

# Before You Start ...

## THE CHALLENGE

Today's average high school graduate knows and can do less math than their counterpart of ten, fifteen, or twenty years ago. Basic math skills have deteriorated to the point that many wonder if this country can continue to be a leader in shaping the technology of the future. Unfortunately, the general trend of modern education of all types is downward. Students in private education, while they score higher overall than public school students, still do poorly in math computation skills.

## THE GOAL

The goal of this curriculum is to provide the parent and teacher with a tool that will help them effectively combat this deterioration of math skills by raising the level of student performance. Research of the content and methods of other existing curriculums, the concepts evaluated by achievement tests, and typical courses of study resulted in selection of the *Scope and Sequence* starting on page 38. This curriculum was not planned around any particular group of students. Rather, it was determined that the material in this curriculum constituted a reasonable level of performance for first grade students who have successfully completed an

academic kindergarten program. The curriculum is designed so that the teacher can adapt its use to student(s) of widely varying ability. In other words, the curriculum is a tool that is capable of performing well over a broad range of student ability to help them achieve a higher minimum level of proficiency. The two major components of the curriculum are the student text (in two volumes) and the *Teacher's Guide*. These are the absolute minimum components for accomplishing the objective of teaching the concepts in the *Scope and Sequence*. Since this guide was designed as an integral part of the curriculum, it is absolutely necessary to use the guide. The guide contains activities not found in the student texts that are essential to accomplishment of the curriculum objectives. As you will see in the following sections, this *Teacher's Guide* contains a significant number of suggestions and helps for the teacher. Some manipulatives are optional. The optional manipulatives are identified with *italics* so that the teacher may easily see what is optional and what is essential.

## THE DESIGN

Take a moment to look at the chart entitled, *Development of Concepts*, on page 51. Take note of how the curriculum

concepts are developed. The first presentation is usually a brief familiarization. Then the basic teaching is accomplished as part of three to five lessons. The thoroughness of a presentation depends on how new and how important the concept is to the student's academic development.

### **The Development**

Each concept will be reviewed for one week after the complete presentation. For the next two months the concept will be presented every two weeks as a part of two or three consecutive lessons. After a break in presentation of four weeks, the concept will be thoroughly reviewed as part of the lesson for three to five days. This will be followed by a period of two months where the concept will be reviewed every two weeks as part of two or three lessons. This progression continues until the student(s) have had the opportunity to thoroughly master the concept.

### **An Example**

Some mathematics curriculums might teach *time* for three weeks and then not go back to it again. In this curriculum it will be introduced and practiced for two weeks. For the next two months, *time* will be presented every two weeks as a part of two or three lessons to give the student(s) continual practice to develop mastery of the concept. The third month will be considered a break

from presenting the concept and *time* will not be taught. In the fourth month, *time* will first be thoroughly reviewed and again practiced every two weeks as a part of two or three lessons. By having a series of practices every two weeks, the student(s) will retain what they have learned to a greater degree. Short periods of exposure done many times is much more effective than long periods with fewer exposures. Since *time* has three aspects at this level (hour, half hour, and quarter hour), each aspect is introduced at its own interval. The *hour* is taught at the introduction, *half hour* a month later (following the same progression), and *quarter hour* another month later. After each aspect has a break from its presentation, the three aspects are presented together for the remainder of the year. Review the chart on page 51 to see how the concepts are developed.

### **READINESS EVALUATION**

There are two parts to the *Readiness Evaluation*. *Part A* evaluates the student in regard to the concepts of color, size, shapes, direction/position, matching/categorizing, and sets. *Part B* evaluates the student in regard to the concepts of numbers, counting, addition, subtraction, and number sequence. It is recommended that you give the two evaluations at different times rather than together at the same time.

# Readiness Evaluation

## Part A

### WHY EVALUATE READINESS?

Teaching could be defined as the process of starting from what a student knows and guiding him to a knowledge of new material. While this may not be a dictionary definition of teaching, it is descriptive of the processes involved.

Determining a student's readiness for first grade mathematics is the first step to successful teaching.

### TYPES OF READINESS

True readiness has little to do with chronological age. Emotional maturity and mental preparation are the main components of academic readiness. The teacher who is dealing directly with the student is best able to determine a child's emotional maturity. An emotionally immature student may need special student training in their problem areas. It might be wise, in this case, to delay placing them in the first grade until the next year. A child's mental *preparation* can be more easily discerned with a simple diagnostic evaluation. Observing the child's attitude of confidence or insecurity while taking the evaluation may help you determine their emotional readiness.

### DETERMINING READINESS

While administering *Part A* of the evaluation, keep in mind that each question has suggestions for proper remediation if the student should fail to demonstrate sufficient skill in a concept area.

If a student of any age is not able to listen and follow directions, complete an assigned task, or read and write well enough to communicate; they will experience great difficulty with this course. Likewise, if a student has not acquired the concepts of color, size, shapes, direction/position, matching/categorizing, sets, numbers, counting, addition, subtraction, and number sequence, they may fail from the beginning. In other words, if a student has missed the concepts taught in a formal kindergarten program, they need to acquire that knowledge before entering this course of study.

## READINESS EVALUATION, PART A

Tell the student this will be like a game to relax them. You will ask the question and they get to find the answer.

1. Use a preformed set of shapes or make a simple set out of card stock. (It would be best if these were not colored since it could distract from the purpose of this part of the evaluation.)
  - A. Lay out a circle, square, triangle, rectangle, oval, octagon, star, heart, and diamond in front of the student.
  - B. Name one of the four basic shapes (circle, square, triangle, or rectangle) and ask the student to pick it up and to place it back. Then ask them to identify each of the remaining three basic shapes, one at a time. If the student makes any errors, ask if they want to try again (giving a chance for any nervousness to pass). If the student gets all four basic shapes correct, ask them to tell you if they know what any of the others are called. Work with the student until they have a grasp of the four basic shapes. Their knowing the four basic shapes and at least familiarization with some of the others is satisfactory.
2. Use construction paper or colored items with the following ten colors: red, blue, yellow, green, orange, purple, brown, pink, black, and white.

Ask the student to show you the requested color (whether correct or not, say okay). Now ask them to replace the first color and show you another color that you will name. The student should identify seven to ten colors correctly or be asked if they want to try again. (Don't be surprised if a student identifies one object for two different colors.) A little drill will normally solve any deficiency with colors.

3. Use a set of objects that are different in size, height, and thickness to evaluate a student's ability to make comparisons.

Ask the student to tell you which is bigger or littler, larger or smaller, taller or shorter, thicker or thinner, etc. Ask which of the objects is longest, tallest, or thinnest. Repeat this activity (if necessary) until the student demonstrates, to your satisfaction, that they comprehend the concept of comparisons.

4. Using a globe or large ball, ask the student a series of directional questions about where you place a ruler in relationship to the globe, like:

- A. Place the ruler above the globe and ask, “If this is ‘above,’ where is this?” (placing the ruler under the globe). Be aware that the student might answer down or even under, and be correct. Your objective is to determine their comprehension of relative position, not their memorization of word associations.
- B. Using your hands, indicate one direction (left or right, front or behind, up or down, etc.) and ask the student what the opposite is.
- C. Positional questions can be asked about off or on, open or closed, first or next, first or last, etc.

The student only needs to show familiarization with directions and positions and know the most basic ones. Directions and positions can be a very confusing area. Drill or time will resolve most difficulties.

- 5. Use pairs of items (clothing, pictures, blocks, or cut-out shapes) to evaluate a child’s ability to identify one-to-one correspondence, and differences.
  - A. Have the student match three or four pairs of socks or picture blocks from a mixed group.
  - B. Have the student select and show you a different sock or picture from one you select.
  - C. Have the student count out three similar items for you and three for himself. (These can be similar in type like socks or in color like a red sock, a red block, and red crayon.)

If the student doesn’t do well on this section, a little personal drill should take care of the difficulty.

- 6. Create two sets of two objects each, two sets of three objects each, a set of five objects, and a set of ten objects (use toothpicks, blocks, or whatever you have available).

Ask the student to select the set with the least number of items, the greatest number, and two that are of equal number. A little drill should solve any confusion the student might have with the exercise.

If the student is unable to complete these activities successfully after some remedial drill, it would be wise to place the student in *Horizons Math K* so that he will receive all of the preparation needed to begin this first grade mathematics curriculum.

# Readiness Evaluation

## Part B

### PURPOSE

*Readiness Evaluation, Part B* helps the teacher to determine if student(s) are ready to begin study at the first grade level. It is designed specifically for the area of math concepts.

### INSTRUCTIONS

Do this evaluation before school starts. If this is not possible, work with the student(s) on a one-to-one basis (before or after school, recess, or lunch time). The evaluation should take about ten minutes. It would be helpful to evaluate all of the students to determine what each student knows. However, you may want to evaluate only those student(s) who have not had a thorough kindergarten program. During the first week of school, you may find it necessary to evaluate some additional student(s) especially those who enroll later in the year or show considerable frustration with the curriculum.

This is an oral evaluation with the exception of activity 2 and 3 under **Numbers**. The student will need a clean sheet of paper for the written part of the evaluation. Record the student(s) response to each activity on the score sheet provided. Write “1” on the blank if the response is correct and “0” on the blank if the response is incorrect.

The first two sections

(**Numbers** and **Counting**) are self explanatory. Have the student(s) orally answer the questions given for the last three concepts (**Addition**, **Subtraction**, and **Number Sequence**).

### MINIMUM SCORES

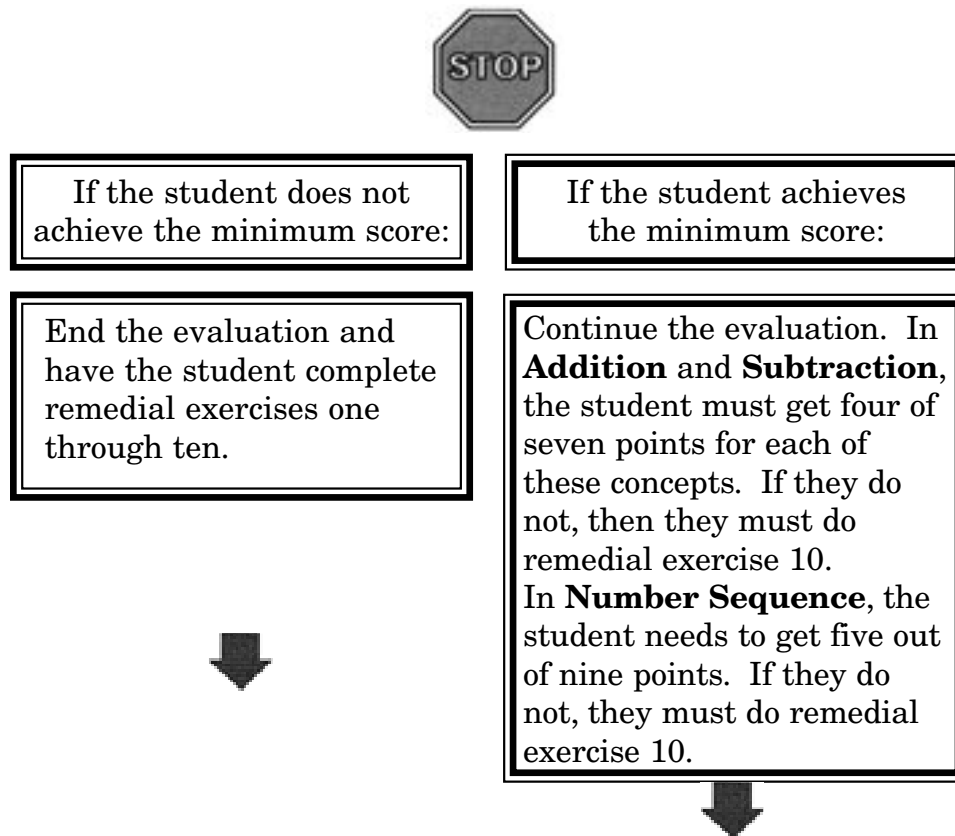
The student must achieve certain minimum scores in the various sections in order to be ready for first grade. The minimum number of points for that section or numbered item is listed in parentheses after each section or numbered item.

In the first concept, **Numbers**, the student must have a total score of nine out of the twelve possible points on the score sheet. If the student does not get the minimum number of points, they must do remedial exercises to prepare them for this first grade curriculum. Note that item two, writing the numerals from 1 to 10, requires the student get eight of ten correct to get the one point on the score sheet.

In **Counting**, the student must have a total score of two of the four points on the score sheet. If the student does not get two of the four points on the score sheet, they must do remedial exercises. Note that in item one the student must get 16 of 20 correct in counting out loud to 20 to get the one point on the score sheet.

After completing the **Numbers** and **Counting** concepts, stop to total the student's scores. A student who does not attain the minimum score should not complete the rest of the evaluation. They must do all ten of the remedial exercises.

Below you will find a flow diagram that explains how to properly use the information obtained from the evaluation.



At this point, it is the teacher's responsibility to determine if the student should proceed with the first grade curriculum or be placed in *Horizons Math K*.

**SCORING**

**NUMBERS**

1. 5 out of 6 (83%)
2. 8 out of 10 (80%) for one point
3. 3 out of 5 (60%)

**COUNTING**

1. 16 out of 20 (80%) for one point
2. 8 out of 10 on counting by 10's, 5's, or 2's (80%)

**ADDITION**

- 4 out of 7 (57%)

**SUBTRACTION**

- 4 out of 7 (57%)

**NUMBER SEQUENCE**

- 5 out of 9 (56%)

## READINESS EVALUATION, PART B

Points on score sheet

### **NUMBERS (note that item two requires 8 of 10 correct to score one point on the score sheet)**

(9 of 12)

1. Have the student tell you the following numbers as you point to them on the number chart: a. 6, b. 13, c. 45, d. 27, e. 89, and f. 30. (5 of 6)
2. Have the student write the numerals 1 to 10. (8 of 10)
3. Have the student write the following numbers as you say them with number chart visible to the student: a. 4, b. 15, c. 39, d. 51, and e. 80. (3 of 5)

### **COUNTING (note that item two requires 8 of 10 correct to score one point on the score sheet)**

(2 of 4)

1. Have the student count from 1 to 20 out loud. (16 of 20)
2. Have the student count out loud: a. by 10's to 100, b. by 5's to 50, and c. by 2's to 20. (8 of 10 on any of these three)

### **ADDITION**

(4 of 7)

1. When you put two numbers together are you adding or subtracting?
2. What is one more than 8?
3. What is one more than 13?
4. What is 27 plus 1?
5. What is 6 plus 0?
6. What is 15 plus 0?
7. What is 49 plus 0?

### **SUBTRACTION**

(4 of 7)

1. When you take one number away from another are you adding or subtracting?
2. What is one taken away from 9?
3. What is one less than 18?
4. What is 52 minus 1?
5. What is 4 minus 0?
6. What is 12 minus 0?
7. What is 0 taken away from 33?

### **NUMBER SEQUENCE**

Show the student flashcards of these numbers and ask the associated question.

(5 of 9)

1. This is a seven. What number comes after it?
2. This is a fourteen. What number comes after it?
3. This is a thirty-six. What number comes after it?
4. This is a five. What number comes before it?
5. This is a seventeen. What number comes before it?
6. This is a twenty-five. What number comes before it?
7. This is a four and this is a six. What number comes between them?
8. This is a forty-one and this is a forty-three. What number comes between them?
9. This is a fifty-nine and this is a sixty-one. What number comes between them?

What number comes between them?



## READINESS EVALUATION, PART B: SCORE SHEET

Write "1" in the box if the response is correct and "0" in the box if the response is incorrect.  
 Reproduce this form as needed.

Student's name: \_\_\_\_\_

### NUMBERS

1.	a.																			
	b.																			
	c.																			
	d.																			
	e.																			
	f.																			
2.																				
3.	a.																			
	b.																			
	c.																			
	d.																			
	e.																			

Concept Total (minimum of 9)

### COUNTING

1.																				
	2.	a.																		
		b.																		
		c.																		

Concept Total (minimum of 2)

### ADDITION

1.																				
	2.																			
	3.																			
	4.																			
	5.																			
	6.																			
	7.																			

Concept Total (minimum of 4)

### SUBTRACTION

1.																				
	2.																			
	3.																			
	4.																			
	5.																			
	6.																			
	7.																			

Concept Total (minimum of 4)

### NUMBER SEQUENCE

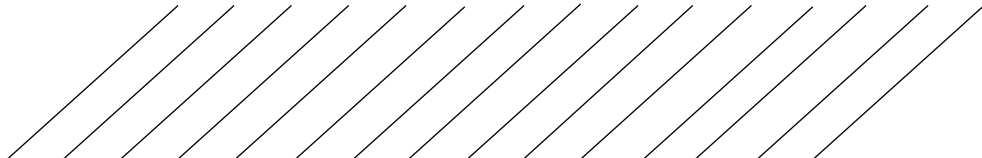
1.																				
	2.																			
	3.																			
	4.																			
	5.																			
	6.																			
	7.																			
	8.																			
	9.																			

Concept Total (minimum of 5)

# READINESS EVALUATION, PART B: SCORE SHEET

Write “1” in the box if the response is correct and “0” in the box if the response is incorrect.  
 Reproduce this form as needed.

Student’s name:



**NUMBERS**

1. a.																					
b.																					
c.																					
d.																					
e.																					
f.																					
2.																					
3. a.																					
b.																					
c.																					
d.																					
e.																					

Concept Total (minimum of 9)

**COUNTING**

1.																					
2. a.																					
b.																					
c.																					

Concept Total (minimum of 2)

**ADDITION**

1.																					
2.																					
3.																					
4.																					
5.																					
6.																					
7.																					

Concept Total (minimum of 4)

**SUBTRACTION**

1.																					
2.																					
3.																					
4.																					
5.																					
6.																					
7.																					

Concept Total (minimum of 4)

**NUMBER SEQUENCE**

1.																					
2.																					
3.																					
4.																					
5.																					
6.																					
7.																					
8.																					
9.																					

Concept Total (minimum of 5)

# Remedial Exercises

## PURPOSE

The ten remedial exercises are designed to help the student(s) who need a refresher unit in writing the numerals (1–10); understanding number concepts (one to ten); and counting by ones, twos, fives, and tens to one hundred.

## ACTIVITIES:

### EXERCISES 1–9

Each exercise consists of practice in tracing a number (1–10) several times and then writing the number. Guide the student(s) by pointing out the place to begin the strokes and the complete forming of each number. If additional practice in forming numerals is needed, use *Worksheet 1* given in the *Teacher's Guide*, which may be copied as many times as needed. Each exercise also has correspondence activities. For each of these activities, draw some objects on the board and then draw lines to corresponding objects as examples for the student(s) to follow. When an exercise has an activity on sets, practice counting sets of objects either on the board or flannel board, being careful that the student(s) say one number each time they point to an object. In Exercise 9, *Student Activity Five* you will need to dictate some numbers chosen at random to the students.

## EXERCISE 10

Exercise 10 requires the guidance of the teacher for each activity. Carefully discuss the directions for *Student Activity One*. Discuss with the student(s) how counting by twos is the same thing as counting every two numbers, every other number, or every second number. Instruct the student(s) to circle the number “2.” Then count over two and circle “4,” count over two and circle “6,” continuing until the student(s) can complete the chart on their own. Follow the same procedure for *Student Activity Two* (counting by tens) and *Three* (counting by fives). For *Student Activity Four, Five, and Six* discuss with the student(s) how the number that comes “after” is the same as one more than the number or adding one to the number. The number that comes “before” is the same as one less than the number or subtracting one from the number. Allow the student(s) to use the number chart in completing *Student Activity Four, Five, and Six*.

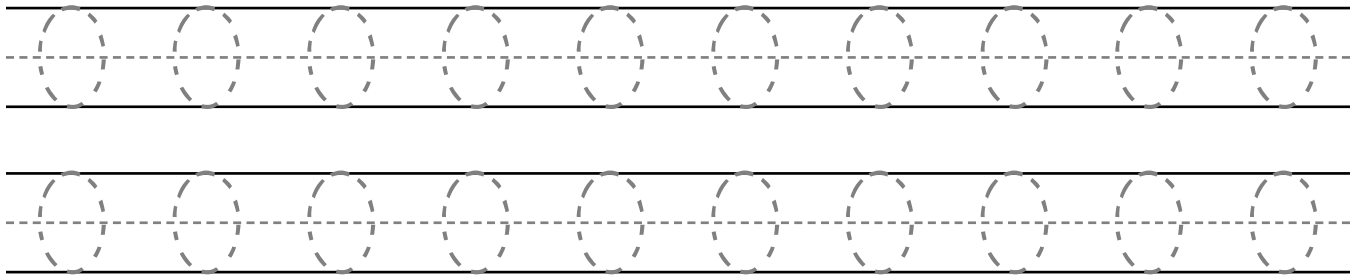
When the student(s) have completed these remedial exercises you must decide if the student(s) have demonstrated sufficient mastery of the material to be able to proceed with the first grade mathematics curriculum.



