

**HOW TO SECURE ACCURACY IN ARITHMETIC**

The degree of approach to accuracy by a pupil does not depend so much upon the *amount* as upon the *character* of the work done. Careless facility is not merely useless; it is positively harmful. Hence, while the problems provided for the pupil may be much more simple in respect to the amount of figuring required, the importance of accuracy must be emphasized to a very much greater degree, than has usually been the custom of teachers in the grades. Indeed the pupil must not be commended at all for inaccurate work—for work in which there is one wrong figure! It must be impressed upon him in the very beginning that ciphering in which there are errors has no value whatever. His task must be, not the solution of ten problems with but few errors, but rather as many problems as he can solve without making any mistakes. His seat work in arithmetic (and his home work, too, if any be assigned) should be, for the most part, mechanical, and so simple that he can concentrate his whole energy upon the matter of accuracy. It should be something that he well knows how to do, the only question being, can he do it accurately? In this way, and in this way only, can proper emphasis be put upon the importance of absolute correctness.

When papers or slates upon which is the work of many pupils to whom the task of copying and figuring had been assigned, are presented to the teacher for examination, it is not well for her to consider too much the *number* of errors made by each pupil. Each paper is *right* or *wrong*; *perfect* or *imperfect*; *good* or *worthless*. Whether it contains one error or ten, it must be put into the imperfect class. All the pupils who make mistakes in figuring must, for the moment at least, be classed together, whether the number of errors is two or ten. In either case the work is unsatisfactory, unreliable, worthless.

If, in the daily tests of the ability of pupils in figuring, more than twenty-five per cent. of the papers are imperfect, the teacher is at fault. Either the lesson is too heavy, or the teacher does not sufficiently impress upon the pupils the importance of accuracy in ciphering.

The seat work, the mere practice in figuring, should be made so light, and the pupils encour-

aged to exercise so much care in the doing of it, that seventy-five to ninety per cent. of the papers will be perfect. When this degree of accuracy has been attained, the amount of daily work *for those pupils who usually present perfect papers*, may be somewhat increased; but in all cases and in all the grades, infallible accuracy must be the aim. To what length can the pupil continue to manipulate figures without one error? is the question for the examiner and for the pupil.

Too often it has been the custom to mark a paper 90 if only one problem in ten contains an error. Often—shall I say usually?—the pupil has been taught to believe that 90 per cent of accuracy in the third grade is *good*. If only one figure was wrong, the paper was marked 95, and 95 is *excellent*. This has been the method of marking, too, in the fourth grade and in the fifth grade, and in all the grades up to and including the eighth. Then perhaps the pupil leaves school. For six years he has been taught that 95 in figure processes is *excellent*; 90, *good*; 80, *fair*; and even 70 good enough to “pass.” He goes out into the business world, to learn that 90 per cent of accuracy in figuring, instead of being *good*, is *absolute failure*; that there is no place in the world for a ninety-per-cent accountant. His inaccurate facility in the use of figures gained for him much credit in the schoolroom, but in the store it is worthless. The fact that he knows how to solve the problems, and can explain them with the “hences” and “sinces” in their proper places, is of no avail in his effort to retain his place as an accountant. He is inaccurate; hence his work is of no value whatever.

A nearer approach to accuracy may be made, not by a greater amount of careless manipulation of figures in difficult problems, but by the careful solution of many simple problems in which the principal effort on the part of both teacher and pupil is to secure results that are correct in every respect. The most important part of the work of the teacher in this effort is not the correcting of the pupil's mistakes: it is rather the training of the pupil into such careful habits that mistakes will not be made. Many a teacher sits up at night to correct errors that she might better sit up in the daytime to prevent.—*The Western Teacher*.