



Ecology Skills Checklist

Member's name: _____

Mastering these Ecology skills will provide a solid foundation upon which the member may build. To achieve success in this project the skills listed below will help 4-H leaders know what to teach and 4-H members to know what they need to learn. Have your leader initial and date each skill as completed. Each level may take more than one year to complete.

| Level 1 | Date Completed | Approved By |
|---|-----------------------|--------------------|
| 1. Tell what plants and animals need to live and grow..... | _____ | _____ |
| 2. Give an example of an ecosystem..... | _____ | _____ |
| 3. Collect evidence of pollution..... | _____ | _____ |
| 4. Tell what a food chain is..... | _____ | _____ |
| 5. Explain what happens to a food web during a drought. A cycle is a series of events that happen over and over. | _____ | _____ |
| 6. Describe at least one cycle of nature..... | _____ | _____ |
| 7. What is decomposition? | _____ | _____ |
| 8. Make a compost pile Pick a human food and explain how the raw materials | _____ | _____ |
| 9. become that food on your plate (example: how does corn become a tortilla?). | _____ | _____ |
| 10. Define biodegradable..... | _____ | _____ |
| 11. Check local newspapers or Internet news sites and look for ecosystem disasters. Report to someone or your group what you found..... | _____ | _____ |
| 12. Describe the characteristics of a mammal..... | _____ | _____ |
| 13. Pick one mammal and describe where it lives and what it eats..... | _____ | _____ |
| 14. Camouflage is an animal adaptation. Explain how camouflage works. | _____ | _____ |
| 15. Name one predator and the prey it would eat..... | _____ | _____ |
| 16. A habitat must have what four things?..... | _____ | _____ |
| 17. Why do Birds build nests?..... | _____ | _____ |

| Level 2 – Complete Level 1 before proceeding to level 2 | Date Completed | Approved By |
|---|-----------------------|--------------------|
| 1. Use the line transect method to measure (count) the living organisms in the area..... | _____ | _____ |
| 2. What is a watershed..... | _____ | _____ |
| 3. Use a topographical map to define the watershed you live in..... | _____ | _____ |
| 4. Soil is made of what things?..... | _____ | _____ |
| 5. Make a soil profile and point out the soil horizons..... | _____ | _____ |
| 6. Look at a flower. Name the parts and predict what pollinator the flower attracts..... | _____ | _____ |
| 7. Use a dichotomous key to identify a plant or animal..... | _____ | _____ |
| 8. Gather 6-10 slightly different items. Construct a dichotomous key to identify the items. Ask someone to “key out” the objects..... | _____ | _____ |
| 9. Make a groundwater model. Explain what happens to contaminants in the watershed..... | _____ | _____ |
| 10. Describe what could cause acid rain..... | _____ | _____ |
| 11. Explain reduce, reuse, recycle. Learn where you can recycle paper, glass. Newspaper, metal, plastic, etc.... | _____ | _____ |
| 12. What is a pest? Describe four methods of pest control.. | _____ | _____ |
| 13. Draw or photograph a plant. Explain the adaptations..... | _____ | _____ |
| 14. Describe six ways plant seeds disperse..... | _____ | _____ |
| 15. Explain “flyway”. Which flyway do you live near?..... | _____ | _____ |
| 16. What are important identifying characteristics of birds? | _____ | _____ |
| 17. Name or find five different animal signs..... | _____ | _____ |
| 18. How can people provide habitat resources for wildlife in their neighborhood?..... | _____ | _____ |

| Level 3 – Complete Level 2 before proceeding to level 3 | Date Completed | Approved By |
|--|----------------|-------------|
| 1. Define biome..... | _____ | _____ |
| 2. Name several ways to test water quality..... | _____ | _____ |
| 3. Define point source pollution and non-point source pollution..... | _____ | _____ |
| 4. What’s the difference between predator-prey, mutualism, and parasitism relationships?..... | _____ | _____ |
| 5. Describe how the human population impacts the environment..... | _____ | _____ |
| 6. What is biotechnology?..... | _____ | _____ |
| 7. Describe how energy flows through a food chain..... | _____ | _____ |
| 8. Find at least two aerial photos many years apart of a nearby town. What changes in wildlife habitat and land use occurred?..... | _____ | _____ |
| 9. Describe the trophic or feeding levels..... | _____ | _____ |
| 10. What can cause soil erosion and how can soil erosion be controlled?..... | _____ | _____ |
| 11. Keep a journal about your favorite or special natural area. Include observations of seasonal changes and personal reflections..... | _____ | _____ |
| 12. What are the costs and benefits of insects to people?... | _____ | _____ |
| 13. Explain “alien species”..... | _____ | _____ |
| 14. Name one alien plant and one alien animal in your area | _____ | _____ |
| 15. How do alien species impact native species?..... | _____ | _____ |
| 16. Measure species richness and evenness in two one-meter plots. Compare the biodiversity in the two plots... | _____ | _____ |
| 17. Explain the difference between diurnal, nocturnal, and crepuscular animals..... | _____ | _____ |
| 18. Explain how wetlands capture, store, and release water | _____ | _____ |

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