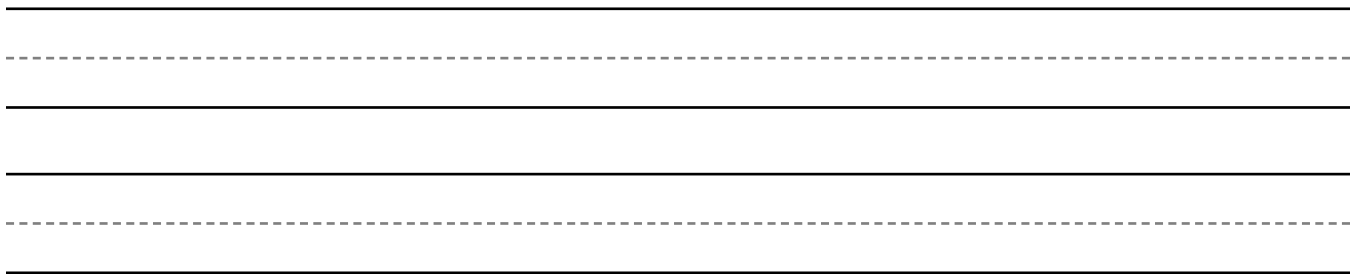
zero 0

0 boats

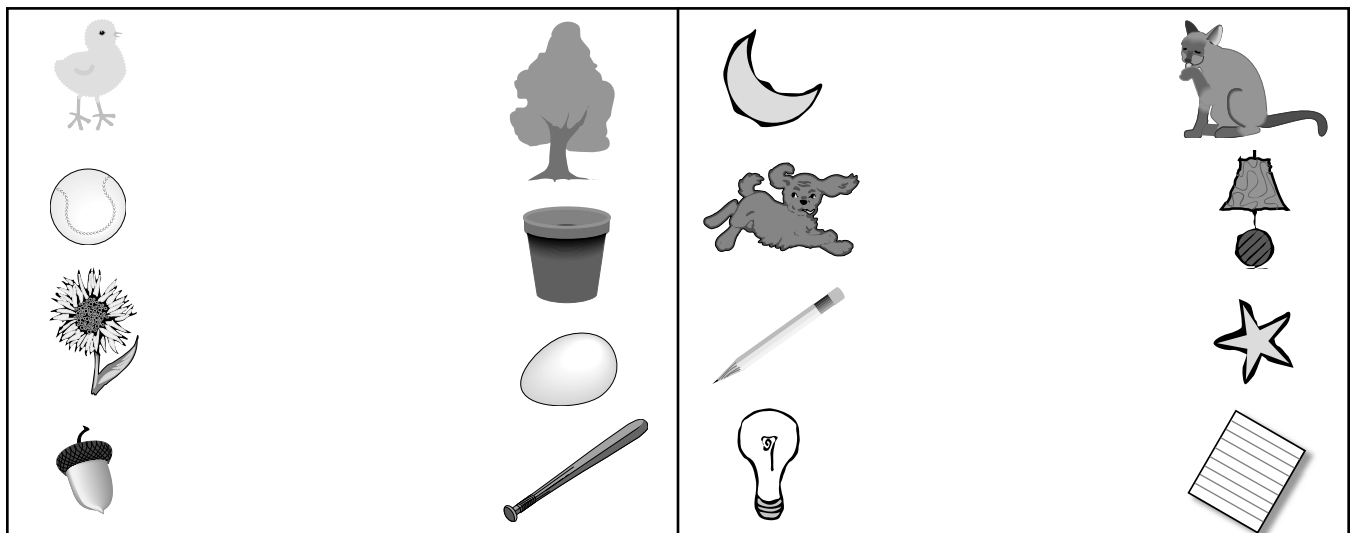
1 Trace the number zero.



2 Write the number zero.



3 Draw a line to match the objects.



one

1



1 boat

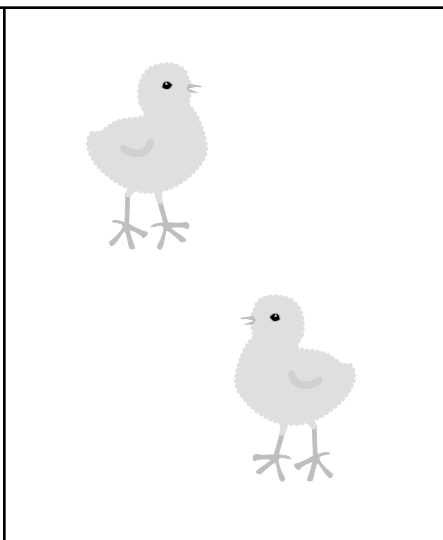
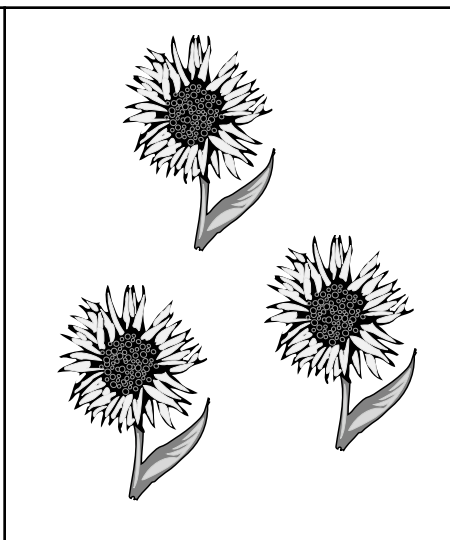
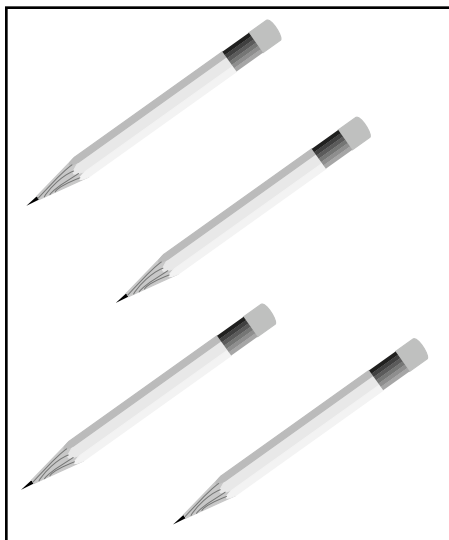
4 Trace the number one.



5 Write the number one.



6 Circle one object in each group.



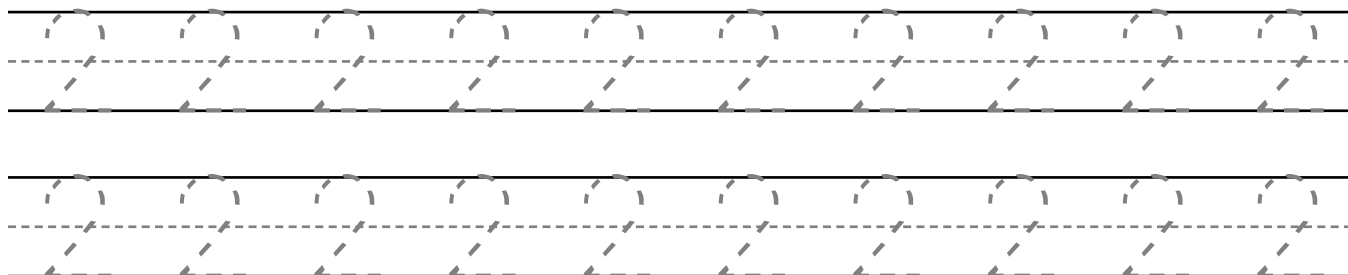
two

2

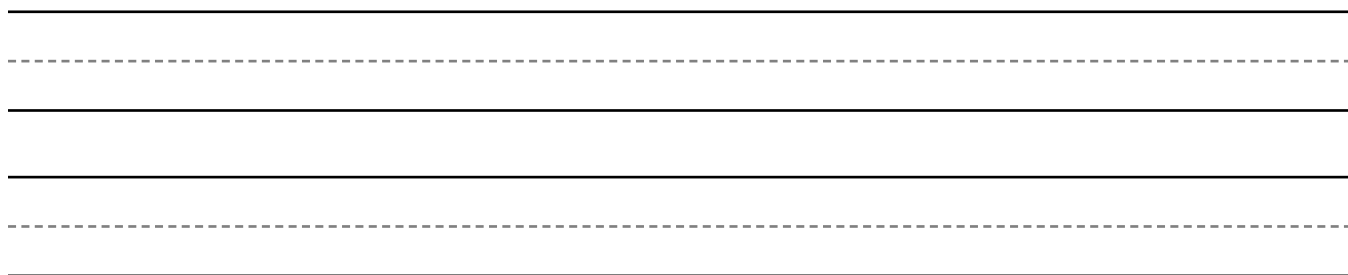


2 boats

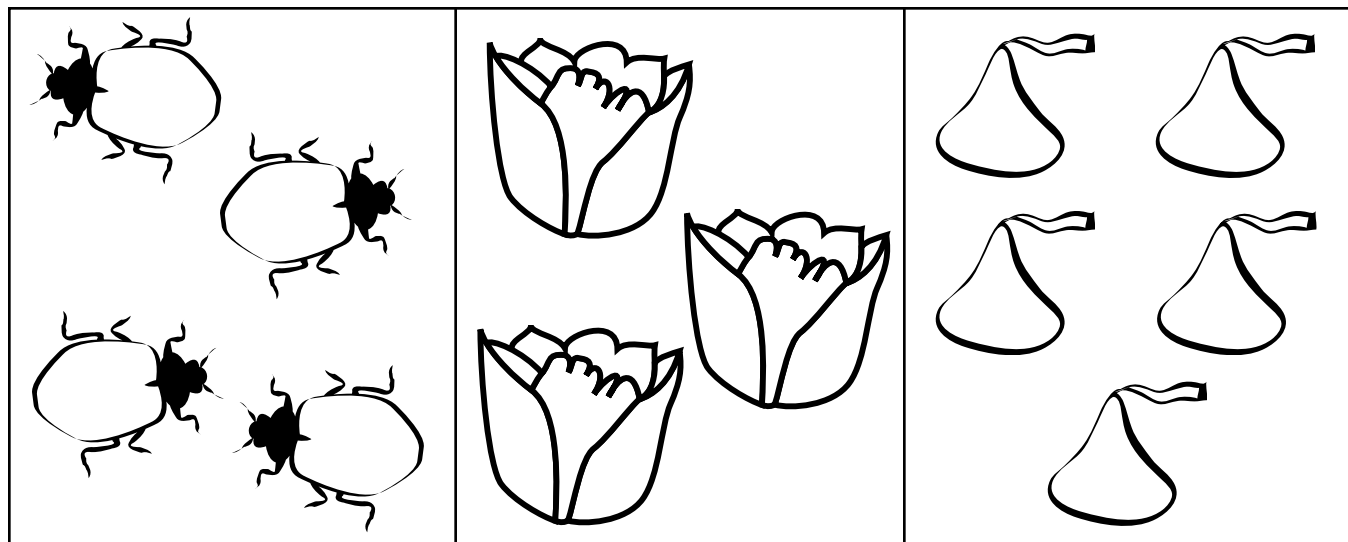
① Trace the number two.



② Write the number two.

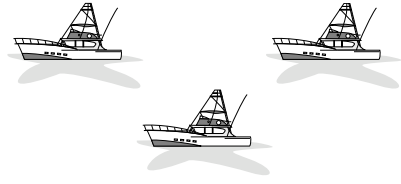


③ Color two in each group.



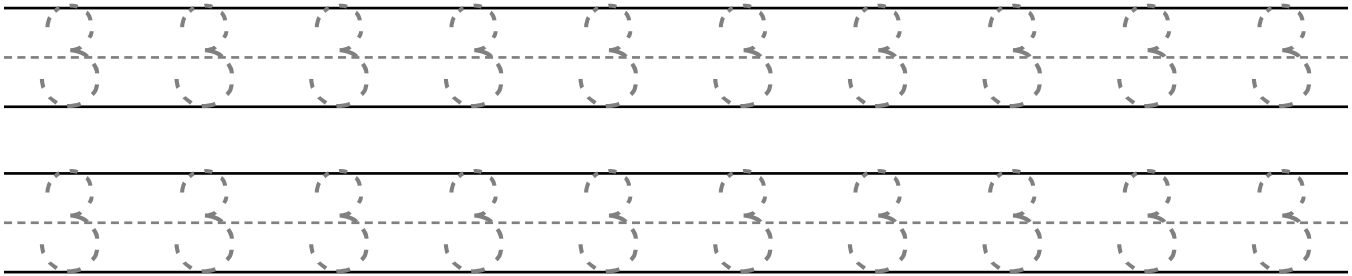
# three

# 3

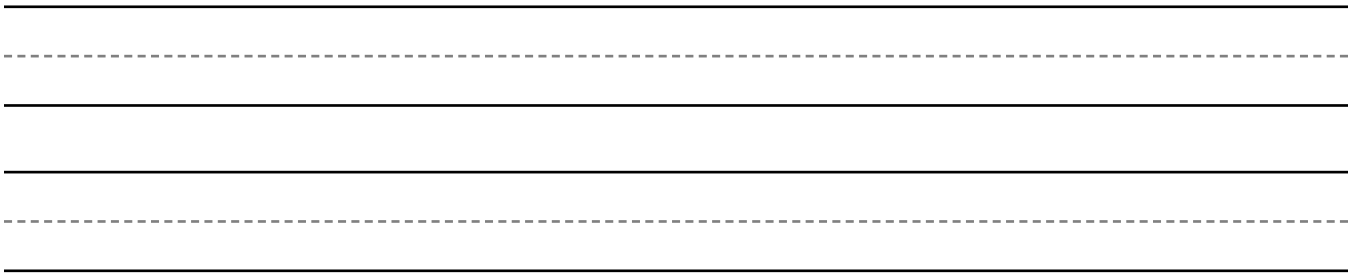


3 boats

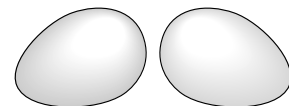
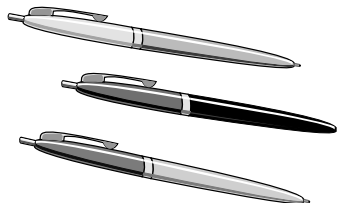
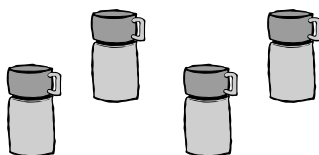
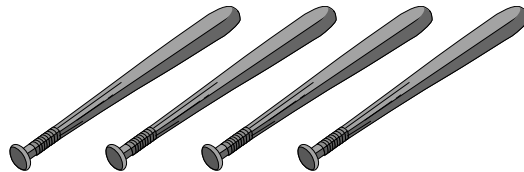
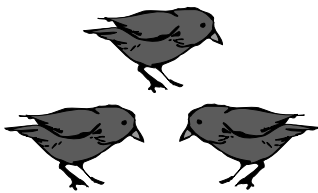
4 Trace the number three.



5 Write the number three.



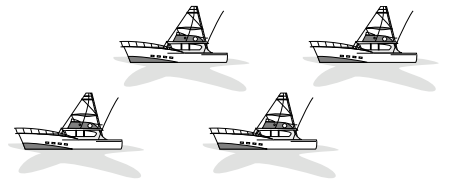
6 Circle the groups of three.





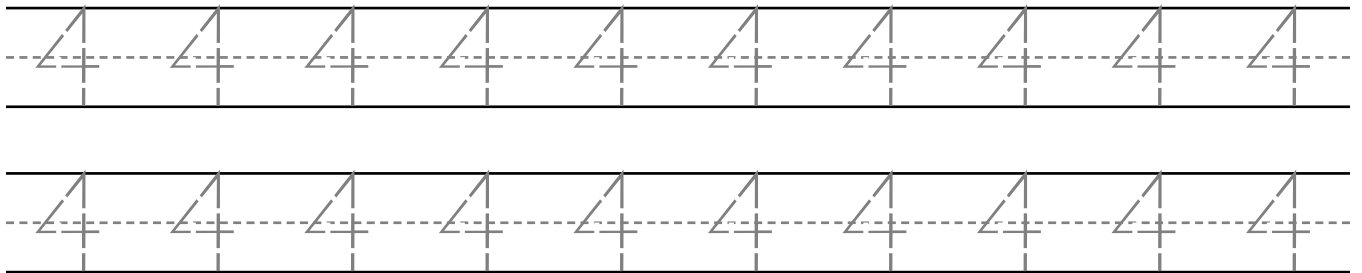
four

4

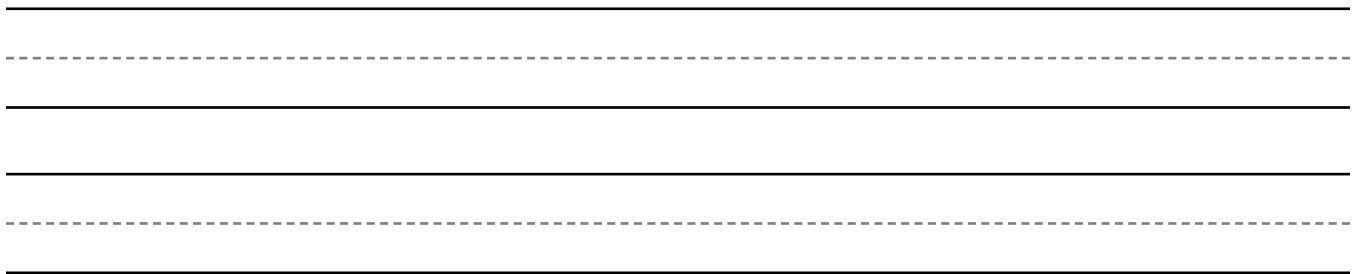


4 boats

1 Trace the number four.



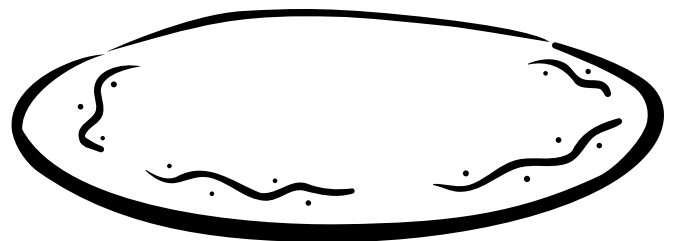
2 Write the number four.



3 Draw four legs for the table.

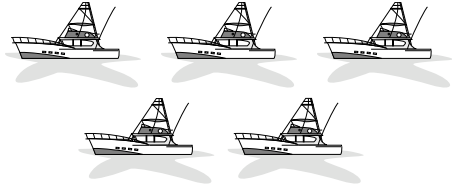


Draw four cookies on the plate.



