

point of the compass being  $11\frac{1}{4}^\circ$ ) making it the required length, 420 yards. From A to a is 119 yards at which point there is a set-off to the left of 21 yards. From A to b is 195 yards, where another set-off of 96 yards to the left is found. BC being 192 yards and AC 479, construct the triangle ABC, noting that BC turns to the right from AB, and on BC and CA mark off the ordinates from the table as before. Join the points of the triangle and extremities of the ordinates to complete the figure.

After completing the drawing the children may be allowed to compute the area of each part of the figure, and of the whole. To allow of the simplest method of getting the area of triangle ABC, the perpendicular height is given from B.

FIG. 10. To draw a tangent to a circle from a given point in the circumference. Join A the given point to the centre O. At A draw AB at right angles to AO. AB is the tangent required.

FIG. 11. The same as Fig. 10, from a point outside the circle. Join the point A to the centre O. Bisect AO in B. With B as centre and radius BO describe a circle cutting the circumference in C and D. Join AC and AD. Both these lines are tangents to the circle.

FIG. 12. The same as Fig. 10, from a point in the circumference, but without using the centre. From A the given point, draw any chord AB. Bisect it in C and erect perpendicular CD. Join AD. Make the angle DAE equal to the angle DAC. AE is the tangent required.

FIG. 13. This exercise is designed to shew a practical application of problems on tangents. AB represents a piece of straight railroad track. Another straight road approaches C. It is required to form by a natural curve a junction at D. AB being tangential, a perpendicular from D will give one locus of the centre. Join CD. Bisect this chord and produce. This will be another locus. The common one is E, which is the centre of the curve.

We are living out these lives of ours too much apart from God. We toil on dismally, as if the making or the marring of our destinies rested wholly with ourselves. It is not so. We are not the lonely, orphaned creatures we let ourselves, suppose ourselves, to be. The earth, rolling on its way through space, does not go unattended. The Maker and Controller of it is with it and around it and upon it. He is with us here and now.—Nelson H. Huntington.

### A History Device.

The use of scrap books has become so well known and so useful in geography that it suggested itself in history and has proved equally successful in that subject. The greatest handicap, especially to the country teacher, is the lack of time, but this may be overcome largely by a little planning, and letting the pupils do most of the work, which greatly enhances its value.

An old composition book makes a good scrap book. Cut out part of the leaves to allow for the added thickness of the pictures. The pupils may be aided a little in collecting the pictures, but as far as possible let each child collect and classify his own pictures, only giving a little advice or a few suggestions as to the topic. Each day's lesson may be taken as a topic, if there is time; for example, when the class is studying some battle, as the battle of Gettysburg, let each try to find pictures illustrating this battle; many such pictures may be found in old magazines. This brings the lesson more clearly before the mental vision, keeps it in the mind longer, and creates an interest.

Pictures of the noted statesmen may be used as they come in the lessons, and a brief sketch of the life of each learned in connection with the picture. Pictures of old historic buildings, forts, etc., all help in making the subject interesting. The children never tire of them, and vie with each other as to who can bring the most practical and useful pictures, and who can picture out the topic in the most graphic manner.

Another aid in the study of history is map-drawing—drawing maps of each section of country as brought into prominence in the lessons. This also helps in making history real. In the wars the maps are drawn, then the routes of the different armies are traced in colored crayons, a different color being used for each army. The best of these maps are saved and put into the scrap books.

History studied in this manner is much more real to the pupils than when studied by merely committing to memory the words of a text-book. Approximate dates are associated with nearly every picture, so that time and places are permanently located in the mind, and looking over the scrap book when completed gives a quick review of the entire term's work. This method is especially helpful in seventh grade history.—Popular Educator.