

The title "Wildlife Express!" is rendered in large, colorful, stylized letters. Each letter is decorated with a different wildlife illustration: a bear on the 'W', a rabbit on the 'i', a goat on the 'l', a snake on the 'd', a hawk on the 'l', a bear on the 'i', a wolf on the 'f', a fish on the 'E', a moose on the 'x', a frog on the 'p', a butterfly on the 'r', and a beaver on the 's'.

Wildlife Express!

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A close-up photograph of a dragonfly perched on a thin, vertical twig. The dragonfly has a dark body and four large, transparent wings with distinct dark bands. The background is a soft, out-of-focus green.

DYNAMIC DRAGONFLIES

Photo courtesy Katheryn High



Photo courtesy Debi Jensen



TOOTHED DRAGONS

Toothed dragons are flying around Idaho! Actually they are just dragonflies and damselflies. Dragonflies and damselflies are in the insect order Odonata. Odonata comes from the Greek word for “toothed”. Dragonflies have chewing mouth parts that have a serrated edge; they look a bit like teeth. Scientists divide the order Odonata into two groups the dragonflies and damselflies.

Dragonflies and damselflies have all the parts that make an insect an insect. They have six jointed legs, three main body parts (head, thorax, abdomen), and a pair of antennae. So what makes them different from other insects?

Let’s look at the three main parts, starting with the head. Dragonflies and damselflies have very large compound eyes. Compound eyes have more than one lens. They are faceted (FAS-et-ed). All insects have two compound eyes, but dragonfly eyes are huge! Some of their eyes are so large that the eyes cover most of the head. Large eyes help dragonflies see ahead, behind and to their sides - perfect for seeing flying insects, like mosquitoes, that they love to eat. Antennae on dragonflies and damselflies are really short. The antennae are used while flying to figure out how fast the wind is blowing. They also can detect temperature with their antennae to pick the best spot to lay eggs.

An amazing part of a dragonfly is the mouth. They have a powerful set of mandibles that are used to chop-up their prey, but the really amazing part is the labium (LAY-bee-um). It is sort of like a lower jaw. When a dragonfly is immature and still living in water, the dragonfly can shoot the labium out to almost its body length and grab its prey. The labium has hooks on it so the prey can be dragged back to the mouth. Once a dragonfly has food in its grasp, dinner is served!

The middle part of an insect is called the thorax. This is where the legs and wings are attached to an insect’s body. Dragonflies and damselflies have three segments or parts to their thorax that all slant backwards. This makes the dragonfly’s legs push forward like a basket. The basket is used to scoop flying insects out of the air. Have you ever noticed that if you hold a butterfly you might get shiny scales on your hands? These shiny scales are from the butterfly’s wings. Dragonflies and damselflies do not have scales on their wings. In fact, you can look right through their wings! The wings are also what set dragonflies and damselflies apart. Damselflies have four wings that look very similar in size and shape. When damselflies rest, they hold their wings up and over their bodies. Dragonflies also have four wings, but the front wings are different in size and shape from the back wings. When dragonflies rest, they hold their wings off to the sides of their bodies.

The last part of the body, the abdomen, is quite long on dragonflies and damselflies. The long body helps a dragonfly to balance while flying. On the tip of the abdomen, the females have an ovipositor. “Ovi” means egg, so the ovipositor is used to lay eggs.

Idaho has 67 species of dragonflies and damselflies. Keep an eye out for them whenever you are near water.



Blue Darner

Courtesy Dr. Lloyd Glenn Ingles
California Academy of Sciences

DYNAMIC DRAGONFLIES!

Have you ever sat along a pond on a summer day? There is nothing quite like sitting along the edge of a pond and watching dragonflies zip and buzz around you. Some might swoop down a little too close for your comfort!

You may have wondered why the dragonflies are chasing each other around. What you are witnessing is a battle over territory or space. It's the males, not the females, madly buzzing around the pond. The males establish a home, or territory, that they defend. Females usually hunt away from the water to avoid the male's harassment. Some dragonflies are very territorial. They will try and chase off anything that gets too close. They will chase off dragonflies, birds, and even humans! The blue-eyed darner is like that; it will chase off just about anything.