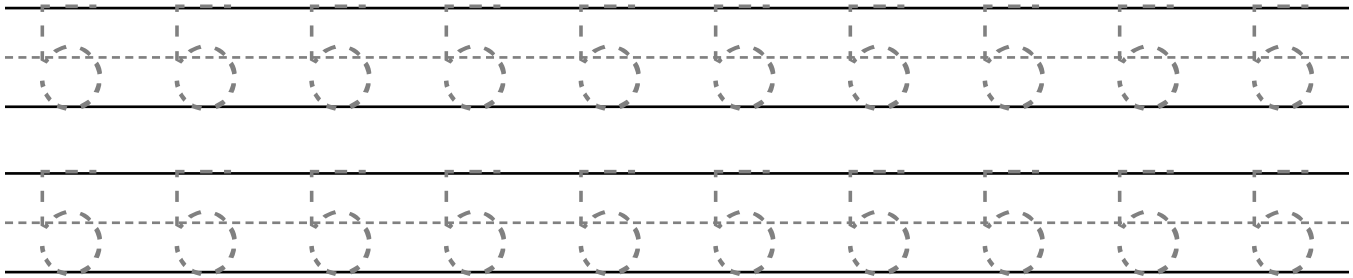
five

5

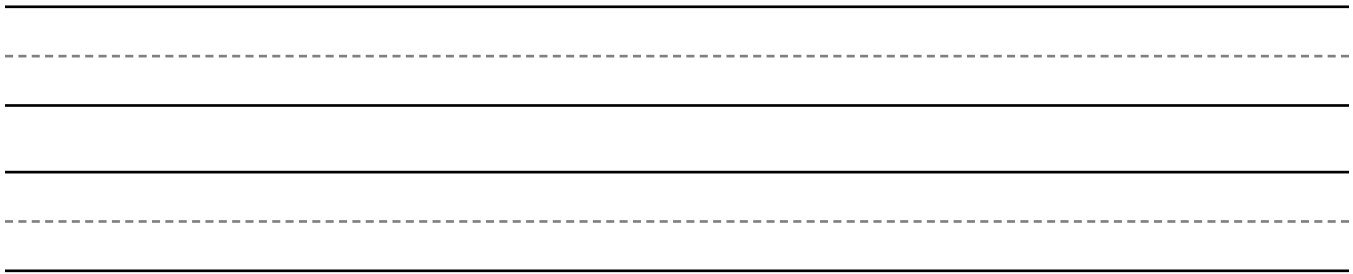


5 boats

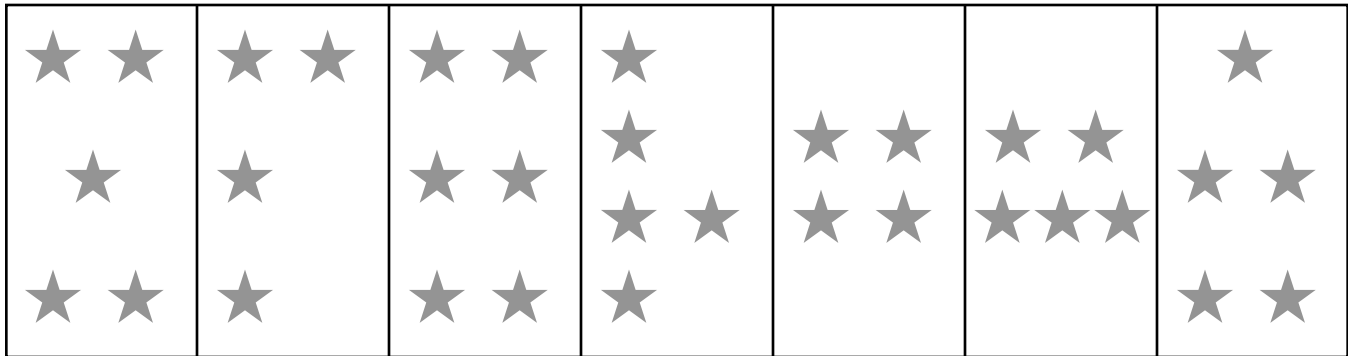
4 Trace the number five.



5 Write the number five.



6 Circle the groups of five.



0

zero

1

one

2

two

3

three

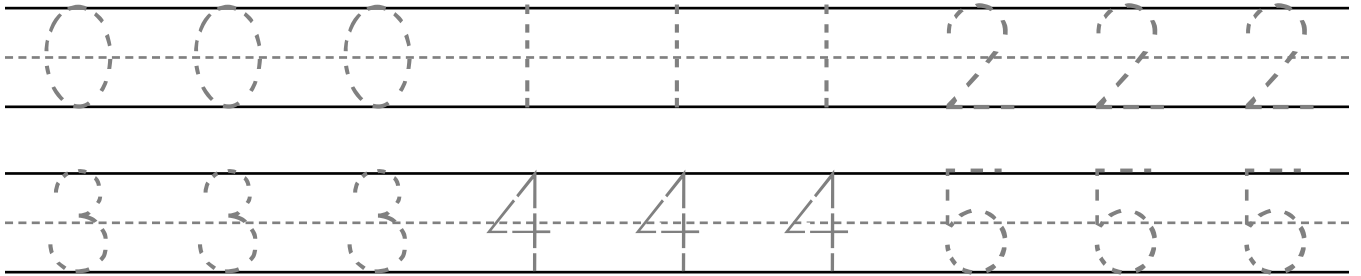
4

four

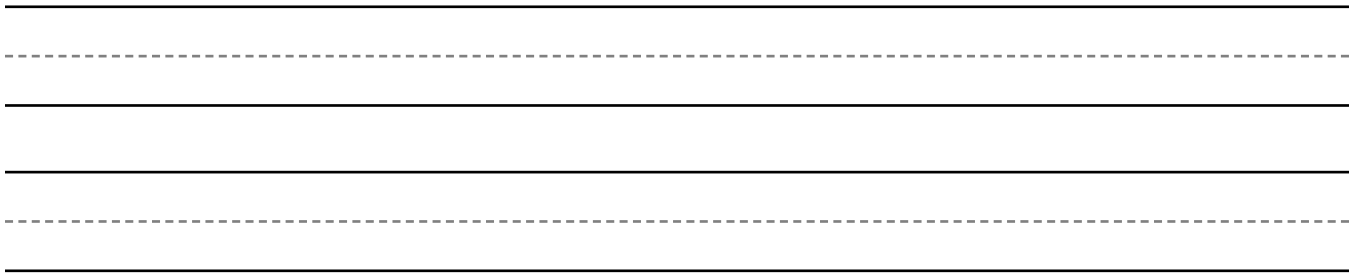
5

five

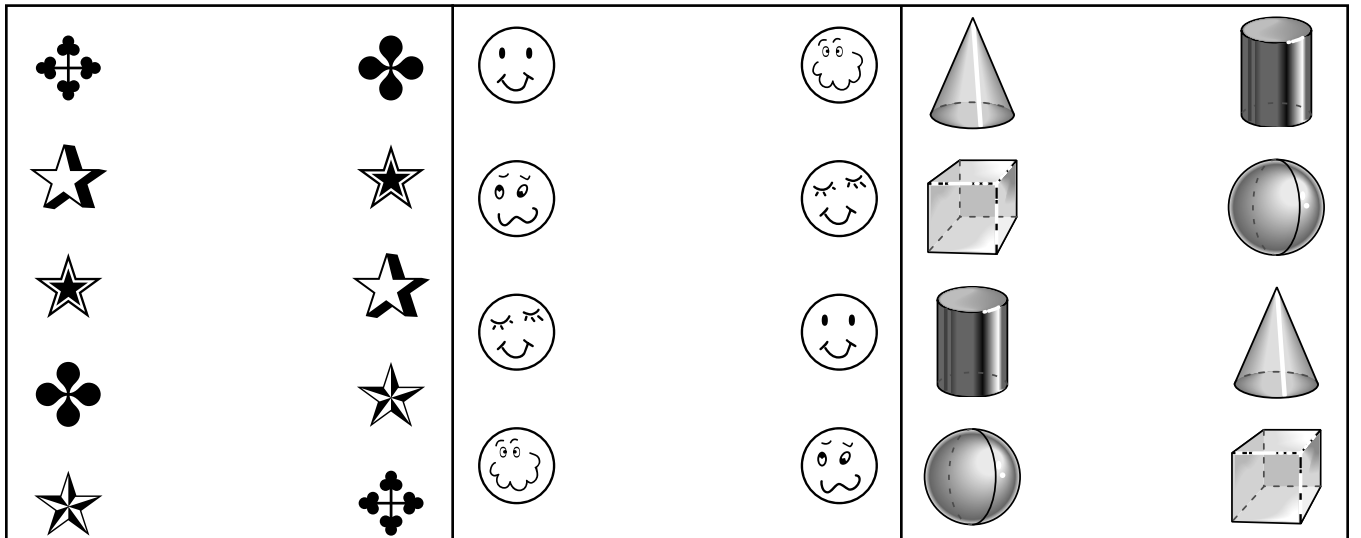
1 Trace the numbers to five.



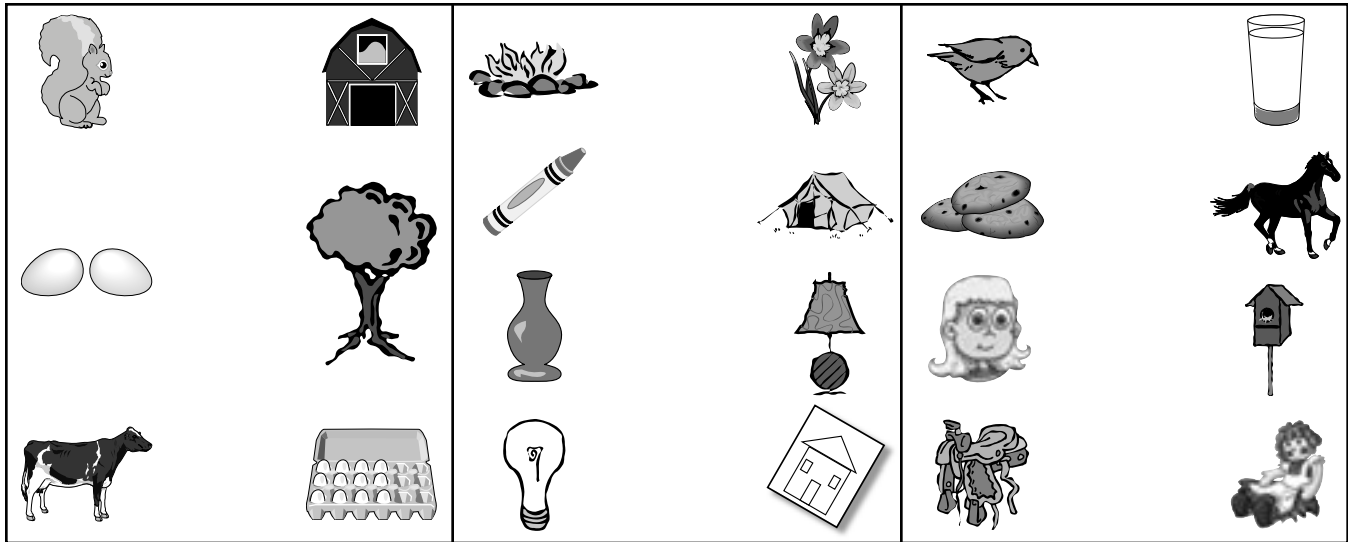
2 Write the numbers to five.








3 Draw a line to match the objects.



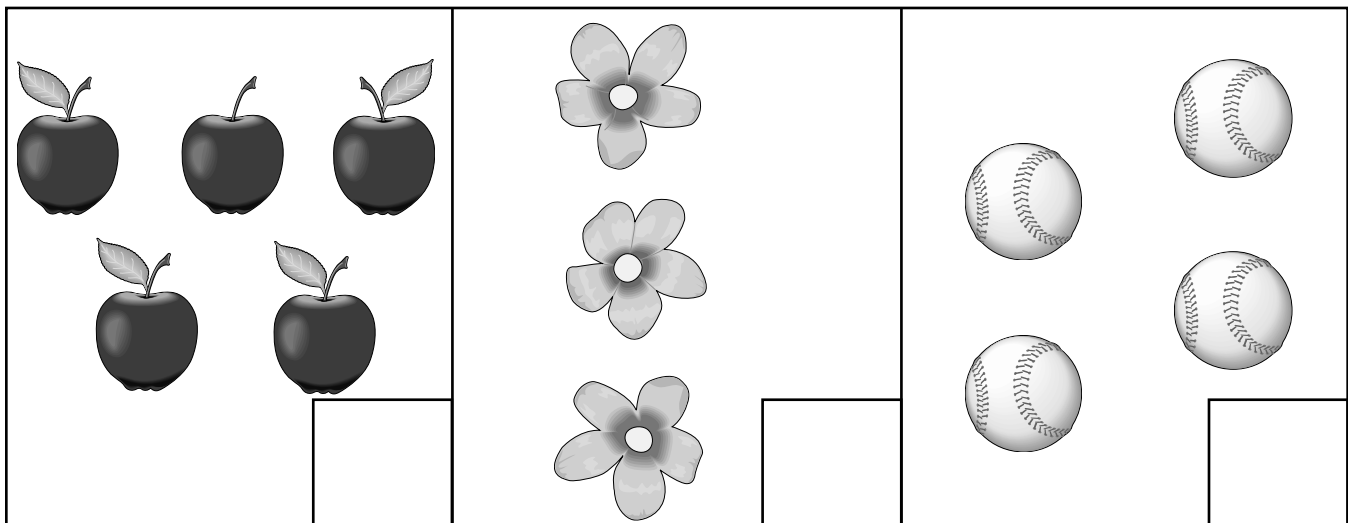
**4 Draw a line to match the objects.**



**5 Draw a line to match.**

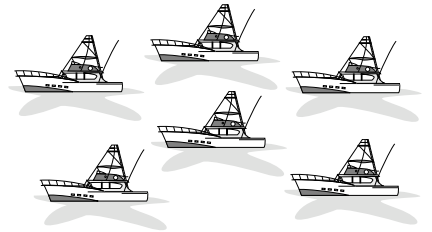
four	1		1
one	2		2
five	3		3
three	4		4
two	5		5

**6 Count the objects. Write the number in the box.**



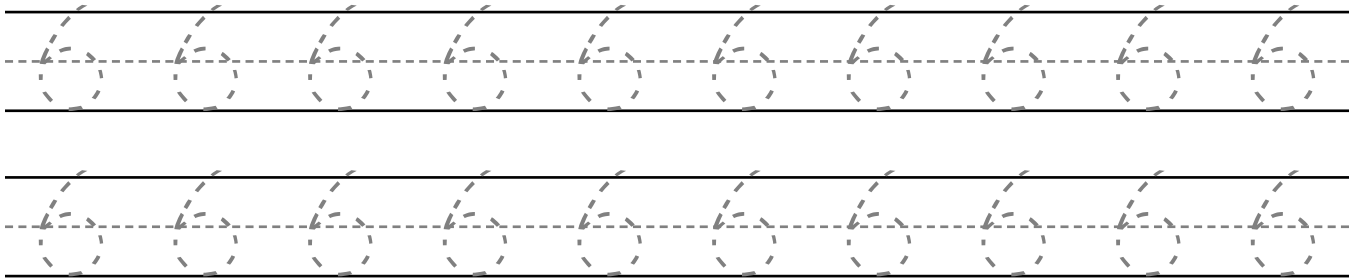
six

6

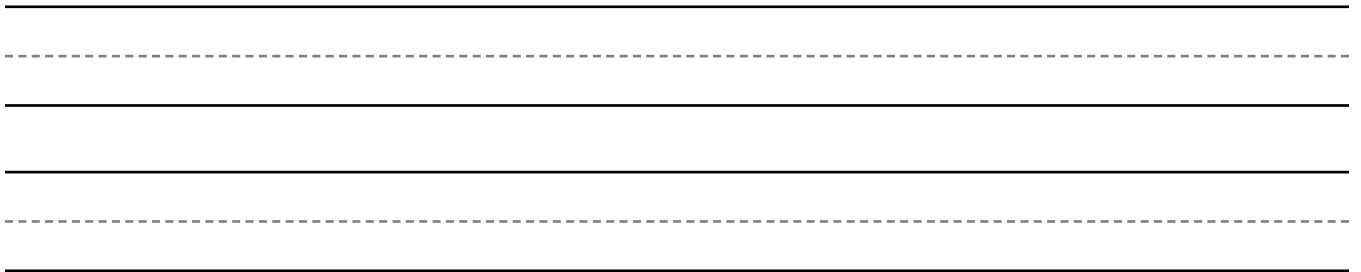


6 boats

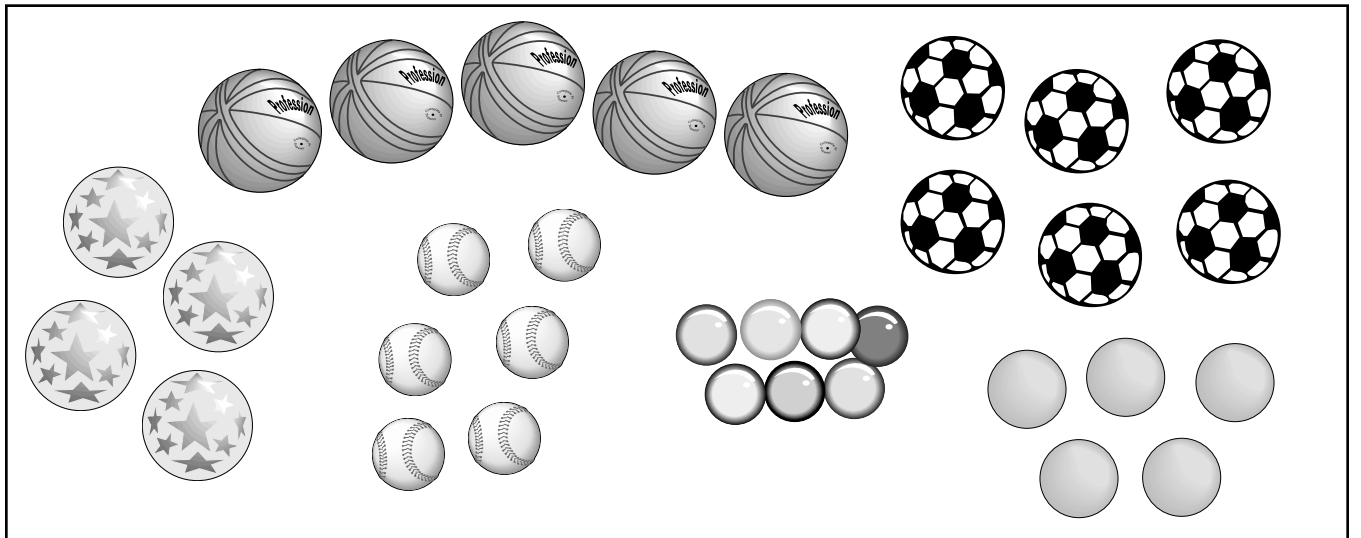
1 Trace the number six.



