

MISCELLANEOUS QUESTIONS.

$18 \div 2?$ $27 \div 3?$ $16 \div 4?$ &c.
 To $21 \div 3$ add $7 + 9 + 4?$ To $56 \div 7$ add $4 + 2 \div 5?$
 To $64 \div 8$ add $3 + 5 - 9 - 7?$
 $(27 \div 3) 9?$ &c. This must be read, $27 \div 3$ multiplied by 9.
 To $(18 \div 9) 2$ add $7 + 9 - 4 - 8?$ &c.

Division of Numbers leaving a Remainder.

How many times is two contained in 15? *Ans.* 7 times and 1 over. Why? Show it by lines. $\overline{)15}$ $\overline{)15}$ $\overline{)15}$ $\overline{)15}$ $\overline{)15}$ $\overline{)15}$ $\overline{)15}$ $\overline{)15}$. The teacher may now tell the scholars, that in future examples of this kind they would do well to arrange the given number into two unequal parts, the first or larger one containing a number a certain number of times, and the latter forming a remainder.

In this operation she appeals to the memory of the children in regard to the products of the table of multiplication. For instance, in the question $29 \div 3$, she may ask whether they think that 3 is contained in 29 a certain number of times without a remainder? Whether this is the case with 28? With 27? Yes; 3 is contained in 27, 9 times. Then how many units are over, to make up 29? Two units. Express now the whole question: $29 \div 3 = 7$ and 2 remaining.

All the following examples, which the teacher may give promiscuously, are to be solved in a similar manner; for instance, $39 \div 5?$

Solution: $39 \div 5 = 7$, with a remainder of 4.

Some Suggestions on the Application of the foregoing Exercises to so-called Concrete Numbers.

The purpose of these lessons being principally to develop a clear insight of numbers, their relations and properties, and the operations performed with them, the subject of their application does not seem to belong within the compass of this book; and the less so, as the examples to which we refer may be found in every treatise on Arithmetic. On the other hand, it may not be inappropriate, in connection with the principles advocated here, to render the teacher, to some extent, even independent of the examples supplied by a book.

In regard to one kind of examples which suggest the addition, subtraction, &c., of given objects, some of them of commercial interest, such as cents, dollars, pounds, &c., it need not be stated how easily these can be supplied at every step; nor should they be neglected, since they form an absorbing subject of consideration to every clerk, accountant, shopkeeper, and to other persons. As mental exercises, they must, however, be limited to numbers that can be easily remembered.

There is, however, one set of questions in which the terms usually adopted in the operations with abstract numbers, such as "adding," "subtracting," "multiplying," &c., are discarded, and other verbs supplied which imply the above named operations. For instance, there is addition implied in the actions to receive, to find, to earn, to borrow, to gain, to collect, &c. On the contrary, the idea of "getting less," or of subtraction, suggests itself to the mind by the actions of "leaving," "losing," "throwing away," "dying," &c. In the transactions of *buying*, we have an increase of articles, and a diminution of money; whilst in those of *selling* the case is reversed.

Now it would seem no difficult task to any thinking teacher to do what she is supposed to do in the preparation of all her other lessons, namely, to prepare for herself some examples of a concrete and practical character; as, for instance, "I had 28 cents; of these I spent 6, and lost 2. On the other hand, I earned 12 cents one day, 18 cents the other; how many cents have I now?"

In regard to multiplication, the teacher's examples must be applied to objects which present some uniform repetition. For instance, in the example, "7 square tables have how many legs?" we find a repetition of 4 legs in each, and therefore 7 times 4 legs in all. The same is the case with the question, What is the price of 7 articles, at 4 cents each?

In regard to division, the first practical view which suggests itself is that of dividing a certain number of objects among some persons, or arranging them within some spaces; as for instance: If I divide 20 apples among 4 persons, how many will each receive? If 28 chairs are equally distributed in seven rooms, how many are there in each room?