Green Darner

Courtesy T.W. Davies
© California Academy of Sciences

The largest dragonfly in Idaho is the green darner. The adults can reach a size of just over three inches! This dragonfly is a strong flyer and actually migrates south to warmer climates in the fall. We start seeing green darners in June. All the green darners we see in June emerged earlier in the spring from lakes and ponds far to the south. These green darners will lay their eggs in Idaho. Their offspring emerge in August and migrate to the south where they lay eggs that will make the next generation to return to Idaho. This dragonfly does all of its hunting "on the wing." It catches its prey in the air. A group of bird watchers along the Eastern Coast of America saw an amazing incident during the fall migration of green darners. They actually saw a green darner take down a ruby-throated hummingbird! Now that's some amazing flying!



Western Meadowhawk

Photo courtesy Debi Jensen

Western meadowhawks are easy to identify. They have an orange-brown band that covers the inner half of each wing. The male's body is reddish brown; the female's body is green to golden brown. The Latin genus name for this dragonfly is *Sympetrum*. *Sympetrum* means "with rock." This dragonfly has a habitat of basking on rocks to absorb heat early in the day. It also likes to hunt flying insects from perches on rocks or bare branches.

Pale Snaketails are dragonflies whose immature forms, called naiads (NY-ads), can live in faster flowing water. All dragonflies lay their eggs in water. The immature dragonfly that lives in the water is called a naiad. Most naiads live in warmer ponds and lakes where the water is slow moving, but pale snaketails can live in colder rivers and streams. To avoid being swept away by the current, the naiads burrow into the sand or mud leaving just the tip of their abdomen exposed. This allows them to breathe by squirting water in and out of their abdomens over their gills. Even though naiads can tolerate cooler temperatures the adults cannot! They are rarely seen flying on cool or cloudy days.



Pale Snaketail

Photo courtesy Debi Jensen

Two dragonfly naiads that live in the debris or mud in the bottoms of ponds, lakes, and marshes are the naiads of the eight-spotted and twelve-spotted dragonflies. These naiads hide to avoid being eaten. They sit and wait for their food to pass by. Something else these dragonflies do that helps to protect them from predators is to emerge from the water at night. The naiads might crawl quite a distance from the water before they make their change into adults. Idaho has some truly amazing dragonflies. Get outside this summer and look for them. You can find a dragonfly just about everywhere in Idaho where there is water!

BONE-FREE CRITTERS

Animals with no bones? You bet! Animals that do not have bones are called invertebrates (in-VERT-e-brets). There are more invertebrates living on earth than any other animal. They make up 98 percent of all animals found on our planet.

Invertebrates come in many shapes and sizes. Crabs, spiders, insects, snails, clams, worms, sea stars, mites and jellyfish are all invertebrates. Most invertebrates are small, but one invertebrate is huge. The largest invertebrate lives in the ocean. It's the giant squid. They can be over 40 feet long! The smallest invertebrate cannot be seen with human eyes. You need a microscope to see protozoan (pro-te-ZO-en). They are one, single cell.

Unlike people, invertebrates do not have a backbone to support their bodies. They may have a hard exoskeleton, like a beetle, or they may be covered with a soft skin. Invertebrates that are covered with a soft skin still need to protect themselves. They may hide under rocks and logs or make a hard shell to protect their bodies. Can you think of an invertebrate that does this? Invertebrates are everywhere. Look around your house and yard. The number of invertebrates you find might surprise you.



Jerusalem Cricket

photo courtesy Luana McCauley

NATURE'S TRANSFORMERS

Can you think of an animal that changes the shape of its body as it grows? How about a butterfly? They change from fuzzy, crawling insects that chew their food to beautiful, flying insects that drink their food. What a change! They go through a metamorphosis (met-a-MOR-fo-sis).

There are many kinds of metamorphosis in the insect world. There are insects that make big changes, like the butterfly. This is called complete metamorphosis. Other insects, like dragonflies, don't seem to change much or change very little. This is called simple metamorphosis.

