

DIRECTIONS, RECORD SHEET, AND ANSWERS FOR
SANGREN-REIDY SURVEY TESTS IN ARITHMETIC
DIVISION II — FORM 1

Grade..... School..... Date.....
City..... State.....

Instructions for Giving

1. The teacher should go through the test booklet before giving it in order to know the test and to understand what the pupils are doing while taking it.

2. Each pupil should have at least two sharpened pencils. Only pencil is to be used. The teacher should have an extra supply of sharpened pencils on hand in case of need.

3. Say to the class, "We are going to have a test in arithmetic. I will give you each a copy of the test. Do not look in it or write anything on it until I tell you to." Give each pupil a copy of the test, and tell the pupils to fill in the blanks at the top of the front page of the test (name, date, age, etc.), but not to read any part of the test.

4. When this is done, say, "In this test you are asked to study each example before you try to work it and to see what you are to do. Try to do each example correctly. You may make some mistakes, but be sure that you see how to do the work. Always begin with the first example and work across the page. Now open your test folders to Test 1, ADDITION, and fold the next page under so that you cannot see it." (The teacher should illustrate how this is done). "Work across the page down to the heavy line across the middle of the page. If you finish this first half of the page before I tell you to stop, do NOT go to Test 2 but go over your work to make sure that no mistakes have been made. Please remember that all these examples are in ADDITION Ready, BEGIN!"

5. At the end of 4 MINUTES, say "STOP!"

6. Then say, "Now work the examples in Test 2, SUBTRACTION, on the bottom half of the page. If you finish the page before I tell you to stop, do not go to the next page, but go over your work to make sure that no mistakes have been made.

Please remember that all these examples are in SUBTRACTION..... Ready, BEGIN!"

7. At the end of 4 MINUTES, say "STOP!"

8. Then say, "Now go to the next page marked Test 3, MULTIPLICATION. Work as many examples on this entire page as you can. If you finish the page before time is up, go over your work to make sure no mistakes have been made. Please note that the last three examples are on percentage..... Ready, BEGIN!"

9. At the end of 8 MINUTES, say "STOP!" Have the pupils close the test folders. Allow a rest period.

10. Then say, "We are now going to work on Test 4 on the front page of your test folders. Turn your test folders around so you can read Test 4, DIVISION." (The teacher should illustrate how this is done and should make sure that each pupil has Test 4 properly before him.) "Work as many examples on this page as you can. Please remember that all the examples on this page are in DIVISION..... Ready, BEGIN!"

11. At the end of 12 MINUTES, say "STOP!"

12. Then say, "Now turn your test folders completely over to the last page so that you can read Test 5, PROBLEM SOLVING." (The teacher should make sure that each pupil has Test 5 correctly before him.) "Let us read the directions at the top of the page: 'Find the answers to these problems. Write the answers in the parentheses () at the right. Use other paper to figure on, if you need to.' Are there any questions concerning these directions?" The teacher should make sure that the pupils know what they are to do..... "Ready, BEGIN!"

13. At the end of 16 MINUTES, say "STOP!" and collect all test folders.

Instructions for Scoring

1. Each correct answer counts one point. The pupil's score is the number of examples correct. The highest possible score on Division II, Form 1 is 75 points.

2. The scoring key is given on page 6. It is suggested

that the teacher take an unused copy of the test and mark on it the correct answers in some conspicuous color. Using this as her guide, the pupils' test papers can be scored rapidly and accurately.

Scoring Key

Test 1 Addition	Test 2 Subtraction	Test 3 Multiplication		Test 4 Division		Test 5 Problem Solving	
a. 111	a. 424	a. 472	l. 23.0	a. 14	j. .124	a. 12	j. 33¢
b. 14,186	b. 739	b. 4284	m. 17 ft.	b. 2	k. 52	b. 32¢	k. 10
c. 611	c. 3	c. 216,568	6 in.	c. 2	l. 7.61	c. \$4.60	l. 15
d. 8/9	d. 1 5/24	d. 1/12	n. 13 gal.	d. 737.75	m. 36	d. 55¢	m. \$8.64
e. 8 2/3	e. 1 1/3	e. 5/8	1 pt.	e. 2982.36	n. 1 ft.	e. 45	n. 33 1/3
f. 3 1/3	f. 2 1/8	f. 3 3/4	o. 1475.7394	f. 21/40	9 in.	f. 18	o. 66 2/3
g. 10 3/4	g. 59/72	g. 14 2/3	p. 2450 4/27	g. 3/10	o. 1 gal.	g. \$3.64	
h. 1.67	h. .50	h. 4 1/2	q. \$54	h. 5/8	2 qt.	h. 6	
i. 10.80	i. .648	i. 40.28	r. \$133.33	i. .5	6/10 pt.	i. 9¢	
j. 62 2/45	j. 2.739	j. 151.2	s. 17 6/7				
k. 180.026	k. 1 sq. ft.	k. .08					
l. 56 min. 20 sec.	80 sq. in. l. .009						
m. 21 yd. 10 in.	m. 3 min. 20 sec.						

