

Awesome Alert: Ants, Aphids, & Ladybugs



Do you think ants are scary? Maybe you do. They have 6 spindly legs, bulbous eyes, a segmented body, and often a set of big pinchy-looking **mandibles**. Mandible means jaw. We have a mandible too, but ours is not quite so impressive. You might feel frightened of ants but that's probably because you don't know much about them. Imagine being shrunk down to the size of a grain of rice. Look around you. How would you feel if you were an ant? Would you feel scary or...maybe a little awesome? Ants are awesome and so are aphids and so are ladybugs, and this **AWESOME ALERT** is going to tell you why.

Let's start with ants. Ants can be found in your backyard or in the schoolyard or in the park—they are everywhere. Ants are awesome because they are nature's recycling machines. They clean up your yard—or the schoolyard, or the park—by eating up bits of other dead bugs. They **aerate** the soil with the tunnels they create; this allows rainwater to filter more easily to plant roots. They act as pollinators and even “pest control”—some kinds of ants eat the **larvae** of insects that bother us, such as flies, fleas, and bedbugs.

Sometimes ants get into our houses looking for food. Often they are looking for sugar, they *love* sugar. Just like some children I know. Do you love sugar? Well, just like I would do to any children I found crawling all over my kitchen looking for sugar, I sweep ants that invade my kitchen into the backyard using a large brown kitchen broom with long spiky bristles. So, if your mom, dad, big sister, crazy uncle or aunt gets upset when they see ants in the kitchen, you remind them that ants are a **beneficial** insect. They are good to have around...outside!

Did you know that ants are quite clever? Well, they are. Some ants have figured out how to get their own sugar. No, they do not buy candy. They get sugar by using another very well-known insect in the garden: the aphid.

Aphids are considered garden pests, and are a teeny tiny insect—not much larger than the head of pin—that come in a variety of colours ranging from a delicate pale green or even pink, to browns and blacks. They often congregate in large numbers to feed off

the sap of plants they find delicious by piercing the stems of the plant with their **stylets**. Stylets are the aphid's mouth parts. (Can you say that 5 times fast? Stylets, stylets, stylets, stylets, stylets.) All this piercing can damage or even kill the plant. What is awesome is that the sugary plant juices go through the aphid and come out the other end as a sticky, sweet substance called **honeydew**. Yes, you heard me, aphids poop honeydew. And ants eat it. In fact, they love it. (I'll let you think about that for a moment....moment over!)

So our clever ants have figured out that by protecting aphids from other insect predators, they will have a constant food source. In a way they are like farmer taking care of their herd of aphids. They can even *milk* the aphids by stroking them with their antennae, which encourages the aphid to release honeydew. This is a relationship that benefits both insects. The ants get constant, easy access to sugar—the sweet aphid poop—and the aphids get protection from predators. Sounds perfect, right? Well, very few things in life are ever exactly perfect. Enter: the ladybug!

You think ladybugs are cute right? Many people do. Short little legs plus a bright cheerful shell with some lovely round spots equals *adorable*. However, you might change your mind if you ever saw a hungry ladybug eat its way through a bunch of aphids. It's *horrific*! A ladybug devouring aphids is like one of those tree shredding machines that workers throw big branches into; the branches are shredded in seconds. In this case it's the aphids that are ripped to pieces. Sad actually—getting ripped to pieces is not something aphids enjoy too much. Many kinds of ladybugs are insect predators, meaning they hunt and eat other insects. They eat garden pests like whiteflies and mites, but they really, really like to eat aphids most of all. That is why they are considered a beneficial insect and encouraged to visit our gardens often!

Now, you may rightly imagine that the presence of voracious, aphid-consuming ladybugs would cause some **consternation** amongst the ants who shepherd and protect their aphid herd. Ants will fight off and even kill ladybugs to protect their flocks. What we see, though, is that these three insects are locked into a relationship with each other based on food. Aphids eat plant sap and produce honeydew. Ants eat honeydew and in return, offer protection from ladybugs who eat aphids. It's a real-life drama. Speaking of dramas, lots of stories have good characters and bad characters right? Who is the **villain**, or the bad character, in this real-life drama?

Well, it's really hard to find a villain in all this. Each creature is awesome in some way; each is unique and contributes something important. You could say the aphids are the villains because they don't benefit humans directly—they are garden pests that destroy plants. On the other hand, by hanging out in a garden—or schoolyard, or park—aphids attract both ants and ladybugs with their deliciousness. This is good! It is very helpful to us to have both ants and ladybugs around. Thank you aphids!

