

Jumping Maggots

(September 2019)

Scientists have made a big discovery: they now know how maggots jump through the air—even though they do not have limbs or wings. This shocking athletic act was spotted a few years ago by a man named Mike Wise of Roanoke College. Wise investigates how plants defend themselves against hungry insects. So how did he find out that maggots can jump?

Wise often dissects the bumps that are on flowers and plants. These bumps take shape around fly larvae. When the larvae are full grown, they are as big as a grain of rice. They also happen to be 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 do not tend to move much. They just twist a bit.

One day while dissecting a goldenrod, Wise put about a dozen maggots on his dish. After an hour of work, he looked down at the dish. The dish held nothing. How did the maggots vanish? Where did they go? All of a sudden, Wise spotted a maggot jumping across his table. There were a bunch on the floor jumping over to the wall. Wise was at a loss! He did not know what was happening.

Wise took the maggots to a biologist named Sheila Patek. Sheila likes to study small, fast animals. In her lab, she made a film of Wise's active maggots. She was quick to discover their secret. The maggots curl into a ring and then use the hair on their little heads to stick to the hair on their little bottoms. When they are in this ring shape, they push fluid through their soft bodies. This causes the part of their bodies that's against the ground to harden. They keep doing this until there is enough force to lift off into the air.

For little maggots, they can jump pretty far—over 30 maggot body lengths. In fact, they are just as good at jumping as fleas. They are so good at it that Sheila wants to construct robots with soft bodies, not hard ones. She thinks that robots can do more and be more useful if they are made from soft stuff. Sheila also thinks it would be fantastic if robots could move the same way as maggots.

Most people do not see the usefulness of maggots. However, they do have a big job. They have a number of big jobs. We use them to compost, for medical purposes, and to solve crimes. The list goes on and on. Now, we can add being the model for soft robots to the list as well.

Teacher Resources

Please note: this non-controlled readable text passage features a ***description text structure***. As such, it is written to be ***at least 80% decodable at Substep 4.2***. A specific decodability score is listed below.

- This text passage is 82.83% decodable at Substep 4.2

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.

This text passage is archived under *Science & Technology*.