Directions for Recording

For the convenience of the teacher in analyzing the results from her class, the diagnostic record chart on the inside sheets of this folder has been prepared. Use a separate chart for each grade (yearly or half-yearly) and for each class.

(a) After the pupils' test blanks have been scored, they should be arranged in alphabetical order. The name of the first child should then be written under "Pupil's Name" on line 1. Suppose now this child had exercises a, b, c, d, and e correct on Test 1, Addition. Check marks should be made in columns a, b, c, d, and e, and the total score, "5", written in the "Total" column for Test 1, Addition. This pupil's results on Tests 2, 3, 4, and 5 should be similarly recorded. Then, add up the totals of each of the separate tests for each pupil and place the result in the column headed "Total of All Tests." Each child's results should be recorded in similar fashion.

(b) After the pupils' results have been thus entered, the number of marks in each column should be counted, and this total entered at the bottom of the record sheet in the "Total right—each problem" row. Evidently those problems which the fewest pupils had right need most class drill.

(c) The "Summary of Individual Record" should now be filled in. Suppose now the first child made a score of 5 on Test 1, Addition, as shown by his individual record. In the "Summary of Individual Record" make a mark opposite "5" in the column headed "No. of Pupils" for Test 1, Addition. Each child's results should be recorded in similar fashion. The figures in the "No. of Pupils" column should now be added and the sum written at the

bottom of each table in the "Total" space. After this has been done, count up from the bottom to the median, or middle case, and write the number of the space in which this case falls in the space marked "Median." (If there are 35 pupils, the median is the eighteenth score. If the number of pupils is even, the median is the average of the two middle cases; thus if there were 34 cases, the median would be the average of the 17th and 18th scores.)

(d) The "Class Total Scores" column should now be filled in. Simply count, from the "Total of All Tests" column, giving the total score of each pupil, the number of pupils making each of the indicated scores. For example, if three pupils made a score of either 44 or 45, place a "3" opposite "44-45" in the "Number of Pupils" column. If five pupils made a score of either 42 or 43, place a "5" opposite "42-43" in the "Number of Pupils" column. Do this until all the pupils' scores have been recorded. The figures in the "No. of Pupils" column should now be added and the sum written at the bottom of this table in the "Total" space. After this has been done, count up from the bottom to the median, or middle case, and write the number of this case in the space marked "Median."

Teacher's Diagnostic Study of Results

The column headed "ABILITY, SKILL, JUDGMENT, OR PROCEDURE INVOLVED IN EACH EXERCISE OF EACH TEST" states the character of difficulties of each pupil and of the class. This diagnos-

tic feature of the record chart is of extreme value to the teacher in discovering individual and class needs and in planning effective remedial instruction.

SANGREN-REIDY SURVEY TESTS IN ARITHMETIC

By PAUL V. SANGREN and ANN REIDY

Division II—For Grades Four, Five, and Six—
 Form 1

Test	Score
1. Add.	
2. Subt.	
3. Mult.	
4. Div.	
5. Prob.	
TOTAL	

Name..... Date.....

Age..... Birthday.....
Years Months

Grade..... School.....

City..... State.....

2) 3 ft. 6 in. (n)
 5) 7 gal. 3 qt. 1 pt. (o)
9.04 325.44 (m)

.05 .025 (i)
7 .868 (j)
.05 2.6 (k)
.042 .3197 (l)

$\frac{3}{5} \div \frac{7}{8} =$ (f)
 $\frac{4}{3} \div 2\frac{1}{2} =$ (g)
 $2\frac{1}{2} \div 4 =$ (h)
203 605420 (e)

4 56 (a)
21 42 (b)
120 240 (c)
65 47954 (d)
 TEST 4, DIVISION (Time: 12 minutes)

TEST 1, ADDITION (Time: 4 minutes)

(a)
44
39
28

(b)
6347
4103
2354
1382

(c)
25
40
302
207
32
5

(d)
 $\frac{2}{9} + \frac{6}{9} =$

(e)
 $5\frac{1}{6}$
 $3\frac{1}{2}$

(f)
 $3 + \frac{1}{3} =$

(g)
 $2\frac{1}{4}$
 $3\frac{1}{3}$
 $5\frac{1}{6}$

(h)
.23
1.4
.04

(i)
3.51
4.26
3.03

(j)
 $25\frac{3}{5}$
 $36\frac{4}{9}$

(k)
23.62
9.38
15.02
132.006

(l)
15 min. 30 sec.
40 min. 50 sec.

(m)
4 yd. 2 ft. 10 in.
6 yd. 1 ft. 7 in.
9 yd. 2 ft. 5 in.

