Dr. Julie Horvath, Evolutionary Genomicist

North Carolina Museum of Natural Science

Podcast length: 16:11

THE walking classroom
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LESSON PLAN

SYNOPSIS

The Walking Classroom's Laura Fenn visits Dr. Julie Horvath, the Director of Genomics and Microbiology at the North Carolina Museum of Natural Science. Dr. Horvath explains genetics and genomics and how after thorough research, scientists work to get their findings published.

VOCABULARY

Review key vocabulary (included definitions are limited to the context of today's podcast)

- **DNA:** (noun) "instruction manual" for your cells; determines your hair color, height, etc.
- **geneticist:** (noun) a scientist that studies thing that are inheritable, like skin color, height, etc.
- **genome:** (noun) the complete set of genes or DNA that are present in an organism

QUESTIONS FOR THOUGHT & DISCUSSION

1. Dr. Horvath explained that as a child she knew she wanted to be a detective in some way. She ended up being a scientist. In what ways are being a scientist and researcher like being a detective?
2. Dr. Horvath said that dirt is alive because of tiny microscopic organisms called microbes that help plants process nutrients. Even though we can't see the microbes with our naked eye, they are still playing a very important role. What can microbes teach us about size and importance in an ecosystem and life?
3. Dr. Horvath explained that after a lot of research, a scientist begins to work on publishing what they have discovered. She said that a scientist looks to see if other scientists have made similar findings and if so, they will mention them in their research. Why might it be important that a scientist looks to see what other scientists' research says and include that when they publish their own research?

BOOK SUGGESTIONS

Consider reading aloud or making some of these titles available to students to reinforce and extend some of the concepts covered in today's podcast.

Tiny Creatures: The World of Microbes **by Nicola Davies**
Find out how the smallest things on the planet do some of the biggest jobs in this fascinating introduction to the world of microbes.

Genes and DNA (Kingfisher Knowledge) ***by Richard Walker***
This book explores genes, DNA and modern genetics and their connection to forensics, therapy and cloning.

Gene Machines (Enjoy Your Cells)* ***by Fran Balkwill***
This book explains the world of proteins, cells and DNA. The information is presented in a kid-friendly format so that students can understand the science behind genes and much more.

**Enjoy Your Cells* is a series of children's books focused around cells. There are many other great titles in the series by Fran Balkwill.

EXTENSION ACTIVITIES

The following activities are ways to build on and extend some of the topics discussed in the podcast. We strongly encourage you to always preview videos prior to showing them to your students.

Rhesus Monkey Society **http://bit.ly/1IMTPXF**
Video from National Geographic (3:14)
A nice example of the social structure of the Rhesus Monkey society.

Tour of Basic Genetics **http://bit.ly/1wIrXOd**
Interactive Learning from the University of Utah
These short interactive learning experiences give students a better understanding of concepts like DNA, genes, and heredity.

An Inventory of My Traits **http://bit.ly/1eK5zhl**
Lesson Plan from The University of Utah
Students examine their own observable genetic traits and how they differ from others. The students will then work together to make a bar graph to show the most and least common traits of the group.