



DAZZLING DRAGONFLIES

Grades K-3: Week 3, Day 5

CRAFT YOUR OWN DRAGONFLY

WELCOME

(5 min)

MEDIA

(10 min)



READ

(20 min)

NATURE WALK

(60 min)

Materials:

- Tape
- Yarn



Introduction: Welcome your students. Be friendly.

LEARN ABOUT DRAGONFLIES

Students watch this video about the wonders of dragonfly transformation.

Say: **Dragonflies lay their eggs in water. When the eggs hatch, tiny dragonfly larvae come out, but they don't have wings yet! These babies are called nymphs. They live in murky water, hiding in plants and mud. They crawl and swim. They love to eat mosquito larvae and even tadpoles! They stay underwater for a long time—sometimes even years! Then one day, something amazing happens. The dragonfly climbs out of the water onto a reed or a lily pad. Its skin splits open and... Would you like to see what happens next for yourself?**

Students watch this stunning, music-only video of a dragonfly's metamorphosis. Call on volunteers to describe what happened.

The Metamorphosis of a Dragonfly

<https://www.youtube.com/watch?v=pMq5IY4XUkc>

MEET DR. JESSICA WARE

Play this video in the background as you read:

Dragonfly | Meditation | Inspirational | Ambient

<https://www.youtube.com/watch?v=WPZGei9GsxQ>

Read the profile of Jessica Ware with your students.

Talk about the passion and excitement she has for these dragonflies and other insects!



THROUGH THE EYES OF A DRAGONFLY

Say: **Dragonflies are expert fliers—they fly low over ponds, grass, and mud and can even turn mid-air or fly backwards. Their huge eyes, made of thousands of tiny lenses, can turn in all directions and let them spot even the tiniest things around them. They observe closely and look carefully, just like scientists need to!**

Watch how a dragonfly views the world:

How Do Dragonflies See the World? |BBC Earth

https://www.youtube.com/watch?v=m5XUdvBO_TE&t=105s

NATURE WALK

(Continued)

(60 min)

Materials:

- Tape
- scissors
- Yarn
- materials collected outside such as leaves, twigs, flowers, and grass



THROUGH THE EYES OF A DRAGONFLY (CONTD.)

Objective: Students ‘fly’ around school and observe like a dragon fly to gather small natural materials to make their own memorable craft.

Note: You can choose to make a nature bracelet or a dragonfly journey stick. Observe your school grounds to see what you feel students will find more material for easily.

Instructions for Dragonfly Flower Bracelet:

1. **Students** collect materials such as twigs, grass, petals and anything else they find interesting.
2. Put a loop of tape around each student’s wrist (sticky side up) like a bracelet. Give students ample time to explore and discover.
3. Students stick materials on their bracelet or attach it with yarn.



Instructions for Dragonfly Journey Sticks:

1. Students work in groups and search for a small sticks.
2. The STEM Coach helps wrap some yarn around the stick. Tie a knot at the ends and tuck it under so it doesn’t unravel.
3. Take your class on a nature walk. As you walk, students can pause and gently tuck in items they find (a feather, a curled leaf, a bit of bark, some grass etc.) *Say: Each thing you add to your journey stick becomes a story of your flight through nature—it’s something you noticed when you paused to look at the world like a dragonfly flying through it!*
4. Add two leaves on each side near the top of your stick to represent four dragonfly wings. *Ask: What did you notice today that you hadn’t seen before?*
5. Let students share how they noticed and chose the parts of their journey stick. What places in school do they think a dragonfly might love?



STEM GAMES

(30 min)

Materials:

- Hula hoops to use as lily pads or chalk
- Music



DASH OF THE DRAGONFLIES

Teacher prep:

Lay out several hula hoops or mark circles across a field. Make arrangements to play music.

What you'll do:

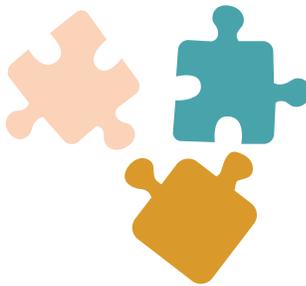
1. Choose a student to be the frog. The rest of the students are dragonflies
 2. When the music starts, the dragonflies flutter and zoom around the pond (the play area).
 3. When the music stops, frogs leap into action, trying to tag dragonflies before they land safely on a lily pad.
 4. More than one dragonfly can land on a lily pad, but everyone must have both feet inside the pad—if any part is off, the frog can still tag them!
 5. If a dragonfly gets tagged, they become a frog.
 6. After a few rounds, remove some lily pads to make it trickier.
- Start again when all the dragonflies have turned into frogs.

PUZZLE TIME

(60 min)

Materials:

- 500 piece puzzle



USE THE SCIENTIFIC PROCESS: FINISH THE PUZZLE

Objective: Students use the scientific process and group work to complete a large puzzle. **Last time, students would have completed building the border, or at least separated the flat-edged pieces (Step 3). Continue from where they left off on Day 2.*

Instructions:

Step 4: Group by Clues – Make Small Discoveries

Work on small clusters—for example, a house, a cloud in the sky or an easily identifiable component. Watch out for clues and stay vigilant! Scientists do the same: they test one hypothesis at a time.

