

(Revised, 1942)

Teacher's Handbook

for

SANGREN-REIDY

SURVEY TESTS IN ARITHMETIC

By

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I. PURPOSE

The purposes of the Sangren-Reidy Survey Tests in Arithmetic are:

1. To provide a measure of the general level of ability of pupils in the major processes of arithmetic;
2. To determine the phases of arithmetic and to locate the level of difficulty in which the pupil needs further analytical testing in order to discover his instructional needs.

II. DESCRIPTION OF TESTS

The Sangren-Reidy Survey Tests in Arithmetic have the following characteristics:

1. They are constructed in three divisions, Divisions I, II, and III. The first division is adapted to grades 2 and 3, the second division to grades 4, 5, and 6, and the third division to grades 7, 8, and 9.
2. The tests of each division are prepared to include a fairly thorough sampling in the order of difficulty of the common types of problems involved in each of the major processes taught at the levels concerned. In Division I, Grades 2 and 3, for instance, the fundamental operations of addition, subtraction, multiplication, and division are thoroughly sampled by test items covering the range of ability which would likely be found in these grades.
3. The test items in each test are arranged in order of increasing difficulty in so far as this could be determined from application of the tests, making possible a determination of the level of development of the pupil in the various arithmetic processes.

III. VALIDITY

The test items involved in the Sangren-Reidy Survey Tests in Arithmetic are selected from the Sangren-Reidy Instructional Tests in Arithmetic. The description of the method of construction of these latter tests will be found in the Teacher's Handbook and Manual of Instructions for Sangren-Reidy Instructional Tests in Arithmetic, Pages 3-7.*

The items for the tests at the different levels were selected on the basis of a thorough analysis of the various units of skill involved in the mastery of each of the major processes. Although it was necessary to grade the steps of difficulty somewhat coarsely in the Survey Tests, yet it is felt that an analyzed succession of thought relations is involved throughout the examination exercises on a very large percentage of the various units of skill which the pupil must master.

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Division	
I	
II	
	6
	7
III	8
	9

The Survey Tests determine the general level of ability of the pupil. However, definite analytical tests are given to examine carefully the types of errors. For example, in the fifth example in addition, it is evident that the pupil has added the numerators and denominators of the fractions and that it would be necessary to indicate that $\frac{1}{6}$ and $\frac{1}{2}$ are to be converted into common denominators.

Directions for administering in a separate folder accompanying this folder to be observed carefully.

Following is a table of contents upon an application of the test to October 1.

TENTATIVE NO

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Division	Grade	Test
I	2	
	3	
II	4	
	5	
III		

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V.
Following is a table of
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TENTATIVE NO

Division	Grade	Test 1 Addition
I	2	
	3	
II	4	
	5	
	6	
III		

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IV. DIRECTIONS FOR ADMINISTERING, SCORING, AND RECORDING THE TESTS

Directions for administering, scoring, and recording the tests will be found in a separate folder accompanying each test package. These directions should be observed carefully.

V. USE OF THE TESTS

Following is a table of tentative norms for the tests. These norms are based upon an application of the tests to the beginning section of each grade on October 1.

TENTATIVE NORMS FOR SANGREN-REIDY SURVEY TESTS
IN ARITHMETIC, FORM 1

(Revised)

Division	Grade	Test 1 Addition	Test 2 Sub- trac- tion	Test 3 Multi- pli- cation	Test 4 Divi- sion	Test 5 Prob. Solv- ing	Men- sur- ation	Per- cent- age	TOTAL SCORE
I	2	4	4	1	1	—	—	—	10
	3	7	6	4	1	—	—	—	18
II	4	4	2	2	1	2	—	—	11
	5	5	4	4	3	4	—	—	20
	6	7	7	9	7	6	—	—	36
III	7	—	—	—	Test 1 3	Test 2 7	Test 3 2	Test 4 9	21
	8	—	—	—	4	7	3	12	26
	9	—	—	—	4	8	6	18	36

The Survey Tests in Arithmetic should be used with the purpose in mind of determining the general level of development of the pupils in arithmetic. However, definite analytical values may be obtained, provided the teacher will examine carefully the types of test items on which the pupil fails and the nature of the errors. For example, suppose that in Test 1, Division II, a pupil should do the fifth example in addition as follows: $5\frac{1}{6} + 3\frac{1}{2}$ equals $8\frac{2}{3}$. It would be very evident that the pupil has not progressed to the point where he can satisfactorily add fractions and that the cause for his error is that he has added the numerators and denominators of the two fractions, obtaining the result of $\frac{2}{3}$. In this case, it would be necessary to indicate to the pupil the necessity of putting these two fractions, $\frac{1}{6}$ and $\frac{1}{2}$, into common terms so that they may be added with the proper

result. Similarly, it would not be unusual to find that a pupil would do test item number two in Test 3, Division II, as follows: Multiply:

$$\begin{array}{r} 204 \\ 21 \\ \hline 204 \\ 408 \\ \hline 612 \end{array}$$

In this instance, it will be clear to the teacher that the cause for the error is the lack of knowledge on the part of the child as to the placement of the digits in place and ten's place in the process of multiplication. He will need to be taught the facts with regard to the unit's

Further diagnostic values for the tests may be realized through the effective use of the analytical "Individual Record" found in the Record Sheet accompanying the tests. By utilizing the record made by the pupils on the various abilities, skills, judgments, and procedures involved in each item of a test, a clear picture of the status of an individual or of a group is obtained. Consider the analysis of the items in Test 1, Division II, Form I, for example. Failure on the first item will indicate inability "to add with carrying two"; failure on the second item will show an inability to "carry in columns other than first"; failure on the third item will indicate inability to "neglect zeros and empty spaces" in adding; etc. Careful study of these results will suggest to the teacher the type of instruction needed by the pupil or group.

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