



The Impact of Environmental Pollutants on Animals and Humans

Suggested Grade Level 5

Objective	The students will learn about pharmaceuticals and personal care products (PPCPs) as environmental pollutants and create a visual map of how these environmental pollutants impact animals and humans.
Materials	<ul style="list-style-type: none"> • AVMA poster • Internet access

<p>Procedure</p> <p>National Standards:</p> <p>Language Arts</p> <ul style="list-style-type: none"> • Writing skills • Analyze, evaluate texts <p>Science</p> <ul style="list-style-type: none"> • Science and technology • Resources and environments 	<ul style="list-style-type: none"> • The teacher begins by defining the term “pollution” and asks the following questions: <i>How does pollution happen? What impact does pollution have on animals? On humans? What are pharmaceuticals? How are they good for humans and for animals? What impact do they have on the environment? How do pharmaceuticals and personal care products get into the water supply? Why should we care if they do or not?</i> • Open the map at www.epa.gov/esd/chemistry/images/303ecb04db.pdf and ask students what it tells them about pharmaceuticals and personal care products (PPCPs) as pollutants. Make a class chart so students see the facts they are able to learn as they analyze the map. Discuss the value of the map versus reading an essay on pollution. • Explain to the students that each of them will have the opportunity to create a visual map similar to the one they just reviewed. • Ask students to compare their community to the sample map. Make a list on the chalkboard of local places similar to features on the map (parks, houses, factories, etc.) or make students a map of their community using the online program of Google Earth. • Next, give groups of 3-4 students a large piece of construction paper and have them work together to draw a map similar to the one used in the example. (Their maps will most likely have fewer graphics and be easier to understand than the sample map.) • Each component of the students’ drawings should include a sentence about why that element is important to the story of the origins and fate of PPCPs in the environment. Be sure to ask them to include the impact on animals. • Ask each group of students to present their map to the class and explain what they have learned about PPCPs and what they can do to help reduce them in the environment.
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Ideas to extend this lesson	<p>Invite a local, county, or state environmental official to come to class and share what efforts are underway locally to monitor the presence of PPCPs and efforts to reduce them.</p> <p>Ask a local veterinarian to visit the class and discuss what happens to animals when they are exposed to PPCP contamination and other pollutants.</p>
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