

# Jumping Maggots

(September 2019)

Scientists have made a big discovery: they've figured out that tiny maggots have the ability to leap through the air—even though they don't have arms, legs, or wings. They've also determined exactly how maggots are able to do this. The athletic feat was observed a few years ago by a man named Mike Wise of Roanoke College. Wise studies how plants defend themselves against insects who want to eat them. So how did he find out that maggots can jump?

Wise often dissects the bumps on flowers and plants. These bumps form around the larvae of developing flies. When the larvae are full grown, they're as big as a grain of rice. They also happen to be bright orange. Typically, Wise will extract the maggots from the bumps on the plant and put them on a dish next to his microscope. The maggots don't usually move much—other than wiggle about a bit.

One day while dissecting a goldenrod, Wise had removed about a dozen maggots. After an hour of the painstaking work, he looked down at the dish where the orange creepy-crawlies were supposed to be hanging out. However, Wise was stunned to see the dish empty. That's when he caught sight of a maggot jumping across his table. Then, he noticed a bunch on the floor racing over to the wall. Totally perplexed, Wise took the

maggots to a biologist named Sheila Patek at another university. Sheila likes to study small, fast creatures. In her lab, she filmed Wise's maggots by using some very high-tech, high-speed cameras. She easily discovered their little secret. The maggots first curl into a loop. Then, they use the hair on their little heads to stick to the hair on their little bottoms. Once they're in this loop position, they squeeze fluid through their bodies. This causes the part of their bodies that's against the ground to harden. They keep doing this until there's enough force to launch them up into the air.

For little maggots, they can jump pretty far—over 30 maggot body lengths. They're just as good at jumping as fleas. In fact, their uncanny abilities have inspired Sheila to want to build soft-bodied robots instead of rigid-bodied ones. She thinks that robots could do more and be more useful if they are made from softer materials. It would also be cool if robots could create movement in the same ways maggots do.

Most people don't see the usefulness of maggots. They just see them as gross. However, they do serve a purpose—actually, many purposes. We use them to compost, for medical purposes, and to help solve crimes. The list goes on and on! Now, we can add being the inspiration for soft-bodied, super cool robots to the list as well.

## Teacher Resources – Vocabulary

*Potential Words for Further Study:* These words not only help with comprehension of the passage, they also appear more frequently in a wide spectrum of reading, especially in academic text. Therefore, further study of the meaning of these words may be beneficial. The words on this list can be incorporated into subsequent lessons.

### **Wilson Reading System Vocabulary Level: AB**

**remove** (v) to take, extract, separate, or withdraw (someone or something *from*)

**rigid** (adj) not bending or flexible; stiff and hard

*Words for Quick Discussion:* Consider discussing these words as they are encountered to help students comprehend the passage. A quick discussion in student-friendly language while reading the text is best.

### **Wilson Reading System Vocabulary Level: B**

**goldenrod** (n) any of a genus (*Solidago*) of chiefly North American plants of the composite family, typically with long, branching stalks bearing one-sided clusters of small, yellow flower heads through the late summer and fall

**maggot** (n) a wormlike insect larva, as the legless larva of the housefly: often found in decaying matter

**perplex** (v) to make (a person) uncertain, doubtful, or hesitant; confuse; puzzle

**uncanny** (adj) strange and difficult to explain

***Definition Source:** Collins English Dictionary. Retrieved from <https://www.collinsdictionary.com/us/dictionary/english>*

**Text Easability:****Text Easability Scores**

If you would like to measure the text easability scores of this passage, please follow the directions below.

1. Visit the Coh-Metrix Text Easability Assessor website at <http://tea.cohmetrix.com/>. If you do not already have a login and password, create one. It is free and easy to sign up for access to the website.
2. Once you have created an account and sign in, you will be taken to a page with an empty, white text box. Copy and paste the text from this passage into the empty, white text box. Make sure you are only copying and pasting the body of the passage. Do not include the title, date, or any of the resources present in the passage.
3. When you have pasted the passage into the text box, click on the red button beneath the text box that says "Analyze." There will be a short delay and after a few seconds, you will see a bar graph appear to the right of the screen.
4. The bar graph will give you the percentages for several text characteristics including: narrativity, syntactic simplicity, word concreteness, referential cohesion, and deep cohesion.
5. Below the bar graph, the Flesch Kincaid Grade Level is also included for your benefit.
6. Lastly, a paragraph is provided that explains the meaning of the measurements of the text characteristics for your particular passage.
7. Once you have completed measuring your passage, you can click on the "Clear" button below the text box and measure another passage, if you wish.

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