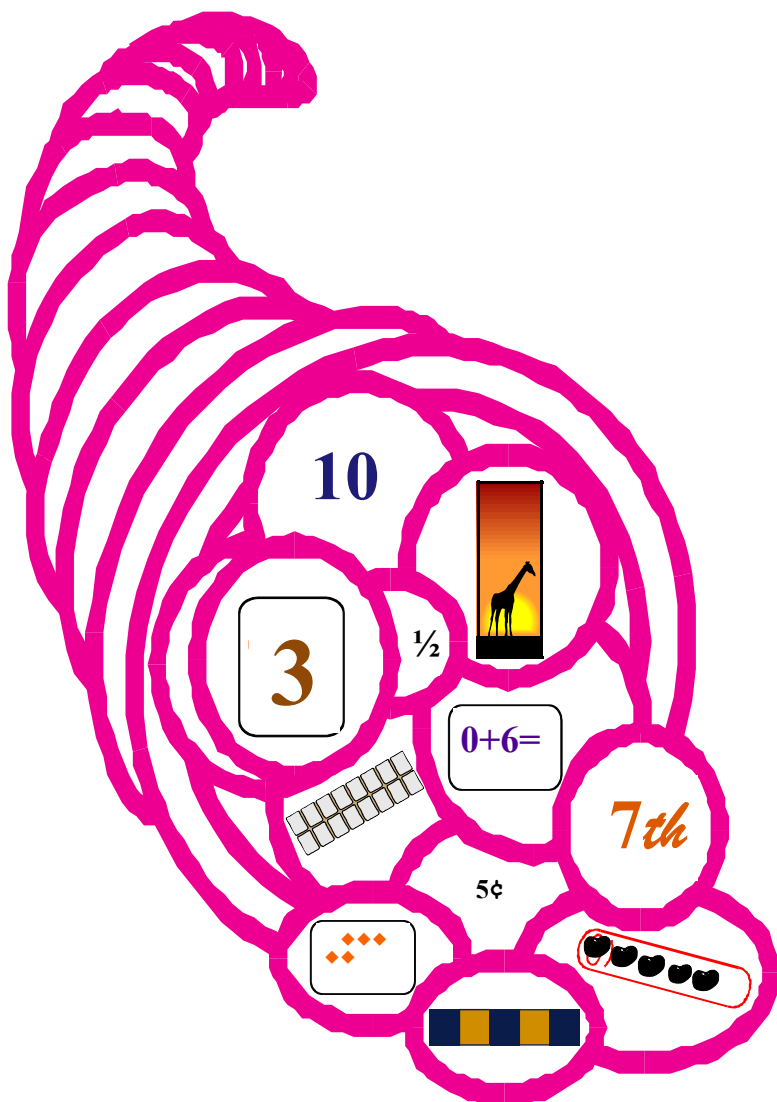




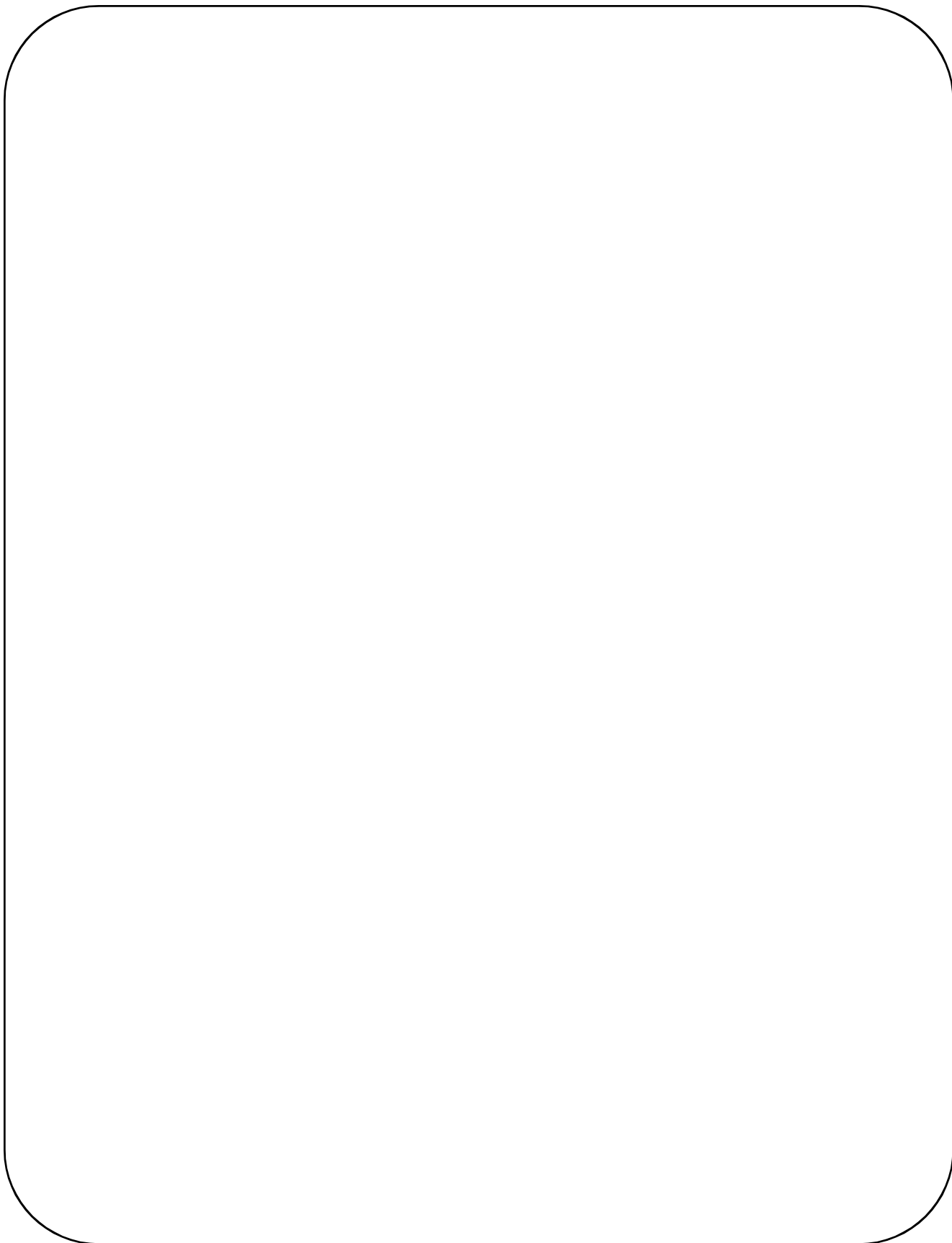
Mathematics:

Grade 1



Number Sense and Numeration

The Ontario Curriculum: Mathematics



Number Sense and Numeration

Number Sense and Numeration: Grade 1

Overall Expectations

By the end of Grade 1, students will:

- 1m1** understand whole numbers by exploring number relationships using concrete materials (e.g., demonstrate with blocks that 7 is one less than 8 or two more than 5);
- 1m2** understand numerals, ordinals, and the corresponding words, and demonstrate the ability to print them;
- 1m3** understand the concept of order by sequencing events (e.g., the steps in washing a dog);
- 1m4** compare and order whole numbers using concrete materials and drawings to develop number meanings (e.g., to show place value, arrange 32 counters in groups of 3 tens and 2 ones);
- 1m5** represent fractions (halves as part of a whole) using concrete materials;
- 1m6** understand and explain basic operations (addition and subtraction) of whole numbers by modelling and discussing a variety of problem situations (e.g., show that addition involves joining);
- 1m7** develop proficiency in adding one-digit whole numbers;
- 1m8** solve simple problems involving counting, joining, and taking one group away from an other (e.g., how many buttons are on the table?), and describe and explain the strategies used;
- 1m9** estimate quantity in everyday life (e.g., guess, then count how many beans are in the jar);
- 1m10** use a calculator to explore counting and to solve problems beyond the required pencil-and-paper skills.