2 Write the number six.

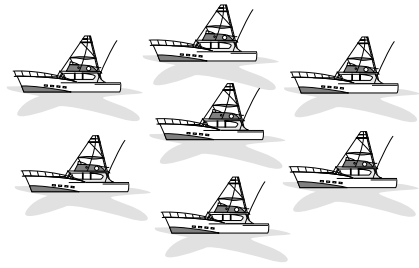


3 Put an X on the groups of six.



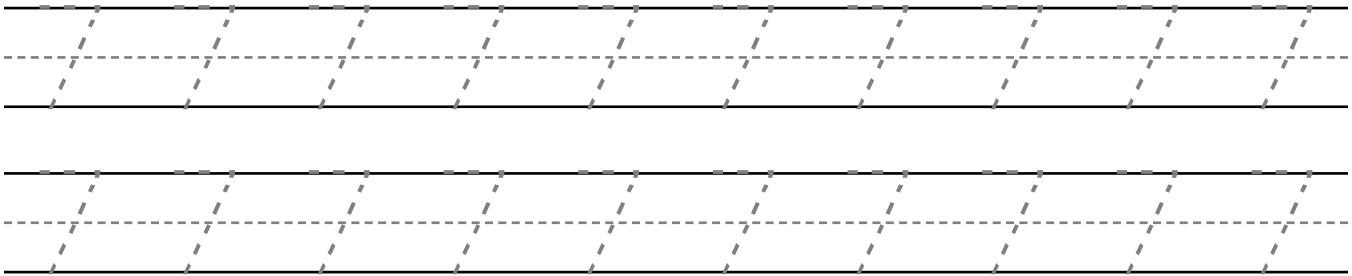
# seven

# 7

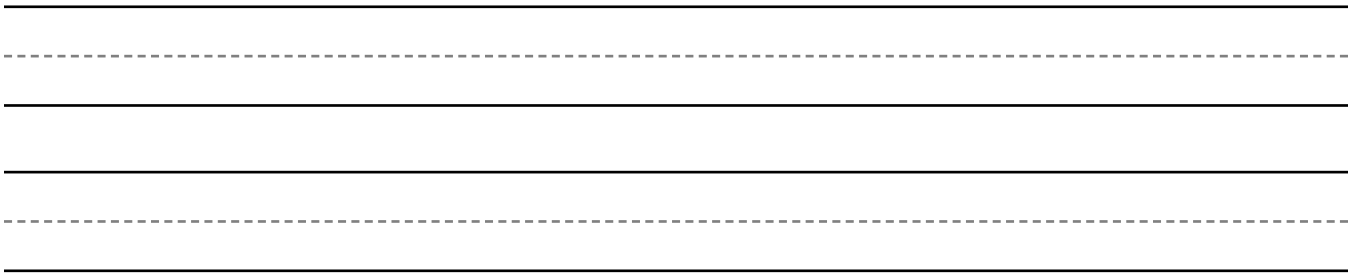


7 boats

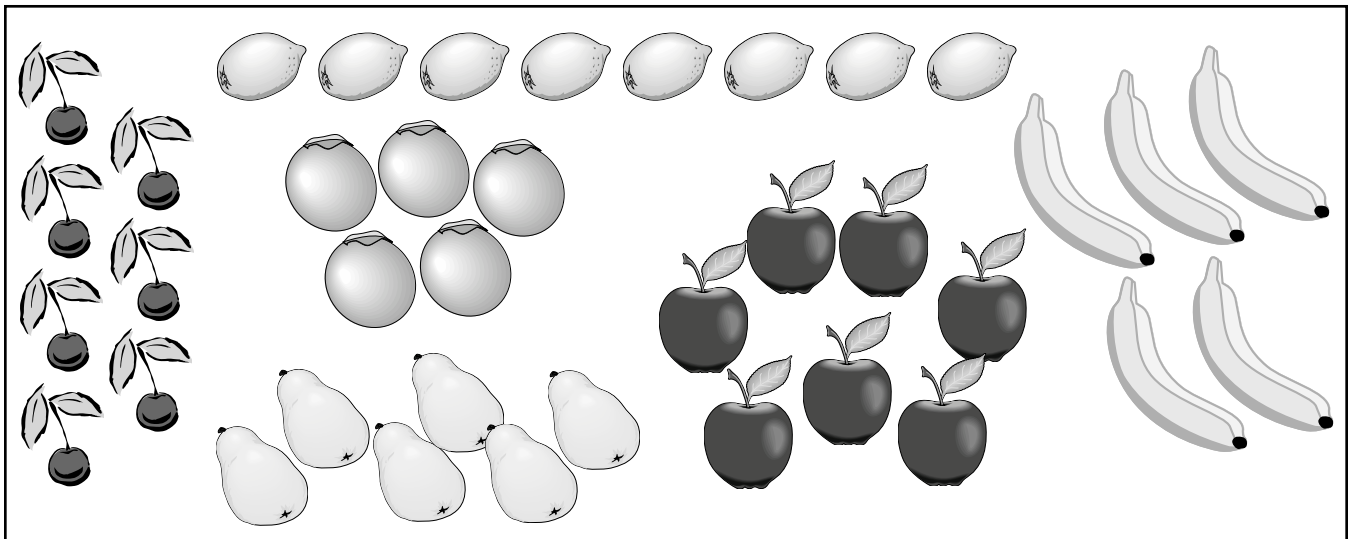
4 Trace the number seven.



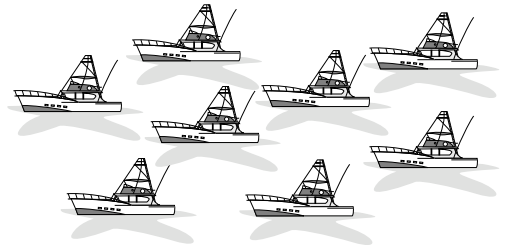
5 Write the number seven.



6 Circle the groups of seven.

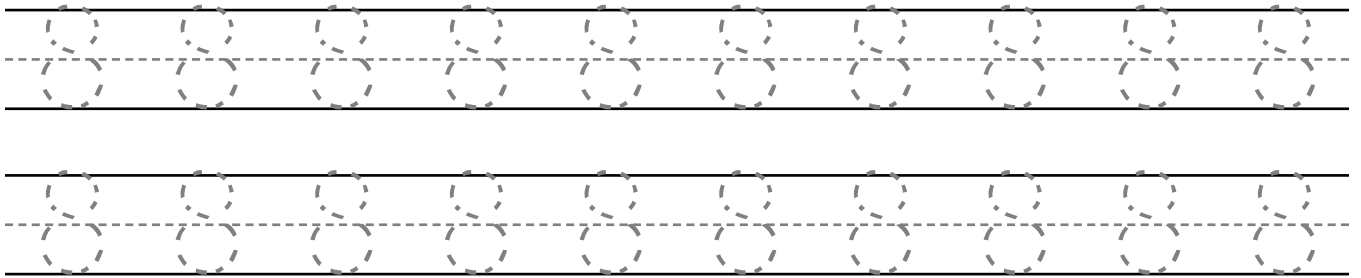


# eight 8

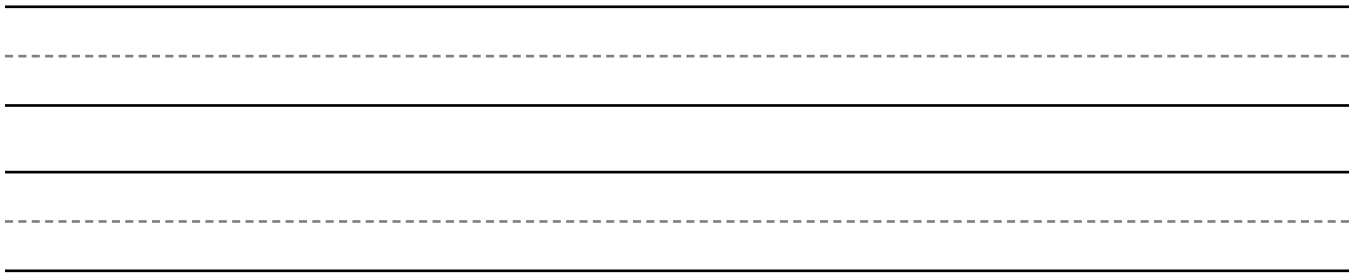


8 boats

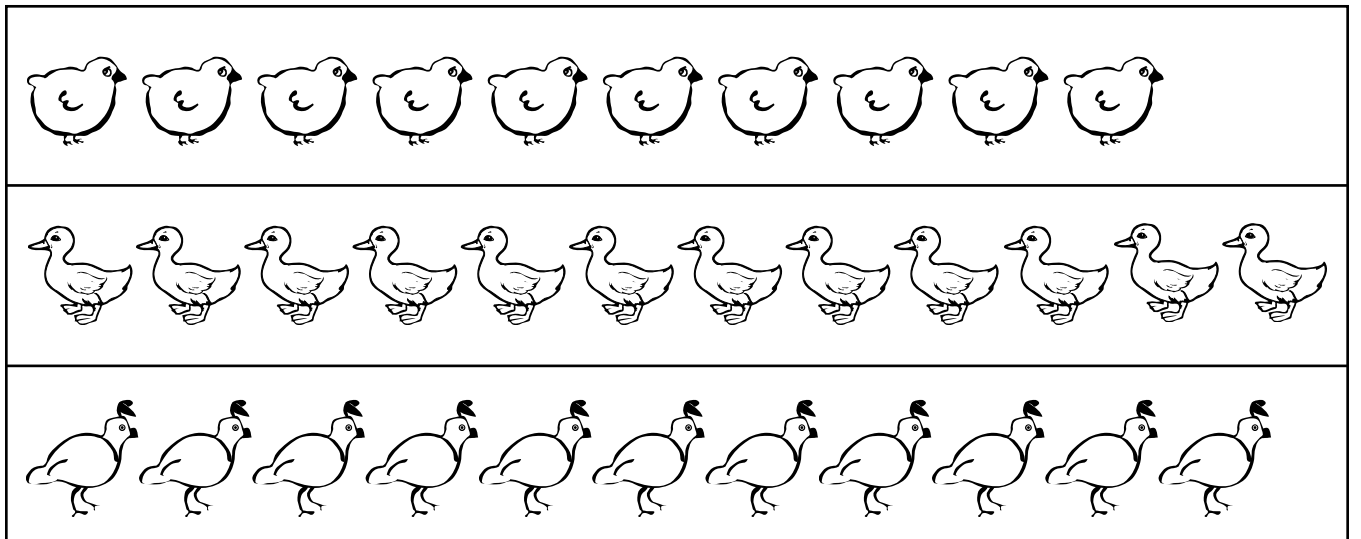
1 Trace the number eight.



2 Write the number eight.

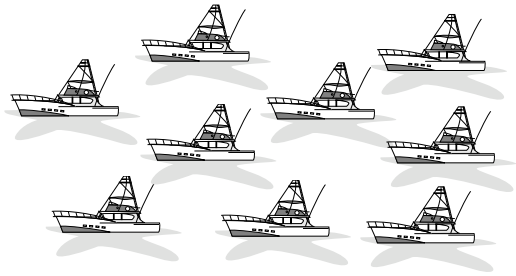


3 Color eight in each group.



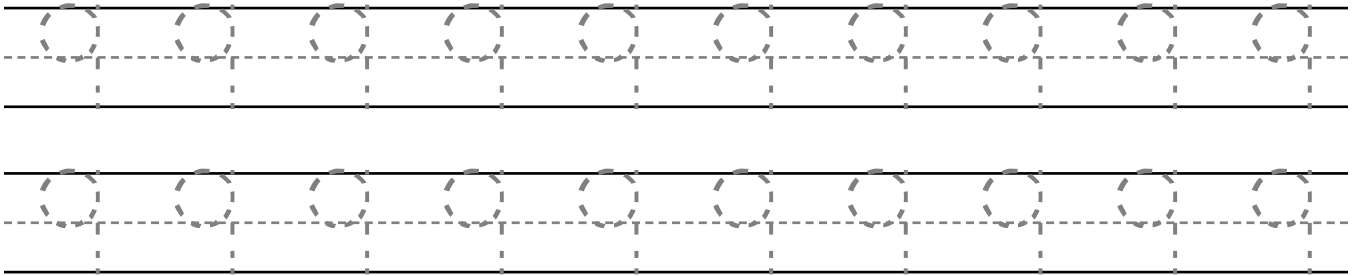
nine

9

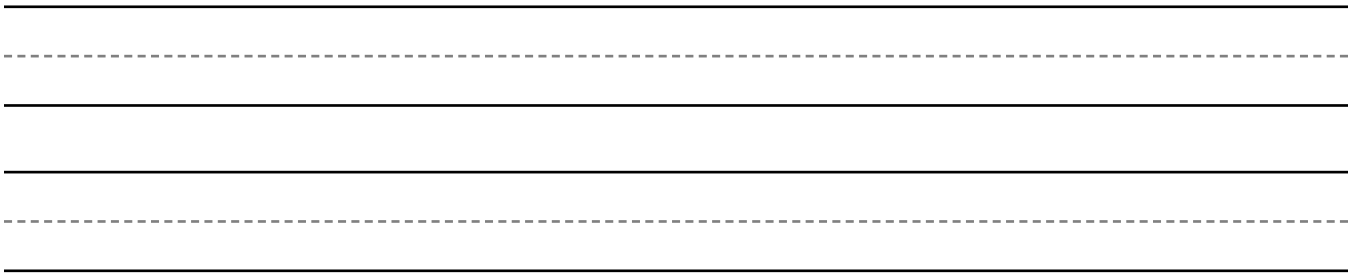


9 boats

4 Trace the number nine.



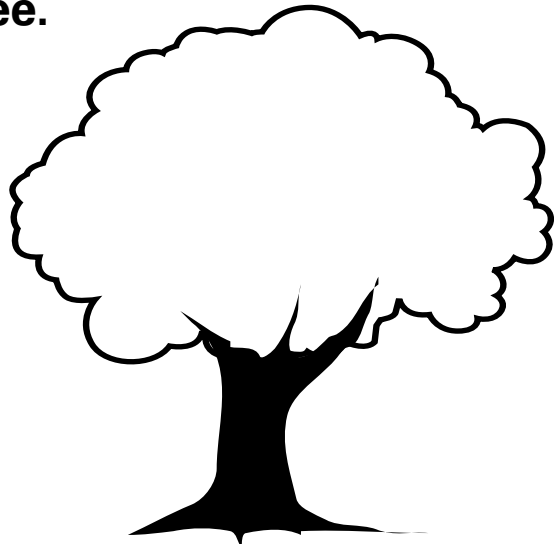
5 Write the number nine.



6 Draw nine candles on the cake.



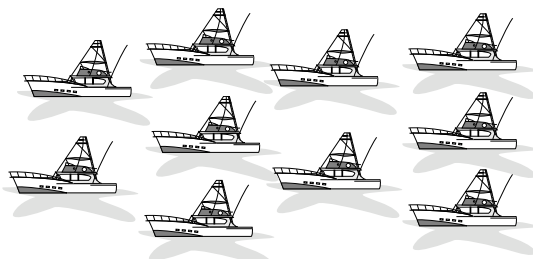
Draw nine apples on the tree.





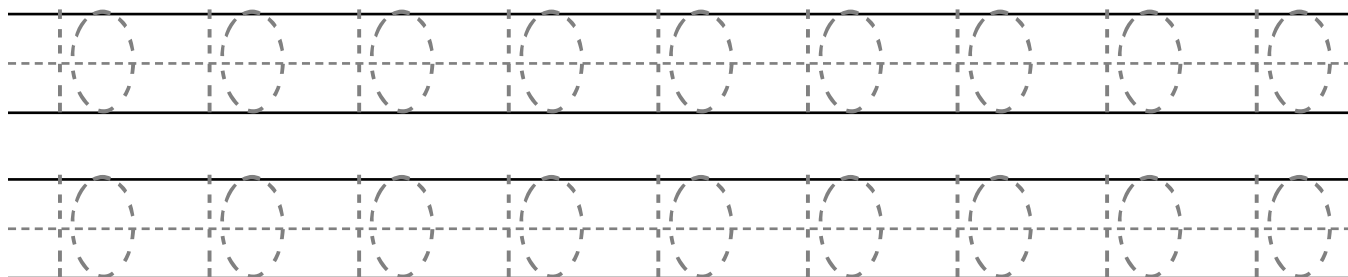
ten

10

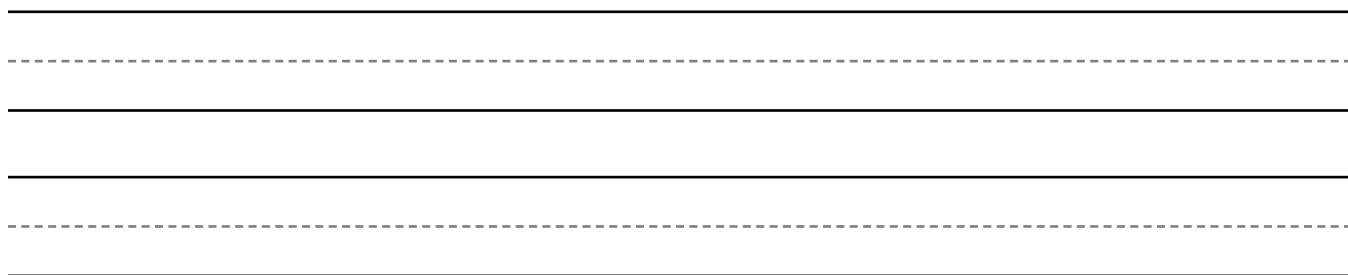


10 boats

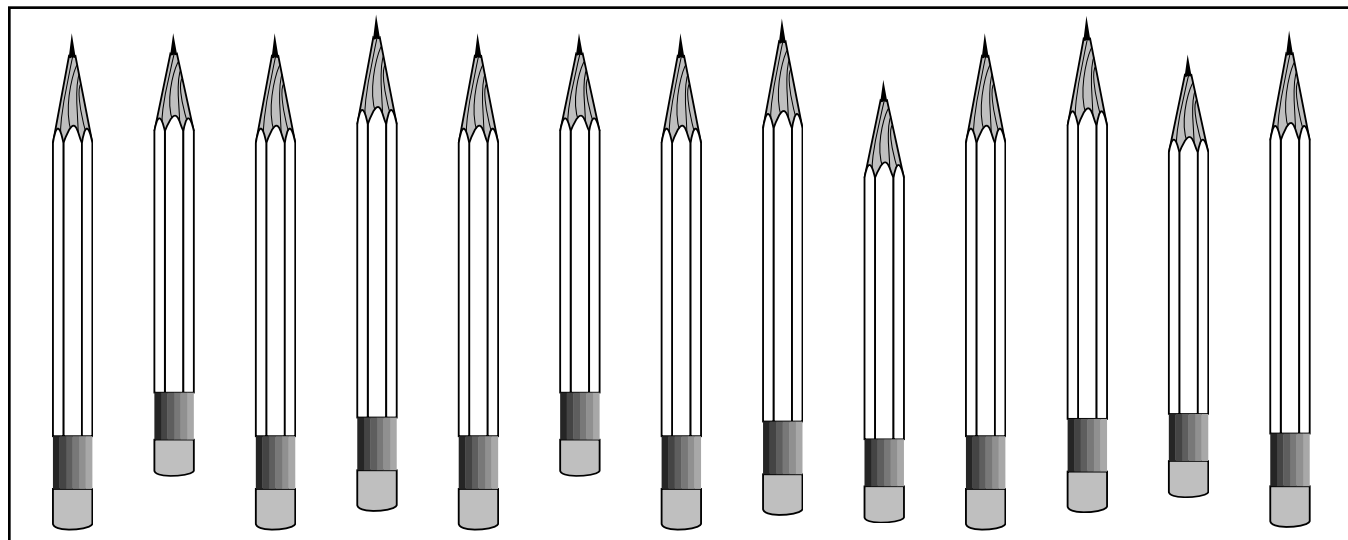
1 Trace the number ten.



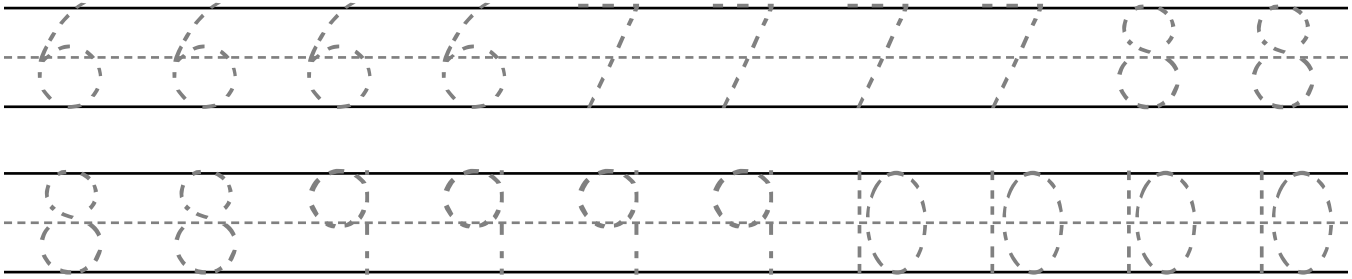
2 Write the number ten.



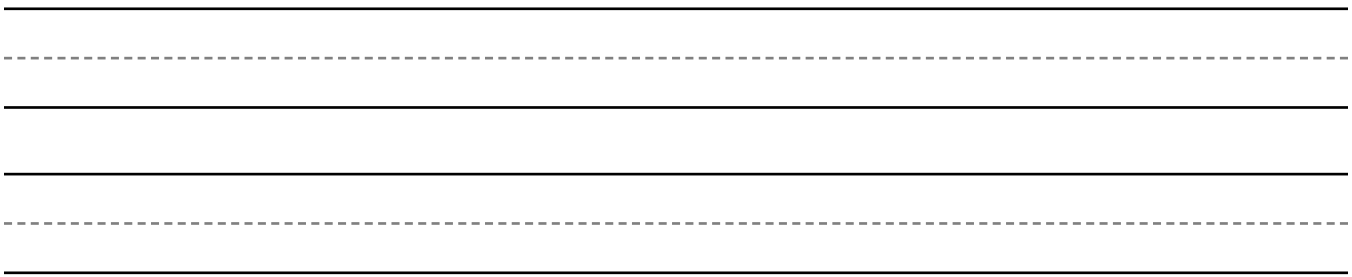
3 Color ten pencils.



