

Photo Credits

Background Cards

Emerald Ash Borer

Front:

- Adult Beetle: Debbie Miller, USDA FS, Bugwood.org

Back:

- Infested ash tree: Judy Rosovsky
- Emerald ash borer larva: David Cappaert, Michigan State University, Bugwood.org

Asian Longhorned Beetle

Front:

- Joe Boggs, Ohio State University, Bugwood.org

Back:

- Adult on tunneled wood: E. Richard Hoebeke, Cornell University, Bugwood.org
- Larva: Steven Katovich, Bugwood.org

Hemlock woolly Adelgid

Front:

- Chris Evans: University of Illinois, Bugwood.org

Back:

- Hillside with dying hemlock: William M. Ciesla, Forest Health Management International, Bugwood.org
- Close-up of adelgid under microscope: Kelly Oten, North Carolina State University, Bugwood.org
- Close-up of branches losing needles: Chris Evans, University of Illinois, Bugwood.org

Spotted Lanternfly

Front:

- Adult on branch: Emelie Swackhamer, Penn State University, Bugwood.org
- SLF Eggs: Emelie Swackhamer, Penn State University, Bugwood.org
- Early nymph: Lawrence Barringer, Pennsylvania Dept of Agriculture, Bugwood.org
- Late Nymph: Lawrence Barringer, Pennsylvania Dept of Agriculture, Bugwood.org
- Adult in circle: Walthery at English Wikipedia, Creative Commons, attribution, Share Alike

Back:

- Adults on tree with honeydew: Louise Bugbee, USDA APHIS PPQ, Bugwood.org
- Sooty mold on grape leaf: Erica Smyers, Pennsylvania State University
- Spotted Lanternfly egg masses on camp chair: Liz Willow, Penn State University
- Spotted lanternfly on windshield wiper: Author unknown, Penn State University
- Egg masses on tire: Zil Fessler, Penn State University

Clue Cards

Asian Longhorned Beetle:

Front:

- Adult and egg sites: Kenneth R. Law, USDA APHIS PPQ, Bugwood.org
- Egg sites and dime: Joe Boggs, Ohio State University, Bugwood.org
- Adult emerging: USDA APHIS ALB Flickr: <https://www.flickr.com/photos/asianlonghornedbeetle/>
- Pencil in emergence hole: Joe Boggs, Ohio State University, Bugwood.org
- Multiple holes in tree: PA Department of Conservation and Natural Resources_Bugwood.org
- Sawdust-like frass: Robert A. Haack, USDA Forest Service, Bugwood.org

Back:

- Maple leaf: Paul Wray, Iowa State University, Bugwood.org
- Maple branch: Chris Evans, University of Illinois, Bugwood.org
- Maple tree: T. Davis Sydnor, The Ohio State University, Bugwood.org

Emerald Ash Borer

Front

- Adult on leaf: Debbie Miller, USDA Forest Service, Bugwood.org
- Larva and tunnels: EAB Larva c. David Cappaert, Michigan State University, Bugwood.org
- Woodpecker flecked bark: Ginger Nickerson, UVM Extension
- Side sprouts on ash tree: Vermont Urban and Community Forestry

Back

- Opposite branching: Ginger Nickerson, UVM Extension
- Compound ash leaves: Ginger Nickerson, UVM Extension
- Ash tree: c. Elise Schadler, Green ash, Burlington, VT
- Diamond patterned bark: Ginger Nickerson, UVM Extension
- Paddle-shaped seeds: Ginger Nickerson, UVM Extension

Spotted Lanternfly

Front

- Adults in mass on tree: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org
- Adult SLF: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org
- Late nymph: Lawrence Barringer, SLF late nymph, Pennsylvania Department of Agriculture, Bugwood.org
- Older and fresher egg masses: Emelie Swackhamer, Penn State University, Bugwood.org
- Early nymph: Early nymph, Pennsylvania Department of Agriculture, Bugwood.org

Back

- Compound tree-of-heaven leaves: Ginger Nickerson, UVM Extension
- Seeds: Chuck Barger. Tree of heaven
- Tree-of-heaven in alley: Annemarie Smith, tree-of-heaven, Bugwood.org

Hemlock Woolly Adelgid

Front

- Hemlock woolly adelgids on branch: Connecticut Agricultural Experiment Station, Bugwood.org
- Hemlock losing needles: Robert L. Anderson, USDA Forest Service, Bugwood.org
- Dead hemlock being removed: Michael Montgomery, USDA Forest Service, Bugwood.org

Back

- Hemlock trees: Vern Wilkins, Indiana University, Bugwood.org
- Hemlock cones: Bill Cook, Michigan State University, Bugwood.org
- Hemlock twig and needles: Pennsylvania Department of Conservation and Natural Resources - Forestry, Bugwood.org

Playing Cards

- Hemlock twig: Connecticut Agricultural Experiment Station, Bugwood.org
- Side sprouts on ash: Edward Czerwinski, Ontario Ministry of Natural Resources, Bugwood.org
- Asian longhorned beetle egg sites and dime: Joe Boggs, Ohio State University, Bugwood.org
- Spotted lanternfly adult: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org
- Spotted lanternfly early nymph: Early nymph, Pennsylvania Department of Agriculture, Bugwood.org
- Spotted lanternfly late nymph: Lawrence Barringer, SLF late nymph, Pennsylvania Department of Agriculture, Bugwood.org
- Ash tree with woodpecker flecks: Art Wagner, USDA - APHIS, Bugwood.org
- Maple tree with sawdust like frass: Robert A. Haack, USDA Forest Service, Bugwood.org
- EAB adult silhouette: Debbie Miller, USDA FS, Bugwood.org

- Firewood pile, bark on: Copyright free image from Canva
- Firewood pile – split wood: Copyright free image from Canva
- Pencil in Asian longhorned beetle exit hole: Joe Boggs, Ohio State University, Bugwood.org
- Spotted lanternfly egg masses: Emelie Swackhamer, Penn State University, Bugwood.org
- Girls brushing horse: Copyright free image from Canva
- Photo of tent in woods: Copyright free image from Canva
- Close-up of hemlock woolly adelgid: Bruce Watt, University of Maine, Bugwood.org
- Woodpecker flecking with beak holes: Ginger Nickerson, UVM Extension

Acknowledgements

We would like to thank the following people for their help testing and designing this game:

- **Gwen Kozlowski**, Vermont Urban and Community Forestry Program
- **Fiona Modrak**, Teacher-Naturalist, North Branch Nature Center
- **Molly McFaun, Emily Xaviere, and the youth and parents of Central Vermont 4-H Trailblazers**
- **Gabriel Nathaniel (Roo) and Debra Ann Pinsof-DePillis**, Montpelier



Extension
College of Agriculture and Life Sciences



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The University of Vermont is an Equal Opportunity/Affirmative Action Employer.
This game was funded in part by USDA's Animal and Plant Health Inspection Service. It may not express APHIS' views.