Insects with simple metamorphosis have three life stages – egg, nymph (NIMF) and adult. Simple metamorphosis is broken into three kinds. The first group is insects that have no metamorphosis. They look the same when they are nymphs and adults. None of these insects have wings. The second group is incomplete metamorphosis. Dragonflies are in this group. Insects in this group lay their eggs in water. The nymphs are called naiads (NY-ads). They live in the water and breathe with gills. The adults do not live in water and do not breathe with gills. The last group with simple metamorphosis is insects with gradual metamorphosis. Grasshoppers are in this group. The nymphs and adults look pretty much the same, and they live in the same habitats.

Insects that have complete metamorphosis have four stages in their life cycle – egg, larva, pupa and adult. The young and adults live in different habitats and often feed on different food. Many people think that metamorphosis happens so that each life stage lives in a different habitat. That way the young insects and adult insects do not have to compete with each other for food.

Metamorphosis is amazing to see. If you find a cocoon, leave it outside, but look at it everyday. You may be able to see the insect changing and developing inside. It is fun to see what will emerge!

OTHER CREEPY CRAWLERS

You turn over a rock in your back yard, and something darts quickly away. You see more than six legs, so it can't be an insect. What is it?

You may call the creepy crawler a bug, but most likely it is not a true bug. A bug is actually a type of insect. Bugs are insects that have four wings and sucking mouthparts. The two bottom wings are lacy, and the top wings are leathery with lacy tips. Water skippers are examples of true bugs.

The creepy crawler you saw running away was probably another type of arthropod (AR-thre-pod). Arthropods are animals that include insects and their relatives. All arthropods have exoskeletons and jointed legs. The word arthropod means jointed foot.

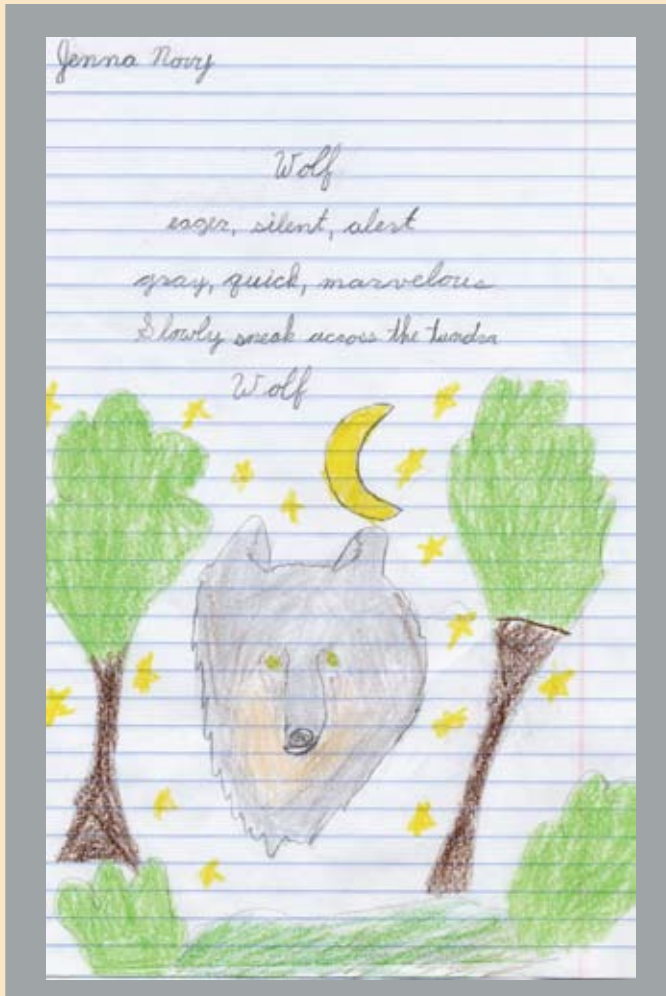
Arthropods are divided into five main groups: arachnids (a-RAK-nids) (spiders, ticks, mites, scorpions), crustaceans (krus-TA-shens) (crabs, lobsters, crayfish, shrimps, sowbugs or roly-polys), centipedes, millipedes and insects. The chart below will help you figure out which group your creepy crawler is in.

	Arachnids	Crustaceans	Centipedes	Millipedes	Insects
Body Parts	2	2	Many Segments	Many Segments	3
Legs	8	Usually 10	Many, 1 Pair per Segment	Many, Usually 2 Pairs per Segment	6
Antennae	None	2 Pairs	1 Pair	1 Pair	1 Pair
Habitat	Land	Saltwater and Freshwater, Rarely Land	Land	Land	Land and Freshwater, Rarely Saltwater



AND THE WINNERS ARE ...

