

Ten Important Hardwoods Lesson Plan

Keywords: hardwood, species, simple leaf, compound leaf, blade, stalk, leaflet, lobe

Lesson Plan Grade Level: 6th - 8th

Total Time Required For Lesson: 50 minutes as one continuous time block, plus an optional homework assignment. Permit four days for the students to gather material and complete the homework.

Setting: Classroom or Outdoor Learning Environment

Subjects Covered: Science, Biology, Environmental Science

Topics: Pennsylvania hardwood trees, tree identification

Goals For The Lesson:

Students will gain an understanding of ten important Pennsylvania hardwood trees.

Students will examine characteristics of each tree species and be able to recognize at least two characteristics of each species.

Materials Needed:

Ten Important Hardwoods' fliers (From The Woods Series)

Ten Important Hardwoods' pre- Assessments (one for each student)

Ten Important Hardwoods' post Assessments (one for each student)

Paper

Pencils

Appendix 1

Appendix 1a – Answer Key

Envelopes

Appendix 2

Poster board (for the optional homework assignment)

State Standards Addressed: *E&E Standards:* 4.2.7, 4.8.7 *S&T Standard:* 3.3.7

Teaching Model: Experiential Learning Model (Experience, Share, Process, Generalize, Apply)

Methods:

Preparation:

Read through the entire lesson and appendices to ensure your understanding of the content and activity.

Be sure to make copies of Appendix 1, then cut out to create the matching activity described below. Place the pieces in envelopes for the groups. (One set of appendix 1 per envelope)

Create four areas in the classroom. The students will be working in groups and should have a designated area to work.

Doing The Activity:

Introduction to the lesson. Explain to the students that they will be learning about and examining ten important hardwood trees of Pennsylvania. These ten trees are important both economically and ecologically.

Steps:

(Experience and Share Stages 25 minutes)

1. Administer the pre assessment to the students; explain that the purpose of the assessment is test knowledge the students already have acquired on the subject. (allow approximately 7 minutes for the test then collect)
2. Ask the students if they have any comments concerning the Assessment.
3. Hand out the *Ten Important Hardwoods* flier.
4. Explain to the students that they will be working in groups to read the flier and complete an activity.
5. Assign the groups and ask them to go to the designated area. Permit time for the groups to read the flier. Tell the students to examine the leaves of each tree species carefully.
6. Once the groups have completed the reading ask if there are any questions, then complete the review questions – Appendix 2, before beginning the activity. After all questions have been answered ask the students to hand in the fliers.
7. Explain to the students that they will be completing a matching activity- matching the tree leaves with the appropriate names.
8. Hand out the pieces of Appendix 1, which should already be cut, to each group.
9. They should document their answers on paper.
10. Allow time for the students to complete the activity, monitor the groups to ensure All of the students are participating.

(Share and Process Stages 13 minutes)

11. Hand out the fliers once again and allow the students to check their answers. Allow time for each group to present their information and how well they were able to identify the trees.

(Generalize and Apply Stages 12 minutes)

12. Ask the students if they have any further questions regarding the material.
13. Administer the post assessments. Allow the students time to complete then Collect.

OPTIONAL - Homework assignment- Explain to the students that they will be completing a homework assignment regarding identifying leaves.

- a. They will have 4 days to complete the assignment. (You may want to assign the project on a Thursday so the students have the weekend to complete.
- b. They must locate 5 of the 10 Important Hardwoods and return to class with the correct names.
- c. The leaves should be mounted on poster board and the correct tree names should be beside the name. They should be properly pressed and dried before mounting.
- d. The students should also identify whether the leaves are simple or compound.
- e. When the students have completed the assignment allow them to share their findings with the class.

(Display your classes' work)

Assessment: The students will be evaluated through participation and upon completion of the activity and assessment. If the homework assignment is completed the students should be assessed upon their work.

Conclusion To The Lesson: “This completes today’s lesson I hope that you have gained a more thorough understanding of ten important hardwoods. Hopefully when you are outside walking you will notice the difference between trees, leaves, bark and other characteristics we discussed. Does anyone have any further comments concerning the lesson?”

References and Resources:

Ten Important Hardwoods flier (From The Woods Series)
The Pennsylvania State University
112 Agricultural Administration Building
University Park, PA 16802

Katie Roth, Pennsylvania Certified Teacher and Sanford Smith, Extension Specialist Penn State School of Forest Resources prepared this lesson.

