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23 Plastic-Eating Worms

Mealworms Can Help With Plastic Waste

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PRE-ASSESSMENT PROFICIENCY INFORMATION

STUDENT **SCORE**

SCIENCE NEWS

Plastic-Eating Worms

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PRE — ASSESSMENT

PRE 1 — True, False, Not Given

*Listen to the audio carefully and determine whether the statements provided are True, False or Not Given based on the information you hear. Mark **True** if the statement is **correct**, mark **False** if the statement is **incorrect**, and **Not Given** if the information is **not mentioned** in the audio.*

		TRUE	FALSE	NOT GIVEN
1	They may be a key to solving our worldwide plastic disaster, but can they really be that key?	☐	☐	☐
2	They can eat plastic and this is what's left of a piece of styrofoam after a week of digesting, it's by these little creatures.	☐	☐	☐
3	Copper happened to be one of the most useful and adorable conductors of electricity.	☐	☐	☐
4	These worms are doing what we thought was impossible, digesting what cannot be digested or decomposed.	☐	☐	☐

PRE 2 — Re-Tell

*Listen to the audio carefully and **take notes** on the main points and key details. After the audio ends, **re-tell what you heard in your own words**. Focus on summarizing the main ideas, supporting details, and any examples **mentioned** in the audio.*

01

Article Transcription Reading.

*The following text below is a transcribed text from the listening article. Feel free to **mark other words** that you are **not familiar** with or are not highlighted below. Notes are available at the last page of this lesson.*

00:00 These worms are doing what we thought was impossible, digesting what cannot be digested or **decomposed**. They can eat plastic and this is what's left of a piece of styrofoam after a week of digesting, it's by these little creatures. They may be a key to solving our worldwide plastic disaster, but can they really be that key?

00:25 This is huge news especially knowing the true evil nature of plastic that doesn't allow it to be decomposed. For example, if we take natural substances, they will naturally be broken up by bugs and bacteria, turning them into water, oxygen, and carbon elements that become a part of nature all over again.

00:45 With plastics, it's impossible. It takes 20 to 500 years for a plastic bottle to decompose. And it will only **shrink** in size. Plastic won't go away. This is a curse of a material we created to make our lives better.

01:02 "There are a number of problems with that. There are a lot of things that we know. We know how water moves roughly. We know how salt moves. We know that our models have errors but they're not too bad. But then when you come to trying to understand plastic, there are a number of different problems because it doesn't necessarily move the same way the water moves as we've seen. It might sink, it might float. If the plastic is floating in, the water comes together, the water goes down, the plastic doesn't. That's why you end up with **garbage patches**."

01:36 After an American inventor, John Wesley Hyatt, discovered a simplified process of creating plastic. It became a **wonder material** that took over the world. Some plastic products are light and flexible. Some can even stop bullets. All thanks to polymers with atomic units that look like a chain. The **chain**, nothing could break down because of its strong bonding and the fact that this little **nasty** worm is the first creature in existence that can break this chain down is a **miracle**. What's more surprising is that it's the regular worm called a **mealworm**. You can actually buy them online and watch them grow into beetles as you feed them with plastic. However it's not the organism itself that destroys it, but the bacteria inside of it that produces special **enzymes.**

02:30 If we manage to **isolate** those enzymes and then produce them in **bioreactors**, they could enhance the recycling process and break the plastic down much faster than literal centuries. As good as everything sounds, the technology for this is not **scalable** yet and it's really expensive so it will take some time to make it real. What we really can do right now is to take a new approach to plastic. Like stopping using it irresponsibly and throwing it out into nature.

03:31 Worms can help us, but we humans should start with ourselves first.

02 A1 — Pairing Meanings.

Match the words on the first column to its corresponding meaning on the second column.

A	**decompose**	**1**	_____	large areas of ocean where litters collects
B	**shrink**	**2**	_____	worms, which is fed to birds
C	**garbage patches**	**3**	_____	able to grow or to be made larger
D	**nasty**	**4**	_____	get smaller; squeeze
E	**chain**	**5**	_____	awful; disgusting
F	**mealworm**	**6**	_____	to separate
G	**isolate**	**7**	_____	decay; spoil; perish
H	**scalable**	**8**	_____	pattern; sequence; series

02 A2 — Choosing the Right Words.

Match the words on the first column to its corresponding meaning on the second column.

nasty

mealworm

scalable

isolate

chain

1 The chain, nothing could break down because of its strong bonding and the fact that this little _____ worm is the first creature in existence that can break this _____ down is a miracle. What's more surprising is that it's the regular worm called a _____.

2 If we manage to _____ those enzymes and then produce them in bioreactors, they could enhance the recycling process and break the plastic down much faster than literal centuries.

3 As good as everything sounds, the technology for this is not _____ yet and it's really expensive so it will take some time to make it real.

03 Speak Up.

You are welcome to authentically share your thoughts as you go through the following questions.

1 In your own point of view, are these worms really the key to the plastic waste problem?

2 Nowadays, DIY is in. What other things that we can make out of plastic wastes?

3 Can you elaborate further, “Be part of the solution, not part of the pollution.”?

04 Building Deeper.

*Choose the **words** from the article, or the vocabulary activity before. Write them under their corresponding categories. Do your best to **create examples** that can **help you remember** and understand the word better.*

FAVORITE WORDS	INTERESTING WORDS	DIFFICULT WORDS
Words that you thin you will use on a daily basis	*Words that you find interesting for the first time*	*Words that you find difficult to say or understand*
WORD 01 + example	WORD 01 + example	WORD 01 how can I understand better + example
WORD 02 + example	WORD 02 + example	WORD 02 how can I understand better + example

FOOD FOR THOUGHT

Everything in this world has a purpose, even you.

Notes

[1] **decompose**
[2] **shrink**
[3] **garbage patches**
[4] **nasty**
[5] **chain**
[6] **meanworm**
[7] **isolate**
[8] **scalable**

Good job for finishing the lesson through. If you were to **give yourself stars** for doing your best, how many stars will you give to yourself for today's hardwork?

KEY ANSWERS

A1

1G 2D 3A 4E 5B 6H 7F 8C

A2

1 nasty, chain, mealworm
2 isolate
3 scalable

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FEEDBACK

EDUCARE