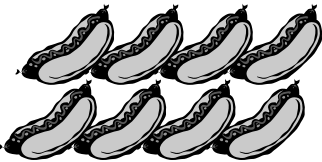
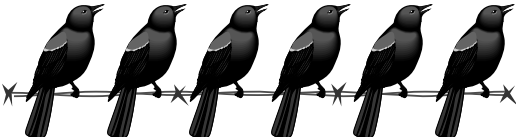
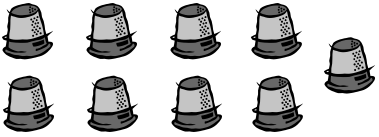
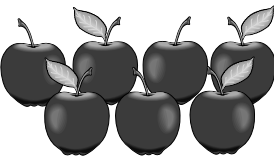
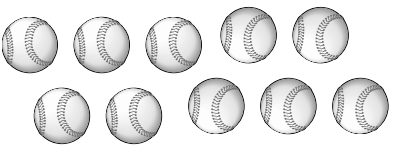
4 Trace the numbers six to ten.



5 Write the numbers six to ten.

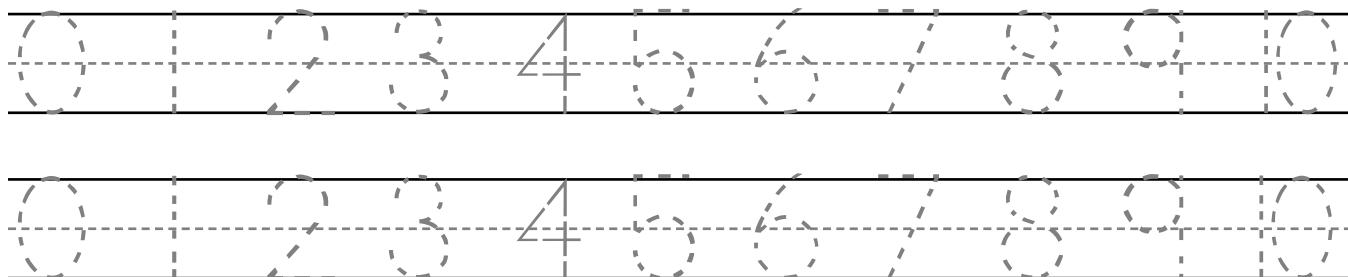


6 Draw a line to match.

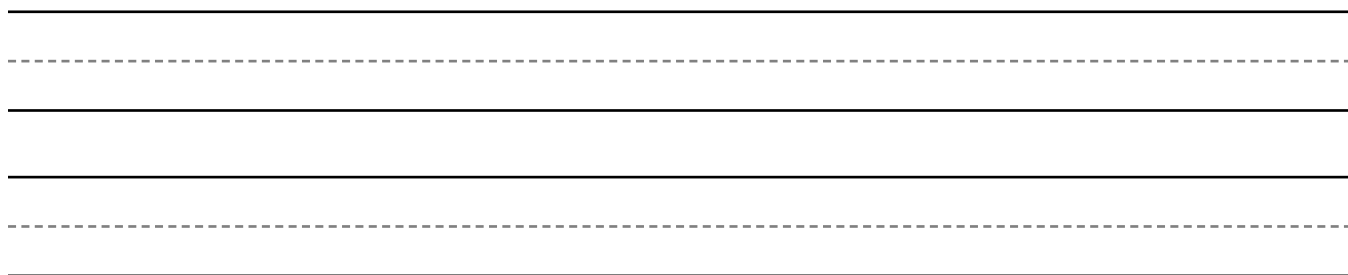
seven	6		6
nine	7		7
six	8		8
ten	9		9
eight	10		10

# numbers

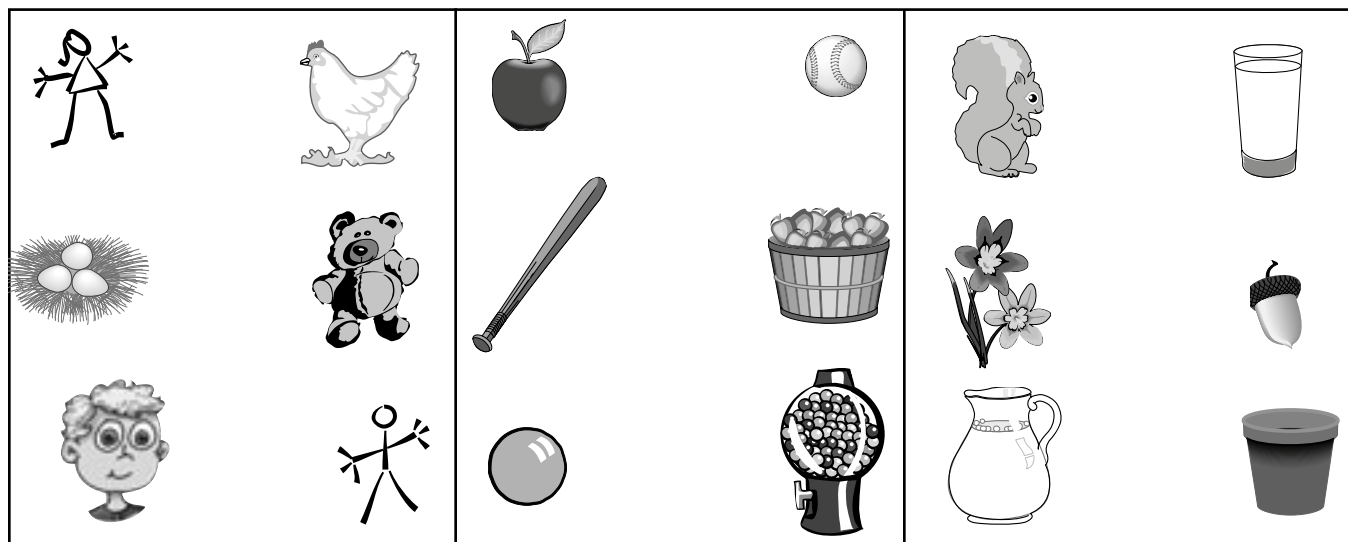
1 Trace the numbers to ten.



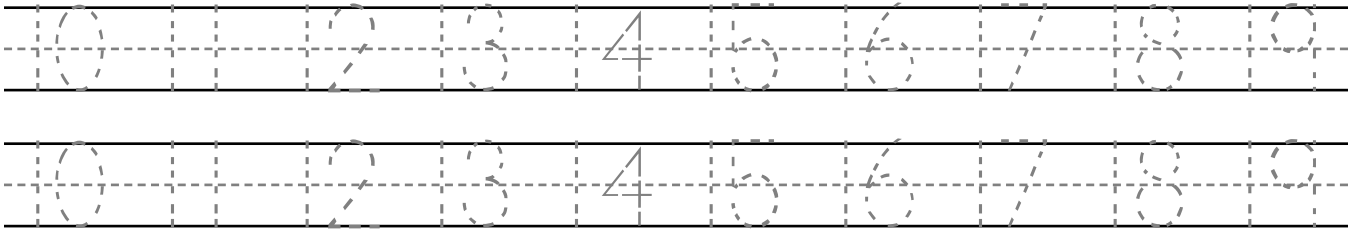
2 Write the numbers to ten.



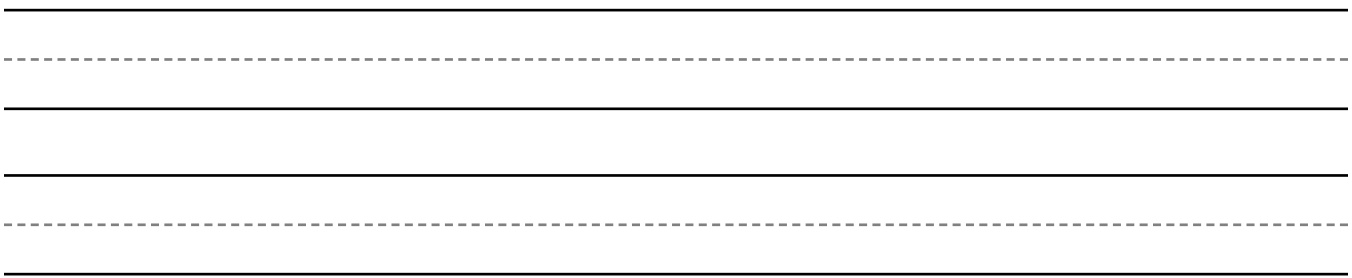
3 Draw a line to match the objects.



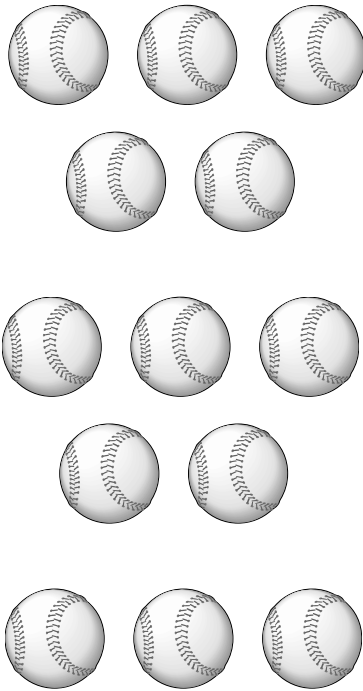
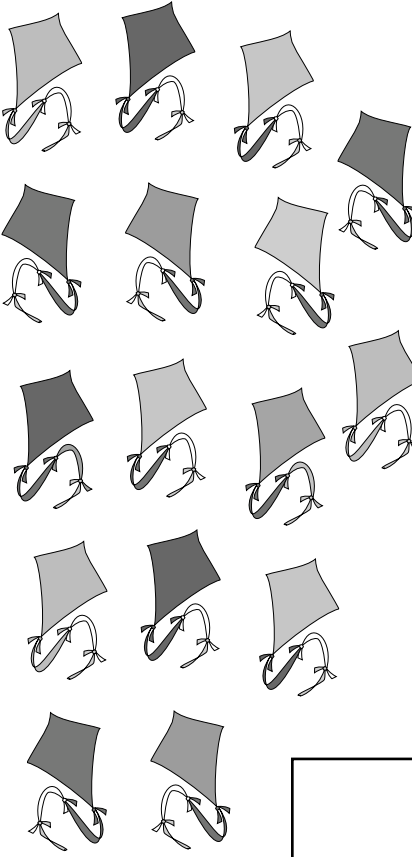
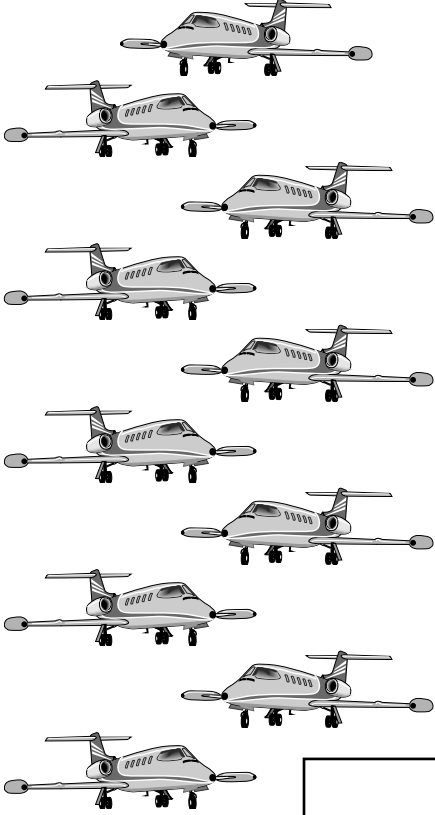
4 Trace the numbers ten to nineteen.



5 Write the numbers ten to nineteen.

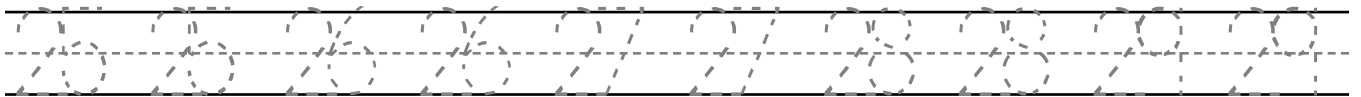
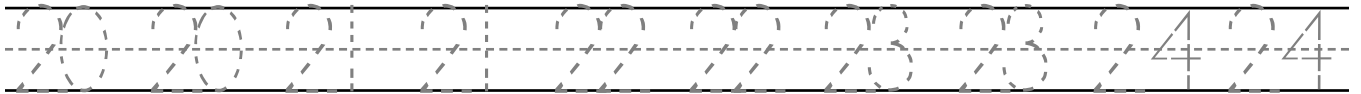


6 Count the objects. Write the number in the box.

 <input data-bbox="375 1837 513 1969" type="text"/>	 <input data-bbox="821 1837 959 1969" type="text"/>	 <input data-bbox="1268 1837 1409 1969" type="text"/>
---	---	--

# numbers

① Trace the numbers twenty to twenty-nine.



② Write the numbers twenty to twenty-nine.

Blank handwriting lines for writing the numbers twenty to twenty-nine. Each line set consists of a solid top line, a dashed middle line, and a solid bottom line.

③ Write the missing numbers.

1	2	___	___	___	6	___
___	___	___	11	___	___	___
15	___	___	___	19	___	___
___	___	24	___	___	___	___

**4 Write the missing numbers.**

30	31	_____	_____	34	_____	36
_____	_____	39	_____	_____	42	_____
44	_____	_____	47	_____	_____	50
_____	_____	53	_____	_____	56	_____
_____	_____	_____	61	_____	_____	_____
_____	66	_____	_____	_____	70	_____
_____	_____	74	_____	_____	_____	78
_____	80	_____	_____	83	_____	_____
_____	_____	88	_____	_____	91	_____
_____	_____	_____	96	_____	_____	_____

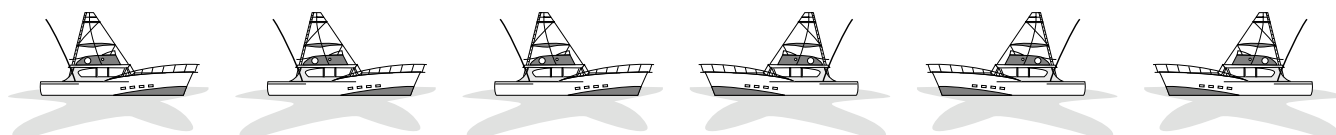
**5 Write the numbers the teacher says.**

\_\_\_\_\_

# counting

- 1 Circle the numbers used in counting by twos.
- 2 Color the numbers used in counting by tens.
- 3 X the numbers used in counting by fives.

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99



④ Write the number that comes after.

16    \_\_\_      61    \_\_\_      50    \_\_\_

5    \_\_\_      87    \_\_\_      42    \_\_\_

24    \_\_\_      38    \_\_\_      93    \_\_\_

⑤ Write the number that comes before.

\_\_\_    8      \_\_\_    67      \_\_\_    23

\_\_\_    35     \_\_\_    40     \_\_\_    91

\_\_\_    14     \_\_\_    52     \_\_\_    76

⑥ Write the missing number that comes between.

3    \_\_\_    5      36    \_\_\_    38      14    \_\_\_    16

70    \_\_\_    72      55    \_\_\_    57      82    \_\_\_    84

21    \_\_\_    23      48    \_\_\_    50      67    \_\_\_    69



# Preparing a Lesson

## GENERAL INFORMATION

Although a guide is provided for writing the numerals in lesson one, please feel free to use the same writing style that you are teaching for handwriting and using in your other subjects. Also there is some room on the teacher lessons for you to write your own notes. The more you personalize your teacher guide in this way, the more useful it will be to you.

You will notice that there are 160 student lessons in the curriculum. This allows for the inevitable interruptions to the school year like holidays, test days, inclement weather days, and those unexpected interruptions. It also allows the teacher the opportunity to spend more time teaching any concept that the student(s) may have difficulty with. Or, you might wish to spend a day doing some of the fun activities mentioned in the Teaching Tips. If you find that the student(s) need extra drill, use the worksheets as extra lessons.

## STUDENT'S LESSONS ORGANIZATION

Student lessons are designed to be completed in thirty to thirty-five minutes a day. If extra manipulatives or worksheets are utilized, you will need to allow more time for teaching. Each lesson

consists of a major concept and practice of previously taught concepts. If the student(s) find the presence of four or five different activities in one lesson a little overwhelming at the beginning, start guiding the student(s) through each activity. By the end of two weeks, they should be able to work more independently as they adjust to the format. Mastery of a new concept is not necessary the first time it is presented. Complete understanding of a new concept will come as the concept is approached from different views using different methods at different intervals. Because of the way the curriculum is designed, *the student(s) need to do all the problems in every lesson every day*. Directions to the student(s) are given in black type and examples or explanations are presented in blue type. If you expect to have very many students, you will find it extremely helpful to remove all pages from the individual student books and file them (all of Lesson 1 in one file, all of Lesson 2 in another file, etc.) before school starts. This will keep the lessons from being damaged or lost in the students' desks.

## Tests

Starting with Lesson 10, tests are included in every tenth lesson. They should require

approximately fifteen minutes to administer. If your daily schedule time is a major factor, you may teach Lesson 10 on the following day. This will require efficient scheduling of the lessons throughout the year to complete the program by the end of the school year. Do not make the test a special lesson. Allow the student(s) to perceive the test as a regular lesson with no undue pressure. The purpose of testing is not just to measure student progress, although that is an important consideration. A test is also an important teaching tool. It should be returned to the student and any missed items discussed so that it is a true learning experience. For this reason, it is important to grade and return the tests as soon as possible while material is fresh in the student's mind. The test structure is such that the student(s) will have had sufficient practice with a concept to have learned it before being tested. Therefore, no concept is tested until the initial presentation has been completed. For example, test 2 in lesson 20 covers concepts completed in lessons 6–15. Test 8 in lesson 80 will cover lessons 66–75.

### **TEACHER'S LESSONS ORGANIZATION**

Each lesson is organized into the following sections:  
*Concepts; Objectives; Teaching Tips; Materials, Supplies, and Equipment; Activities;*

*Worksheets*; and occasionally a maxim or proverb. Each of the sections have a distinct symbol to help you locate them on the page of the teacher's lesson. To be a master teacher you will need to prepare each lesson well in advance.

### **Concepts**

Concepts are listed at the beginning of each lesson in the following order:  
1.) Concepts taught by the teacher from the activities in the *Teacher's Guide* that do not have a corresponding written activity in the student lesson  
2.) New concepts  
3.) Concepts that are practiced from previous lessons (listed in the order they appear in the student lesson). First grade math has seventeen major concepts. These are developed in a progression that is designed to give the student(s) a solid foundation in the basic math skills while providing enough variety to hold the student's interest. Definitions are given for new terms.



### **Objectives**

The Objectives list criteria for the student's performance. They state what the student should be able to do at the completion of the lesson. You will find objectives helpful in determining the student's progress, the need for remedial work, and readiness for more advanced information. Objectives are stated in terms of measurable



student performance so that the teacher has a fixed level of performance to be attained before the student(s) are ready to progress to the next level.

### Teaching Tips

Each tip is related to one of the Activities in the lesson. Some Teaching Tips



require the teacher to make a manipulative needed to complete the activity. Teaching Tips are optional activities that the teacher can do to enhance the teaching process. You will find them useful for helping the student who needs additional practice to master the concepts or for the student who needs to be challenged by extra work. The manipulatives needed only in the Teaching Tips are listed in *italics* to signify that they are optional.

### Materials, Supplies, and Equipment



Materials, Supplies, and Equipment lists the things you'll need to find before you teach each lesson. Each item listed in *italics* is an optional item and will be referred to in *italics* in the Teaching Tips or Activities section. Sometimes you will also find instructions on how to make your own materials, supplies, and equipment. When "Number Chart" is listed, it is understood to refer to the chart for 0–99. The number chart for 100–199 will state "Number

Chart 100–199." A complete list of all manipulatives and where they are used starts on page 40.

### Activities

The Activities section is where the teacher will concentrate most of her time. Here the teacher will find step-by-step directions for teaching each lesson. All activities are designed to be teacher directed both in the student lesson and in the teacher's guide. You will need to use your own judgement concerning how much time is necessary to carry out the activities. Be sure, however, that the student(s) do every problem of every lesson. When the activity is part of the student lesson you will find it referred to as ***Student Activity One***, ***Student Activity Two***, etc. referring to the number in the circle on the student lesson. If the activity is not part of the student lesson there will be no bold face italic reference and the student will receive the activity from the teacher. Each activity is important to the over all scope of the lesson and must be completed. Do not omit any portion of the activities unless the student(s) have thoroughly mastered the concept being presented. Please do not put off looking at the activities in the lesson until you are actually teaching. Taking time to preview what you will be



1

teaching is essential. Choose the manipulatives that fit your program best.