TEST 2, SUBTRACTION (Time: 4 minutes)

(a)
648
224

(b)
1708
969

(c)
 $9\frac{3}{5}$
 $6\frac{3}{5}$

(d)
 $3\frac{7}{8}$
 $2\frac{2}{3}$

(e)
4
 $2\frac{2}{3}$

(f)
 $5\frac{1}{8}$
3

(g)
 $5\frac{3}{8}$
 $4\frac{5}{9}$

(h)
.72
.22

(i)
1.435
.787

(j)
16.
13.261

(k) Subtract
9 sq. ft. 60 sq. in.
7 sq. ft. 124 sq. in.

(l) Subtract
twenty-five thousandths from
thirty-four thousandths
Answer.....

(m) Subtract from
20 min.
16 min. 40 sec.

Answer.....

TEST 3, MULTIPLICATION (Time: 8 minutes)

(a)

$$\begin{array}{r} 236 \\ \underline{2} \end{array}$$

(b)

$$\begin{array}{r} 204 \\ \underline{21} \end{array}$$

(c)

$$\begin{array}{r} 428 \\ \underline{506} \end{array}$$

(d)

$$\frac{1}{3} \times \frac{1}{4} =$$

(e)

$$\frac{1}{2} \times \frac{5}{4} =$$

(f)

$$2 \times 1\frac{7}{8} =$$

(g)

$$5\frac{1}{2} \times 2\frac{2}{3} =$$

(h)

$$\frac{3}{4} \text{ of } 6 =$$

(i)

$$\begin{array}{r} .76 \\ \underline{53} \end{array}$$

(j)

$$\begin{array}{r} 63 \\ \underline{2.4} \end{array}$$

(k)

$$\begin{array}{r} .04 \\ \underline{2} \end{array}$$

(l)

$$\begin{array}{r} 2.3 \\ \underline{10} \end{array}$$

(m)

$$\begin{array}{r} 2 \text{ ft. } 6 \text{ in.} \\ \underline{7} \end{array}$$

(n)

$$\begin{array}{r} 2 \text{ gal. } 2 \text{ qt. } 1 \text{ pt.} \\ \underline{5} \end{array}$$

(o)

$$\begin{array}{r} 36.02 \\ \underline{40.97} \end{array}$$

(p)

$$\begin{array}{r} 64\frac{2}{3} \\ \underline{37\frac{8}{9}} \end{array}$$

(q)

nao 27% of \$200 =

(r) \$8 is 6% of what amount?.....

(s) \$250 is.....% of \$1400

TEST 5, PROBLEM SOLVING (Time: 16 minutes)

Directions: Find the answers to these problems. Write the answers in the parentheses () at the right. Use other paper to figure on, if you need to.

- | | Answer |
|--|--------|
| a. John and William were going to play marbles. John had 7 marbles and William had 5. How many did they have together? - - - - - () | () |
| b. Charles earned 25 cents running errands and Billy earned 57 cents. Billy earned how much more than did Charles? - - - - - () | () |
| c. If potatoes sell for 46 cents a bushel, how much will ten bushels cost? - - - () | () |
| d. John and two boys he took with him, went to a movie. The tickets were 15 cents each. How much change did he receive from one dollar? - - - - - () | () |
| e. The temperature fell 12 degrees during the night of April tenth. If it was 57 degrees on the day of April tenth, what was the temperature April eleventh? - - () | () |
| f. The Browns took a trip of 630 miles in their car. They used 35 gallons of gasoline. On the average, how many miles were traveled on one gallon? - - - - - () | () |
| g. John had saved \$6.59 for a football. The football cost \$12.95. Also John had been given and earned \$10.00 How much did he have left after buying the football? - - - - - () | () |
| h. Milk sells for 11 cents a quart. How many quart bottles of milk may I buy for 75c? - - - - - () | () |
| i. What change will I receive? - - - - - () | () |
| j. Mary was finding out the cost of making a cake. The cake called for 4 eggs which were 24 cents a dozen and $\frac{1}{4}$ pound of butter which was 28 cents a pound, and $\frac{1}{2}$ pound of sugar which was 6 cents a pound. The rest of the mixture and the baking were worth about 15 cents. What was the cost of the cake? - - - - - () | () |
| k. A merchant makes a profit of 10c on every quarter of a dozen cans of milk which he sells. How many dozen cans of milk must he sell to make a profit of four dollars? - - - - - () | () |
| l. A boy who sells magazines earns 2 cents for each five-cent magazine he sells and 4 cents for each 10-cent magazine he sells. He wants to earn one dollar. How many magazines at ten cents each must he sell if he has sold 20 copies at five cents? - - - - - () | () |
| m. A merchant bought dresses and sold them realizing 100% gain on each sale. If the dresses cost on an average of \$4.32 what is the selling price? - - - - - () | () |
| n. A man buys packages of needles at the rate of 3 for 10 cents. He sells them at 5 cents a package. What percent of the sale price is his gain in money on every 3 packages? - - - - - () | () |
| o. Mr. Smith bought a car in 1931 for \$1965.00. He sold it in January 1933 for \$1310.00. What percent of the cost was the selling price? - - - - - () | () |