### See-Think-Wonder

Look at the pictures from three ecosystems (coral reef, kelp forest, and Antarctica) and describe what you see in the pictures, what the pictures make you think about, and what the pictures make you wonder about.

<table>
<thead>
<tr>
<th>Ecosystem</th>
<th>See</th>
<th>Think</th>
<th>Wonder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coral reef</td>
<td></td>
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<td>Kelp forest</td>
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<td>Antarctica</td>
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</table>
Abiotic and biotic factors

<table>
<thead>
<tr>
<th>Abiotic (nonliving) factors</th>
<th>Biotic (living) factors</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
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<td>2.</td>
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<td>3.</td>
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Photosynthesis in the ocean

1. Where does most of our oxygen come from?

2. What are examples of producers in the ocean?

3. Draw and label a picture of photosynthesis in the ocean. Include the words: carbon dioxide, sunlight, water, oxygen, and glucose.
Ecosystem comparison of pH levels

**Understanding graphs** The three graphs represent actual pH data collected from three different ecosystems: tropical, temperate, and polar. This is called time-series data.

- What do the $X$ and $Y$ axes represent?

  $X$ axis ________________________________________________________________

  $Y$ axis ________________________________________________________________

- The $Y$ axis is the same across all three graphs and the $X$ is different for each graph. What does this mean?

  ______________________________________________________________________

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  ______________________________________________________________________

- What is the range for the $Y$ axis (pH units)? ________________________________

Lesson: Ecosystem pH variability, Grades 6 – 8
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These graphs are from the same location. The graph on the left is for pH, and the graph on the right is for temperature.

Describe the pH variability on the mystery graph (pH range, pH max, etc.).

______________________________________________________________

______________________________________________________________

Describe temperature variability on the mystery graph (temperature range, maximum temperature, etc.).

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______________________________________________________________
Hypothesize which ecosystem these pH data came from and describe the evidence behind your reasoning.

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What could be the biotic and abiotic sources of pH variation in this graph? Explain your reasoning.

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