

Group 1:

Polypropylene

Day 2

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Day 16

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Group 2:

Polypropylene

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Day 8

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Group 3:

Low-Density Polyethylene

Day 2

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Day 16

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Group 4:

Low-Density Polyethylene

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Day 8

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Group 5:

Water (H₂O)

Day 1

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Day 2

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
	X	X		X	X	X	X

Group 5 & 6 Combined Data:

Water (H₂O)

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Group 6:

Water (H₂O)

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
X				X	X	X	X

Day 8

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Day 16

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

Group 5 & 6 Combined Data:

Water (H₂O)

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units

All Groups:

Water (H₂O)

Time (Days)	Temperature (Celsius)
1	21.0
2	20.3
4	17.0
8	16.8
16	17.1

Group 1:

Polypropylene

Day 2

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
2	6	3	CFU	4	CFU	2	CFU/cm ²

Day 16

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
80	86	91	CFU	86	CFU	43	CFU/cm ²

Group 2:

Polypropylene

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
25	20	23	CFU	23	CFU	11	CFU/cm ²

Day 8

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
64	61	61	CFU	62	CFU	31	CFU/cm ²

Group 3:

Low-Density Polyethylene

Day 2

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
4	7	7	CFU	6	CFU	3	CFU/cm ²

Day 16

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
116	142	153	CFU	137	CFU	69	CFU/cm ²

Group 4:

Low-Density Polyethylene

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
54	61	56	CFU	57	CFU	29	CFU/cm ²

Day 8

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
132	91	143	CFU	122	CFU	61	CFU/cm ²

Group 5:

Water (H₂O)

Day 1

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
64	70	61	CFU	65	CFU	33	CFU/ml

Day 2

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
61	64	56	CFU	60	CFU	30	CFU/ml

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
44	X	X	CFU	X	X	X	X

Group 5 & 6 Combined Data:

Water (H2O)

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
44	43	47	CFU	45	CFU	22	CFU/ml

Group 6:

Water (H₂O)

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
X	43	47	CFU	X	X	X	X

Day 8

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
20	25	27	CFU	24	CFU	12	CFU/ml

Day 16

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
27	25	23	CFU	25	CFU	13	CFU/ml

Group 5 & 6 Combined Data:

Water (H2O)

Day 4

Replicate #1	Replicate #2	Replicate #3	Units	Average	Units	Average/Area	Units
44	43	47	CFU	45	CFU	22	CFU/ml

All Groups:

Water (H₂O)

Time (Days)	Temperature (Celsius)
1	21.0
2	20.3
4	17.0
8	16.8
16	17.1

Name: _____

Discussion Questions:

1. What trend do you see for CFU/cm² over time?

a. Why do you think that is?

2. Are both plastic substrates showing the same trend?

3. What trend do you see for CFU/ml over time?

4. What trend do you see for water temperature over time?

5. Could water temperature explain the trend seen for CFU/ml over time? Why or why not?

6. Was our hypothesis correct? Could plastic pollution be harboring and possibly transporting bacteria around in the marine environment?

Name: _____

Discussion Questions:

1. What trend do you see for CFU/cm² over time?

They should note that there is an increase in CFU/cm² over time.

a. Why do you think that is?

They should mention how biofilms protect and enable more growth for bacteria.

2. Are both plastic substrates showing the same trend?

We see the same trend for both plastic substrates but they aren't exactly the same.

3. What trend do you see for CFU/ml over time?

They should note that there is general decrease in CFU/cm² over time.

4. What trend do you see for water temperature over time?

They should see a decrease in water temperature.

5. Could water temperature explain the trend seen for CFU/ml over time? Why or why not?

Yes, vibrios are temperature dependent.

6. Was our hypothesis correct? Could plastic pollution be harboring and possibly transporting bacteria around in the marine environment?

We can't say for sure that they are transporting bacteria, but they are certainly serving as a habitat. So it is possible! More research should be done!

The take home message should be that plastic is not only bad for the environment in ways we've already listed, but it can also harbor potentially harmful bacteria.