Specific Expectations

Students will:

Understanding Number

- 1m11** read and print numerals from 0 to 100;
- 1m12** read and print number words to ten;
- 1m13** demonstrate the conservation of number (e.g., 5 counters still represent the number 5 whether they are close together or far apart);
- 1m14** demonstrate the one-to-one correspondence between number and objects when counting;
- 1m15** count by 1's, 2's, 5's, and 10's to 100 using a variety of ways (e.g., counting board, abacus, rote);
- 1m16** count backwards from 10;
- 1m17** locate whole numbers to 10 on a number line;
- 1m18** compare, order, and represent whole numbers to 50 using concrete materials and drawings;
- 1m19** investigate number meanings (e.g., the concept of 5);
- 1m20** use mathematical language to identify and describe numbers to 50 in real-life situations;
- 1m21** discuss the use of number and arrangement in real-life situations (e.g., there are 21 children in my class, 11 girls and 10 boys);
- 1m22** use a calculator to explore counting, to

The Ontario Curriculum: Mathematics

use a seriation line to display relationships of order (e.g., order of events in a story); model numbers grouped in 10's and 1's and use zero as a place holder;

1m23 solve problems, and to operate with numbers larger than 10;

1m24 use ordinal numbers to tenth;

Computations

1m25 demonstrate that addition involves joining and that subtraction involves taking one group away from another;

1m26 demonstrate addition and subtraction facts to 20 using concrete materials;

1m27 represent addition and subtraction sentences (e.g., $5 + 6 = 11$) using concrete materials (e.g., counters);

1m28 identify the effect of zero in addition and subtraction;

1m29 mentally add one-digit numbers;

1m30 add and subtract money amounts to 10¢ using concrete materials, drawings, and symbols;

Applications

1m31 pose and solve simple number problems orally (e.g., how many students wore boots today?);

1m32 use concrete materials to help in solving simple number problems;

1m33 describe their thinking as they solve problems.

1m34 - pose and solve simple number problems orally (e.g., how many students wore boots today)

1m35 - use concrete materials to help in solving simple number problems;

1m36 - describe their thinking as they solve problems.



Number Sense and Numeration

Materials

- adding machine tape
- beads
- beans
- calculators
- card stock
- clip art of candy
- computer games
- construction paper
- empty clear jar
- flannel board
- glue
- graham crackers
- hundreds chart
- index cards
- items to estimate
- link-its
- magnetic objects
- miniature marshmallows
- multi-cubes
- number cards to 100
- number line
- number magnets
- paper clips
- paper strips
- place value mat
- popsicle sticks
- play money
- segmented chocolate bar
- small *Ziploc* baggies
- stickers
- straws
- tapes for counting
- two-sided counters

The Ontario Curriculum: Mathematics

Vocabulary

- one
- two
- three
- four
- five
- six
- seven
- eight
- nine
- ten
- first
- second
- third
- fourth
- fifth
- sixth
- seventh
- eighth
- ninth
- tenth
- tens
- ones
- one half
- fractions
- compare
- count
- counting board
- numbers
- numerals
- penny
- nickel
- dime
- order
- sequence (order)
- bigger
- smaller
- lesser
- greater
- less
- same
- different
- colour
- circle
- print
- spring
- summer
- fall
- winter



Number Sense and Numeration

Counting — Ideas and Strategies

Expectations	Teaching Strategies	Strategies for Assessment
<p>1m11 read and print numerals from 0 to 100;</p> <p>1m14 demonstrate the one-to-one correspondence between number and objects when counting;</p> <p>1m15 count by 1's, 2's, 5's, and 10's to 100 using a variety of ways (e.g., counting board, abacus, rote);</p> <p>1m16 count backwards from 10;</p> <p>1m17 locate whole numbers to 10 on a number line;</p> <p>1m24 use ordinal numbers to tenth;</p>	<ol style="list-style-type: none"> 1. Post hundreds chart. You will need a large group work area. 2. Use daily oral practice to help students learn to count to 100 by 1's, 2's, 5's and 10's. 3. Ask students to identify specific numbers; e.g., find number 10, find number 75, etc. 4. Have different students lead oral counting, using a pointer. 5. Explain counting patterns, using individual hundreds charts. Students can colour all the two's, five's, ten's, etc. (See <i>Appendix 6</i>) 6. When practicing, use commercial audio/video tapes which contain counting songs/raps. 7. Use other visual materials; i.e., daily calendar activities - adding beads or straws each day - to help with place value concepts and with counting by 10's. 8. Use manipulatives, when counting, to demonstrate one-to-one correspondence; i.e., count by two's, moving two objects at the same time, five's using nickels, ten's using dimes, etc. 9. Fill in blank hundreds chart (or have a few [see <i>Appendix...</i>] numbers here and there) to practice writing numbers from 1-100. Do this frequently. 10. Complete counting number patterns by filling in missing numbers (see <i>Appendix 7</i>) 	<ul style="list-style-type: none"> ◆ Listen to students count orally. Use a clipboard checklist. Check a few kids everyday. ◆ Check for accuracy when students complete written work, like those suggested in the teaching strategies section. (see also <i>Appendix 4</i>) ◆ Conference with students to see that one-to-one correspondence is understood. Check to see that they are also able to identify numbers in isolation. ◆ Use number dictations in which the students write down the number which the teacher dictates.