We had very creative entries for our poetry contest. We found it difficult to choose our winners. After much deliberation, here are the top five. Each of the children below will receive the book *Camp Out! The Ultimate Kid's Guide* by Lynn Brunelle. Congratulations!

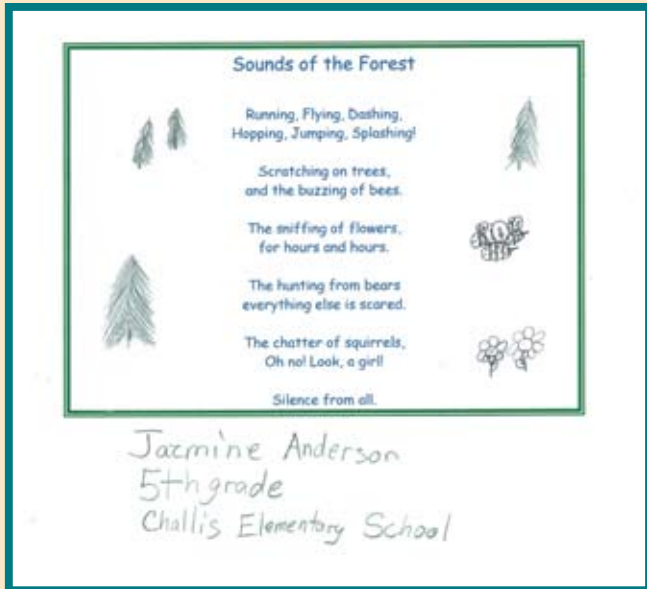


*Jenna Novy
4th Grade
Gate City Elementary, Pocatello
Mrs Jones' Class*

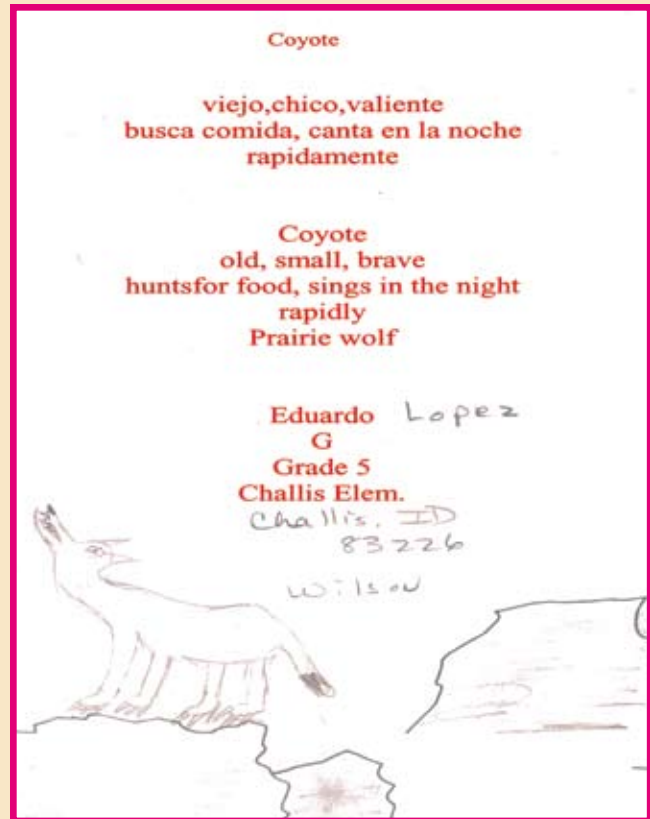


*Alyssa Olson
6th Grade
Peck Elementary School
Ms. Pollock's Class*

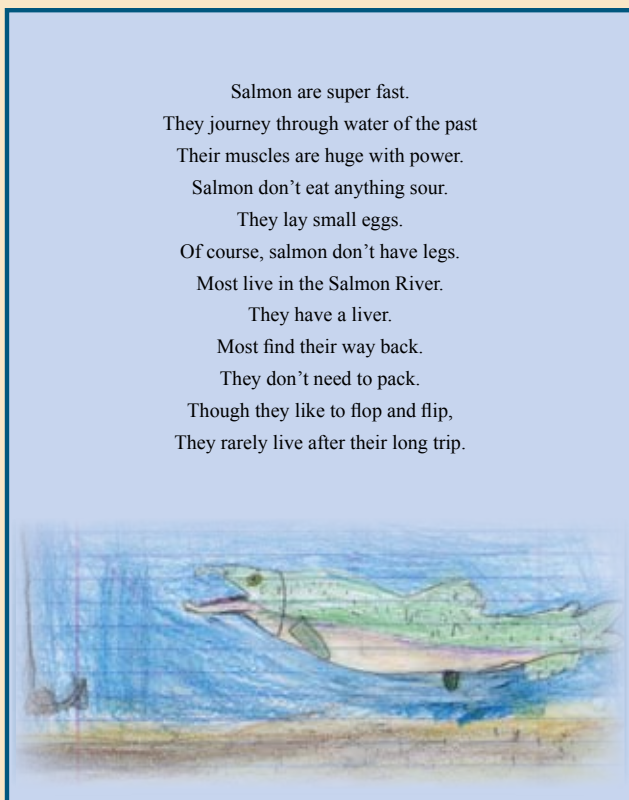
AND THE WINNERS ARE ...continued



*Jasmine Anderson
5th Grade
Challis Elementary School
Mrs. Lemmon-Wilson's Class*



*Eduardo Lopez , 5th Grade
Challis Elementary School
Mrs. Lemmon-Wilson's Class*



*Katherine Chacon , 4th Grade
Gate City Elementary, Pocatello
Mrs. Jones' Class*

Across

- 2. Arthropod means _____.
- 4. Some dragonflies _____ like birds.
