

Object Lessons and Nature-Study.

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Trees in School.

The trees will soon awake from their long winter sleep, and stimulated by the energy radiated from the vernal sun, burst into flower and leaf. Do not let this wonderful and beautiful transformation pass, with all its opportunities for teaching, almost unnoticed by your school.

For it is certainly true that in this land of forests and of schools, a great number of the children are growing up unable to recognize any but a few of our native trees and shrubs. And of the few they can name, their knowledge is extremely limited and superficial. The leaves of the trees, their flowers, their fruits, their *habits of life* are practically unknown.

Two lessons on the willow are outlined in this article. But of course you cannot give the time required for these lessons to every tree. Branches should be brought in from the fields and groves and set about the school room in jars or bottles containing a little water. Attach to these branches cards upon which are written a few carefully selected questions. Encourage your pupils to find during their spare minutes, by examining the branches and observing their development, the answers to these questions. Fresh branches may be brought in from time to time.

By watching the trees out of doors, the children will learn that many of our trees and shrubs blossom before the new leaves appear—that in some the flowers and leaves appear together—while in others, the leaves precede the flowers. Ask the young observers to notice whether the leaves are small when they first appear, and gradually grow larger, or whether their blades are full grown when they first expand. Then the development of the fruit should be watched, and what parts of the flower enter into it should be determined.

TWO EARLY SPRING LESSONS ON A WILLOW.

Each pupil is supplied with a short willow branch, bearing leaf-buds and yellow catkins in full bloom.

1. What do you miss on this willow branch?
2. Find how last year's leaves were arranged. How did you find out?
3. What do you find on the willow branch?
4. What kind of buds do you see?
5. What became of the large buds (which we saw on the willow early in April) with both waterproof and fur coats? Where are the coats?
6. Take off one of the yellow catkins and shake it or press it between your fingers.

7. What have you thus found out about these yellow catkins?

8. Pull one of them in two and find what the soft hairs grow on.

9. Bend back with a pin or knife-blade one of the brown scales and then another, and find what grows close above each.

10. Show whether all the stamens in the catkin belong to one flower or not.

11. How many stamens are there in each single flower?

12. What parts of a complete flower are absent in each of these?

13. Why is each single flower called a staminate flower? Of what use is it?

14. Since the brown scales grow close below the flowers, and are neither flower-leaves nor foliage-leaves, they may be called *bracts*.

15. Make a drawing of a single staminate flower.

LESSON II.

On each desk are placed two small willow branches, one bearing staminate catkins and the other a different sort.

1. Pull one of the new sort of catkins into two parts.
2. What do you find in it which you found in the other?
3. What do you miss in it which you saw in the other?
4. What do you find in it which was absent in the other?
5. Of what does each single flower in *this* catkin consist?
6. Why is each flower called a *pistillate* flower? What is its use?
7. Into how many parts is the top of the pistil divided? What does that show?
8. What is the use of this part? It is called the *stigma*.
9. Find where the seeds are formed. This part is called the *ovary*.
10. From how many carpels (ovule-bearing leaves) is each pistillate flower formed?
11. Of how many stamens (pollen-bearing leaves) is each staminate flower composed?
12. Which cohere more—the stamens or the carpels?
13. Make a drawing of a single pistillate flower.
14. What is a catkin?
15. Find why such a cluster of flowers is called a catkin.
16. Find whether both staminate and pistillate catkins can be found on one branch.