**Answer Key: The Ozone Layer: Show What You Know**

**Question**
Why is the ozone layer important to life on this planet? How is the reduction of the Ozone Layer going to affect the ecosystems and humans on Earth?

**Directions**
1. In the Before/After section below, draw what is happening that you can’t see when UV waves hit the ozone layer. Draw a before with the ozone layer and after with a large hole in the Ozone Layer.
2. In each panel, draw and label the earth, the ozone layer, ozone gas, how the electromagnetic waves travel through space, plants on earth, and identify UVA, UVB, UVC waves.
3. Use the drawings and evidence from your experiment to write an explanation: *How is the reduction of the Ozone Layer going to affect the ecosystems on Earth?*

**Gotta Have Checklist:**
- I described how electromagnetic waves travel through space.
- I labeled all the different types of UV waves and how they interact with the Ozone Layer.
- I identified the effect of the UV waves on the organisms on Earth’s surface.
- I described how the ozone layer caused any change in the Earth’s atmosphere.
- On one panel I provided evidence from a class activity that supports one claim in the drawing or written explanation.

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<th><strong>Before</strong></th>
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<td>UVA, UVB, and UVC are types of electromagnetic waves emitted from the sun. They travel through space in the form of wave. Each type of wave contains a specific amount of energy. UVA has less energy than UVB, and UVC has the highest amount of energy of the three. The collisions of ozone molecules and UVC waves prevent up to 99% of all UVC waves from hitting the Earth’s surface. Therefore, protecting the planet’s ecosystems.</td>
<td>Due to the hole in the ozone layer, 100% of all UV waves enter the Earth’s atmosphere. Presently the holes are over the poles where there aren’t any plants. However, if the gap would enlarge, the UV light would affect plants by denaturing cellular proteins. Hence, causing a decrease in photosynthesis and eventual death of plants. The reduction in photosynthesis would reduce the level of oxygen, which in turn would cause all respirating organisms to perish.</td>
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