

vided by an even number, the G. C. M. of these numbers is 1. The application of the test renders the operation easier, in proportion to the increase of the number of numbers, whose G. C. M. is to be determined.

It is required to find the G. C. M. of 740, 333, 296. It is evident that it cannot be greater than 37. Thirty-seven is a prime number, therefore the G. C. M. of these numbers is either 37 or 1. As 37 will divide each, it is their G. C. M. Illustrations might be multiplied, but it is believed that a sufficient number has been cited to show the great value of the test. The use to which the G. C. M. is commonly applied is in the reduction of the more difficult fractions to lower terms.

Instead of its use, the operation in many schools has been made a trial process. This should not be. The thought should go directly to the point desired.

It is required to reduce to lowest terms  $\frac{333}{667}$ . It is evident that the G. C. M. cannot be greater than 34. It cannot be 34, and if the G. C. M. is other than 1, it is factor of 34, which is odd : 17 is such factor. Consequently 17, and only 17, will divide each term, or else the fraction is in its lowest terms.

It is required to reduce to lowest terms  $\frac{329}{658}$ . It is evident that the G. C. M. cannot be greater than 138, the difference between the two terms, but 138 is an even number. If its factor 6 be expunged, the factor 23 remains; therefore, if the terms of the fraction are each divisible by any number, that number is 23.

It may be asked, Why should six be expunged? By well-known tests, neither 529 nor 667 can be divided either by 2 or 3; consequently they cannot be divided by their product.

The knowledge of the G. C. M. can be applied in the solution of many problems, which some arithmeticians have solved by means of a lengthy process of analytical induction. When the knowledge is thus applied, it renders the solution not only mental, but nearly instantaneous. The citation of such examples may hereafter be given in these columns.

### HELPFUL HINTS.

Be natural ; a poor diamond is better than a good imitation.

Try to be accurate, not only for your own sake, but for the sake of your sex ; the incapacity of the female mind for accuracy is a standard argument against the equality of the sexes.

Observe . the faculty of observation, well cultivated, makes practical men and women.

Try to be sensible , it is not a particular sign of superiority to talk like a fool.

Be ready in time for church : If you do not respect yourself sufficiently to be punctual, respect the feelings of other people.

Avoid causes of irritation in your family circle ; reflect that home is the place in which to be agreeable.

Cultivate the habit of listening to others ; it will make you an invaluable member of society, to say nothing of the advantage it will be to you when you marry ; every man likes to talk about himself ; a good listener makes a delightful wife.

Be contented ; " martyrs " are detestable ; a cheerful, happy spirit is infectious ; you can carry it about with you like a sunny atmosphere.

Avoid whispering ; it is as bad as giggling ; both are to be condemned ; there is no excuse for either one of them ; if you have anything to say, say it ; if you have not, hold your tongue altogether ; silence is golden.

Be truthful ; avoid exaggeration ; if you mean a mile, say a mile, and not a mile and a half : if you mean one, say one, and not a dozen.

Sometimes, at least, allow your mother to know better than you do ; she was educated before you were born.—*Southern Journal of Education.*

### READING.

Special drill exercises suitable to either primary or advanced classes :

1. Each as he reads a paragraph closes the book, and tells in his own language what he has read.
2. One reads, another tells what has been read.
3. All read silently, close books, and one tells the thought gained from the reading.

This is a very valuable exercise. The power to use books profitably and pleasantly will be in proportion to the power of gaining rapidly and easily the thought of a sentence through the medium of the eye. Silent reading should be a daily exercise.

4. After a lesson has been read, either silently or aloud, the teacher may, by questions, bring out the main thoughts of the lesson.

5. After a lesson has been completed, either silently or aloud, books may be closed, and one pupil gives a complete summary of it, without questions.—*Bell S. Thompson, in N. E. Journal of Education.*

### DRAWING.

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### XIII.

LEAF-DRAWING.—(Continued.)

After having made the single leaf-forms as described in our last paper, it will both instruct and amuse the pupil to require him to combine them in various ways, especially as rosettes and mouldings. The prettiest and most artistic forms of ornament can thus be made ; many children show great natural taste even in the grouping of a few flowers or in making an ornament out of a few dried or withered leaves—and in the Greek story of the origin of the Acanthus ornament we have the same idea of leaf-beauty ; now this is a taste that is worth cultivating, and one whose best models are supplied by Nature all around us.

Let the teacher take a few dried leaves, maple, oak, ivy, &c., and arrange them in a rosette, or as a running pattern, by fastening them to a card or board—he will have an excellent model for this part of our work. Suppose, then that a square rosette of Ivy has been made, the next point is to make two pupils give a conventionalized copy of the natural one. Draw a square of  $2\frac{1}{2}$  or 3 inches side (be very careful in this branch also that minute drawings are discouraged)—then mark the diameters and diagonals. In each of



the four squares place the design required, the diagonals forming the centre of the leaf, then in order to avoid the inartistic appearance of the junction of stalks, place at the centre of the original square, an ornamented circle or square of about  $\frac{1}{2}$  inch radius or side ; of course the leaves must all be exactly similar and also equal otherwise an unsymmetrical form is

the result ; a smaller leaf may be introduced between the others, should the first not be made to cover the whole space. Another variety may be made by causing the leaves to overlap, and erasing the hidden portion of the one below.

Similarly a triangular or circular rosette of "maple" may be