



# National Center for Science Education

Defending the Teaching of Evolution in Public Schools

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## Guide to *Episode 4: The Evolutionary Arms Race*

For a 45–60 minute dialogue on Episode 4 of *Evolution*

By Phina Borgeson, M.Div.

“Toward the end of the 20th century biologists began to realize that there is another force, equally important, and responsible for the build up of a great deal of the magnificent superstructure of the earth’s biodiversity, and that is cooperation, what we call symbiosis, and particularly mutualistic symbiosis, that is, intimate living together of different kinds of organisms in which there is a partnership which benefits most of the partners.”

— Edward O. Wilson, from the episode

### Image

There are many images in this episode of ways in which species evolve interactively. Which of them impressed you most and stuck with you?

### Dig

Take the time to reflect on the images that members of your group have mentioned. Are they examples of predator–prey relationships? Parasitizing? Cooperating? What is new or surprising in what people have learned about how different species evolve together?

### Dialogue

Sacred texts of a prophetic or apocalyptic nature, particularly in the Hebrew Bible, often contain images of unlike creatures in intimate association. The lion and the lamb are often depicted, and there are more complex visual representations like “the peaceable kingdom.”

What others can you think of?

How do the images from the episode and the images from scripture enrich one another?

How might the images of symbiosis presented in the episode inform our envisioning of ultimate reality?

### Explore

1. Strong words and images in this episode warn us of the dangers of humans separating themselves too much from the rest of the living world. This is an issue that probably could not be envisioned in the times and cultures in which sacred texts of the Abrahamic faiths originated. If prophets were writing today of this danger, how might they speak of it? How is human separation from the rest of life related to human separation from the holy?

2. New developments are happening all the time in the “evolutionary arms race.” Scan current newspapers and magazines, search the web, and pay attention to radio and television news. What’s new? How did what you learned from this episode help your understanding of these developments?

## **Act**

The image from this episode of supermarket aisles filled with antibacterial products is a powerful one. The overuse of such products and the inappropriate use of antibiotics have changed our environment, favoring the evolution of resistant strains of microbes. Draw on the doctors and other health care workers in your congregation for evidence and anecdotes of the dangers involved. What actions might you take in your household, congregation, and community to educate people about antibiotic use and take steps to correct it?

Please send comments on these guides, and any questions about ideas and resources for extending the conversation, to:

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