



Illinois Trees

1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

BACKGROUND: See the Background Information section.

OBJECTIVE: Students will use Illinois-specific tree resources to observe, draw conclusions, develop a plan and design a solution.

MATERIALS: *Illinois Trees* resources trunk

PLEASE NOTE: The *Biodiversity of Illinois* CD-ROMs are included in the *Illinois Trees Resources Trunk*. However, the information in the CDs has been updated, expanded and converted into a Web page at <https://www2.illinois.gov/dnr/education/Pages/Biodiversity-of-Illinois.aspx>. You may find the information easier to access at this Web page.

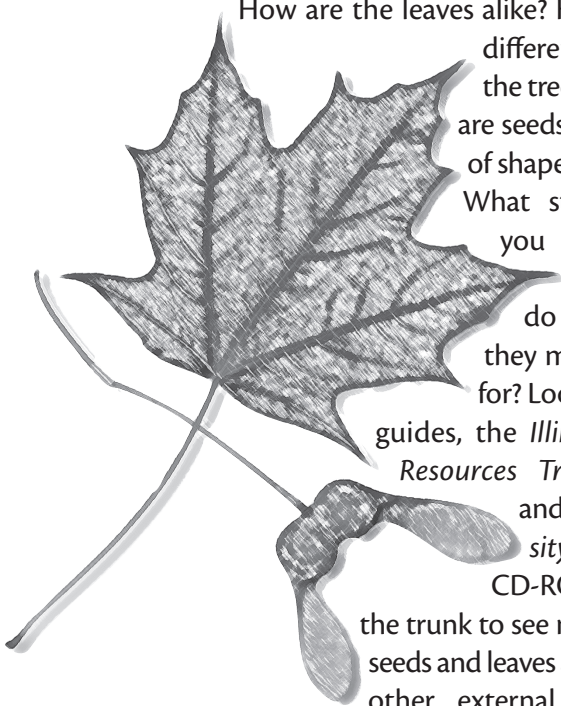
Suggested Activities

Activity 1

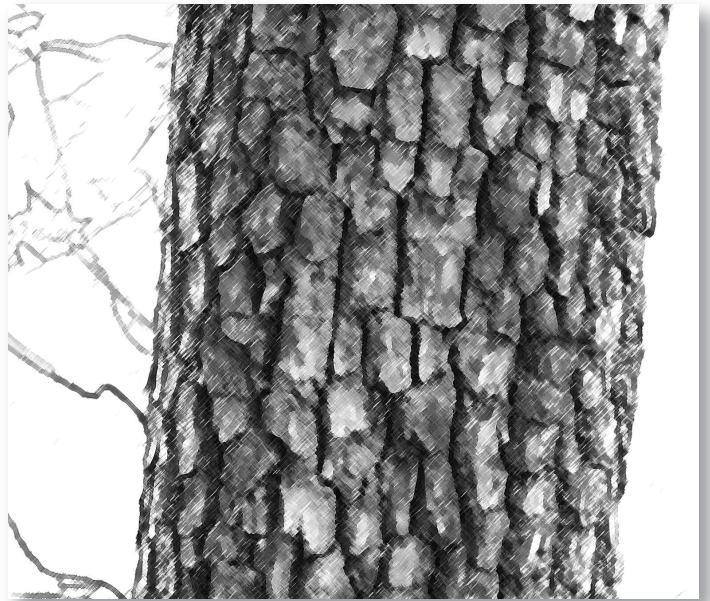
● The contents of the *Illinois Trees* resources trunk include preserved leaves and seeds. Have the students look at these items. What are leaves? Where are they found on a tree?

How are the leaves alike? How are they different? Look at the tree seeds. What are seeds? What kinds of shapes do you see? What structures do you see on the seeds? What do you think they might be used for? Look at the field guides, the *Illinois' Natural Resources Trading Cards* and the *Biodiversity of Illinois* CD-ROM series in the trunk to see more types of seeds and leaves and to look at other external features of

trees. Take the students outdoors to examine trees, if possible.

