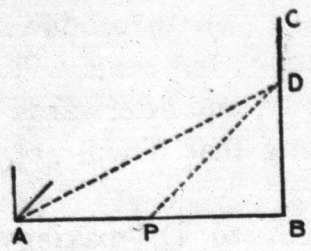
square upon which would be twice the square on PB? Have you had an exercise to do it?



Pupil: Yes, in the last exercise but one, we learned how to do this.

Teacher: What would you do then?

Pupil: From B, draw BC perpendicular to AB and cut BD off equal to PB. Join PD, then PD squared = 2PB squared (theor. 29).

Teacher: Then as AP squared was supposed to be equal to 2 PB squared, and you have shown PD squared = 2 PB squared, what follows?

Pupil: That AP squared = PD squared; therefore, AP = PD.

Teacher: What construction would we now make, so as to get any connection between AP and PD?

Pupil: Join A, D.

Teacher: Now, since BD = BP in triangle DBP and angle DBP is a right angle, what is the size of angle DPB?

Pupil: The angle DPB is ½ a right angle by theors. 5 and 16.

Teacher; And since AP = PD, and exterior angle DPB = ½ a right angle, what is the size of angle DAB?

Pupil: The angle DAB must be ¼ of a right angle.

Teacher: Now, having a straight line AB given, can you give me the necessary construction to divide it as required?

Pupil: Yes. At A make the angle BAD equal to ¼ of a right angle. From B draw BC perpendicular to AB and let AD meet it in D. From BA cut off BP = BD. Join D, P.

Teacher: Now can you prove AP squared = 2 PB squared?

Pupil: Yes, it is an easy exercise.

In order to work intelligently the "Exercises for Squared Paper" given on page 132 and in subsequent exercises, the pupils must be provided with paper ruled in squares. This can be obtained at any bookstore. The teacher must have a blackboard striped in inch squares. But if this is not convenient, a couple of yards of blackboard cloth can easily be procured, and any painter will do the necessary striping. Indeed, the teacher might do it himself.

For the Little Folk.

St. Valentine's Day, February 14th.

If it seems to interrupt the regular work and you are tempted to overlook it, go back into your own childhood for a minute and think whether it is the "regular" days that you remember, or the days in which something a little out of the ordinary happened, Tell the legend of St. Valentine, and that it is love that makes the tokens valuable. Nobody wishes to send his love with anything that is not pretty, of course, so the question of comic valentines is easily disposed of.

Now we will make some valentines to take home, and mamma shall be the recipient of these favours. Sketch a dainty flower on a small card and have the children colour it with coloured pencils or with water colour. A bird with a letter in his mouth is a pretty design to be perforated or sewed, while a heart sewed in red worsted, or cut from red paper and pasted on a white card, is effective with an appropriate motto. Always choose some simple design. The result will be much more satisfactory when completed than an elaborate affair, for the latter will be only half done, and so soiled that neither giver nor receiver will find much pleasure in it, except as an expression of love.

Let envelopes be made and the "love tokens" taken home to be put at mamma's plate or to be left at the door with a loud ringing of the door bell.—*Selected.*

When the Birds Come North Again.

Oh, every year hath its winter
And every year hath its rain—
But a day is always coming
When the birds come North again.

When new leaves swell in the forest,
And grass springs green on the plain,
And the alder's vein turns crimson—
And the birds come North again.

Oh, every heart hath its sorrow,
And every heart hath its pain—
But a day is always coming
When the birds come North again.

'Tis the sweetest thing to remember,
If courage be on the wane,
When the cold, dark days are over—
Why, the birds come North again.

—Ella Higginson, in Our Dumb Animals.