

## Backyard Biologist

1. **DESCRIPTION**: Teams will be assessed on their knowledge of living organisms that they may encounter in their own backyard. **In 2022, the focus will be on plants & insects.** Teams will be required to identify organisms from a provided list and know about the habitat and conditions required for growth of the organisms.
2. **ESSENTIAL STANDARDS ALIGNMENT**: 2.L.1, 3.L.2, 6.L.1, 6.L.2
3. **TEAM OF UP TO**: 2
4. **MAXIMUM TIME**: 60 min.
5. **TEAMS**: Must bring writing instruments. Teams may also bring up to 2 commercially produced field guides and/or 2 1-inch, 3-ring binders with pages in any form, from any source, contained in the rings. (This means 2 guides, or 2 binders, or a guide and a binder). Actual plant & leaf samples are allowed in the binders as long as they are in plastic sheet protectors. No insect parts are allowed in the binder. Teams may also bring up to two hand lenses.
6. **EVENT LEADERS**: Will provide an event with all necessary items, objects, materials, questions, and response sheets for participants to complete exams. Examples include but are not limited to: drawings, scenarios, questions, leaves, bark, seeds, photographs, and specimens.
7. **SAFETY REQUIREMENTS**: None
8. **IMPOUND**: No
9. **THE COMPETITION**: The competition will consist of an exam that covers any or all of the following topics.
  - a. Identification of specimens, by common name, from the Official Specimen List, including which are NC official state symbols. No more than 50% of the test will be identification of specimens.
  - b. Plants and trees
    - i. The structure and function of roots, stems, leaves, seeds, and flower parts.
    - ii. The life cycle of plants and how they make energy (e.g. basic photosynthesis, no chemical equations).
    - iii. The concepts of gravitropism, phototropism, thigmotropism, & hydrotropism.
  - c. Horticulture
    - i. What is needed to grow a successful garden and harvest food to eat, including how plants react in different conditions (no light, too much/too little water, addition of fertilizer, competition with other plants, etc).
  - d. Insects
    - i. Basic characteristics and description of habitat.
    - ii. Eating habits and life cycles.
    - iii. Diseases they may transmit and economic importance (good or bad), if any.
10. **SCORING**: Points will be awarded for the accuracy of responses. Ties will be broken by the accuracy or quality of responses to pre-selected questions chosen by the event leader.
11. **EVENT RESOURCES**:  
See the Event Resources tab on our website ([ncscienceolympiad.ncsu.edu](http://ncscienceolympiad.ncsu.edu)) for instructions, videos and more.

## Backyard Biologist – 2022 Official Specimen List

For identification, students only need to know the common name and if it is an official NC State Symbol. Scientific names are given for reference purposes only.

<p><b>Trees</b> (Identify by leaves, bark, and seeds):</p> <p>American elm (<i>Ulmus Americana</i>)          Bitternut hickory (<i>Carya cordiformis</i>)          Black cherry (<i>Prunus serotina</i>)          Black oak (<i>Quercus velutina</i>)          Eastern white pine (<i>Pinus strobus</i>)          Flowering dogwood (<i>Cornus florida</i>)          *NC State Flower          Southern live oak (<i>Quercus virginiana</i>)          Loblolly pine (<i>Pinus taeda</i>)**          Longleaf pine (<i>Pinus palustris</i>)**          Red maple (<i>Acer rubrum</i>)          Shortleaf pine (<i>Pinus echinata</i>)**          Southern red oak (<i>Quercus falcate</i>)          Sweet gum (<i>Liquidambar styraciflua</i>)          Tulip/yellow poplar (<i>Liriodendron tulipifera</i>)          White oak (<i>Quercus alba</i>)</p> <p><b>Bushes, Vines, and Flowers</b>          English ivy (<i>Hedera helix</i>)          Carolina lily (<i>Lilium michauxii</i>)          *NC State Wildflower          Eastern poison ivy (<i>Toxicodendron radicans</i>)          Carolina rose (<i>Rosa carolina</i>)          Kudzu (<i>Pueraria lobata</i>)          Pink lady’s slipper (<i>Cypripedium acaule</i>)          Scuppernong grape (<i>Vitis rotundifolia</i>)          *NC State Fruit          Sunflower (<i>Helianthus annuus</i>)          Venus flytrap (<i>Dionaea muscipula</i>)          *NC State Carnivorous Plant          Butterfly weed (<i>Asclepias tuberosa</i>)          Trumpet creeper (<i>Campsis radicans</i>)</p> <p>* State Symbol          ** Pine trees (generic) are the NC state tree</p>	<p><b><u>Insects:</u></b>  <b>American Cockroach</b> (<i>Periplaneta americana</i>)  <b>Antlion</b> (<i>Glenurus gratus</i>)  <b>Big Dipper Firefly</b> (<i>Photinis pyralis</i>)  <b>Black &amp; Yellow Mud Dauber</b>          (<i>Sceliphron caementarium</i>)  <b>Brown Marmorated Stink Bug</b>          (<i>Halyomorpha halys</i>)  <b>Carolina Locust</b> (<i>Dissosteira carolina</i>)  <b>Carolina Mantis</b> (<i>Stagmomantis carolina</i>)  <b>Carpenter Ant</b> (<i>Camponotus spp.</i>)  <b>Common Pillbug</b> (<i>Armadillidium vulgare</i>)  <b>European Earwig</b> (<i>Forficula auricularia</i>)  <b>European Honeybee</b> (<i>Apis mellifera</i>)          *NC State Insect  <b>Fire Ant</b> (<i>Solenopsis sp.</i>)  <b>Giant Water Bug</b> (<i>Lethocerus americanus</i>)  <b>Gray Silverfish</b> (<i>Ctenolepisma longicaudata</i>)  <b>Green June Beetle</b> (<i>Cotinus nitida</i>)  <b>House Cricket</b> (<i>Acheta domestica</i>)  <b>Japanese Beetle</b> (<i>Popillia japonica</i>)  <b>Katydid</b> (<i>Microcentrum rhombifolium</i>)  <b>Red Pavement Ant</b> (<i>Tetramorium caespitum</i>)  <b>Spotted Camel Cricket</b> (<i>Ceuthophilus maculatus</i>)  <b>Tick</b> (<i>Dermacentor sp.</i>)</p>
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