Illinois Department of Natural Resources

Division of Education

Illinois' Amphibians and Reptiles Field Pack

Instruction Sheet and Science Standards Correlations

Thank you for borrowing and using an *Illinois' Amphibians and Reptiles Field Pack* from the Illinois Department of Natural Resources! We hope that you and your students will enjoy your time spent observing and learning about these animals.

Please read the following information regarding the *Illinois' Amphibians and Reptiles Field Pack*.

1. When you obtain the pack at the lending location, please ensure that all of the components shown on the *Content Checklist* are included in the pack. If anything is missing, please immediately report it to the staff members at the lending location.

2. All of the pack contents are meant to be used. You will find some suggested uses for them listed below. Do not be limited by these suggestions, however.

3. Please clean and dry any of the items that get wet, muddy or dirty during use.

4. Before returning the pack, please use the *Content Checklist* again to help you determine if you have placed all of the contents into the pack.

5. Please complete the evaluation at https://www.surveymonkey.com/s/LG66T2N. This short survey should take no more than five minutes of your time and will be very beneficial to us.

6. If something should be broken or damaged while your students are using the pack, please tell the staff at the lending location about it when you return the pack.

7. Please read the *Wildlife in the Classroom* document before going on the field trip to familiarize yourself with the applicable laws and permits/licenses needed in regard to collecting wildlife, including sampling for observation purposes in the field. You must also obtain permission from the property owner and follow site regulations before collecting anything! Please also read the *Field Trip Tips* document included in the pack.

What can we do with. . .

- **aluminum pans?** The pans can be used in conjunction with the dip nets. Remember to leave organisms or eggs in the pans for only a short time and then return them to the place where you captured them. The pans can also be used to reflect sunlight to alert others of your location in an emergency.
    - If you use the dip net to collect aquatic life forms, you can place the organisms in the pan to help you see them better. Also include some water from where the organisms were living in order to provide a supply of oxygen and/or to allow them to move freely. The skin of most amphibian adults should remain moist at all times. Please limit the amount of human contact with amphibians and

reptiles so that neither these animals nor humans will be affected by the contact.

- **field guides and cards?** Field guides and cards contain information and images that can be used to help you and your students to prepare for the trip. By allowing students to review these items in advance of the trip, they can become familiar with some of the animals that they might encounter on the trip. While on the field trip, the guides are quick reference tools for you and the students to use.
- **an Indentiflyer Lyric?** Play the frog calls before you go on the field trip, then listen for these calls while you are on the trip. Sometimes, you will be more likely to hear frogs calling than to see these secretive organisms. Bird calls are also included on the cards, and they may assist you in identifying birds that you hear while on the field trip.
- **binoculars?** Binoculars aid our ability to see distant objects in more detail. They may also allow you and the students to see amphibians and reptiles that would hide or escape if you moved closer to them.
- **forceps?** This simple tool can be used to help pull algae or other objects away from organisms for better viewing. Extreme care should be taken when using forceps near amphibian eggs and larvae.
- **a dip net?** Amphibian eggs, tadpoles and small adults can be captured in a dip net. Use the aluminum pans, magnifying glasses, observation container and/or forceps to assist your observation.
- **a headlamp?** Frogs and toads are generally solitary creatures until the breeding season. When they are breeding, they can be found at ponds, lakes and other water bodies in greater numbers than usual. They are very active at night during breeding and produce their calls regularly. The headlamp can help you see to walk at night and also illuminate frogs and toads in and along the shore of water bodies.
- **magnifying glasses?** Look closely at the skin of amphibian larvae (tadpoles) and adults with magnifying glasses. Get a close view of amphibian eggs, too.
- **a Nature Bag?** These bags allow for air flow and can be soaked to provide moisture to temporarily house aquatic specimens, such as frogs and salamanders. Do not leave organisms in the bags for extended periods of time.
- **an observation container?** You can enclose small amphibians or amphibian eggs in this container for safe viewing. Remember to include water from their habitat and leave the organisms/eggs in the container for only a short time. A magnifying glass is built into the lid, and a grid on the bottom of the container can assist you in making size comparisons among individuals.
- **thermometers?** Amphibian and reptile activity is greatly affected by temperature. Students can measure air and water temperature during the trip in several locations and correlate it with the amphibian and reptile observations that they make.

Next Generation Science Standards

Observations made on a field trip to study amphibians and reptiles can help to support the teaching of several Next Generation Science Standards Performance Expectations. Some of the most relevant ones are listed below. Do not be limited by this list, however. You know the curriculum you are teaching and your goals for the students. All subject areas can easily be incorporated into a field trip, even if your main objective is teaching science.

K-LS-1 Use observations to describe patterns of what plants and animals need to survive.
K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals and the places they live.

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.
1-LS3-1 Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like their parents.

2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.

3-LS1-1 Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction and death.
3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well and some cannot survive at all.
3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior and reproduction.

5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers and the environment.

MS-LS1-4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants, respectively.

HS-LS2-7 Design, evaluate and refine a solution for reducing the impacts of human activities on the environment and biodiversity.
HS-ESS3-4 Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

Illinois Early Learning and Development Standards

Observations made on a field trip to study amphibians and reptiles can help to support the teaching of several Illinois Early Learning and Development Goals. Some of the most relevant science-based ones are listed below. Do not be limited by this list, however. You know the curriculum you are teaching and your objectives for the students. All subject areas can easily be incorporated into a field trip.

Goal 11 Demonstrate curiosity about the world and begin to use the practices of science and engineering to answer questions and solve problems.

Learning Standard 11.A Develop beginning skills in the use of science and engineering practices, such as observing, asking questions, solving problems and drawing conclusions.

Goal 12 Explore concepts and information about the physical, earth and life sciences.

Learning Standard 12.A Understand that living things grow and change.

Learning Standard 12.B Understand that living things rely on the environment and/or others to live and grow.

Goal 13 Understand important connections and understandings in science and engineering.

Learning Standard 13.B Use tools and technology to assist with science and engineering investigations.

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