HOW A NORMAL SCHOOL CLASS LOCALIZED ARITHMETIC

No problems in arithmetic, written for general distribution, can function absolutely in any locality. To arouse the child's keenest interest, and thus secure his best effort, the data of some of his problems must be of such a nature that they will help him interpret his everyday experience. Nothing touches his interests more closely than the industries of his community.

Although some teachers recognize this fact, they fail to utilize it. In many cases, the failure is due to the teacher's lack of training in the laboratory method in arithmetic. She needs to know how to get and use arithmetic data. To supply this need to teachers, normal schools should train their classes to get and use this material.

How shall a teacher get and organize data furnished by the industrial or commercial pursuits of her community?

First, she must know what the leading pursuits are. She must have sufficient knowledge of the ones which she intends to use to select the data most effective for her use.

Second, she must know the types of problems which occur in the actual business practice of these pursuits, so that she may present effectively the data secured in these types.

A description of a method for localizing arithmetic, worked out by classes in the Westfield Normal School, is here given.

The class first made a list of the leading industries of Westfield, and then selected several for study. Among those chosen were paper making and tobacco growing, as representative of two leading kinds of industry. Since a definite knowledge of these pursuits was necessary before a student could ask questions concerning them, the class made a brief study of paper making and tobacco growing, after which they visited a paper mill and a tobacco farm. Then they were ready to make sets of questions pertinent to arithmetic and to experience.

The following list of questions was sent to a paper manufacturer:

1. The price of raw materials?
2. Loss of weight in reducing the following raw materials to prepared pulp—wood, straw, linen, hemp, jute, cotton, and esparto grass?
3. The amount of time taken by the various processes in paper making?
4. The average cost of the following processes: cleaning, dusting, bleaching, reducing to pulp; beating, sizing, coloring, making the sheet or web, surfacing and cutting?
5. The wholesale and retail prices of writing, drawing, wrapping and tissue paper
6. The average yearly output by the firm of the different kinds of paper?
7. The output compared with the output of other paper mills in this locality and with the mill of the past?
8. The average increase in the cost of labor in the last two years; in the cost of material?
9. The markets for the paper?
10. The cost of the various kinds of insurance?
11. The average wage of an operative?
12. The number of operatives?
13. The rates of discount?
14. The number of commission agents?
14. The rate of commission?
16. Cost of transportation?
17. Amount of taxes?

Teachers will find most business men very willing to co-operate with the school in this work. From the data received, in answer to the questions written above, one student made the following set of problems in commercial discount, illustrating by one example each of the four types of problems most common in business practice.

Type I. The list price of one case of paper was $110. The discounts were 25% and 10%. Find the net price.

Type II. What was the list price of paper which gave discounts of 10% and 15% and stil lrealized $234?

Type III. Connors and Company buy paper at a discount of 25% and sell at a discount of 15% from the list price. What per cent. do they gain?