The Ontario Curriculum: Mathematics

Counting — Ideas and Strategies

Expectations	Teaching Strategies	Strategies for Assessment
<p>1m11 read and print numerals from 0 to 100;</p> <p>1m14 demonstrate the one-to-one correspondence between number and objects when counting;</p> <p>1m15 count by 1's, 2's, 5's, and 10's to 100 using a variety of ways (e.g., counting board, abacus, rote);</p> <p>1m16 count backwards from 10;</p> <p>1m17 locate whole numbers to 10 on a number line;</p> <p>1m24 use ordinal numbers to tenth;</p>	<p>11. During daily oral counting activities, ask questions such as, <i>What comes before, what comes after... the number 9? What comes between 5 and 7?</i></p> <p>12. Use a calculator to explore counting patterns on a hundreds chart; e.g., $4 + 4$ is 8 — student colours the number 8, $8+4 = 12$ — colour 12, etc.</p> <p>13. Use the My Math Drill Book to review numbers; i.e., printing numerals dictated by the teacher, addition/subtraction facts, number words dictated by the teacher, etc.</p> <p>14. Use computer programs like <i>IBM Math Concepts 1</i>, <i>School Vista Mathematics 1</i>, <i>Jumpstart Kindergarten/Grade 1</i>, <i>Mathville Kidway - Baseball Count</i>, <i>Snack Shack</i> to re-inforce the concept of counting.</p>	<ul style="list-style-type: none"> ◆ Listen to students count orally. Use a clipboard checklist. Check a few kids everyday. ◆ Check for accuracy when students complete written work, like those suggested in the teaching strategies section. (see also <i>Appendix 4</i>). ◆ Conference with students to see that one-to-one correspondence is understood. Check to see that they are also able to identify numbers in isolation. ◆ Use number dictations in which the students write down the number which the teacher dictates.



Number Sense and Numeration

Name - _____

Counting By Two's: Odd Numbers

Pattern: 1, 3, 5, 7, 9

Count a number, then write it. Think, then put . for the next number.

.	1	.	3	.	5	.	7	.	9

Number Sense and Numeration

Count by Two's: Odd Numbers

1	3	5	7										
---	---	---	---	--	--	--	--	--	--	--	--	--	--

25	27	29											
----	----	----	--	--	--	--	--	--	--	--	--	--	--

49	51	53											
----	----	----	--	--	--	--	--	--	--	--	--	--	--

35	37	39											
----	----	----	--	--	--	--	--	--	--	--	--	--	--

3	5	7											
---	---	---	--	--	--	--	--	--	--	--	--	--	--

15	17	19											
----	----	----	--	--	--	--	--	--	--	--	--	--	--

55	57												
----	----	--	--	--	--	--	--	--	--	--	--	--	--

9	11												
---	----	--	--	--	--	--	--	--	--	--	--	--	--

91	93												
----	----	--	--	--	--	--	--	--	--	--	--	--	--

73	75												
----	----	--	--	--	--	--	--	--	--	--	--	--	--

81	83												
----	----	--	--	--	--	--	--	--	--	--	--	--	--

The Ontario Curriculum: Mathematics

Count by Two's: Watch the Pattern!

