



## Tips and Tricks for Group Leaders at Minnesota Valley National Wildlife Refuge

- **Do** remind your students what it means to be a naturalist – being observant, quiet, curious, etc. This is a great way to get everyone focused and back on track!
- **Do** stay in front of the group. That way, everyone will have the same chance to see wildlife and share their discoveries.
- **Do** stop and sit down from time to time with your students. It's important to have quiet time in your group and work on your journal pages.
- **Do** ask questions to keep students engaged. (Ex. what do you see? What do you hear? Who might have made this hole? etc.) Even if you know the answer, allow them to make discoveries, even if they're "wrong."
- **Do** foster participation from all of your students.
  - If someone is reluctant, give them a "job" to do, or ask specific questions.
  - If one student is answering everything, encourage them to give others a chance.
  - If students are distracted or unfocused, bring them back into the task by asking a direct question, or encouraging them to explore a specific object.
- **Do** let the students figure out how to use the equipment - this is part of their learning process!
- **Do** encourage students to fill out their journal pages completely. Remember, they do *not* have to be perfect. (For example, you do not have to spell words for them...they can sound them out).
- **Don't** feel like you have to know all the answers. "I don't know" is acceptable, but "I don't know, but let's sketch it or make some notes and see if we can find out together when we get back" is even better! We encourage you to come back with unanswered questions!
- **Don't** be afraid to jump right in and explore, journal, and share discoveries with your group of students – everyone will enjoy themselves more if you're involved, and you can lead by example!

*"If a child is to keep alive his inborn sense of wonder...he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in."*

*- Rachel Carson*





# Winter Under a Microscope

## Group Leader Guidelines



*Students will go on a hike to collect specimens to view under a microscope.*

### Collection Hike:

- Collect ONLY as much as you will need,
- BE GENTLE when collecting from plants. Even in the winter, most plants are still living.
- Allow time for students to simply explore after they have collected specimens.

***Have fun and enjoy being outside and making discoveries with your students!***

### Under the Field Microscope:

Students will work in small teams

- When students return to the classroom FIRST view specimens under a FIELD MICROSCOPE.
- Student teams should place one specimen at a time on a petri dish for viewing.
- To reduce eye fatigue, students should keep both eyes open while viewing specimens.
- Only parts of a large, thick specimen will be in focus. Students should use the knob on the side of the microscope to experiment with the focus.
- Students must complete the journal page drawings BEFORE they are invited to use compound microscopes.

### Using a Compound Microscope:

Students will rotate through a set of compound microscopes, each with a different specimen to view.

- Start by turning on the light switch.
- Different magnifications are marked by different colored rings (red, green and blue).
- Always start with the lowest magnification (red).
- Students should always hold the microscope firmly by its arm when changing magnification.
- Make sure the object is in clear focus before moving to a higher-powered magnification.
- When students are finished, return the magnification to the lowest power (red).
- When the last student is done using the compound microscope ,turn off the light switch.