Step 5: Step back and see the Big Picture

Pause, observe, and adjust. If a piece doesn't fit, don't force it. Try a new angle. That's what research is all about—revising ideas based on what the evidence shows.

Step 6: Persevere! Scientists face setbacks all the time, but the important thing is to keep on trying. If you feel stumped, take a short walk, do some jumping jacks in place, or switch to help another team for a bit. When you look at something with fresh eyes, it becomes easier!



PUZZLE TIME

(Continued)

CELEBRATE

(20 min)



STEM CRAFT

(30 min)

Materials:

- Pipe cleaners (3/student)
- Beads (4-6/student)
- Scissors
- Glue



CLEAN UP / DISMISSAL

Step 7: Celebrate Your Discovery!

When that last piece finally clicks in, you've done what all great scientists do—you've solved a mystery through patience, logic, and a bit of creative thinking! Well done, STEM Taught scientists!

Optional: The STEM Coach stands on a chair and takes a selfie of the whole class with the completed puzzle to treasure this moment forever!

HAVE FUN AND DANCE!

To celebrate completing your puzzle, play a fun song celebrating their creativity and participate in a kids versus adult dance challenges and get your wiggles out before craft time!

Kids Vs. Adults Freeze Dance Game!

<https://www.youtube.com/watch?v=Tw0pd6Z6Qds>

"Razz-Ma-Tazz" 🌟 /// Danny Go! Songs About Creativity

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

BUILD YOUR OWN DRAGONFLY

Say: **“Dragonflies are incredible fliers, known for their ability to move in any direction—up, down, forward, and even backward! Their four wings work independently, giving them super control and the ability to fly at speeds up to 35 miles per hour. With their huge eyes and fast reflexes, dragonflies can catch insects mid-air, making them great hunters. Today, we are going to make a dragonfly craft using pipe cleaners.”**

1. Make the Body: Fold a pipe cleaner in half to form the body. Add 4-6 beads to the center and twist the ends to hold them in place.
2. Create the Wings: Bend a pipe cleaner into two wing shapes (oval or teardrop). Twist them to the body just below the beads to secure them in place. Repeat to create 4 wings total.
3. Shape the Wings: Adjust the wings to give them a natural dragonfly shape.
4. Add the Eyes: Glue googly eyes to the top of the body.
5. Finishing Touches: Trim the wings, adjust the body, or curl the pipe cleaner ends for extra details.
6. Play with the dragonflies outside!

Clean up/pack up/dismissal

Clean up, pack up and head home.





Image source: Photo by ©AMNH/D. Finnin.

Jessica Ware

When Jessica was a little girl, she would sit on the docks near her Nana's house, dipping her toes into the icy Muskoka Lake in southern Ontario's rocky uplands. It is believed that the name Muskoka means 'the place with the large red rocks'. Jessica, though, was looking at different colors—and not of rocks. She was exploring the beautiful, fascinating, and quirky world of dragonflies.

Gazing at the wonderfully unique different colors, sizes, and shapes of dragonflies hovering over the lake, she reveled in their beauty and often thought: "Gee, that's weird! How many different types of dragonflies *are* there?" Had they always been the same? Did they go anywhere? Could they fly over oceans? What could they tell us about the past?

These are some of the questions Jessica explores today, and she researches dragonflies, as well as the smaller version of dragonflies that tuck their wings in against themselves when they rest—damselflies.

Great scientists can have questions about anything that fascinates them and can spend a lifetime exploring and discovering those answers, just like Jessica.

Now, as a researcher, Jessica knows there are 6,000 species of dragonflies... that's more than ALL the species of whales, rodents, monkeys, pandas, cows, and every mammal in the world... combined!

If you meet Jessica today, she will tell you that dragonflies and damselflies are the most fascinating insects, and they're actually predators! They eat things like flies and mosquitos. Juniors look like mini versions of the big dragonflies, so they have an incomplete metamorphosis.

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This means that, unlike butterflies, for example, where the caterpillar goes into a cocoon and rearranges itself completely into a butterfly, dragonflies change just a tiny bit. She will tell you that some dragonflies, like the globe wanderer, can fly over oceans, and that scientists used eyelash glue to place a tiny device to track an emperor dragonfly and followed behind it in a helicopter to see how far it could go.

She might share with you the wonderful history of dragonflies, and that there is evidence they lived up to 4 million years ago, that some of the biggest dragonflies were 37 cm—that's over two full, fresh yellow pencils joined end to end across the wingspan—and that in the Proterozoic era, or the Age of Early Life, dragonflies were huge and had very stiff wings to go through the thick, musky air.

Sometimes, she'll be in New York, managing her wonderful collection of dragonflies and damselflies at the American Museum of Natural History. At other times, she'll be off in the lush rainforests of Diana, an area teeming with wonder and rich natural wildlife in Madagascar, where dozens of new dragonfly species are discovered each year. Some dragonflies she sees are so big that you can barely tell if they're dragonflies or birds.

