CD, the line EF is also equal to CD, What is the inference? At first the answer is likely to be, "therefore the lines are all equal to one another," and this, of course, is *not* the immediate inference. So, in solving an arithmetical problem, a pupil may discover the relations:—The selling price $= \frac{11}{10}$ of cost price; the selling price is 20 more than $\frac{9}{10}$ of cost price; and yet fail to see that through the application of this axiom the answer is at once obtained. The pupil must be plied with many concrete examples; he will have to be questioned and cross-questioned upon the principle and its applications, until he has acquired a clear apprehension of it, a working conception which he can readily bring to bear in all cases in which it applies.

Once more; when a child has fairly learned the number six, he will not, at first, solve off-hand such a question as: If 2 apples cost 4 cents, what will 3 apples cost? Much less will he be able to comprehend its solution by the "Rule of Three," since the general idea of ratio and the complex idea of the equality of ratios, are quite beyond his grasp. But he can be led to solve the problem by taking its two steps, one at a time. By clear intuitions he can be led first to perceive, and then to conceive that if 2 apples cost 4 cents, one will cost 2 cents; and then by similar means, to see that if 1 apple cost 2 cents, 3 apples will cost 6 cents: As, *e.g.*,

apples .. .. • | • .. .. cents;
apples .. .. • | • .. .. cents;

therefore 1 apple costs 2 cents, etc. Thus forming clear perceptions from a few examples, he will quickly rise to a conception of such relations, and so be able to solve similar problems without the aid of visible objects.

*Relating Facts.*—Not only is questioning the sure test of how the child's mind is dealing with the material, it is, as has been suggested, the best way to guide him in relating the facts. Though it is chiefly the mechanical aspect of association that comes into play in the primary stage of instruction, the main object, even here, is mental discipline, and, therefore, a rational spirit must pervade the teaching. There can be, of course, no severe demand made upon rational comprehension, because this is only in the beginning of its development; but facts can be presented in their proper relations—things can be associated by the law of similarity. It is by the teacher's preparatory analysis of the subject, and by his judicious questioning, that the child is brought to think implicitly, facts in their relations. He does not grasp explicitly the underlying unity of the facts; but to some extent, related facts explain themselves; and if this rationality of facts has been carefully kept in mind by the teacher during his Socratic lesson, there will be retention of the facts in their relations, unconscious appropriation of their rationality, which in good time will grow into conscious recognition of their logical connection.

*Illustration.*—If, for example, the facts of six have been presented in clear intuitions : : : there will be a gradual, but sure growth of these clear perceptions into a conscious thinking of the relations between 1 and 6, 2 and 6, etc.; 6 is 6 times 1, 1 is one-sixth of 6; 6 is 3 times 2; 2 is one-third of 6, etc. Having learned thus much, he passes easily (first by intuitions, of course) to the new facts: $6 + 2 = 8 = 4$ times 2, 2 is one fourth of 8; and so on, to 5 times 2, 6 times 2, etc. So, too, $6 =$ *two* times 3; $9 = 6 + 3 =$ *three* times 3, $3 =$ one third of 9, and so on. That is, from the right presentation of objects, the child forms clear perceptions which almost unconsciously grow into a clear thinking of the relations of numbers in the multipli-