



## The Bug Girl

Sophia Spencer has loved bugs ever since a butterfly landed on her shoulder at a butterfly conservancy when she was only two-and-a-half years old. Sophia was thrilled to share what she knew about grasshoppers (her very favorite insects), as well as ants and fireflies. In first grade, not everyone shared her enthusiasm. Some students teased her, and Sophia stopped talking about bugs altogether. Sophia's mother wrote to an entomological society looking for a bug scientist to be a pen pal for Sophie. Using the hashtag BugsR4Girls, scientists tweeted hundreds of times to tell Sophia to keep up her interest in bugs--and it worked!



## The Bug Girl

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**WITS CONNECTIONS: Seek Help!**

**WITS LEADeRS Connections: Look and Listen! Explore points of view!**

**Other learning outcomes:** Insects, Scientists, Career developments, English language (“ologists”).

## Pre reading activities

### Check out the cover- what is the difference between a true story and fiction?

**Do you have a favorite insect?** Let's name all the bugs we can think of that live where we live (spiders, flies, mosquito, honey bee, wasp, ants, lady bug, aphids, dragon flies, grasshopper, beetles, pill bugs, moth, praying mantis, and roach). Is an earth worm a bug? (NO! Unlike worms, insects have exoskeletons which act like a skeletal support structure and protects the insects' soft internal organs. Worms breathe through their skin, compared to insects breathing through tiny tubes in their abdomen called tracheae. Worm skin is made up of collagen and does not molt in comparison to insects' exoskeleton which is made up of chitin and molts at certain stages of their life cycle. <https://australianmuseum.net.au/learn/species-identification/ask-an-expert/are-worms-insects-or-animals/>)

**Are Insects Just Pests or Are They Important to People** (pollinate flowers fruits vegetables, feed birds and fish, create honey) etc. See: 4H club news at [https://extension.entm.purdue.edu/radicalbugs/index.php?page=importance\\_of\\_insects](https://extension.entm.purdue.edu/radicalbugs/index.php?page=importance_of_insects)

**What is an entomologist?** An **entomologist** is a scientist who studies insects. Entomologists have many important jobs, such as the study of the classification, life cycle, distribution, physiology, behavior, ecology, and population dynamics of insects.

**Have you ever been to a butterfly garden?** What did you see there (besides butterflies of course)? What questions do you have about butterflies? See last page of THE BUG GIRL to see answers to these questions: What do butterflies eat? How do they make a cocoon? Where do butterflies live?) All these questions are studied by scientists called entomologists! Because of these scientists' work we can look up answers to many of our questions, and anyone can grow up to be a scientist if that interests them!

**Post Reading Questions:** Demonstrate appropriate strategies for responding to bullying behaviour (e.g., assess the situation, avoidance, assertiveness, reporting, seeking help).

- Think about something you are really interested in that you like to do with your friends, even when you are not in school? What would you like to tell your friends about the activity?
- Why did Sophia like bugs when she was little? What did Sophia feel like when students teased her about talking about bugs all the time (embarrassed, shy, left out, different)?
- Why do think Sophia stopped talking about bugs in grade 1? (She wanted to fit in with the other kids and do what they did so she could be part of the classroom groups?)
- What did Sophia do? Got help from her mom. Started to get involved in other activities (gymnastics, books, swimming, and technology) where she met new friends.
- What if we all wanted to be interested in the same thing, say everyone wanted to play soccer all the time what would happen? (There might not be enough balls or fields to go around!)
- What topic would you like to know more about (cameras, rocks, dinosaurs, bugs, brains, anatomy, sports, music, robots, or creative writing)?
- Is there a person who studies that?

**Post reading Activities: Look closely and observe details – act like a scientist:** On the top half of a blank page of paper, draw a picture of a bug you know – just as you think it might look, before you study

it. Now look up a “scientific” image of your bug and draw it again. Did you observe more things about the bug in your second drawing? Turn your paper over and draw all the things you remember about the bug again.

**Activity:** How many bugs can you find in the book! (nine) Look carefully! What are names have people given them? How does their name match the kind of bug they are? (butterfly, dragonfly, grasshopper, firefly, ladybug, stinkbug, ant, mosquito, roach, grasshopper)

**Activity: You can be a scientist:** Create an inventory of their own attributes, including skills, interests, and accomplishments: Make a poster about your interests that shows what you are studying as an “X”ologist. Use pictures from the interest or magazines! Write the most important thing you learned when studying this topic in big letters on your poster?

**Activity: Careers in science:** What would you study, if you were one of the following?

**Paleontologist** - fossils and forms of lives previously existing

**Archaeologist** - historic or prehistoric people and their cultures

**Psychologist** - the mind; mental states & processes human & animal behavior

**Geologist** - the dynamics and physical history of the earth

**Dermatologists** - skin

**Anthropologist** - human cultures

**Cardiologist** - the heart

**Cosmologist** - the universe

**Genealogist** -descent of families

**Ophthalmologist** - eyesight

**Pharologist** -- lighthouses!

**Biologist** - biological processes of life

**Zoologist** - animals

**Radiologist** - X-rays

**Kinesiology** - movement and physical activity

**Herpetologist** – snakes

**Hydrologists** – water

**Activity: Invite a scientist to your classroom?** Invite in a live scientist from a local university – check out an area of expertise that your students are interested in and contact the department secretary – a professor or a graduate student might come and talk with your students and answer their questions about their favorite topic of study!

**Activity: new words list** – make sentences or story of your own using the following words: Conservatory, flit, perch, continent, arthropod, entomologist, helicopter, weird, scientist, curious, segment, environment.