You could say the ants are the villains as they sneak into our houses and steal our sugary goodies. But, ants are great cleaner-uppers of dead plants and other insects; they help our gardens grow by dealing with insects ready to eat our plants and they churn the soil for us.

So does that mean the ladybugs are the villains? They eat through a herd of aphids with frightening speed—that sounds kind of mean doesn't it?—but then again, we can't have a healthy garden with too many aphids in it. Thank you ladybugs for pigging out on those aphids! So this is a story in which good versus evil doesn't make sense.

What we have is a triangle of awesome. An *awesome* triangle. So remember this dear friends—those ants, aphids and ladybugs deserve your respect. You couldn't do their work even if you wanted to...would you want to?

Internet Sites, YouTube Videos & Other On-Line Resources:

https://www.youtube.com/watch?v=43id_NRajDo

(This BBC video shows ants farming aphids.)

<https://www.youtube.com/watch?v=p9zTwngwdVc>

(Another video describing ant/aphid interactions and relationships.)

<https://www.youtube.com/watch?v=zaDTIVwKgck>

(This video focuses on ladybugs chowing down on aphids.)

<http://handsonaswegrow.com/nature-suncatcher-wind-chimes/>

(Art activity)

A Few Curriculum Activities: Ants, Aphids, & Ladybugs

Note to Teachers—The following activities are just a few suggestions for how to expand the “Awesome Alert” and to make curricular connections. Of course, many more connections could be made and many other follow-up activities are possible. For this example we have made connections to the Grade 5 curriculum but activities could be shaped and/or developed for different grade levels.

Creating Creative Conversations: Vivacious Vocabulary (Language Arts)

- a. Ask students to record the meaning of the new words on their Awesome Alert worksheets—(Appendix C)—they can both write and make a sketch to evoke the meaning of the word.
- b. Next they can demonstrate the meaning of each word using the body—what pose or gesture evokes the meaning? (You can secretly assign a different word to small groups of students. They can then create poses or gestures and the class can guess what the word is.)
- c. Writing/Reflection: Ask students to identify with one of the new words—Which word best describes something they are feeling, have recently experienced or have been thinking about? Alternatively, ask students which of the three insects they most identify with. Why?
- d. **Challenge:** For homework, ask students to use two or more words with their parents/guardians.

Get Moving! (Daily Physical Activity)

Divide the class into 4 or 5 groups. Each group is required to create up a kind of “tag” game that involves ants, aphids, ladybugs. The “tag” game must

- a) somehow differentiate the three species (what actions or movements can ants make? How must aphids move?).
- b) somehow reveal the interconnections between the species.

Expert Entomologists! (Social Studies/Science)

Entomology is the scientific study of insects. In pairs, enlist students as entomologists. With magnifying glasses and some paper to take notes, send students into the schoolyard. They are in search of any one of our characters: ants, aphids, or ladybugs. One golden rule: They may not hurt any of the insects they find.

They need to:

- a) describe in as vivid a way as possible *any* insect they find. They can use words and even sketch (How many legs? Any wings? What kind of body shape? Distinguishing features?) They must conclude if it is, or is not, an ant, aphid or ladybug. They may hypothesize what it is.
- b) keep track of any ants/aphids or ladybugs they find starting in the schoolyard that day, but then continuing for a period of time to be determined by the teacher. What would be the best way to collect and organize this information?
- d) describe the places they most often find ants, aphids, or ladybugs and hypothesize about features of the favoured homes/habitats of these creatures.

e) create a map of the schoolyard that shows the collected information—map should include some sense of scale, a legend etc.

At-Home Challenge: Challenge our student-entomologists to find out one amazing or bizarre thing about one of the species (ant/aphid/ladybug) e.g. BIGGEST ants in the world—what kind and where? Most dangerous? Something we eat?

Bug Suncatchers

Source/Instructions:

<http://handsonaswegrow.com/nature-suncatcher-wind-chimes/>



Materials:

Wax paper (or clear contact paper if you want to avoid ironing);

Scissors;

Permanent markers/felts;

3 mason jar rings (of same or different sizes);

String;

1 stick to hang the suncatchers from;

A collection of small plant bits, grasses, flowers and leaves from outside;

An iron (if using wax paper)

Name:

Awesome Alert!! Ants, Aphids, & Ladybugs



Creating Creative Conversations: Vivacious Vocabulary

mandibles

aerate

larvae

beneficial

stylets

honeydew

consternation

villain

