

Activity Detail

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Productivity of an Ecosystem

Activity Overview

Students will observe the change in dissolved oxygen, pH, and temperature in a closed system

Before the Activity

Each group is given 3 sealable containers through which light can pass (I use pint sized canning jars). In jar 1, a goldfish is placed. In jar 2, two elodea plants are placed. In jar 3, one goldfish and two elodea plants are placed.

During the Activity

In this activity students use the pH probes, dissolved oxygen probes, and temperature probes to study the productivity in ecosystems. Students take initial readings and then seal the jars and place them in a lighted area (sunlight or artificial lights). After 30 minutes, student open the jars and take sensor readings again. Students can the graph their data for each parameter. I use the TI-Navigator™ to pool and average the data using the TI Connect™ software. With the pH, you can discuss how CO2 production/consumption can alter the pH. The temperature may or may not fluctuate depending on the lighting you are using. The dissolved oxygen graphs are a great way to illustrate the concepts of Gross Primary Productivity and Net Primary Productivity.

After the Activity

- Review student results:
- As a class, discuss questions that appeared to be more challenging
 - Re-teach concepts as necessary

Other Downloads

Subject Area:

Science : Biology : Interactions

author:

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Grade Level:

9-12

Activity Time:

50 Minutes

Device:

TI-83 Plus Family, TI-84 Plus Family

Apps:

DataMate

Software:

TI Connect™

Accessories:

Sensor - Dissolved Oxygen - Vernier, Sensor - Temperature, Sensor - pH - Vernier

Other:

- pH Probes
- Dissolved Oxygen probes
- Temperature probes
- Pint sized canning jars

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