WASTEWATER TREATMENT DESIGN CHALLENGE

Parts List and Cost Analysis Form

Item	Cost per Item ($)	Quantity Needed	Cost Subtotal
Plastic soda bottle (any size)	0.05		
Tubing	1.50/m		
Straight connector for tubing	1.80		
T connector for tubing	1.00		
Duct tape	0.15/m		
Stopper	0.15		
Screen—10 cm^2	0.75		
Gravel—100 g	0.50		
Sand—100 g	0.75		
Aerator	3.00		
Bucket	2.00		
Activated charcoal—10 g	1.00		
Alum—10 g	0.75		
Source of microbes*—10 g	0.25		
Coffee filter	0.10		
Duckweed or other aquatic plants (free if collected by students)	1.00		
Other:			
TOTAL COST			$

*In activated sludge treatment systems, sewage sludge is added back into the system as a rich source of microbes capable of digesting organic matter. Sludge is not an option for classroom projects because it contains disease-causing organisms, but a wide range of microbes can be found in samples of compost, soil, or sediment from a pond or stream.

Cost Analysis Instructions

- Under **Quantity Needed**, enter the number of pieces or estimated length of each item you plan to use.
- Multiply the numbers in column 2 by column 3 to obtain the subtotal for each item.
- Sum the subtotals in column 4 to determine the total cost of your design.

Other Materials: If approved by your teacher, you may use materials other than those listed above, with prices based on those listed in commercial catalogs.