### **Worksheets**

There is approximately one worksheet for every two lessons. If worksheets are suggested in a particular lesson you will find them listed in the Worksheets section. Each worksheet has a worksheet number and the number of the lesson with which it is associated. Note that some worksheets will be used over and over as resources, so you'll need to keep a master copy. The *Teacher's Guide* identifies where these resource worksheets are essential to the lessons. All addition and subtraction drill sheets are included in the worksheets. If the Worksheet symbol is on the page, there is a worksheet associated with that lesson. The worksheets will be handy for many purposes. You might use them for extra work for student(s) who demonstrate extra aptitude or ability or as remedial work for the student(s) who demonstrate a lack of aptitude or ability. You may also make your own worksheets and note where you would use them in the worksheet section on the teacher's lesson.



### **Maxims**

In some lessons you will find a short maxim or proverb at the bottom of the right hand page.

These are intended for the teacher to share with the student and discuss. These maxims provide a collection of various wise and pithy sayings that deal with character. You will find many opportunities to challenge your student(s) in the day-to-day activities of life in these sayings. You may use or not use them as you wish.

### **Lesson Summary**

The curriculum will work best when you prepare in the following manner. First, note that the teacher's lesson has items that pertain to an overview of the lesson on the left-hand page. The details are on the right-hand page. It is suggested that you first look at the Concepts involved in the lesson. Then study the Objectives to get an idea of the tasks that the student(s) will need to perform to complete the lesson. Next, look at the Activities to get an idea of the presentation of the lesson. If you would like to view the student lessons, the complete student curriculum is included in reduced format in the answer key section. This presentation will allow you to see the whole student lesson in one place as well as all the answers at the same time. You will need more preparation for some of the activities that aren't in the student lessons. Some of the activities will refer to a worksheet which you will find listed in the Worksheet section below the Activities section.

You might also want to check the Teaching Tips section for any additional ideas on presenting the lesson. Finally, check the Materials, Supplies, and Equipment for any resources that you may need before you begin the lesson.

### **ANSWER KEYS**

The answer keys section of the *Teacher's Guide* provides answers (in red) to the student lessons (reduced so that there are four student pages on each answer key page and printed in black and white). It is suggested that you give the student(s) a grade for tests only. Daily work is to be a learning experience for the student, so do not put unnecessary pressure on them. You should correct every paper, but you should not grade every paper. This means that each lesson should be marked for correct and incorrect answers, but it is not necessary to record a letter or percentage grade on every lesson. The lessons should then be returned to the student(s) so that they have the opportunity to learn from their mistakes.

### **WORKSHEETS**

The next section contains the worksheets. Note that some worksheets will be used over and over as resources, so you will need to keep a master copy. Worksheets are reproducible and may be copied freely. You will find a complete listing of worksheets, where they are used, and which

worksheets are used more than once on pages 44 and 45. Separate packets of all the necessary worksheets for an individual student are also available.

### **WORKSHEET ANSWER KEYS**

Answer keys to the worksheets are provided in the same manner as for the student lessons and reduced so that there are four worksheets on each page of the answer key. The multiple use worksheets do not have answer keys.



## 1. COUNTING 1-200

(Recognition)

By 1's, 10's, 5's, 2's, 3's, 6's, 9's, 4's,  
8's, 7's to 100  
By 1's from 100–200  
One-to-one correspondence  
Even and odd numbers  
Tally marks  
Word numbers to 100



## 2. ORDINAL AND CARDINAL NUMBERS

(Recognition and Use)

First, second, third, etc. to 10  
The number that comes between  
The number that comes after  
The number that comes before a  
given number  
The number that comes before and  
after a given number



## 3. CORRESPONDENCE OF QUANTITIES

(Distinguish Between)

Big—little  
Large—small  
Tall—short  
Less than—greater than  
Long—short  
Equal—not equal



## 4. PLACE VALUE

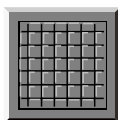
(Digit Value)

Ones  
Tens  
Hundreds



## 5. ADDITION

Addition facts 1–18  
Two double- and triple-digit numbers  
Three single- and double-digit numbers  
Horizontal and vertical addition  
Carrying in the ones' place  
Word problems



## 6. CALENDAR

(Memorize and Use)

Months of the year  
Days of the week



## 7. TIME

(Read and Write)

Hour  
Half hour  
Quarter hour



## 8. SUBTRACTION

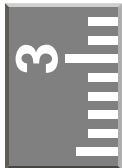
Subtraction facts 1–18  
 Two double- and triple-digit numbers without borrowing  
 Horizontal and vertical subtraction  
 Word problems



## 9. MONEY

(Recognition, Value, and Use)

Penny, nickel, dime, quarter, and dollar  
 Adding



## 10. MEASUREMENT

(Practice and Use)

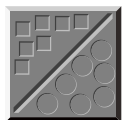
Inches  
 Centimeters



## 11. FRACTIONS

(Meaning and Recognition)

$1/2$ ,  $1/3$ ,  $1/4$ ,  $1/5$ ,  $1/6$ ,  $1/8$



## 12. SETS

(Count and Use)

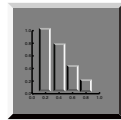
Groups



## 13. SHAPES

(Recognition and Characteristics)

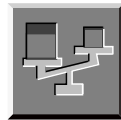
Circle	Oval	Cylinder
Square	Diamond	Cube
Triangle	Octagon	Cone
Rectangle	Sphere	



## 14. GRAPHS

(Read and Draw)

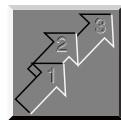
Bar Graph



## 15. UNITS OF MEASURE

(Identify)

Dozen  
 Ounce, cup, pint, quart, and gallon (liquid)  
 Pound



## 16. SEQUENCE

(Create and Identify)

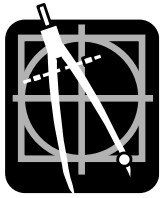
Numbers  
 Events



## 17. ESTIMATION

(Practice)

Rounding numbers using the number line  
 Height  
 Length  
 Quantity



# Manipulatives

*(Italic numbers indicate optional use of a manipulative.)*

Manipulative Name	Description	Used In Lesson
Alarm clock or timer		<i>53, 54</i>
Bags	(self closing)	<i>79</i>
Balls	(2 small)	<i>75</i>
Bar graph		113
Bread	lb. loaf	132, 137
Butter	lb.	132, 137
Calendar	(picture)	<i>14, 15, 17, 23, 24, 28, 30, 39, 41, 45, 71, 72, 86, 101, 127, 129, 130, 143, 144, 154, 155</i>
Cardboard	(8" x 10")	<i>62</i>
Clock model	(large)	<i>16, 17, 18, 19, 20, 21, 27, 28, 29, 42, 43, 44, 45, 56, 74, 75, 76, 86, 89, 90, 91, 118, 119, 120, 144, 145, 154, 155, 156</i>
Clock model	(small)	<i>19, 20, 28, 30, 43, 45, 54, 55, 68, 69, 75, 76, 87, 118, 119, 120, 133, 145, 155, 156</i>
Construction paper		<i>19, 39, 41, 43, 44, 67, 78, 83, 93, 105, 106, 121</i>
Counting chips		<i>5, 72, 73, 75, 76, 78, 102, 103, 110, 115, 117, 120, 131, 138, 139, 140, 150, 158</i>
Crayons		<i>2, 41, 52, 68, 71, 105, 113</i>
Egg carton		<i>75, 104</i>
Flannel board		<i>4, 10, 12, 13, 33, 35, 38, 39, 43, 49, 51, 53, 116, 157, 158</i>
Flannel board materials		<i>4, 10, 53, 59, 157, 158</i>



Manipulative Name	Description	Used In Lesson
Flashcards	addition facts 1–9	7, 9, 10, 11, 12
Flashcards	addition facts 1–18	13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 65, 73, 104, 118, 119, 122, 124, 127, 129, 132, 134, 136, 137, 139, 142, 144, 147, 149, 152, 154, 157, 159
Flashcards	days of the week	40, 41, 71, 72, 86, 104, 105, 130, 143, 155
Flashcards	= and $\neq$ symbols	13, 14, 18, 29, 31, 41, 42, 51, 52, 53, 67, 79, 80, 109, 133, 134, 159
Flashcards	< and > symbols	7, 8, 10, 20, 21, 32, 43, 65, 77, 88, 114, 139, 160
Flashcards	liquid measure	97, 98, 99, 119
Flashcards	minus sign	53, 63
Flashcards	months of the year	12, 13, 15, 27, 61, 62, 84, 85, 101, 127, 128, 141, 152, 153
Flashcards	ordinal numbers	2, 6, 58, 70, 92, 114, 156
Flashcards	shapes	82, 83, 84, 93, 94, 95, 104, 105, 106, 115, 116, 117, 126, 127, 146, 147, 158
Flashcards	solids	108, 109, 110, 111, 121, 132, 133, 153
Flashcards	subtraction 1–9	56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75
Flashcards	subtraction 1–18	76, 77, 78, 79, 80, 116, 117, 118, 121, 123, 126, 128, 131, 133, 136, 138, 141, 143, 146, 148, 151, 153, 156, 158
Flashcards	subtraction 10–18	81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 150
Flashcards	tally marks	12, 18, 22, 24, 25, 66
Flashcards	whole numbers	3, 6, 8, 12, 13, 25, 26, 28, 32, 53, 72, 77, 82

Manipulative Name	Description	Used In Lesson
Flashcards	word numbers	12, 13, 18, 24, 25, 32, 47, 48, 53, 60, 63, 68, 82, 84, 85, 86, 100, 110, 111, 122, 135, 136, 141, 142, 146, 147
Flour	5 lb. bag	132, 137
Fraction materials		35, 38, 39, 43, 49, 50, 51, 52, 53, 54, 55, 64, 65, 66, 67, 78, 79, 80, 81, 116, 148, 149, 159
Graph paper		148
Growth chart		47, 93
Jelly beans	(Glass jar of)	101
Happy face stamp		46, 47, 48, 49, 51, 52, 53, 54
Liquid measure containers		97, 98, 99, 119, 120, 142, 143
Meter stick		130
Newspaper	Word numbers <i>grocery ads</i>	112, 134, 142
Number line		1, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 36, 42, 55, 56, 57, 58, 59, 60, 61, 62, 63, 71, 76, 99, 106, 112, 119, 125, 138, 148
Number chart		1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 36, 37, 38, 39, 40, 41, 42, 44, 45, 48, 49, 52, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 77, 78, 79, 80, 82, 88, 89, 90, 91, 92, 93, 94, 95, 96, 98, 99, 101, 105, 106, 107, 108, 112, 113, 114, 115, 118, 120, 123, 124, 125, 126, 127, 128, 129, 131, 136, 137, 138, 139, 141, 142, 143, 144, 151, 152, 153, 154, 159
Number chart	100–199	83, 84, 85, 86, 95, 96, 87, 88, 93, 94, 95, 96, 97, 98, 99, 102, 103, 105, 107, 109, 110, 111, 116, 121, 122, 123, 133, 134, 135, 137, 145, 146, 153
Paper plate	1 per student	43
Paste or glue		19, 66, 67, 75, 142
Place value game cards		131

Manipulative Name	Description	Used In Lesson
Place value materials		5, 6, 7, 9, 10, 11, 13, 36, 37, 48, 49, 59, 60, 61, 81, 82, 83, 84, 85, 86, 96, 100, 107, 123, 124, 128, 131, 132, 157
Plastic rings	from 6-pack of pop	128
Play or real money		4, 15, 23, 26, 27, 28, 29, 32, 33, 34, 35, 36, 37, 38, 41, 43, 45, 46, 47, 48, 49, 51, 52, 53, 54, 56, 57, 58, 59, 60, 63, 64, 73, 87, 88, 89, 98, 99, 103, 104, 114, 118, 119, 122, 123, 124, 126, 127, 129, 130, 136, 137, 138, 139, 140, 151, 152, 153, 154
Posterboard		19, 66, 77, 78, 79, 90
Real money		29, 33, 34, 48, 51, 64, 89
Rock		132, 137
Ruler	(centimeter)	91, 92, 93, 94, 95, 105, 106, 107, 113, 114, 119, 126, 130, 140, 141, 158, 159
Ruler	(12")	20, 31, 32, 33, 34, 35, 45, 46, 47, 57, 69, 70, 81, 102, 124, 144, 145, 149, 150, 157, 159, 160
Scales		132, 135, 136
Solid models		108, 109, 110, 111, 112, 121, 122, 142, 143, 152, 153
Spinner		58
Straws		57, 72, 82
Sales receipt		56
String or yarn		19
Typing paper		57, 105, 142
World Book Encyclopedia	Vol. 3	61
Yardstick		20, 102, 139, 160
3" x 5" cards		35, 50, 69, 80

# Where To Use Mathematics Worksheets

*In this handbook you will find eighty worksheets to be used as **Duplication Masters**.*

This chart shows where worksheets may be used. You will need to **duplicate** any worksheet used more than once.

No.	Master Worksheet Name	Lessons Where Worksheets Are Used
1	Writing numbers 0–9	1
2	Number order, Dot-to-dot	2
3	Ordinal numbers, counting by tens, number order	4
4	Place Value	6, 30, 31
5	Number chart	1, 8, 18, 30, 31, 36, 82, 99, 138, 139, 144
6	Number line	9, 58, 59
7	Addition on the number line	11
8	Addition facts 1–18	13, 24
9	Addition facts 1–18	18, 24, 35
10	General review	19
11	Addition facts 1–18	22, 24, 35
12	Calendar	24, 40
13	Fill in the blank number chart	26
14	Addition facts	28, 35
15	Adding money	29
16	Addition facts 10–18	32, 35
17	Addition facts for 10–18	34, 35
18	Word number addition facts	36
19	Dot-to-dot counting by 6's	37
20	Addition drill sheet	41
21	Pennies and dimes	43
22	Adding three single-digit numbers	45
23	Addition drill sheet.	46
24	Harvest color page with addition facts practice	48
25	Addition drill sheet	51
26	Thanksgiving dot-to-dot by ones	52
27	Subtraction with visual representation	54
28	Addition drill sheet	56
29	Inches	58
30	Addition drill sheet	61
31	Christmas math maze	62
32	Subtraction by number line	64, 76
33	Addition drill sheet	66
34	Counting by fives, sixes, sevens, and eights	68
35	Addition drill sheet	71
36	Christmas addition	72

## Where To Use Mathematics Worksheets, continued:

No.	Master Worksheet Name	Lesson Where Worksheets Are Used
37	Visual representation of subtraction word problems	74
38	Addition drill sheet	76
39	Subtraction 10–18 with number line.	78, 105
40	Addition and subtraction drill sheet	81
41	Subtraction with number line 0–19	82, 105
42	Number chart 100–199	84, 85
43	Addition and subtraction drill sheet	86
44	Shapes color sheet	88
45	Addition and subtraction drill sheet	91
46	Subtraction 10–18 with number line	92, 105
47	Word problems (add and subtract)	94
48	Addition and subtraction drill sheet	96
49	Subtraction 10–18 with number line	98, 105
50	Addition and subtraction drill sheet	101
51	Corresponding subtraction facts for addition fact	102
52	Color sheet with < and >	104
53	Subtraction 10–18 with number line	105
54	Addition and subtraction drill sheet	106
55	Addition and subtraction without the number line	108
56	Addition and subtraction drill sheet	111
57	Patriotic color sheet	114
58	Addition and subtraction drill sheet	116
59	Number sequence	118
60	Addition and subtraction drill sheet	121
61	Cube pattern	121
62	Addition of money	124
63	Addition and subtraction drill sheet	126
64	Addition with answers in ones' column double-digit	128
65	Addition and subtraction drill sheet	131
66	Word problems from pictures	132
67	Addition with carrying and double-digit subtraction	134
68	Addition and subtraction drill sheet	136
69	Addition of money	138
70	Addition and subtraction drill sheet	141
71	Measuring a boat in centimeters	142
72	Dot to Dot over 100	144
73	Fill in the blank number chart 100–199	145
74	Addition and subtraction drill sheet	146
75	81 addition facts	148
76	Addition and subtraction drill sheet	151
77	81 subtraction facts	154
78	Addition and subtraction drill sheet	156
79	Estimation	158
80	Double-digit addition	159



# APPEARANCE OF CONCEPTS MATHEMATICS 1

1. COUNTING 1-200	Appears in Lesson
By 1's By 10's By 5's By 2's By 3's By 6's  By 9's  By 4's By 8's  By 7's  Counting by 1's from 100-200  One-to-one correspondence Even numbers Odd numbers Tally marks Word numbers one to ten eleven to twenty eleven to 100 all over 100	1, 2, 3, 4, 5, 48, 49, 79, 80, 117 4, 5, 50, 81, 118 6, 7, 51, 82, 118 8, 9, 10, 11, 12, 52, 53, 54, 88, 89, 117 13, 14, 15, 16, 17, 55, 56, 58, 90, 91, 124, 125 18, 19, 20, 21, 22, 59, 60, 61, 92, 93, 126, 127, 128, 129, 138, 139 23, 24, 25, 26, 27, 62, 63, 64, 95, 96, 130, 131, 132, 149, 150, 159 28, 29, 30, 31, 32, 65, 66, 67, 105, 106, 136, 137 33, 34, 35, 36, 37, 68, 69, 70, 107, 108, 140, 141, 147, 148, 158 38, 39, 40, 41, 42, 71, 72, 73, 74, 112, 113, 114, 115, 142, 143, 144, 151, 152, 153, 154, 160  83, 84, 85, 87, 97, 98, 99, 109, 110, 111, 121, 122, 123, 133, 134, 135, 145, 146, 156, 157  3, 4, 10, 11, 12, 14, 74, 76, 125, 157 65, 66, 77, 96, 97, 117, 130, 141, 142, 152, 154 94, 95, 97, 107, 108, 120, 130, 141, 143, 153, 154 10, 11, 12, 14, 17, 18, 22, 23, 24, 25, 66, 98  11, 12, 13, 24, 25, 33, 43 35, 47, 48, 53 60, 62, 63 68, 80, 82 84, 85, 86, 87, 100, 101, 110, 111, 112, 122, 123, 134, 135, 136, 141, 142, 146, 147, 158, 159
2. ORDINAL AND CARDINAL NUMBERS	
First, second, third, etc. to last Between by ones by twos by fives by tens by ones over 100 After by ones by twos by fives by tens by ones over 100	2, 6, 15, 58, 70, 71, 92, 114, 133, 155, 156  4, 5, 7 9 11 13 83, 84, 85  15, 16 18, 19 21, 22 24, 25 93, 94, 95

Before by ones by twos by ones over 100 Before and After by ones by tens by ones over 100	28, 30, 31 32, 33, 34, 36, 37 96, 97, 98 39, 41, 42 44, 46, 59 105, 106, 107
<b>3. CORRESPONDENCE OF QUANTITIES</b>	
Big and little Large and Small Tall and short Less/greater than  (over 100) Long and Short Equal and not equal	4, 50 8 14 6, 7, 8, 9, 10, 20, 21, 23, 32, 33, 43, 44, 53, 54, 65, 66, 76, 77, 150, 151, 160 88, 90, 102, 103, 114, 116, 139, 140 20 13, 14, 18, 29, 30, 31, 41, 42, 51, 52, 67, 68, 79, 80, 98, 99, 109, 110, 133, 134, 146, 147, 159
<b>4. PLACE VALUE</b>	
Ones and Tens  Hundreds	5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 25, 26, 27, 37, 38, 46, 48, 49, 59, 60, 61, 71, 72, 73 81, 82, 83, 84, 85, 86, 87, 88, 96, 97, 107, 108, 109, 119, 120, 121, 131, 132, 133, 143, 144, 145, 155, 156, 157
<b>5. ADDITION</b>	
1–9 w/number line 1–18 w/number line 1–18 w/out number line  Horizontal and vertical addition Two numbers double digit  Two numbers triple digit  Three numbers single digit  Three numbers double digit Adding with carrying in 1's  Word problems visualized with lines for fact with lines for fact and label given	7, 8, 9, 10, 11, 12 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 31, 35 30, 32, 39, 40, 41, 42, 43, 44, 46, 48, 54, 58, 60, 65, 67, 80, 109, 125  18, 37, 38, 39, 40, 62, 68, 77  36, 37, 38, 39, 40, 41, 42, 43, 46, 47, 48, 49, 50, 51, 55, 60, 61, 63, 64, 69, 70, 75, 79, 99, 109, 111, 116, 118, 122, 123, 124, 127, 128, 129, 130, 141, 143, 145, 146, 148, 149, 150, 152, 153, 154, 155, 156, 157  100, 102, 104, 105, 106, 110, 111, 112, 113, 116, 121, 138, 140, 144, 146  45, 46, 47, 49, 50, 54, 55, 57, 58, 60, 61, 63, 64, 66, 69, 70, 72, 74, 75, 99, 111, 112, 113, 116, 118, 121  92, 93, 99, 111  131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 143, 144, 145, 146, 148, 149, 150, 152, 153, 154, 155, 156, 157  15, 16, 17, 18 19, 22, 23  24, 25, 30, 36, 38, 41, 44

