**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 curricula, the concepts evaluated by achievement tests, and typical courses of study resulted in selection of the *Scope and Sequence* starting on page 14. 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 third grade students. 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 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 the accomplishment of the curriculum objectives. As you will see in the following sections, this Teacher Handbook contains a significant number of suggestions and helps for the teacher. All manipulatives are identified with *italics* so that the teacher may easily see them at a glance.

**THE DESIGN**
Take a moment to look at the sample chart entitled, *Development of Concepts*, on page 29. 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 three to five lessons 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 curricula might teach graphs for two weeks and not go back to it again. In this curriculum it will be introduced and practiced for two weeks. For the next two months, graphs 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 graphs will not be taught. In the fourth month, graphs 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 repeated many times is much more effective than long periods with fewer exposures. Since there are four types of graphs to study at this level (bar, line, pictograph, and circle), each type is introduced at separate intervals. The bar graph is taught at the introduction to the study. Line graphs are introduced a month later (following the same progression), pictographs another month later, and circle graphs still another month later. After each type of graph has been completely introduced individually, the four types are presented together for the remainder of the year. Review the chart on page 29 to see how the concepts are developed.

**Readiness Evaluation**

**WHY EVALUATE READINESS?**
Teaching could be defined as the process of starting with what a student knows and guiding him to added knowledge with 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 third 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. All emotionally immature students may need special student training in their problem areas. 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 determine emotional readiness.

**DETERMINING READINESS**
The third grade Readiness Evaluation on pages 3–8 helps the teacher to determine if student(s) are ready to begin studying math at the third grade level. Complete this evaluation the first or second day of school.

The evaluation should take about 30 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 second grade program.

It is especially important to evaluate any student who is using this curriculum for the first time. The student(s) should be able to complete the test on their own with the teacher making sure they understand the directions for each individual activity.

The answer key is on page 4. Count each individual answer as a separate point. The total for the test is 70 points. The student(s) should achieve a score of 50 or more points to be ready to begin third grade. Be sure to note the areas of weakness of each student, even those who have scored over 50 points. If the student(s) scored under 50 points, they may need to repeat second grade math or do some refresher work in their areas of weakness. For possible review of the identified areas of weakness, refer to the chart Appearance of Concepts on page 22 of the Horizons Math 2 Teacher Handbook. It will locate lessons where the concepts were taught.