

# Primary Productivity Kit

## Order Code PPK



The Vernier Primary Productivity Kit is a set of bottles, stoppers, and screens to be used with a Vernier Dissolved Oxygen Sensor and a light source to determine the gross and net productivity of an aquatic sample. The screens allow varying amounts of light to pass through the bottles (see below for details) and are designed to be used with the Primary Productivity lab found in several Vernier biology lab manuals.

### Inventory of Items Included with the Primary Productivity Kit

Check to be sure that each of these items is included with your kit:

- 7 sample bottles
- 7 #4 stoppers
- 4 screens

### Using the Primary Productivity Kit

This kit is designed to be used with a Vernier Dissolved Oxygen Sensor. The screens are used to create limited light levels that can be compared to full light exposure. All items in the kit are reusable and should last for many years with proper care and storage.

Here is the general procedure to follow when using the Primary Productivity Kit:

1. Gently fill the control bottle with sample water. Agitating the sample or allowing bubbles to form in the transfer will compromise the accuracy of your results. Measure the dissolved oxygen concentration, and record it as a baseline.
2. Gently fill the remaining sample bottles to the top.
3. Firmly insert a stopper into each bottle. Twist the stopper to secure closure. Be sure that no air bubbles exist at the interface between the stopper and the water sample.
4. Wrap each screen around a bottle. The screens wrap 1, 3, 5, and 8 times around the bottles, blocking approximately 2%, 10%, 25%, or 65% of the light, respectively.
5. Position the bottles equidistant from the light source being used, record the time, and turn the light on.
6. At the conclusion of the testing period, remove the stoppers and record the dissolved oxygen concentration for each bottle. Make any other calculations as necessary.

**NOTE:** This product is to be used for educational purposes only. It is not appropriate for industrial, medical, research, or commercial applications.

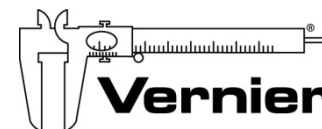
### Important Additional Information

- The lightweight, unbreakable bottles made of PET resin hold 300 mL of sample.
- The bottle is filled when the sample level is high enough in the neck that the tapered stopper is seated without trapping air bubbles.
- The bottle appears yellow because the inside is coated with an amorphous carbon layer that provides a barrier to prevent oxygen from entering or leaving the stoppered sample.
- Bottles are to be filled with aqueous solutions only. Organic solutions may harm the PET and/or the inside coating.
- Bottles are not made using food grade PET. Do not drink from the bottles.
- Bottles will be damaged if exposed to temperatures exceeding 45°C.
- Do not use abrasive soaps, solvents, or lab cleaners to clean bottles; they may damage the inner coating of the bottle. To clean, use a few drops of mild liquid dishwashing detergent and rinse each bottle several times after each use with tap or distilled water. Allow to air dry.

### Accessories for the Primary Productivity Kit

Replacement bottles and stoppers can be purchased separately in boxes of eight.

- Water Quality Bottles (8 bottles and stoppers) order code WQ-BOT



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