Word problems (continued) with lines for fact and label with nothing	45, 46, 47, 48, 50, 51, 53, 56, 57, 59, 61, 62 64, 65, 68, 69, 78, 79, 86, 89, 91, 110, 111, 117, 126, 127, 129, 130, 134, 136, 138, 139, 142, 147, 155, 156, 159
<b>6. CALENDAR</b>	
Months  Days of the week “Thirty Days Hath September”	12, 14, 15, 23, 24, 25, 26, 27, 61, 62, 85, 101, 103, 126, 127, 128, 141, 142, 152, 153 17, 30, 40, 41, 71, 72, 86, 104, 105, 129, 130, 143, 144, 154, 155  23, 24, 25, 26, 27, 28, 29, 30, 44, 45, 55, 56, 61, 62, 77, 78, 85, 101, 103, 126, 127, 128, 141, 142, 152, 153
<b>7. TIME</b>	
Hour Half hour Quarter hour All time	16, 17, 18, 19, 20, 21, 54, 68, 69 27, 28, 29, 30, 43, 54, 74, 75, 76 42, 43, 44, 45, 55, 86, 87, 120 56, 89, 90, 91, 100, 101, 102, 103, 118, 119, 132, 133, 144, 145, 154, 155, 156
<b>8. SUBTRACTION</b>	
Visual representation 1–9 w/number line  w/out number line Horizontal to vertical 10–18 w/number line 10–18 w/out number line  Two numbers double digit Two numbers triple digit Word Problems (visualized) with lines for fact and label with nothing	52, 53, 54 55, 56, 57, 58, 59, 60, 62, 64, 65, 66, 67, 68, 69, 70, 72, 74, 75, 79 106, 107, 109, 110, 112, 113, 115, 118, 119, 121, 122, 125, 131 61, 63 76, 77, 78, 79, 80, 81, 90, 92, 93, 94, 97, 99, 102 106, 107, 109, 110, 112, 113, 115, 116, 118, 119, 121, 122, 124, 125, 128, 130, 131, 132, 134, 139, 140, 141, 143, 144, 145, 146, 147, 149, 150, 151, 152, 154, 155, 156, 157, 160  134, 135, 136, 138, 139, 140, 141, 143, 145, 147, 149, 150 151, 152, 154, 155, 156, 157 71, 73, 75  82, 84, 85, 89, 91, 94, 99, 102, 103, 108 110, 111, 114, 117, 120, 123, 126, 132, 135, 140, 141, 142, 144, 146, 149, 159
<b>9. MONEY</b>	
Penny Nickel Dime Quarter All coins Dollar Adding	26, 27, 29, 32, 36, 37, 43, 46, 47, 56, 57, 58, 98 33, 34, 35, 36, 37, 48, 49, 59, 60, 100 28, 29, 32, 43, 46, 47, 56, 57, 58, 99 51, 52, 53, 63, 101 51, 64, 85, 87, 88, 103, 104, 140, 151, 152, 153, 154 89, 103, 104 122, 123, 124, 126, 137, 138, 139
<b>10. MEASUREMENT</b>	
Inches  Centimeters	31, 32, 33, 34, 35, 45, 46, 47, 57, 69, 70, 81, 144, 145, 149, 150, 159, 160 91, 92, 93, 94, 95, 105, 106, 107, 113, 114, 126, 130, 140, 141

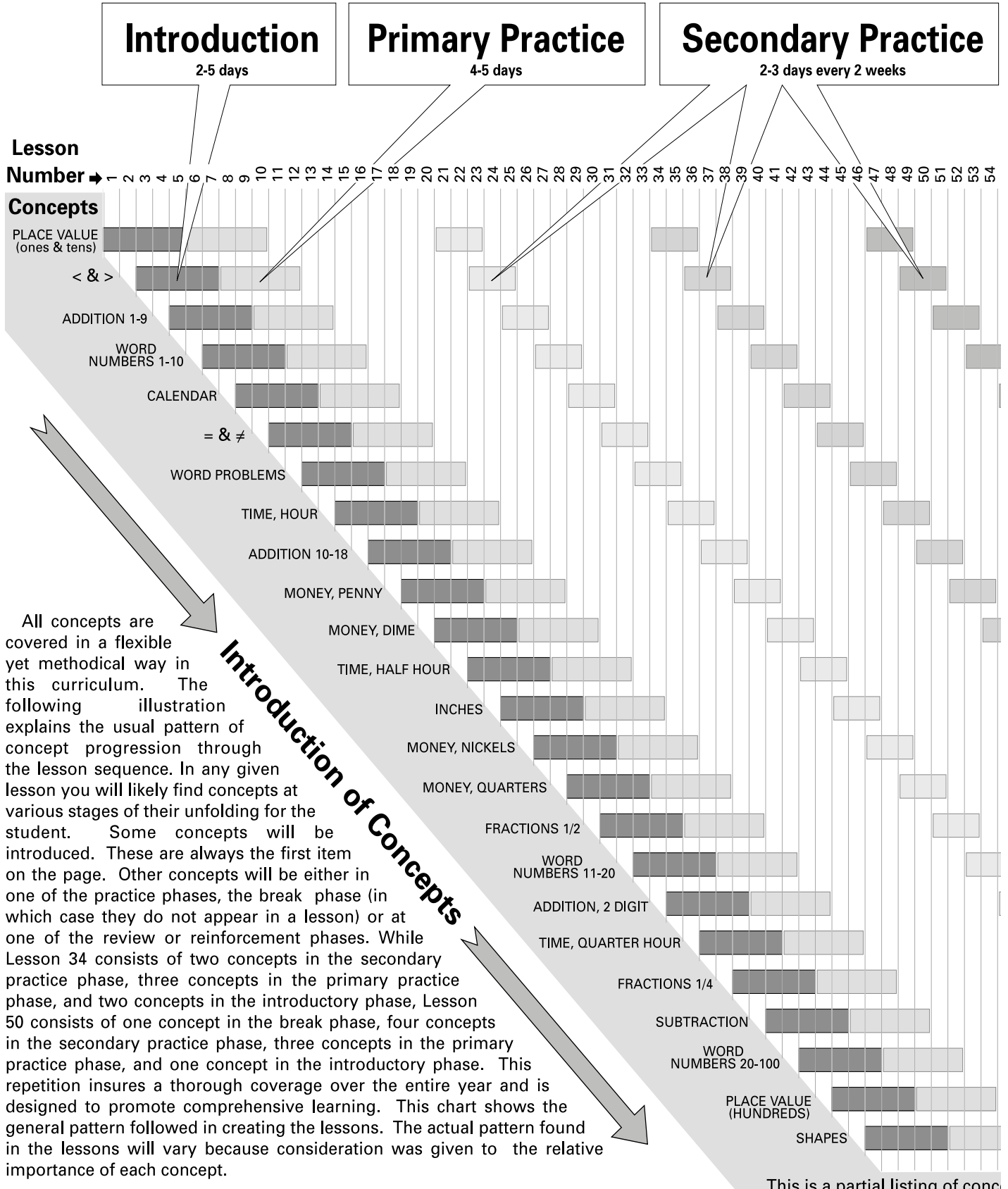


<b>11. FRACTIONS</b>	
Whole	34
Half	38, 39, 43, 44, 53, 55, 66, 78, 157, 158
One fourth	49, 50, 51, 53, 54, 64, 65, 66, 79
One third	80
All fractions	35, 52, 67, 81, 116, 131, 132, 148, 149, 159
<b>12. SETS</b>	
Groups	3, 4, 39, 74, 76, 125, 157
<b>13. SHAPES</b>	
Circle, square, triangle, rectangle	82, 83, 84, 104, 105, 106, 115, 116, 117, 126, 127, 128, 146, 147, 158
Oval, diamond, octagon	93, 94, 95, 104, 105, 106, 115, 116, 117, 126, 127, 128, 146, 147, 158
Sphere, cylinder, cube, cone	108, 109, 110, 111, 112, 121, 122, 132, 133, 142, 143, 152, 153
<b>14. GRAPHS</b>	
Bar graph	87, 88, 89, 90, 91, 101, 102, 103, 113, 114, 115, 136, 137, 147, 148, 158, 160
<b>15. UNITS OF MEASURE</b>	
Dozen	104, 105, 117, 128, 150
Ounce, cup, pint, quart, gallon	97, 98, 99, 119, 120, 142, 143
Pound	132, 133, 134, 135, 137
<b>16. SEQUENCE</b>	
Numbers	98, 99, 100, 101, 102, 116, 117, 118, 125, 126, 127, 138, 139, 140, 149, 150, 159, 160
Events	95, 96, 97, 98, 107, 108, 119, 120, 129, 130, 151, 152, 153
<b>17. ESTIMATION</b>	99, 100, 101, 102, 112, 113, 114, 124, 125, 126, 137, 138, 139, 148, 149, 158, 159

# Development

Grades 1

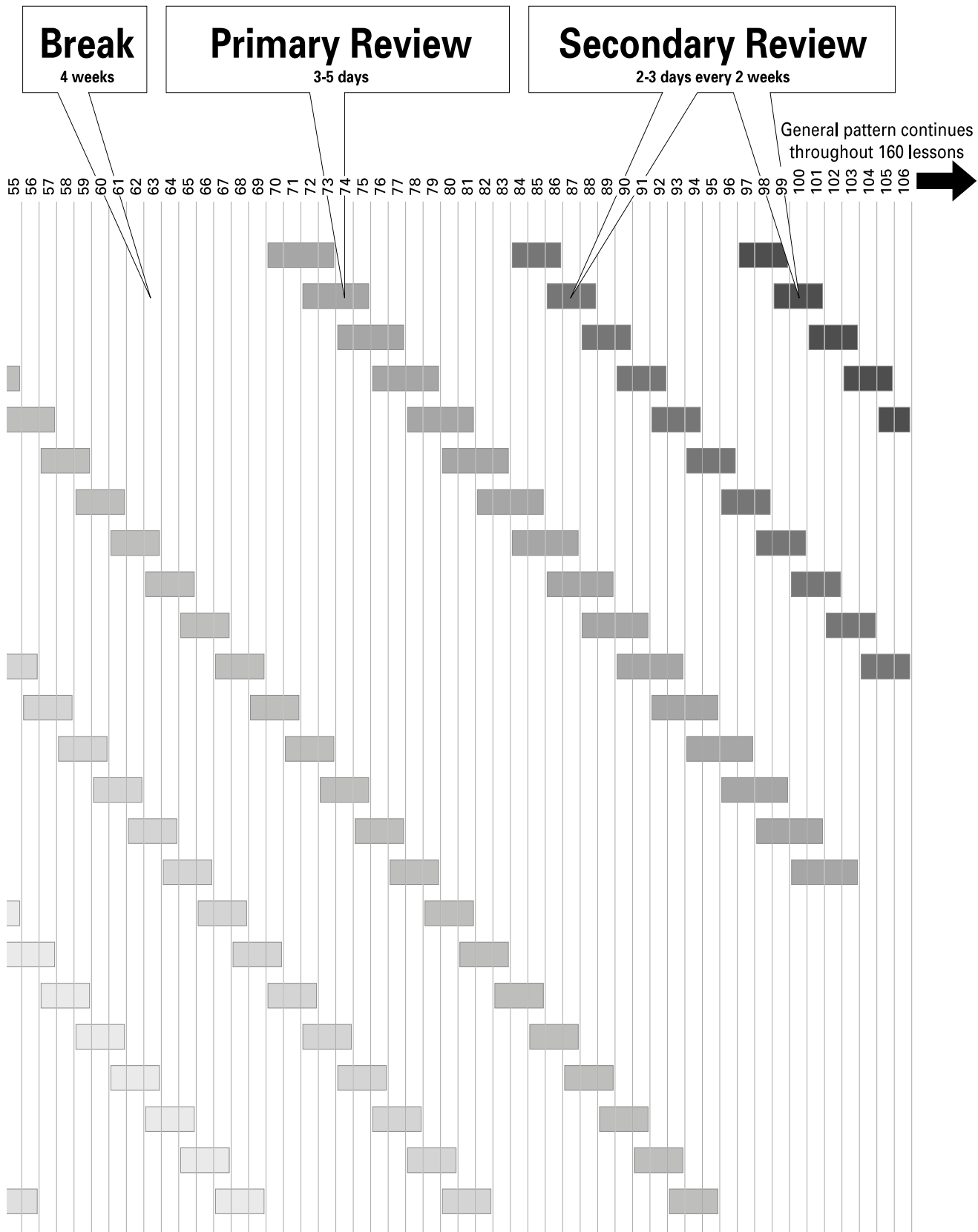
## GENERAL PATTERN:



All concepts are covered in a flexible yet methodical way in this curriculum. The following illustration explains the usual pattern of concept progression through the lesson sequence. In any given lesson you will likely find concepts at various stages of their unfolding for the student. Some concepts will be introduced. These are always the first item on the page. Other concepts will be either in one of the practice phases, the break phase (in which case they do not appear in a lesson) or at one of the review or reinforcement phases. While Lesson 34 consists of two concepts in the secondary practice phase, three concepts in the primary practice phase, and two concepts in the introductory phase, Lesson 50 consists of one concept in the break phase, four concepts in the secondary practice phase, three concepts in the primary practice phase, and one concept in the introductory phase. This repetition insures a thorough coverage over the entire year and is designed to promote comprehensive learning. This chart shows the general pattern followed in creating the lessons. The actual pattern found in the lessons will vary because consideration was given to the relative importance of each concept.

# of Concepts

& 2



Concepts. A list of all concepts may be found in the Scope and Sequence.  
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# NUMBERS



### Concepts:

Counting by ones and number line

*Definition:* A number line is a graphic representation of how far a number is from zero.

### Objectives:

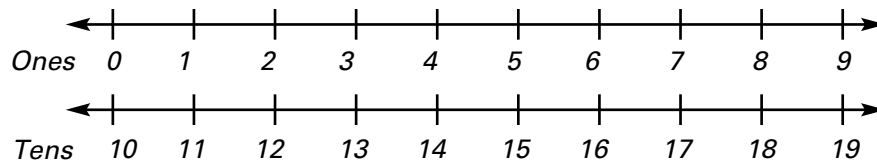
1. The student shall be able to count by ones and twos up to 100 out loud from memory.
2. The student shall be able to correctly form all the numerals from zero through nine with a pencil.

### Teaching Tips:

1. When doing activity 4, have each student stand up when the name of each number family (10, 20, 30, 40) is called while counting out loud. For example, when counting by ones to 100 the student would stand on ten, twenty, thirty, forty, fifty, etc.
2. If a student asks about the arrows at the ends of the number line in activity 3, give the illustration of standing on a railroad track. If you look in either direction the tracks seem to go on forever. In the same way, the number line seems to have no end.

### Materials, Supplies, & Equipment:

1. Number line segments in families [or draw on chalkboard]



2. Number chart arranged in families either horizontally or vertically.

*Vertical*

0	10	20	30	40	50	60	70	80	90
1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	13	23	33	43	53	63	73	83	93
4	14	24	34	44	54	64	74	84	94
5	15	25	35	45	55	65	75	85	95
6	16	26	36	46	56	66	76	86	96
7	17	27	37	47	57	67	77	87	97
8	18	28	38	48	58	68	78	88	98
9	19	29	39	49	59	69	79	89	99

*Horizontal*

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

**Note:** For a complete listing of materials and where they are used in the curriculum, see page 40 in the introduction.

**Activities:**

1. Work the student(s) through the printed guide a number at a time, reiterating the place to begin the strokes and the complete forming of the number in ***Student Activity One***. If you want the numerals formed differently, you will need to provide a guide and follow it.
2. Now that the student(s) have been instructed, have them practice writing numerals without guides in ***Student Activity Two***. You may wish to set a time limit on this activity to see how well each student can form their numbers. However, there is no need to create artificial pressure on the student(s) by telling them there is a time limit. Simply tell them when it's time to stop. For additional practice of writing numbers use *Worksheet 1*.
3. Explain the number line using the definition under **Concepts**. Draw a number line on the chalkboard and demonstrate the relation of the number line to counting. Erase some of the numbers and have a student tell you the missing numbers. When you feel the student(s) have grasped the relation of the number line to counting, let them do ***Student Activity Three***.
4. Count out loud with the student(s) by ones to 100 using a number chart. Discuss with the student(s) how counting by ones means to count over one each time on the number chart or to add one to each previous number.
5. To begin ***Student Activity Four***, have the student(s) place their pencil point on the star at number one. Guide them from number to number, referring to the number chart. You may want to give them a copy of *Worksheet 5* so that they have their own number chart at their desk and put it into a folder in their desk for future reference.

**Worksheets:**

1. *Worksheet 1* – Writing numbers 0–9
2. *Worksheet 5* – Number chart

*There is a place for everything and  
everything should be in its place.*



# NUMBER ORDER – ORDINAL NUMBERS



## Concepts:

Cardinal and ordinal numbers and their relationship to counting and counting by ones

*Definitions:* Cardinal numbers are the counting numbers. Ordinal numbers are the numbers that show order like first, second, third, and fourth.



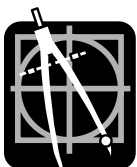
## Objectives:

1. The student shall be able to identify ordinal numbers from memory by marking the item at the teacher's instruction (cover first through tenth).
2. The student shall be able to correctly arrange numbers in sequence by rewriting the numbers.



## Teaching Tips:

1. When doing activity 2, have the student(s) tell you what grade they are in. Then ask them if “first” is an ordinal or cardinal number. Have them name the other grades using ordinal numbers. Discuss other examples of ordinal and cardinal numbers distinguishing which is which. Examples might include how old they are, how many brothers and sisters they have, if they are the “first” born in their family, and at what desk they sit.
2. If the student(s) find the presence of four or five different activities in one lesson a little overwhelming at the beginning, start guiding the student(s) through each activity each day. By the end of two weeks, they should be able to work more independently as they adjust to the format. Mastery of a new concept is not necessary the first time it is presented to be successful. Complete understanding of a new concept will come as the concept is approached from different views using different methods at different intervals.



## Materials, Supplies, & Equipment:

1. Number chart
2. Crayons
3. *Flashcards for cardinal and ordinal numbers*





### Activities:

1. Count out loud with the student(s) by ones to 100 using a number chart. Discuss with the student(s) the idea that when they are counting they are using cardinal numbers. They are also called natural numbers. Don't spend more than seven minutes on this or you won't have the time you need for the rest of the lesson.
2. Discuss with the student(s) that ordinal numbers (in the title for this lesson) are numbers that show order or position. Select groups of ten objects, count them out loud, and point out first through tenth. For example, lay ten crayons on your desk. Count them out loud and identify first through tenth (*flashcards for cardinal and ordinal numbers* would be a help). Write the cardinal number for the life stage of the frog as you identify them by ordinal number in ***Student Activity One***.
3. Look at the numbers on the sailboats that show order in ***Student Activity Two***. Direct the student(s) in counting them out loud using ordinal numbers. Next have them draw an "X" on the first sailboat and draw a circle around the fifth sailboat in ***Student Activity Three***.
4. In ***Student Activity Four*** count the balls with the student(s) and have them put an "X" on the third ball and circle the eighth ball.
5. Count the fish in ***Student Activity Five*** with the student(s) and have them put an "X" on the second fish.
6. Write the numbers 0–10 on the board leaving several blanks. Ask the student(s) to fill in the missing numbers. Then begin ***Student Activity Six***.
7. Write four numbers out of order on the board. Let a student put them in correct order. Do this for several sets of numbers. Have student(s) rearrange the scrambled list of numbers into correct order in ***Student Activity Seven***.

