Rouge Education Project Evaluation Summary Report – Fall 2012

Pre- and post-REP surveys are distributed to each participating teacher and are written for different grade levels: 4, 5-6, 7, and 8-12. Schools in the program that have numerous grade levels participating are given the appropriate mix so that each student has the ability to take the proper survey. Pre surveys that do not have a matching post- survey (and vice-versa) are taken out of that classroom pile. This assures that the assessments are accurate (*i.e.,* balanced), though it also can mean some schools had more/less students participating in the program than in the surveys because they missed either the sampling day or the survey distribution. Below is the compiled assessment of each survey along with individual assessments of each school that returned their materials.

Rouge Education Project Evaluation Summary Report – Fall 2012

Key:
Increase
Decrease
No Change

5-6th Grade Pre/Post Survey Analysis

Overall the Rouge Education Project had two participating 5th or 6th grade classes. Of the two participating schools, both completed the pre- and post- survey. Below are the combined results followed by individual results for each school.

5th-6th Grade Evaluations Overall Summary Report (2 -5th/6th grade classes submitted pre/post surveys for analysis)					
Boys- 47	Girls- 37	5th Grade- 39	6th Grade- 45	1st Time- 45	Total- 84

	What is a river?					
1.	Pre-Survey	Correct: 82	Incorrect: 2	Percent: 98%	**Percent Difference: 5% Decrease**	
	Post-Survey	Correct: 78	Incorrect: 6	Percent: 93%		

	What do we do to examine the health of the river?					
2.	Pre-Survey	Correct: 67	Incorrect: 17	Percent: 80%	**Percent Difference: 10% Increase**	
	Post-Survey	Correct: 76	Incorrect: 8	Percent: 90%		

	Which of the following would indicate a healthy river?					
3.	Pre-Survey	Correct: 82	Incorrect: 2	Percent: 98%	**Percent Difference: 3% Decrease**	
	Post-Survey	Correct: 80	Incorrect: 4	Percent: 95%		

	How do you feel about science?				
6.		**Love It**	**Like It**	**Neutral**	**Dislike It**	**Hate It**
	Pre-Survey	22	37	18	3	2
	Post-Survey	**24**	**29**	**29**	**1**	**0**

	How do you feel about participating in this project? // How did you feel about participating in this project?				
7.		**Very Excited**	**Excited**	**OK**	**Not So Excited**	**Not Excited At All**
	Pre-Survey	40	20	18	2	1
	Post-Survey	**31**	**25**	**17**	**10**	**0**

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Overall Summary (Steppingstone School) 5th/6th Grade			
Boys- 4	**Girls- 1**	**1st Time- 2**	**Total- 5**

1.	**What is a river?**			
	Pre-Survey	Correct: 5	Incorrect: 0	Percent: 100%	**Percent Difference: 20% Decrease**
	Post-Survey	Correct: 4	Incorrect: 1	Percent: 80%	

2.	**What do we do to determine the health of the river?**			
	Pre-Survey	Correct: 3	Incorrect: 2	Percent: 60%	**Percent Difference: 40% Increase**
	Post-Survey	Correct: 5	Incorrect: 0	Percent: 100%	

3.	**Which of the following would indicate a healthy river?**			
	Pre-Survey	Correct: 5	Incorrect: 0	Percent: 100%	**Percent Difference: No Change**
	Post-Survey	Correct: 5	Incorrect: 0	Percent: 100%	

6.	**How do you feel about science?**				
		Love It	**Like It**	**Neutral**	**Dislike It**	**Hate It**
	Pre-Survey	2	3	0	0	0
	Post-Survey	**4**	**1**	**0**	**0**	**0**

7.	**How do you feel about participating in this project?**				
		Very Excited	**Excited**	**OK**	**Not So Excited**	**Not Excited At All**
	Pre-Survey	2	1	2	0	0
	Post-Survey	**3**	1	**1**	**0**	**0**

Overall Summary (Birmingham Covington School) 5th/6th Grade			
Boys- 43	**Girls- 36**	**1st Time- 43**	**Total- 79**