- 5. Dragonflies rest with their wings held _____ to their sides.
- 6. The _____ helps dragonflies catch prey.
- 7. Odonata means _____.
- 8. The largest dragonfly in Idaho is the green _____.
- 9. Meadowhawks may be found basking on _____ early in the day.

Down

- 1. Females have an _____ to lay eggs.
- 3. Male dragonflies are _____.
- 4. Dragonflies have an incomplete _____.

Words

- | | |
|---------------|-------------|
| Darner | Out |
| Foot | Ovipositor |
| Labium | Rocks |
| Metamorphosis | Territorial |
| Migrate | Toothed |

Dynamite Dragonflies

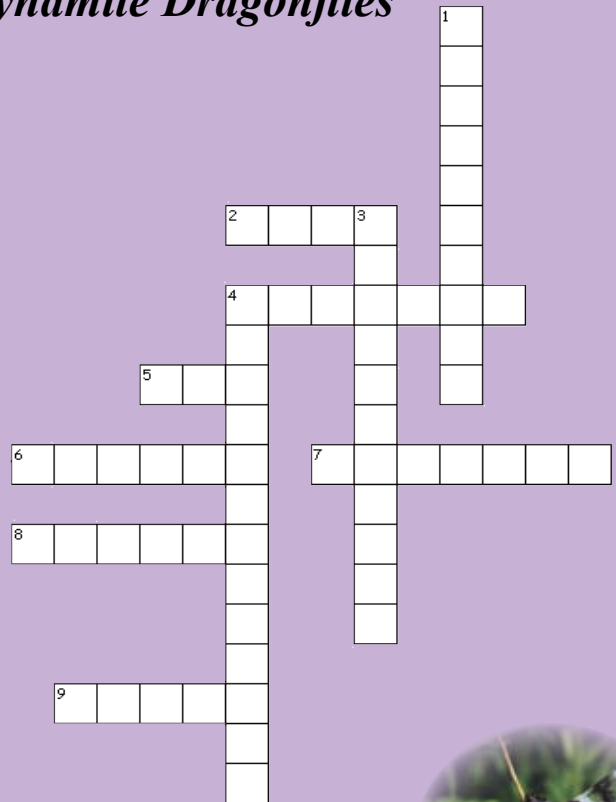


Photo courtesy Tony Lamansky

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• Cristina Watson • Vicky Runnoe

WE WOULD LIKE TO HEAR FROM YOU !

If you have a letter, poem or question for *Wildlife Express*, it may be included in a future issue! Send it to the address printed above!

