**Elementary Leave Your Leaves Lesson 4**

*Elementary Lessons designed and created by Katie Henson*

**Who’s Hiding in the Leaf Litter?**

**Introduction:** It’s a misconception that all bugs die off in the winter. In reality, many bugs are able to survive freezing temperatures using different strategies. Adult insects like ladybugs, butterflies, and wasps hibernate to save energy. Ladybugs use dead leaves as a warm and sheltered place to carry out their hibernation, and without leaf litter, we would never see them alive in spring and summer. Larvae bury down into the soil under dead leaves, feeding on the worms and slugs that are busy breaking down the leaves. Firefly larvae overwinter under leaves as part of their life cycle, emerging as pupae in the spring and completing the cycle as adults in the summer. Thus, dead leaves provide an important habitat for insects that rely on them to survive the cold winter months.

**Procedure:** Present the powerpoint or print the document and make into a book, “Who’s hiding in the Leaf Litter?” and have your class discuss the story titled “Who’s hiding in the Leaf Litter?” **Depending on grade level**, you may read the story aloud to students or have them read independently. The pages are best viewed in color, so if color printing is not available, it is recommended to have students view the story on a screen. The story is also available in PowerPoint format. *A benefit of this format is that additional slides can be made to explain concepts and terms that might be new to students.* It could even be made into a full lesson about the carbon cycle, insect life cycles, or any other relevant topic.

Discussion questions:

1. Where do all the bugs go when it gets cold outside?
2. Why can’t bugs be outside in the cold like other animals?
3. Layla wanted to spend all winter sleeping. How might this help ladybugs like herself?
4. Why did the larvae want to eat so much?
5. Why are there no dead leaves on the ground in the spring?
6. Explain how dead leaves in the winter help plants grow in the spring.
7. What living things in the soil help recycle leaves?
8. What would happen if there were no leaves on the ground over winter? Would we see bugs like ladybugs and fireflies the next summer?
9. Luckily, Layla and the fireflies survived the winter. What dangers did they face while hiding in the leaves? What dangers would they have faced without the leaves?
10. What life cycles did the fireflies go through in each season?