1.	**What do we do to find out if water is polluted?**			
	Pre-Survey	Correct: 77	Incorrect: 2	Percent: 97%	**Percent Difference: 3% Decrease**
	Post-Survey	Correct: 74	Incorrect: 5	Percent: 94%	

Friends of the Rouge, Rouge Education Project, Fall Monitoring 2012

Key:
Increase
Decrease
No Change

2.	*What do we do to determine the health of the river?*				
	Pre-Survey	Correct: 64	Incorrect: 15	Percent: 81%	**Percent Difference: 9% Increase**
	Post-Survey	Correct: 71	Incorrect: 8	Percent: 90%	

3.	*Which of the following would indicate a healthy river?*				
	Pre-Survey	Correct: 77	Incorrect: 2	Percent: 97%	**Percent Difference: 2% Decrease**
	Post-Survey	Correct: 75	Incorrect: 4	Percent: 95%	

6.	*How do you feel about science?*				
		Love It	**Like It**	**Neutral**	**Dislike It**	**Hate It**
	Pre-Survey	20	34	18	3	2
	Post-Survey	**20**	**28**	**29**	**1**	**0**

7.	*How do you feel about participating in this project?*				
		Very Excited	**Excited**	**OK**	**Not So Excited**	**Not Excited At All**
	Pre-Survey	38	19	16	2	1
	Post-Survey	**28**	**24**	**16**	**10**	**0**

Selected 5-6th Grade Written Responses

 # 4: Why is it important to keep the river healthy and what will YOU do to improve the health?
PRE:

- It is important to keep it healthy because most of Michigan uses it. I can improve the health of it by not littering and (not) throwing trash in storm drains.
- It leads to an ocean and I will participate in a cleanup
- The reason it is important to keep the Rouge River clean healthy is so we can conserve the plants and wild life. What I will do to keep it clean is I will try to pick up litter and trash.
- I will not litter or harm the river. I think it is important because if it is not healthy then it could harm the animals and plants in it.
- It is important because we need a clean environment and we need to keep plants and animals alive. Also, I will improve it by cleaning garbage.
- It is important to keep the river healthy cause if there is trash in it it would go into the lake or a ocean. You can help keep it clean by not putting trash in it.

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POST:

- It is important to keep the River healthy because it supports a lot of life and I can keep it healthy by not littering.
- It is important so animals don't die, I could conduct chemicals to see if the river is healthy.
- Stuff lives in the Rouge and I will help make sure it's healthy.
- It is important to keep the rouge river healthy because all watersheds are connected and if this one is polluted they all are. I will report information about it if is doing good or bad.

#5: What do you think you will enjoy/not enjoy about the REP?
PRE:
- - I will enjoy looking for bugs and performing chemical tests.
- - I think that I will enjoy the testing and the experience of it all.
- - I enjoy everything about the rouge river education project.
- - I don't think I will enjoy falling in the river.
- - I don't know what I will enjoy I have never done one.
- I will enjoy being able to help the environment. I will not enjoy if I fell in the water.
- I think I will not enjoy doing the pH testing. I will enjoy seeing the river and learning about it.
- I will enjoy it cause my dad is a science teacher.
- I am looking forward to getting in the river and searching for bugs.

POST:
- I enjoyed conducting chemical tests.
- I enjoy everything about rouge river.
- I enjoyed catching all of the critters.
- I enjoyed the many creatures we found on the project and also the chemical tests.
- I enjoyed collecting the bugs, the orange part, performing the chemical tests, and definitely going in the water. There are a couple of things I didn't like, which were wearing gloves and I wish we had more life jackets and waders.
- I enjoyed performing different chemical tests and recording the answers like an actual scientist. I did not enjoy the cold weather, though.
- I enjoyed having a team because you have friends to help you.

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Rouge Education Project Evaluation Summary Report – Fall 2012

7th Grade Pre/Post Survey Analysis

Overall the Rouge Education Project had one participating 7th grade class; both pre- and post- surveys were submitted.