12	14	16											
----	----	----	--	--	--	--	--	--	--	--	--	--	--

83	85	87											
----	----	----	--	--	--	--	--	--	--	--	--	--	--

21	23	25											
----	----	----	--	--	--	--	--	--	--	--	--	--	--

42	44	46											
----	----	----	--	--	--	--	--	--	--	--	--	--	--

70	72	74											
----	----	----	--	--	--	--	--	--	--	--	--	--	--

37	39												
----	----	--	--	--	--	--	--	--	--	--	--	--	--

55	57												
----	----	--	--	--	--	--	--	--	--	--	--	--	--

9	11												
---	----	--	--	--	--	--	--	--	--	--	--	--	--

92	94												
----	----	--	--	--	--	--	--	--	--	--	--	--	--

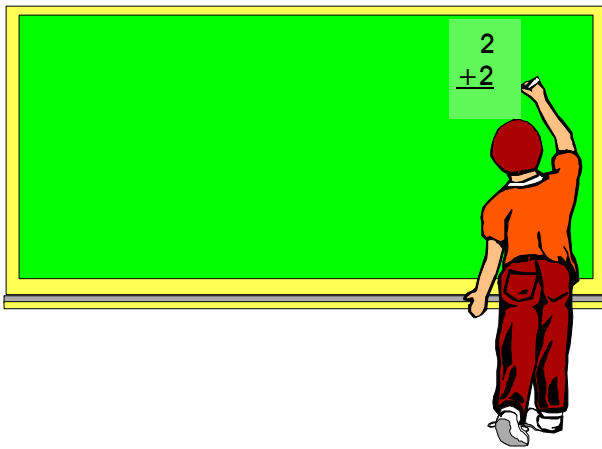
20	22												
----	----	--	--	--	--	--	--	--	--	--	--	--	--

61	63												
----	----	--	--	--	--	--	--	--	--	--	--	--	--

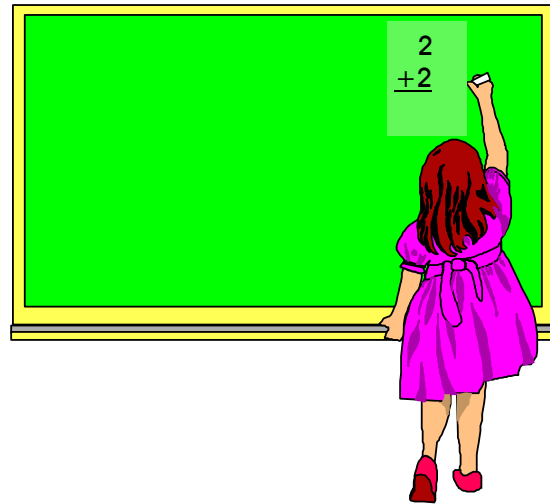


Number Sense and Numeration

My Math Drill Book



My Math Drill Book



Name

Name

The Ontario Curriculum: Mathematics

date: _____

date: _____

1. _____

1. _____

2. _____

2. _____

3. _____

3. _____

4. _____

4. _____

5. _____

5. _____

6. _____

6. _____

7. _____

7. _____

8. _____

8. _____



Number Sense and Numeration

A large, empty rounded rectangular box with a black border, intended for student work or notes. The box is centered on the page and occupies most of the vertical space below the title and above the footer.

The Ontario Curriculum: Mathematics

Challenge P1

T

Match 'Em Up 1 - 10

Expectations

- 1m1** understand whole numbers by exploring number relationships using concrete materials (e.g., demonstrate with blocks that 7 is one less than 8 or two more than 5);
- 1m2** understand numerals, ordinals, and the corresponding words, and demonstrate the ability to print them;
- 1m12** read and print number words to ten;

Teaching Strategies

- ◆ Using the flashcards found in *Appendix #1*, teach number words to ten. You will need to review this frequently prior to using these activity cards.
- ◆ Using *Appendix #2*, prepare one set of number/word/picture cards for each student. You may want to use cardstock. Baggies are a great way to keep materials organized for students.
- ◆ Before the students begin to work independently, go through several examples with the whole class.
- ◆ See the assessment section for follow-up activities, which can be done after a great deal of practice on this topic.

Suggested Resources

- ◆ *Appendices 1, 2, and 3*
- ◆ cardstock
- ◆ construction paper
- ◆ glue
- ◆ ———. **Magic Garden**. IBM Computers.
- ◆ *Ziploc* baggies
- ◆ *Mathville Kidway - Baseball Count, Snack Shack*

Catholic School Commentary

- ◆ **Genesis 15:5** (God's covenant with Abraham)
- (5) *A collaborative contributor* who finds meaning, dignity and vocation in work which respects the rights of all and contributes to the common good. (a) Works effectively as an interdependent team member. (e) Respects the rights, responsibilities and contributions of self and others. ———. **Ontario Catholic School Graduate Expectations (OCSGE)**. Toronto: Institute for Catholic Education, 1998.

