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ANIMATION SCRIPT

WHY WORMS MATTER: THE IMPORTANCE OF NEMATODE DIVERSITY FOR STUDYING BIOLOGY AND EVOLUTION DR ERIK ANDERSEN

TO MAKE THE MOST OUT OF THIS SCRIPT, YOU COULD:

- Stick it in your book as a record of watching Dr Andersen's animation
- Pause the animation and make notes as you go
- Add your own illustrations to the sheet
- Create your own animation to accompany it
- Add notes from classroom discussions
- Make notes of areas you will investigate further
- Make notes of key words and definitions
- Add questions you would like answered – you can message Dr Andersen through the comments box at the bottom of his article: **www.futurumcareers.com/why-worms-matter-the-importance-of-nematode-diversity-for-studying-biology-and-evolution**

SCRIPT:

Dr Erik Andersen, a geneticist at Northwestern University, is a man with a mission – to capture the genetic diversity of *Caenorhabditis elegans*, or *C. elegans*, a species of nematode.

Even though this tiny worm is only the size of a full stop, it has had a huge impact on our understanding of human biology. The importance of *C. elegans* in genetic research is highlighted by its key role in six Nobel Prize winning studies.

However, most studies use only a single genetic strain of *C. elegans*. This is like trying to study the whole of human biology by looking at a single person!

Genetic diversity exists within every species, so it is important to capture the natural genetic variation of *C. elegans* to improve its use as a model organism.

Model organisms are non-human species that scientists can study to increase their understanding of biological processes shared with humans.

C. elegans has several features that make it a powerful model organism for geneticists like Dr Andersen.

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It is easy to grow in a lab. It has a life cycle of only 3.5 days. It can be stored frozen and then brought back to life. Scientists know the location of every cell in *C. elegans*. It shares many genes with humans, but the *C. elegans* genome is 1/30 of the size of the human genome, so is much easier to study.

To determine the natural genetic diversity of *C. elegans*, Dr Andersen collects samples from wild populations. He goes on hikes and picks up rotting leaves, fruits or fungi. With each sample, he takes a picture and records the environmental parameters.

Back in the laboratory, Dr Andersen collects the nematodes as they crawl off the vegetation, identifies them and sequences their genetic material. He adds each new strain to his collection, building a database of global *C. elegans* genetic diversity.

Other geneticists can then use these *C. elegans* genetic data in their own research. By ensuring that genetics research is truly capturing the natural diversity of *C. elegans* populations, Dr Andersen's work will help researchers to improve our understanding of human biology.

And you can help Dr Andersen with his mission!

When you are next on a hike, pick up some rotting vegetation and send it to Dr Andersen. He will analyse the nematodes on it and add the genetic material of any *C. elegans* to his database.

You will be contributing to the field of genetic research!

You've learnt about Dr Andersen's work. What would you study as a geneticist? What could you achieve?