In these examples it would be simply absurd to say, Divide 20 apples by 4 persons, or 28 chairs by 8 rooms. This is another proof that the operations of arithmetic are performed mainly with abstract numbers, since the substitution of pears, cherries, marbles, and other objects, would not have affected the numerical operation.

There are a great many practical examples where division is not suggested by name, but simply by the circumstances attending the transaction. For instance, "I bought 5 articles with 35 cents; how much did I give for each?"

THE CO-EDUCATION OF THE SEXES.

TO what extent should the sexes be educated together? Is there any limit within the scope of our educational agencies at which the simultaneous instruction of boys and girls should cease? These questions deserve a more deliberate and careful examination by educators generally than they have yet received. If the well-being of society demands that the sexes should be educated together, then it is wrong to separate them in our schools. If otherwise, then the co-education of the sexes is equally wrong and impolitic.

Practically, the sentiment of our people is divided upon the subject; for we have schools for each of the sexes, and for both. So far as our common-school system is concerned, no distinction is made between the sexes in respect to their educational advantages, save in a limited number of cases in cities, where some of the grammar and high school departments are arranged for the separate accommodation of boys and girls. Certainly, in our public schools the two receive simultaneous instruction, and are brought under the influence of the same teachers. Why should not this plan universally prevail, and why should it not be continued throughout the entire course of training to which the young are subjected? There seem to be no objections which cannot be obviated by suitable accommodations and appliances. In a truly good school, under accomplished teachers, there certainly can be no serious impediment in the way of this simultaneous education. In a poor school neither sex should ever be educated. Any objection, therefore, which would lie against the combined plan would be equally strong when applied to a separate one.

Let us consider briefly the facts which have a bearing upon the question under discussion.

1. The school is designed for and ought to be an instrumentality for preparing the young for the duties of life. In actual life the sexes are and ever ought to be co-workers. They co-exist in the family, they mingle in the social gathering, in the church, in the street, everywhere. Why, then, should they be separated in the school? The mutual influence of the sexes over each other is everywhere a powerful aid and incentive to both in their respective spheres of duty; and nowhere is it more so than in the school. The duties of life are comprised in the work of the family, in the amenities of the social circle, and in the offices pertaining to the citizen and the Christian. In these duties the sexes are called upon mutually to bear a part. There is here no isolation and no exclusiveness, while here, too, they have need of mutual sympathy and support. Why do they not equally require the mutual stimulus of each other's presence and efforts in the course of preparation for these duties?

2. Men and women possess the same order of faculties. And in general they require the stimulus of the same order of truths for the proper development of these faculties. Indeed, the social element of our nature can be developed only by the mutual influence of the sexes. And is social education to be neglected in our schools? Are the manners and the personal habits to be left unearned for? Indeed, may we not find one of the best explanations of the lack of discipline, and of the rough and often riotous demeanor of young men in our higher institutions in the absence of the refining and subduing influence of woman? Has it been proved by experience that in this isolated state the sexes make greater progress either in mental discipline or moral growth? Has not experiment rather established the reverse of this proposition? We are social beings. It is not wise to ignore this fact in our arrangements for the training of youth for the social state. It is not good for either man or woman to be alone. And this truth is verified in the history alike of our colleges and our female seminaries. No one that has had experience in college-life will dispute the demoralizing tendency of thus isolating young men from the benign influences which spring from the presence and society of woman. Nor would the history of exclusively female schools, if made known, afford to the philosophic educator results any more encouraging or satisfactory. Clandestine communications, secret meetings, and lapses from truth and duty are the legitimate fruits of violated social laws. The science of temptation should not constitute an element in the courses of training pursued in our schools. But such seems to be the case in these exclusive and one-sided plans for the education of youth.

The argument for the simultaneous education of the sexes, in our higher schools, derives strong support from actual experience. There are scores of able and successful educators in our country whose testimony concurs in favor of the highly salutary influence of the sexes, not only upon each other, but upon the discipline of the school. For the most part all well-regulated institutions of this character are self-governing. Breaches of good order, riots, and