Name:
Teacher:
Class:
Date:

AQUAPONIC ECOSYSTEMS WEEKLY TESTS

WATER
TANK # _____

Date	Temperature	pH	Ammonia	Nitrite	Nitrate
Optimal Range	**60°F - 75°F**	**6.5 – 7.5**	**0 – 0.5 ppm**	**0 – 1.0 ppm**	**< 40 ppm**

In the space below, provide a Qualitative Analysis of the Water in the tank. Be descriptive.

_____

_____

Water Volume
Calculate the amount of water that is in the tank. Show your work in the spaces provided.

- **Using centimeters, measure the length, width, and height of the water within the tank.**

Length = _____cm Width = _____cm Height = _____cm

- **Multiply the three measurements together. The unit of measurement is cm^3**

_____ cm^3

- **cm^3 = mL; Therefore your product can also be labeled with the unit of measurement mL**

_____ cm^3 = _____ mL

- **1000 mL = 1 L; Divide your product by 1000 (or move the decimal point THREE places to the LEFT) to determine the amount of Liters in the tank**

_____ mL = _____ L

- **Multiply .2642 and the number of Liters to convert to gallons**

_____ L = _____ gallons

Our tanks are 10-gallon tanks. Does your answer make sense? _____

IF NECESSARY, using a graduated cylinder, add enough water to bring the water amount in the tank even to the blue line marked on the glass.
Amount of water added _____mL = _____L

How could you calculate the exact amount of water to add?

PLANTS

List the types of plants and measure their heights (in cm) in your ecosystem below.

Plant type							
cm height	cm	cm	cm	cm	cm	cm	cm

Observe the plants to check on health and quality. Check off items and write necessary comments.

- _ **Prune any dead leaves off of plants**
- _ **Check that baskets (if being used) are still holding plants in place**
- _ **Harvest plants or leaves as needed**
- _ **Do any areas need replanting?**
- _ **If possible, check the root system. Do roots look healthy?**
- _ **Check the health of the plants- any bugs/insects?**
- _ **Are plants facing the sun or light? If possible, turn plants that lean to light, away from light to help plant grow strong and straight.**

- _ **Other: _____**

Comments: _____

_____

_____

FISH

Measure the length (in cm) of the fish in your ecosystem.

Gently capture one fish with the net; bring the fish to the surface of the water; quickly measure.

Fish				
cm Length	**cm**	**cm**	**cm**	**cm**

Observe all the fish in your tank carefully. Check off items that apply; write necessary comments.

- _ **Eye color good, eyes clear** _____
- _ **Scales look shiny and healthy** _____
- _ **Swimming erratically** _____
- _ **Swimming slowly** _____
- _ **Appears to be gasping for air** _____
- _ **Off on its own** _____
- _ **Fish missing** _____
- _ **Other: _____** _____

Comments: _____

_____

_____

Choose a fish to draw: Include any observations you noted above and its structural adaptations.
Choose a plant to draw: Include any observations you noted above and structural adaptations.
Label and color your diagram.

FISH	PLANT _____(type)

TANK COMPARISONS

Week _____

Optimal Range	Date				
		Tank 1	Tank 2	Tank 3	Tank 4
60°F - 75°F	*Temperature*				
6.5 – 7.5	*pH*				
0 – 0.5 ppm	*Ammonia*				
0 – 1.0 ppm	*Nitrite*				
< 40 ppm	*Nitrate*				

Make a CLAIM as to which tank is the healthiest.

_____

What EVIDENCE (from your data table) supports your CLAIM.

_____

_____

Provide the REASONING of your EVIDENCE and what you know of healthy aquaponic ecosystems.

_____

_____

_____

TANK COMPARISONS

Last Week- Week _____

data from page 3

Optimal Range	Date				
		Tank 1	Tank 2	Tank 3	Tank 4
60°F - 75°F	*Temperature*				
6.5 – 7.5	*pH*				
0 – 0.5 ppm	*Ammonia*				
0 – 1.0 ppm	*Nitrite*				
< 40 ppm	*Nitrate*				

Current Week- Week _____

Optimal Range	Date				
		Tank 1	Tank 2	Tank 3	Tank 4
60°F - 75°F	*Temperature*				
6.5 – 7.5	*pH*				
0 – 0.5 ppm	*Ammonia*				
0 – 1.0 ppm	*Nitrite*				
< 40 ppm	*Nitrate*				

Make a CLAIM as to which tank is the healthiest.

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What EVIDENCE (from your data table) supports your CLAIM.

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Provide the REASONING of your EVIDENCE and what you know of healthy aquaponic ecosystems.

_____

_____

_____