Jessica always carries a net with her: "You never know what you're going to see!" she says. Once, when she saw a rare and exotic dragonfly, she didn't have her net, so she used her shirt to gently catch it and bring it back to the lab to study.

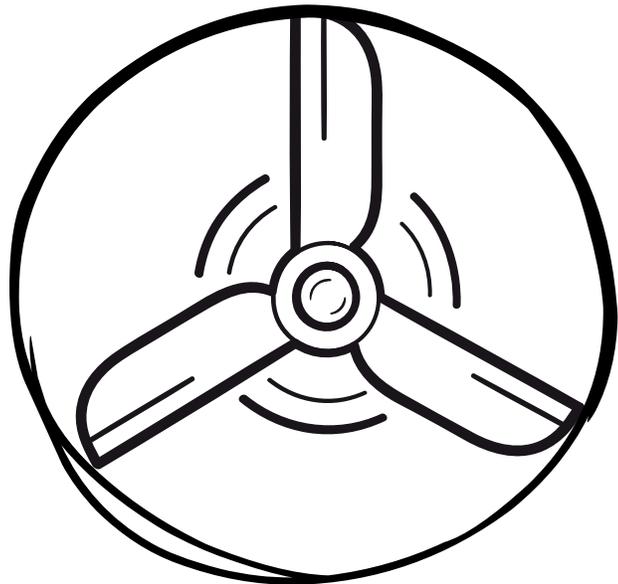
But most of all, if you were to meet Jessica today, you would see her immense and pure love for this species. Dangly dragonfly earrings, a charming dragonfly nook, dragonflies on her clothes and her walls and her curtains, and probably even her cups and bowls.

You would see that sometimes, even the tiniest microscopic part of a dragonfly can be used to make exciting new discoveries about a species. The antennae dragonflies have are barely visible without a microscope, but they play a very important role in helping dragonflies make decisions about wind speed by sensing it. Once, Jessica even used a single dragonfly toe to help answer some important dragonfly questions.

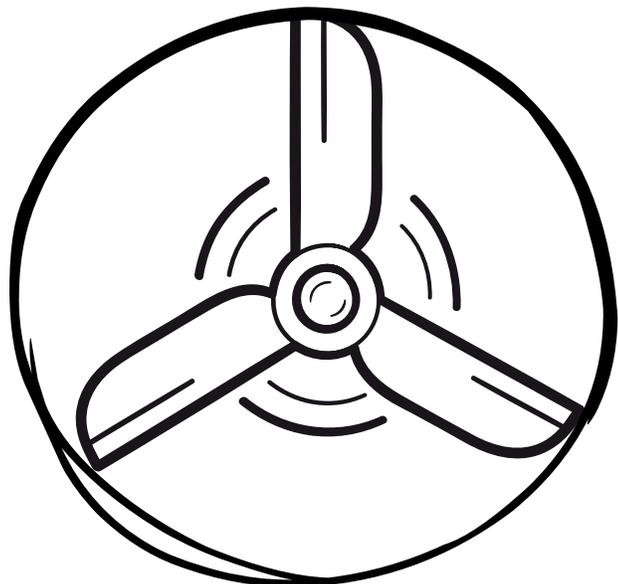
With a microscope and science by your side, you can choose any corner of the world to be curious about, whether that's the insect world, the regular world, or anything at all.

As fascinating flight engineers, dragonflies might be tiny, but they have monumental lessons to teach us!

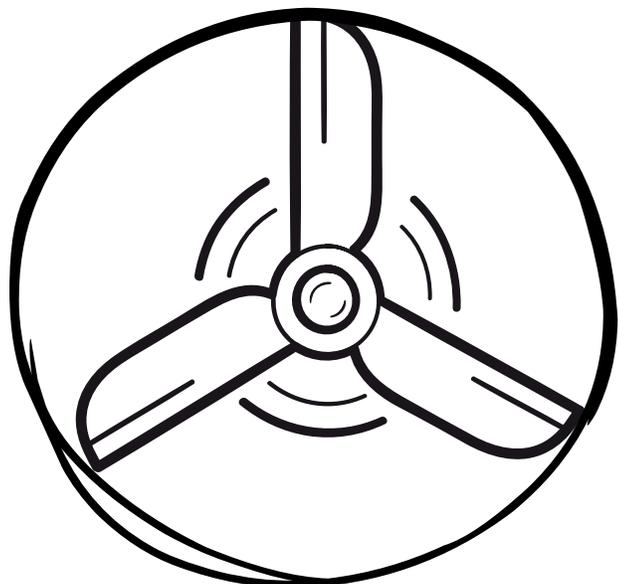




TAKE F.L.I.G.H.T. 
FORWARD
LEFT AND RIGHT (SIDEWAYS)
IN PLACE (SPIN 360°)
GO UP
HEAD DOWN
TURN BACK (FLY BACKWARD)



TAKE F.L.I.G.H.T. 
FORWARD
LEFT AND RIGHT (SIDEWAYS)
IN PLACE (SPIN 360°)
GO UP
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