

## The Goal

The goal of this curriculum is to provide the parent and teacher with a tool that will help them effectively develop 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 adopted curriculum standards resulted in selection of the Scope and Sequence. 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 kindergarten students of average maturity. 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 students achieve a higher minimum level of proficiency.

## The Design

Bright, colorful lessons and varied activities are designed to bring success and enjoyment to the student. Take a moment to look at the chart entitled *Development of Concepts*. 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 two major components of the curriculum are the student text (in two volumes) and the Teacher Handbook. These are the absolute minimum components for accomplishing the objective of teaching the concepts in the Scope and Sequence. Since this handbook was designed as an integral part of the curriculum, it is absolutely necessary to use the handbook. The handbook 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 handbook contains a significant number of suggestions and helps for the teacher.

## The Development

Students are not expected to master a concept at its introduction. 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 several 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.

## A Balance of the Best Methods

Since not every child learns as easily with one given method of presentation, *Horizons* incorporates a balance of the best methods. Some curriculums drill the students into boredom. Others challenge students through reasoning to the point of frustration when they cannot comprehend what is being covered. Still others major on learning by doing, abandoning all academics. The blend of the best of each of these learning styles is found in *Horizons Mathematics* without the disadvantages associated with overemphasis on any one presentation. Analytical reason-

ing skills are used in making daily decisions. These thinking skills are taught in order to help students gain a complete understanding of mathematics. Students are taught to reason from the principles taught in *Horizons Mathematics* and to apply them to real-life situations. Memorization is stressed in the learning of basic math facts and computational skills. Students will progress rapidly when they can instantly recall basic math facts. A built-in repetition and review cycle makes the process simple to follow. Drill reinforces the concepts being introduced.

## 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 about 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 are 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 comes later (following the same progression), and quarter-hour a little later on. After each aspect has a break from its presentation, the three aspects are presented together for the remainder of the year. Review the Scope and Sequence to see how the concepts are developed.

## General Information

Although a guide is provided for writing the numerals in the lessons, 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 handbook 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 *Activities* section of each teacher's lesson. If you find that the student(s) need extra drill, use the worksheets as extra lessons.

## Organization of Student Lessons

Student lessons are designed to be completed in twenty-five to thirty 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) should do all the problems in every lesson every day. Directions to the student(s) are given before each activity and examples or explanations are sometimes presented. 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.

## Organization of Teacher Lessons

Each lesson is organized into the following sections: *Overview*, *Materials and Supplies*, *Teaching Tips*, *Activities*. To be a master teacher you will need to prepare each lesson well in advance.

### Overview

Concepts are listed at the beginning of each lesson in the order that they are presented. This same information is available in the *Daily Lesson Planner* and can be cross-referenced with the *Appearance of Concepts* chart.

### Materials and Supplies

*Materials and Supplies* lists the things you'll need to find before you teach each lesson. Most of the items listed are things that can be easily constructed as they are needed. Sometimes you will also find instructions in the *Activities* section on how to make your own materials and supplies. When "Number Chart" is listed, it is understood to refer to the chart for 0–100.

### Teaching Tips

Each tip is related to one of the activities in the lesson. The tip will identify whether a concept is being taught, reviewed or drilled. The tips are a brief lesson plan of what needs to be accomplished during the lesson. Teaching strategies for most of the tips are given in the *Activities* section. Items listed for drill are left to the teacher's or parent's discretion whether or not they will be incorporated into the daily lesson.

### Activities

The *Activities* section is where the teacher or parent will concentrate most of their time. Here the teacher or parent will find step-by-step directions for teaching each lesson. All of the activities are designed to be teacher directed both in the student lesson and in the teacher handbook. You will need to use your own judgement concerning how much time is necessary to carry out the activities. Be sure, however, that if at all possible the student(s) do every problem of every lesson. Each activity is important to the overall 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 teaching is essential. Choose the manipulatives that fit your program best.

## Answer Keys

The answer keys are provided on the same pages as the teacher's lesson. Answers are provided for most of the student exercises. Penmanship activities and coloring activities have been left as the student(s) see them. You should correct every paper, but you may 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) and sent home so that they have the opportunity to learn from their mistakes.

## Worksheets

There are 40 worksheets provided for duplication masters. The first time a worksheet is suggested for use, you will find it listed in the *Materials and Supplies* section. Each worksheet has a worksheet number. Look at the *Where to Use Mathematics Worksheets* chart to identify the lesson where the worksheet concept is first taught. The worksheet can be used during that lesson and with any future lesson for additional drill and practice. NOTE: Many worksheets will be used over and over as resources, so you'll need to keep a master copy.

Customize or adapt the worksheets for your particular student(s). For example, you can make one copy of the "clocks" worksheet. Add clock hands for the hour, half-hour, or quarter-hour and make copies of the revised worksheet for the student(s).

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 teacher's lesson.