### Worksheets:

1. *Worksheet 2* – Ordinal numbers



*“Let everything be done decently and in order.”*

# SETS



## Concepts:

One-to-one correspondence, sets, number line, and counting by ones

*Definition:* A set is any group of objects or numbers.



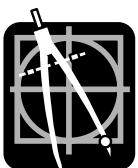
## Objectives:

1. The student shall be able to count out loud by ones to 100.
2. The student shall be able to draw a set of a given number of objects.
3. The student shall be able to count a set of objects and write the numeral which represents them.



## Teaching Tips:

1. When you are counting out loud in activity 1, have the student(s) do a different motion for each number within a family. For example, clap their hands on ones. Have them pat their head on tens. On twenties they might bend their knees.
2. In activity 2 the student(s) may use their finger to trace on their desk as you write on the board.



## Materials, Supplies, & Equipment:

1. Number chart
2. *Flashcards 0–100*

**Activities:**

1. Count out loud by ones to 100 using a number chart. (*Flashcards*)
2. According to the style you have selected, practice writing the numerals 0–9 on the chalkboard. Encourage the student(s) to be neat as they do ***Student Activity One***.
3. Draw sets of fives and tens on the board or represent sets of fives and tens with objects. Point out the sets and count them with the student(s). Direct the student(s) to do ***Student Activity Two***.
4. Read the directions with the student(s) and have them count to themselves by ones as they write the missing numbers in the blanks in ***Student Activity Three***.
5. In ***Student Activity Four***, have the student(s) write the missing numbers in the blanks under the number line.
6. Count the nickels in the first box of ***Student Activity Five*** out loud with your student(s). Place the number in the box at the lower right corner. Instruct the student(s) to continue the activity on their own.
7. As the student(s) count to themselves by ones, they should write the missing numbers in the blanks in ***Student Activity Six***.

*Men do less than they ought, unless they do all that they can.*

# BIG AND LITTLE



## Concepts:

Big and little, the number that comes between by ones, sets, one-to-one correspondence, and counting by ones and tens



## Objectives:

1. The student shall be able to count out loud by ones and tens to 100.
2. The student shall be able to identify the bigger or littler object by drawing a circle around it.
3. The student shall be able to draw a set of a given number of objects.
4. The student shall be able to count a set of objects and write the numeral which represents them.



## Teaching Tips:

1. To aid in the understanding of *Student Activity One* and *Two*, the teacher may need to instruct the student(s) to put their finger on the bigger or littler rectangle before they circle it with their pencil.
2. When doing activity 5, the student's crayons may be used to illustrate different sets by color, number, size, etc.
3. Give the student(s) a blank sheet of paper. Have them draw a set of one triangle, then a set of two triangles, then a set of three triangles, continuing until they have a set for each of the numbers from one through nine as practice for *Student Activity Four*.
4. The student(s) may use pages in one of their textbooks to practice finding what number comes between two numbers that you give them in preparing them for *Student Activity Five*.



## Materials, Supplies, & Equipment:

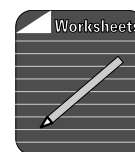
1. Number chart
2. Flannel board and numbers
3. Flannel board materials
4. Money (real or play)

**Activities:**

- Count out loud by tens to 100 using the number chart. Discuss with the student(s) that counting by tens means to count over ten places on the number chart, to count every tenth number, or to add ten to each number.
- Using the number chart, review counting out loud by ones to 100.
- Demonstrate big and little with several different objects. An example of this would be a big apple and a little apple. Hold them up and ask the student(s) which is the big apple and which is the little apple. Try not to use objects that are long and short because this can be confusing. Have the student(s) choose which is big and which is little in ***Student Activity One*** and ***Two***.
- Practice re-arranging numbers on the board or a flannel board to prepare the student(s) for doing ***Student Activity Three***.
- Illustrate sets using common objects. Example: Put 5 objects on the flannel board. Let the student(s) count them. This is a set — any group of objects. Have them draw the sets in ***Student Activity Four***.
- Direct the student(s) in practicing what comes between two numbers using the number chart. Proceed with ***Student Activity Five***.
- Have the student(s) count several sets of money (play or real) and write the number on scrap paper. Then have the student(s) do ***Student Activity Six*** after you go over the directions with them.

**Worksheets:**

- Worksheet 3* – Ordinal numbers, counting by tens, and number order.

*Is Bigger Better?*

*A nickel is bigger than a dime, but a dime is worth more.*

*Don't let size be your only measure for judging worth.*

# PLACE VALUE – TENS AND ONES



## Concepts:

Place value for tens' and ones' place, counting by tens, the number that comes between by ones, and counting by ones



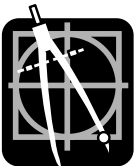
## Objectives:

1. The student shall be able to count by tens to 100 out loud.
2. The student shall be able to correctly write the digit in the tens' place and ones' place.
3. The student shall be able to correctly write the missing numbers when counting by tens.
4. The student shall be able to correctly write the missing number between two given numbers.



## Teaching Tips:

1. When you explain place value in activity 3, tell the student that when the tenth block is added to the ones, the group of ten ones must be replaced by one stack of ten in the tens' place and zero blocks in the ones' place.
2. If a student is having trouble with place value, use *counting sticks, blocks, colored stickers*, or other manipulatives to demonstrate the concept.



## Materials, Supplies, & Equipment:

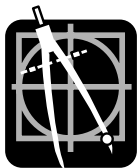
1. Number chart
2. Place value materials – many are available for purchase. To make them yourself, look at the student book to see how they should look. Cut ten 1" or 2" cardboard squares to represent the ones' place. Color them blue. For the tens' place cut ten stacks of ten squares. Color them pink. Glue a magnet on the back of each piece to allow you to display place value concepts on any magnetic surface.
3. *Counting sticks, blocks, and colored stickers*

**Activities:**

1. Count out loud by tens to 100 using the number chart.
2. Count out loud by ones to 100 using the number chart.
3. Before ***Student Activity One***, discuss the number of places a single-digit numeral (such as 4) takes. Using the numbers chart, ask what the largest number is that takes only one place (9). Discuss how many ones in this number (9). Discuss the next number (10). How many places does it take? What is in the tens' place? What is in the ones' place? Read over the instructions with the student(s). Do other examples using place value materials for the student(s). The student(s) should tell you how many groups of ten in the number and write them; then, how many ones and write them.
4. ***Student Activity Two*** and ***Three*** need the teacher to guide the student(s) through each exercise. Have them count the groups of ten and write the number. Then, count the ones and write the number.
5. Guide the student(s) in counting by tens by giving examples on the board or using the number chart. They need to count by tens to themselves with the aid of the number chart as they do ***Student Activity Four***.
6. With the aid of the number chart, have the student(s) write the number as they count to themselves in ***Student Activity Five***.

*Great minds have purposes, others have wishes.*

# LESS AND GREATER



## Concepts:

Less and greater, ordinal numbers, place value, and counting by fives

## Objectives:

1. The student shall be able to count out loud by fives to 100.
2. The student shall be able to identify the number that is less or greater by drawing a circle around it.
3. The student shall be able to identify ordinal numbers from memory by marking the item first through tenth at the teacher's instruction.
4. The student shall be able to correctly write the digit in the tens' place and the ones' place and the number that they represent.

## Teaching Tips:

1. When doing activity 1, have the student(s) count by fives to 100 by filling in missing numbers from the sequence written on the board.
2. Before the student(s) start ***Student Activity One***, tell the student(s) to point to the number which is less (5 or 6, 7 or 4, 2 or 9).
3. Have the student(s) point to each greater number in ***Student Activity Two*** before beginning the exercise.
4. The student(s) could create groups of ten and ones with their crayons as you dictate the number to them in activity 5. Be sure to keep the tens' digit small. For more place value practice be sure to see *Worksheet 4*.

## Materials, Supplies, & Equipment:

1. Number chart
2. Number line 0–10
3. *Flashcards for cardinal and ordinal numbers*
4. Flashcards for whole numbers
5. *Place value materials*

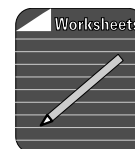


**Activities:**

1. Count out loud by fives to 100 using a number chart.  
Discuss with the student(s) that counting by fives means to count over five places on the number chart, to count every fifth number, or to add five to each number.
2. Before ***Student Activity One***, the student needs to orally identify two numerals on the number line. State which is less and which is greater or more. Repeat the activity several times. Have the student(s) circle which is less and which is greater in ***Student Activity One*** and ***Two***.
3. Practice ordinal numbers by having the student(s) point to the first, fourth, and seventh teddy bear in ***Student Activity Three*** (*Flashcards for cardinal and ordinal numbers* may be a help). Go through the instructions with the student(s) making sure that they understand what they are to do.
4. Choose six consecutive whole number flashcards.  
Arrange the cards out of order. Have the student(s) put them in correct order. Repeat this four or five times with different sets of six numbers. The student(s) should now be ready to do ***Student Activity Four***.
5. In the first set in ***Student Activity Five***, have the student(s) count the tens and write the number. Then have them count the ones and write the number. This is the number 36. Write it down (*place value materials* may be a help). The student(s) will need the teacher's guidance through each of these sets.
6. As the student(s) count to themselves by fives, they should write the missing numbers in the blanks in ***Student Activity Six*** with the aid of the number chart.

**Worksheets:**

1. *Worksheet 4* – Place value.



*True greatness is found in serving others.*

# ADDITION 1-9



## Concepts:

Addition facts 1–9,  $<$  and  $>$ , the number that comes between by ones, place value, and counting by fives



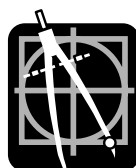
## Objectives:

1. The student shall be able to count out loud by fives to 100.
2. The student shall be able to write the answers to the addition facts 1–9 using the number line.
3. The student shall be able to read the less than and greater than symbols.
4. The student shall be able to determine the number that comes between two given numbers by ones.
5. The student shall be able to write the number represented by a given number of groups of tens and ones.



## Teaching Tips:

1. Before doing *Student Activity Two*, give two students a number and one student a symbol. Have the student(s) arrange them in order and read them. You may do the same thing by having a student correctly arrange jumbled cards.
2. If you wish to drill the addition facts by families in activity 2, you may want to set up your own schedule. If the schedule does not match the addition problems given in the student lesson, allow the student(s) to use the number line as long as necessary to arrive at the correct answer.



## Materials, Supplies, & Equipment:

1. Number chart
2. Flashcards for addition facts with sums 1–9 and  $<$  and  $>$
3. Number line
4. Place value materials



### Activities:

- Count out loud by fives to 100 using a number chart.
- Discuss with the student(s) the fact that any number added to zero is equal to the same number. Then discuss the fact that the number that comes after a given number is equal to the given number plus 1 (e.g. the number that comes after 5 is equal to  $5 + 1$ ). Using flashcards, drill the addition facts in which the answer is 1–9. For the first three weeks this drill needs to be done for five minutes with the answers showing. The student(s) need to repeat the complete addition fact and its opposite, not just the answer. They should say, “Four plus two equals six” and “two plus four equals six.” Concentrate on the following 12 facts and their opposites:  $2 + 2$ ,  $2 + 3$ ,  $2 + 4$ ,  $2 + 5$ ,  $2 + 6$ ,  $2 + 7$ ,  $3 + 3$ ,  $3 + 4$ ,  $3 + 5$ ,  $3 + 6$ ,  $4 + 4$ , and  $4 + 5$ .
- Use the number line to introduce addition facts. Draw lines on the number line to show the process of addition. For example, above the number line draw a line from zero to three and then from three to five. This shows that three plus two equals five. Do several problems like those in ***Student Activity One*** orally with the student(s). Write the addition fact. The student(s) need to understand that addition is “putting together.” Carefully check each student’s progress on ***Student Activity One***.
- Remind the student(s) to refer to the number line to help distinguish between the less than and the greater than symbols. The arrow at the end of the number line where the numbers are increasing is the greater than arrow and the arrow at the end where the numbers are decreasing is the less than arrow. Go over several examples before having the student(s) read ***Student Activity Two***.
- Review counting by ones with the student(s) as a refresher. To do the problems in ***Student Activity Three*** they need to count by ones to themselves. The number chart may be a help to the student(s).
- Review counting by tens with the student(s) to aid in ***Student Activity Four***. Using the place value materials, have the student(s) count the groups of ten, then continue to count by ones to arrive at the number. Example: first set — 10, 20, 30, 40, 41, 42, 43, 44, 45, 46, 47, 48. Write the number 48. Do the first three activities in ***Student Activity Four*** with the student(s). They may work the remaining sets by themselves.

*There must be absolutes, else nothing can be known and no one can be trusted.*

# LARGE AND SMALL



## Concepts:

Large and small, place value, addition 1–9,  $<$  and  $>$ , and counting by twos



## Objectives:

1. The student shall be able to count out loud by twos to 100.
2. The student shall be able to circle the larger or smaller of two given objects.
3. The student shall be able to state how many tens and how many ones are in a given number.
4. The student shall be able to write the addition fact demonstrated on the number line.
5. Given two numbers, the student shall be able to write the correct symbol to identify whether the first number is less than or greater than the second number.

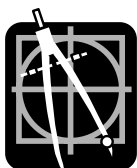


## Teaching Tips:

1. Activity 1 can be demonstrated by having the student(s) take a number chart and circle all the twos. This could be done as an activity sheet later in the day on *Worksheet 5*. *Worksheet 5* will be used again on later assignments. Be sure to save your master copy.
2. The review in activity 6 may be done by using flashcards, counting objects, or writing on the board.

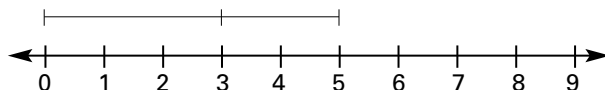
## Materials, Supplies, & Equipment:

1. Number chart
2. Flashcards for whole numbers and addition facts with sums 1-9
3. Number line
4. Flashcards for  $<$  and  $>$



**Activities:**

- Count out loud by twos to 100 using a number chart. Discuss with the student(s) that counting by twos means to count every other number, to count every second number, or to add two to each number.
- Drill addition facts with sums 1–9 with flashcards for five minutes with answers showing.
- Start ***Student Activity One*** and ***Two*** by choosing objects of different size in the room. Compare pencils, books, crayons, chairs, etc. in relationship to large and small. Now have the student(s) work through these activities.
- Hold up different flashcards of any number from 0–99 and have the student(s) tell you how many tens and how many ones are in the number. Do as many of these as you feel necessary, then begin ***Student Activity Three***.
- In preparation for ***Student Activity Four***, use a number line on the board to demonstrate several addition facts. Example:  $3 + 2 = 5$



Have the student(s) find the first number of the addition fact by counting from zero to three. Write three above the line. The second number is found by counting from three to five. Write two above the second line. Five is the answer. Have the student(s) tell you the addition fact,  $3 + 2 = 5$ . Be sure the student(s) follow each step as they do ***Student Activity Four***.

- Review with the student(s) which is the less than and which is the greater than symbol. Remind the student(s) that the arrows' names correspond to the arrows on the number line. Tell the student(s) to point to the number that is less in ***Student Activity Five***. Then remind them that the arrow points towards the number that is less. After writing in the symbol have the student(s) then read the expression to themselves.

**Worksheets:**

- Worksheet 5*** – Number Chart. (Be sure to save your master copy.)



# ADDITION ON THE NUMBER LINE



## Concepts:

Addition on the number line, between by twos,  $<$  and  $>$ , place value, and counting by twos



## Objectives:

1. The student shall be able to count out loud by twos to 100.
2. The student shall be able to write the solution to an addition fact using the number line.
3. The student shall be able to write the number that comes between two given numbers by counting by twos.
4. The student shall be able to write the correct symbol ( $<$  or  $>$ ) between two given numbers.
5. The student shall be able to write the value of the digit in the tens' place.



## Teaching Tips:

1. Use *Worksheet 6* to provide the practice needed before doing *Student Activity One*.
2. If you use the number chart to help the student(s) choose the correct number between two given numbers by twos in *Student Activity Two* remind them that counting by twos is the same as counting over two on the number chart or adding two to each number.



## Materials, Supplies, & Equipment:

1. Number chart
2. Flashcards for addition facts with sums 1–9
3. Number line
4. Place value materials

**Activities:**

1. Count out loud by twos to 100 using the number chart.
2. For five minutes, drill the addition facts 1–9 using flashcards with the answers showing.
3. In presenting addition, point out to the student(s) that zero means “nothing.” When you add zero to a number you are putting nothing with it. To add zero on the number line means that you add nothing. Zero added to any number is the same number. In preparation for ***Student Activity One***, the student(s) need to be reminded to begin at zero on the number line with a vertical mark. They then draw a straight line to the first number with a vertical mark at the end. Next they count over on the marks to equal the second number. The second straight line is drawn to this mark with a vertical mark at the end. Where the second straight line ends is the answer to the addition fact. After the student(s) practice several of these problems have them attempt the activity while you work closely with them.
4. Review counting by twos to help the student(s) as they complete ***Student Activity Two***. The number chart may be helpful to the student(s).
5. In ***Student Activity Three***, remind the student(s) that they read the less than and greater than symbols by referring to the arrows on the number line. Also remind them that the arrow always points to the smaller number. Go over the directions with the student(s) emphasizing that they read each set.
6. Using place value materials for groups of ten and then counting them by tens will increase the student’s understanding as they start ***Student Activity Four***. Display 5 groups of ten and have the student(s) count them by tens. Example: 10, 20, 30, 40, 50. Therefore, the value of 5 groups of ten is 50.

**Worksheets:**

1. *Worksheet 6* – Number line



*Since we can't be sure of tomorrow, we'd best do  
what we can about today.*

# TALLY MARKS



## Concepts:

One-to-one correspondence with tally marks,  $<$  and  $>$ , place value, addition 1–9, and counting by twos

## Objectives:

1. The student shall be able to count out loud by twos to 100.
2. The student shall be able to make a tally mark for each given object.
3. The student shall be able to write the correct symbol ( $<$  or  $>$ ) between two given numbers.
4. The student shall be able to write the value of the number in the tens' place and the ones' place.
5. The student shall be able to write the addition fact represented on the number line.

## Teaching Tips:

1. Tell the student(s) to lay down their pencil when they finish each activity on **Test 1** to indicate that they are ready to proceed.
2. Before starting **Student Activity One** have five *objects* for the *flannel board*. Make a set of one. Have a student go to the board and make one tally mark for the set of one. Do the same for sets of two, three, four, and five.
3. Let the student(s) choose which *flashcard* for less than and greater than goes between two numbers written on the board when introducing **Student Activity Three**.

## Materials, Supplies, & Equipment:

1. Number chart
2. Flashcards for addition facts with sums 1–9 and  $<$  and  $>$
3. Number line
4. *Flannel board and objects*
5. *Place value materials*





**Activities:**

1. Administer **Test 1**. Proceed through the test as a regular lesson to avoid any unnecessary anxiety by the student(s). Go over the directions for each activity with the student(s) as they are ready to begin that activity.
2. Count out loud by twos to 100 using a number chart.
3. Drill the addition facts 1–9 with flashcards for five minutes with the answers showing.
4. In **Student Activity One**, explain that the student(s) make a mark for each object in the group. Have the student(s) point to the elephant and trace the tally mark with their pencil. In the second box, have the student(s) point to the first camel and trace the first tally mark with their pencil. Point to the second camel and trace the second tally mark with their pencil. Repeat this exercise with remaining boxes.
5. In **Student Activity Two**, have the student(s) put a tally mark in the box for one piano. The student(s) now point to the first french horn and make a tally mark in the box. Point to the second french horn and make a second tally mark in the box. Allow the student(s) to complete the page independently.
6. Remind the student(s) that the arrow points towards the number that is less as they do **Student Activity Three**.
7. Before starting **Student Activity Four**, be sure that the student(s) can correctly identify and give the value for the tens' place and the ones' place (*place value materials* may be helpful). The student(s) must answer the question, "How many tens are there and how many ones?" The student(s) need to remember that 1 ten is the same as 10, 2 tens 20, 3 tens 30 etc. Check their progress as they do **Student Activity Four**.
8. On the board demonstrate several addition facts (1–9) on the number line. Read the directions to the student(s) in **Student Activity Five**. Have them count on the number line to find the first number in the addition fact. Write the number. Then count to find the second and write that number. Write the answer to the addition fact. Do the same for the remaining problems.