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Health and the Invisible World

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I have been concerned with the fact that many people misuse prescription drugs. This misuse is not just recreational; it is also misunderstanding of the nature of medications. For example, friends and relatives have offered me left over antibiotics when I complained of a sore throat. There are several problems here: they stopped their medication early, selecting for antibiotic resistant bacteria, and they are diagnosing my disease without any expertise.

Since some of the California standards for health address correct use of prescription drugs and since the California Department of Health has been reminding schools about the dangers of multiple resistant bacteria, I combine several topics and present a unit on the differences between bacteria and viruses. We explore the size and structure differences between bacteria and viruses and why antibiotics do not work on viruses. We also do activities to show how taking medications incorrectly actually selects for bacteria resistant to that medication. At the same time, we learn about communicable disease, both viral and bacterial.

In the end, I want students to take from these lessons an understanding of why taking their medications correctly is important. I also want them to glimpse the incredible complexity of microorganisms.

(Developed for Health, grade 9; recommended for Health, grade 9, and Biology, grades 9-10)

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