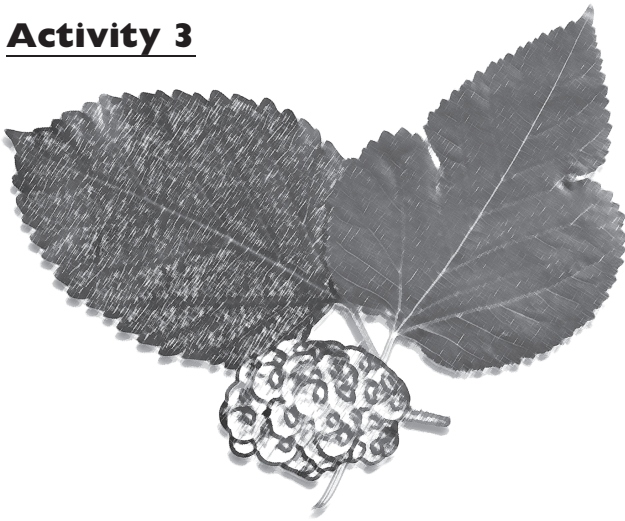


Activity 2



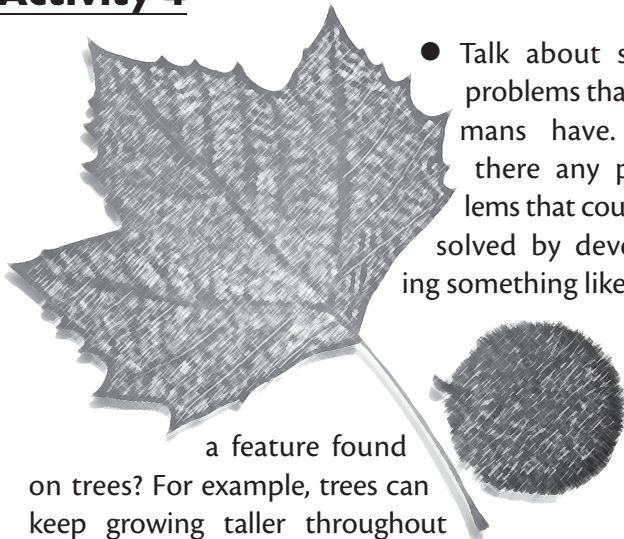
● Tree cookies are also included in the *Illinois Trees* resources trunk. Ask the students to look at the bark on the tree cookies. Have them describe the bark. If there are trees in your schoolyard, have them look at the bark on the trees. What similarities and differences do they see in the bark on different trees? What functions might the bark have for a tree?

Activity 3



- From what you have learned in looking at these items, how could you as a human be helped by some of these features that trees possess? What are some problems that humans have that could be helped by developing structures or traits that are more like those of trees? For example, if you had leaves, how could that help you? If you could make your own food, how would that help you? Would these changes cause problems as well?

Activity 4



- Talk about some problems that humans have. Are there any problems that could be solved by developing something like

a feature found on trees? For example, trees can keep growing taller throughout their life. Would it help humans to be able to keep growing taller throughout their life? Trees have tough bark. How could we be helped by a tough outer coating? Have each student select a human problem that could be solved by copying some feature that a tree possesses. The student should design and make some representation of what this new feature would look

like, what tree feature he/she chose to copy and be able to explain its benefit. Each student should also talk about any problems that might arise from having this new feature.

STEM Connections: Evaluations

Science: All of the activities shown above are science-based and can be used for evaluations.

Technology: Students can use the *Biodiversity of Illinois* CD-ROMs to look for features in Illinois trees that might be beneficial to humans.

Engineering: Activity four is engineering-based and can be used for evaluations.

Mathematics: Students could research the heights of a few trees and represent those heights comparatively and visually in some manner (graphing; measuring and marking the distance in the school yard or hallway; etc.).

Training

Additional training about Illinois trees and woodlands and on implementing this topic to support performance expectation 1-LS1-1 can be obtained through ENTICE (Environment and Nature Training Institute for Conservation Education) workshops from the IDNR. *Illinois Woodlands 101* is an example of a related workshop. See the “Resources” page for more information. The IDNR Division of Education also provides training sessions at teacher conferences throughout the state.



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Printed by the Authority of the State of Illinois 09/20 • IOCI 21-0116