

## TELLING THE TIME.

"Tick, tock, tick, tock," says the big clock,  
 Tick, tock, tick, tock, almost eight,  
 Hurry, children, get your school books,  
 Hurry now, and don't be late.

"Tick, tock, tick, tock," says the big clock,  
 Tick, tock, tick, tock, almost three;  
 Put your books away, my children,  
 Run off home right merrily.

"Here is where my geometry can be put to practical use," said Miss Russell, as she deftly drew a circle sixteen inches in diameter on a piece of white bristol board, by means of a pencil "stub" and a piece of cord.

Upon the circle, in very faint dotted lines, she drew the diameters (vertical and horizontal). About half an inch inside the circle, she drew another circle. At the top of the vertical diameter, with a brush dipped in ink, she made the Roman numeral XII, at the lower end, the VI; at the left end of the horizontal diameter the IX, and at the right end the III.

Dividing the four right angles into three equal parts, she painted on the rest of the numerals, I, II, IV, V, VII, VIII, X, and XI.

The space between the numbers all around the dial was divided on the circle margin, into five equal parts (thus making the minute divisions.)

A long hand and a short hand, cut from cardboard and inked black, were secured to the middle of the dial by means of a metal fastener, and now the clock face was ready, and the hands easily turned this way and that.

Miss Russell took it to school and hung it by a cord from the top of the blackboard, within easy reach of the children.

She taught them the Roman numerals, and the meaning of the minute spaces—what "half" and "quarter" meant, and illustrated it all on the big dial. She taught them to count by fives, and how to move the short hour hand and the long minute hand.

Of course, this took time, but the training in number work was good, and after a while when the children understood about it, as a little recreation and exercise, Miss Russell would call up one of the little pupils, whisper to him to make the clock say a "quarter after ten," whereupon he would go to the dial, turn the hands to the proper place and call upon one of his schoolmates to "tell the time," and this one, if he told it correctly, as a reward, was permitted

to set the clock at some hour, and call upon others to "tell the time."

This is a good and practical exercise, and can be worked out with good results even in the first grade.—*Primary Education*.

## DRILL IN MULTIPLICATION.

I have found it advantageous to substitute for drill in the multiplication tables a series of problems. These problems can be prepared rapidly and in great numbers in the following way. The method also has the advantage of giving complete drill in all the combinations.

The selection of the multiplier is dictated by the steps previously developed. Two's and three's having been developed, the multiplier may be 2, or 3, or, if two-place multiplying be known, 23. Four's having been developed, and multiplication by three places known, the multiplier can be 234, or 432, or 423, or 324. A multiplicand is then selected as follows: 369—. Successively around the school I give out to replace the dash the figures 1, 2, 3, 4, etc., up to 9. The first child's multiplicand, then will read 3691; the second child's 3692; the third child's, 3693, etc., a condition that alters the result of each child's example and so puts each child on his own resources. His neighbor cannot help him and he finds the necessity of doing his own work.

Quickly working the first example, I add the multiplier to the product and get the answer to the second example. Adding the multiplier to that answer gives the answer to the third example, and so on.

This is the device partially worked out:

3691	
432	
7382	
11073	
14764	
1594512	First child's answer.
432	
1594944	Second child's answer.
432	
1595376	Third child's answer, and so on.

The facility with which each child can be given a separate example and be immediately examined is the feature that recommends the device for at least examination.—*Western School Journal*.