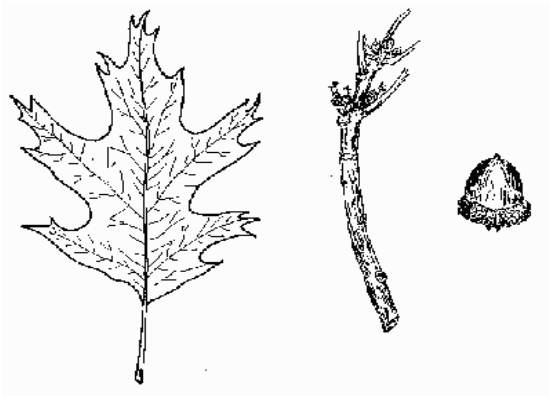
Appendix 1 – Matching Tree Names with their Leaves

Directions: Make copies of the Appendix, you will need a copy for each group. After you have made the copies cut out each tree name and each leaf picture separately. Place each piece in an envelope to hand out to the groups. The students must: 1. match the tree name with the correct leaf/characteristic picture and 2. write down if the leaf/ leaves are compound or simple and opposite or alternate.

Leaves/ Characteristics

Tree Names

A



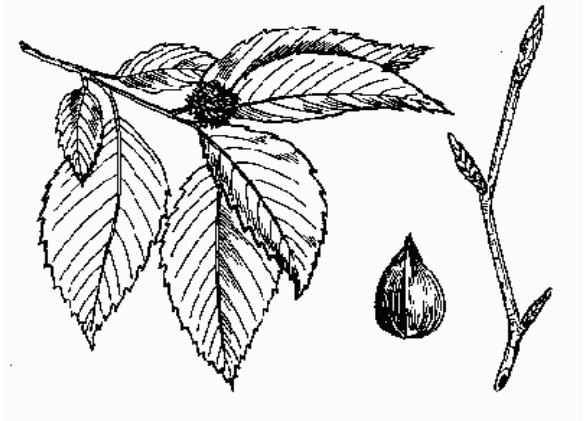
1. Red Maple

B



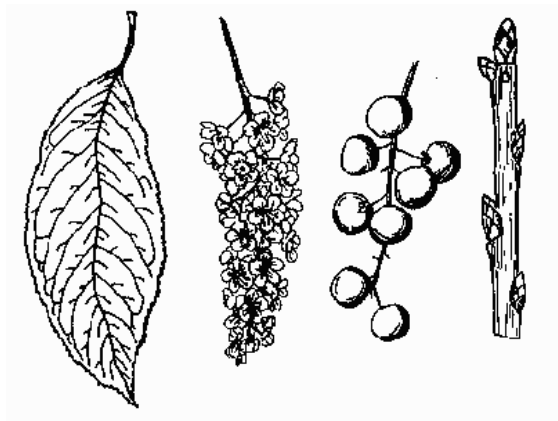
2. Black Cherry

C



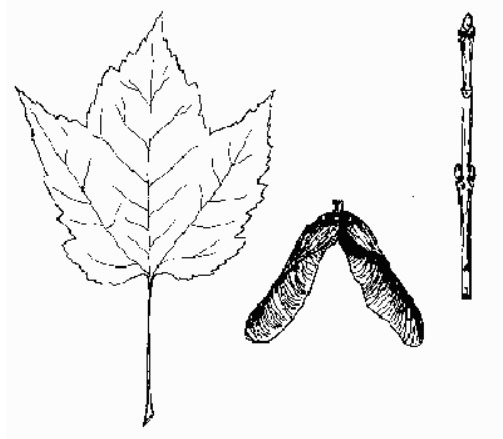
3. Red Oak

D



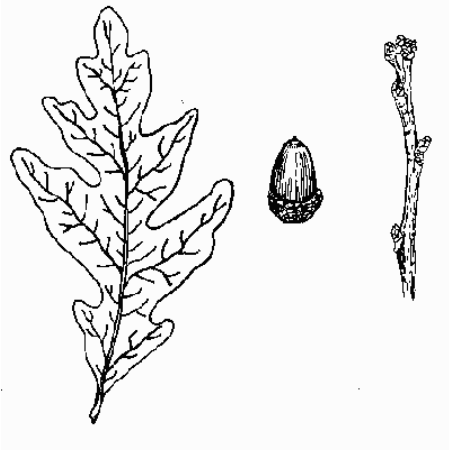
4. White Oak

E



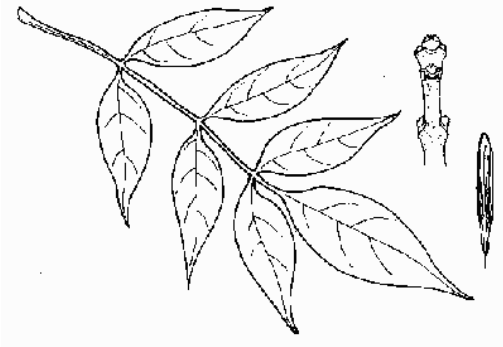
5. Yellow Poplar

F



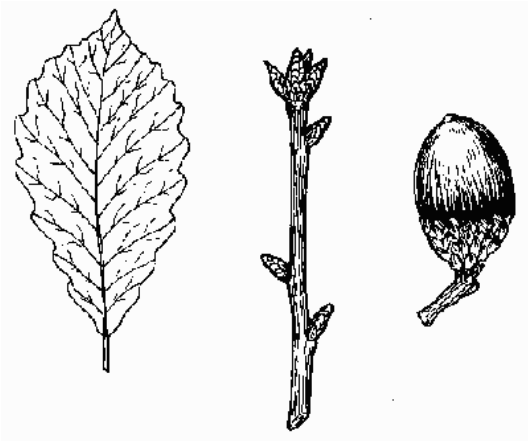
6. Sugar Maple

G



7. Chestnut Oak

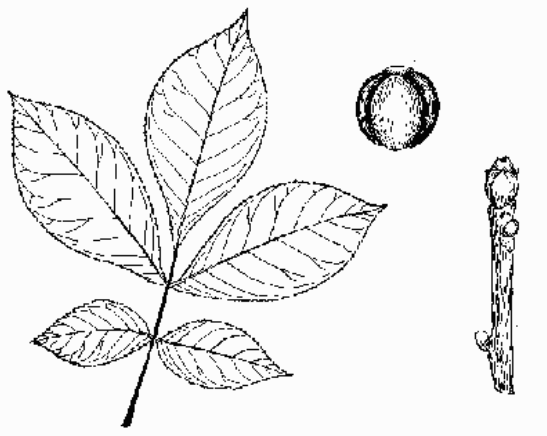
H



8. White Ash

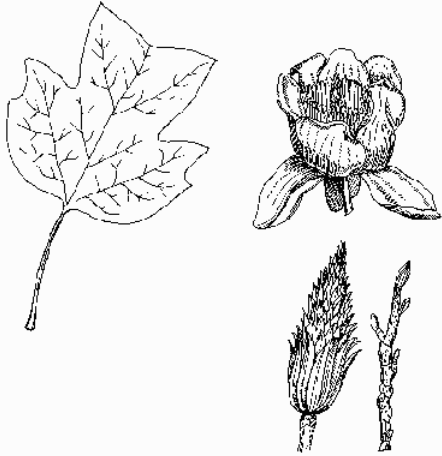
I.

9. American Beech



J.

10. Hickory



Appendix 1a Answer Key

- A. = 3 Red Oak- alternate/ simple
- B. = 6 Sugar Maple- opposite/ simple
- C. = 9 American Beech- alternate/ simple
- D. = 2 Black Cherry- alternate/ simple
- E. = 1 Red Maple- opposite/ simple
- F. = 4 White Oak- alternate/ simple
- G. = 8 White Ash- opposite/ compound
- H. = 7 Chestnut Oak- alternate/ simple
- I. = 10 Hickory- alternate/ compound
- J. = 5 Yellow Poplar- alternate/ simple

Appendix 2- Review Questions

1. What are some things you might examine to identify a tree?
(leaves, flowers, bark, seeds, fruit, etc.)
2. What are the parts of a simple leaf? Ask the students to point out each part on a leaf.
(blade, leaf stalk, and bud)
3. What are the parts of a compound leaf? Ask the students to point out each part on a leaf.
(leaflets, leaf stalk and bud)
4. Explain the difference between opposite and alternate leaves.
(opposite leaves are opposing on the branch/ alternate leaves are alternate on the branch)
5. What are some products that can be made out of hardwood trees?
(furniture, cabinet making, paneling, doors, handrails, flooring, etc.)