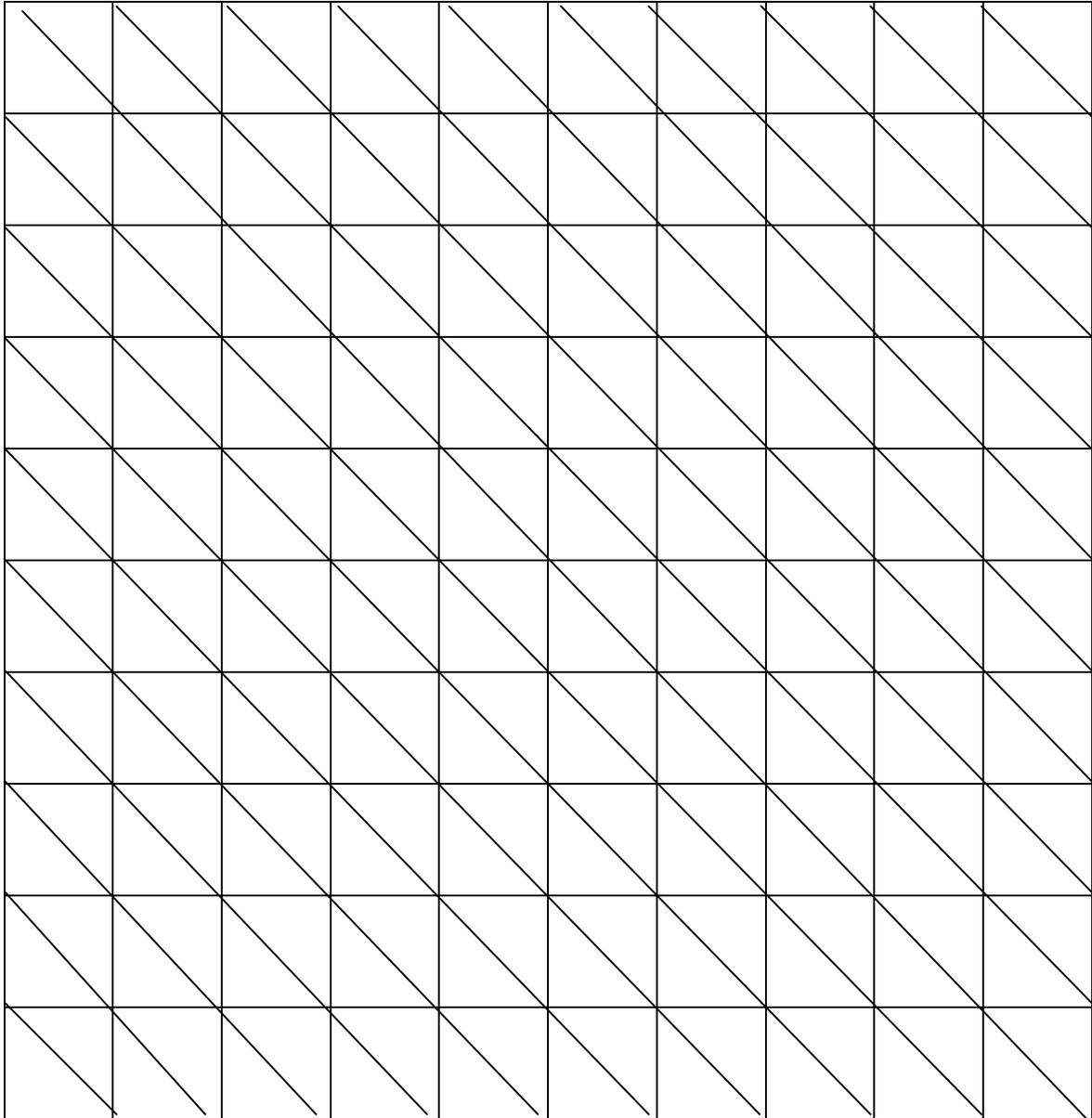
Cut the numbers below in strips and place in a baggie. Shake baggie to shuffle numbers.

6 hundreds, 5 tens, and 9 ones
 4 hundreds, 1 ten, and 8 ones
 3 hundreds, 9 tens, and 6 ones
 7 hundreds, 0 tens, and 5 ones
 5 hundreds, 0 tens, and 3 ones
 8 hundreds, 7 tens, and 5 ones
 1 hundred, 1 ten, and 4 ones
 2 hundreds, 1 ten, and 7 ones

3 hundreds, 2 tens, and 4 ones
 7 hundreds, 4 tens, and 5 ones
 5 hundreds, 5 tens, and 2 ones
 3 hundreds, 0 tens, and 3 ones
 5 hundreds, 5 tens, and 9 ones
 6 hundreds, 5 tens, and 4 ones
 1 hundred, 1 ten, and 6 ones

Pattern Art

Let your imagination go wild as you create arrays or other patterns with colors.





Multiplication Magic

Students play this game in groups of three. One student is the "caller" while the other two students are the "players."

- Each player pulls one card from the deck without looking at it holding it on their forehead with the value facing outward. In this position, the players can only see the other person's card.
- The caller looks at both cards and calls out the product. (Face cards have a value of 10). The caller can use the multiplication chart to ensure accuracy.
- Both players try to determine what card they are personally holding, using the information they have (the product and the other player's card).
- Caller keeps score giving one point for each correct answer. Both players can earn a point for each round. After 5 rounds, switch roles, allowing caller to become a player. Continue play until each group member has had the opportunity to be a caller.
- Alternative version: Once students are proficient knowing their multiplication facts, score could be based on speed, with only one player earning the point each round.



Score Card

Names			
Points			