Assessment

- ◆ Use *Appendix #3* to help evaluate knowledge of number words to 10 and their pictorial representations.
- ◆ Have students glue numbers in order, on construction paper, matching the numbers to the word and picture cards.



Number Sense and Numeration

Challenge P1

S

Match 'Em Up

Materials

- ◆ *baggie* with number, word and picture cards
- ◆ construction paper
- ◆ glue
- ◆ Worksheet #1

Procedures

- ◆ Using the cards in your *baggie*, order the number cards from 1-10.
- ◆ Find the number word which matches the number card. Place it beside the number card.
- ◆ Find the picture card which has the matching number of objects. Place it beside the matching number card.
- ◆ When you are done, compare your work to a friend's. Fix any mistakes.

Further Challenges

- ◆ Working with a partner, pull all of the number cards from the *baggie*. Arrange them from 1-10. Take turns pulling picture cards out of the *baggie* and matching them to the correct number cards.
- ◆ Play memory with the cards. Remember you will need 3 cards in order to make a matched set.

Appendix #1

one

two

three

four

five

six

seven

eight




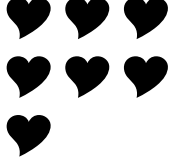
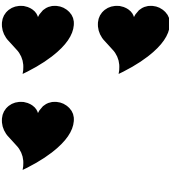
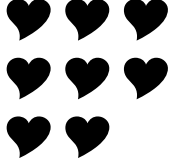

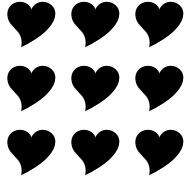
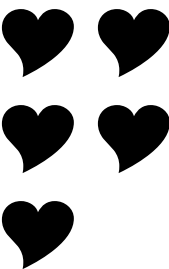
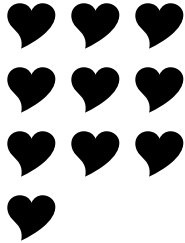
nine

ten



Number Sense and Numeration

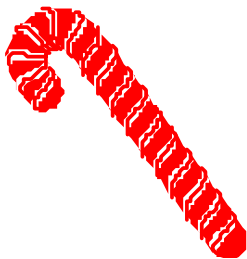
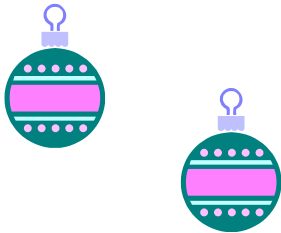
Appendix #2

1	one		6	six	
2	two		7	seven	
3	three		8	eight	
4	four		9	nine	
5	five		10	ten	

Appendix #3a

Name _____

I Can Count

Number Word	Picture	Number
one		1
five		
		7
		
three		

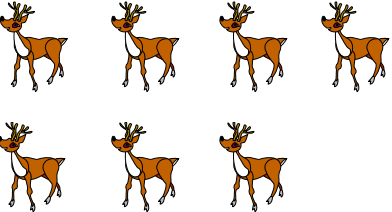


Number Sense and Numeration

Appendix #3b

Name _____

I Can Count

Number Word	Picture	Number
four		
		6
ten		
		
		9

Appendix #3c

Name _____

I Can Count

Number Word	Picture	Number
one		1
eight		
		7
		
three		

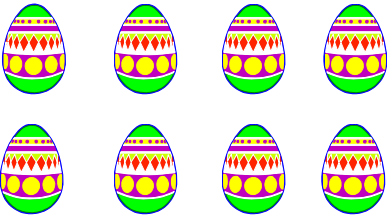


Number Sense and Numeration

Appendix #3d

Name _____

I Can Count

Number Word	Picture	Number
four		
		6
ten		
		
		9

Worksheet #1

I Know My Numbers

Name _____

Match.

one	1
five	3
seven	5
two	7
four	9
six	10
ten	2
three	4
eight	6
nine	8

