



Going Viral

Dr. B answers 3 questions about viruses: Why do we have to live with them? Why can't we live without them? Why do social distancing, masks, and vaccines prevent their spread?



Watch the show!



<https://www.youtube.com/watch?v=yAYBsOzHWZA>

Quick Questions

1. The title of this video is "Going Viral." Why might popular posts on social media be considered "going viral"?
2. Did you learn anything new about viruses during this video?
3. Dr. B mentioned that viruses can actually be beneficial. Did that surprise you?
4. Not all diseases are caused by viruses. Some can be caused by other pathogens like bacteria or parasites. What are some diseases you know are caused by viruses?



Deep Dives

1. Dr. B and COSI produced this episode about viruses in 2021, when the world was still heavily in the midst of the COVID-19 pandemic. Now that more years have passed, what do you think individuals who went through it learned after the pandemic? What about society as a whole? Do you think any organizations or government entities have learned or grown as a result of the pandemic? Explain.
2. You've likely experienced multiple aspects of viral transmission (getting sick!) and efforts to control that transmission: handwashing, masking, distancing, vaccination, quarantining, etc. What are some of the positive outcomes of employing these techniques? Are there negative outcomes? Which techniques are more difficult to implement? Outside of these efforts, what larger actions could be taken to promote a healthier society?
3. Dr. B mentions that viruses are critical for life on Earth. In fact, an epidemiologist at the University of Wisconsin-Madison, Tony Goldberg, once said, "If all viruses suddenly disappeared, the world would be a wonderful place for about a day and a half, and then we'd all die." Viruses help maintain a healthy ecosystem in the oceans, where oxygen-producing plankton sustain life on Earth. They help stop bacterial species from overpopulating. They are a part of the gut microbiome in all animals. There may be as many as 320,000 different species of viruses in mammals alone. Imagine you study the benefits of viruses. What questions would you ask? What environments would you want to study?

Engaging in Science Discussions



Recommended Grade Level: Middle and High School

Objective: To engage in open-ended discussions about critical science topics. While leading these discussions, it is important to ensure that everyone is heard, and everyone is treating one another with respect. There is no “right answer” during these discussions, and it’s okay to respectfully disagree.

Additional Notes: We recommend having these discussions multiple times with the same group of participants. This provides the opportunity to explore different topics and improve one’s abilities to have successful conversations about STEM topics. Quick Questions are optional and are recommended to be used as warm-up questions.

Materials: TV or projector Paper and writing utensils

TIMELINE (30 – 40 MINUTES)

5 min	10 min	5 min	10 min	10 min <i>(optional)</i>
Intro + prompts	Watch segment	Think/write time	Share with partner	Small groups

Intro (5 min) Before starting, select one Deep Dive question. Tell the group you will be asking them a question that has no right or wrong answer. After they watch the clip, they will have time to think about and write their response. They will share their response with a partner or small group. Now share the question you selected.

If participants are new to these sorts of discussions, you may want to review the following concepts:

- When you are sharing your responses, provide reasoning and evidence. Reasoning is your own thinking behind your answer. Evidence is facts that support your answer, such as historical facts or scientific facts. You may also have experiences from your own life that support your answer.
- When listening to your classmates, ask questions. The purpose of questions is to better understand their thought process, not to challenge them. Some ways to frame questions are: “I didn’t understand X.” “Could you explain Y again?” “What do you mean by Z?”
- If someone asks you questions, provide clarification. Explain your reasoning and evidence. Remember that there are no right or wrong answers.

Watch the segment (10 minutes)

Think/write time (5 minutes): Participants write down their answers

Share with a partner (10 minutes): Pair up participants. Each person has 5 minutes to share their response and answer questions from their partner. Then switch so each partner gets a turn.

(Optional) Small groups (10 minutes): Put participants in groups of 4 for share-outs and conversations.

(Optional) Homework prompts: Expand your response into a report, picture, poem, essay, short story, song, or performance. Or, write your own discussion question for the group.