

## ARITHMETIC.

## PREPARATORY DIVISION.

In this division all the instruction should be as concrete as possible, and closely associated with the play interests of the pupils. Formality in the earlier stages is to be avoided, and while memorization is to be accurate the amount required should not be excessive. The following syllabus of work is set out as for four divisions, but the teacher is at liberty to rearrange the work in any way that suits his particular school, provided that such rearrangement meets with the approval of the Inspector. With like approval the teacher may omit all formal lessons in number in this division, but this course is not advised.

*Class P.1.*—In this class no formal instruction in number should be given. Pupils should, however, be afforded opportunity to develop some conception of number through stories and play activities in which there is free access to varied and suitable materials—*e.g.*, blocks, beads, sticks, &c. To assist this development the teacher should take advantage of such opportunities as arise in rhythmic exercises, kindergarten games, nature-study, and other lessons.

*Class P.2.*—At this stage there should be no excessive formality in the lessons, and the teacher need not restrict the teaching of number to a special period on the time-table, but should continue to use such opportunities as arise in the rhythmic exercises, kindergarten games, nature-study lessons. The pupils should have free access to suitable material—*e.g.*, playing-bricks, marbles, beads, shells, balls, sticks. The pupils should learn to count actual objects to 10—first by ones, and then by twos. Addition of small groups—*e.g.*, 3 plus 4—with the corresponding subtraction of one of the groups. Practice in the addition of equal groups, leading to the counting of the equal groups, and thus to first ideas of multiplication and division. The instruction should be mainly oral, but figures may be taught, and, at the discretion of the teacher, simple practical problems may be solved through play activities or by means of pictures. If number facts are expressed by means of figures, only the plus sign should be used.

*Class P.3.*—Counting actual objects by ones, twos, threes, fours, &c., to 15. Further progress in the written expression of number facts. Simple problems as prescribed for P.2, but suited to the stage now reached. All instruction must be concrete in character. Memorization of simple number facts suitably arranged.

*Class P.4.*—Counting actual objects by ones, twos, threes, fours, &c., to 20. Further training of a concrete character in the four rules applied to numbers not exceeding 20. Simple problems along with the memorizing of number facts.

## STANDARD I.

In this class the work should be mainly oral, but some written exercises should be given, provided these are kept strictly within the scope of the syllabus. Concrete methods of instruction should be made use of in much the same way as in the Preparatory Division. Where the organization permits, about three-quarters of the total time allotted to arithmetic should be devoted to practical and mental exercises.

1. *Numeration and notation* to 100.

2. *Addition.*—

(a) Two-figure combinations to  $9 + 9 = 18$  to be thoroughly memorized.

(b) Extensions of above to 100: *e.g.*,  $5 + 4 = 9$ ,  $25 + 4 = 29$ ,  
 $5 + 24 = 29$ .

(c) Addition of a single column of not more than eight figures, or a double column of not more than four lines.

3. *Subtraction.*—To be taught in association with addition—that is, by the method of complementary addition. Combination to  $18 - 9 = 9$  to be made automatic. No numbers in written exercises to exceed 100.

4. *Multiplication.*—The portions of the tables (twos to twelves) with products less than 100 to be thoroughly memorized. Oral and written exercises of the type  $7 \times 8 + 4$  (eight sevens plus four) to be included.

5. *Division.*—To be taught in association with multiplication; separate tables not to be used. Division with remainders not to exceed the limits of the multiplication table.

6. *Fractions.*—Practical and applied knowledge of the following fractional parts: one-half, one-third, one-quarter, one-fifth, one-sixth, one-eighth, one-tenth, and one-twelfth. Very simple examples of equivalence of fractions—*e.g.*, one-half equals two-quarters or four-eighths, illustrated by concrete work only.