<table>
<tr><td colspan="6">Overall Summary (Steppingstone School)
7th Grade</td></tr>
<tr><td colspan="2" align="center">Boys- 2</td><td colspan="1" align="center">Girls- 1</td><td colspan="1" align="center">1st Time- 0</td><td colspan="2" align="center">Total- 3</td></tr>
<tr><td rowspan="3">1.</td><td colspan="5"><i>What do we do to find out if water is polluted?</i></td></tr>
<tr><td>Pre-Survey</td><td>Correct: 3</td><td>Incorrect: 0</td><td>Percent: 100%</td><td rowspan="2">Percent Difference: No Change</td></tr>
<tr><td>Post-Survey</td><td>Correct: 3</td><td>Incorrect: 0</td><td>Percent: 100%</td></tr>
<tr><td rowspan="3">2.</td><td colspan="5"><i>What is something a river needs to be healthy?</i></td></tr>
<tr><td>Pre-Survey</td><td>Correct: 2</td><td>Incorrect: 1</td><td>Percent: 67%</td><td rowspan="2">Percent Difference: No Change</td></tr>
<tr><td>Post-Survey</td><td>Correct: 2</td><td>Incorrect: 1</td><td>Percent: 67%</td></tr>
<tr><td rowspan="3">3.</td><td colspan="5"><i>Which of the following would indicate a healthy river?</i></td></tr>
<tr><td>Pre-Survey</td><td>Correct: 3</td><td>Incorrect: 0</td><td>Percent: 100%</td><td rowspan="2">Percent Difference: No Change</td></tr>
<tr><td>Post-Survey</td><td>Correct: 3</td><td>Incorrect: 0</td><td>Percent: 100%</td></tr>
<tr><td rowspan="4">6.</td><td colspan="5"><i>How do you feel about science?</i></td></tr>
<tr><td></td><td>Love It</td><td>Like It</td><td>Neutral</td><td>Dislike It</td><td>Hate It</td></tr>
<tr><td>Pre-Survey</td><td>2</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Post-Survey</td><td>2</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td rowspan="4">7.</td><td colspan="5"><i>How do you feel about participating in this project?</i></td></tr>
<tr><td></td><td>Very Excited</td><td>Excited</td><td>OK</td><td>Not So Excited</td><td>Not Excited At All</td></tr>
<tr><td>Pre-Survey</td><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>Post-Survey</td><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
</table>

7th Grade Written Responses

 # 4: Why is it important to keep the river healthy and what will YOU do to improve the health?

PRE:

- The Rouge is home to many a creatures and if it isn't healthy, all the creatures will die.
- It is important to keep the river healthy is that it is wrong to liter in rivers or in the woods and I would recycle and pick up trash to help the river.
- It is important to keep the Rouge River clean because animals, including people, drink from it, and plant need to grow because of water.

POST:

- Because it keeps the ecosystem running. I won't pollute.
- It is important because it is home to many animals and I will participate in this project.
- It is important to keep the Rouge River healthy because animals and plants drink from it and it would help if we laid down filters.

#5: What do you think you will enjoy/not enjoy about the REP?

PRE:

- I will not enjoy falling in the river.
- I will enjoy everything.
- I don't really enjoy it or dislike it either. I just think it is a normal project like all students must do so I am not really that excited about this project.
- I will enjoy the River Rouge Project because I love exploring the outdoors, especially after it rains.

POST:

- I enjoyed doing chemical tests.
- I enjoy everything.
- What I enjoyed most about the Rouge Education Project was putting on the suit and looking for crawfish. I found a big one!

Rouge Education Project Evaluation Summary Report – Fall 2012

Key:
Increase
Decrease
No Change

8-12th Grade Pre/Post Survey Analysis

Overall, the Rouge Education Project had six participating 8-12th grade classes: Crestwood High School, Intercity Baptist High School, Oakland Schools Technical Campus Southeast, Steppingstone School, Troy High School, and University of Michigan-Dearborn. Of these, all six completed the pre and post surveys. For the purposes of this analysis, this includes one participating post-secondary education class; this group of U. of Michigan-Dearborn undergraduates are studying to become science educators. Below are the combined results followed by individual results for each school.

	Overall Summary **8th-12th Grade**								
Males- 106	**Females- 118**	**8th Grade- 1**	**9th Grade- 0**	**10th Grade- 107**	**11th Grade- 49**	**12th Grade- 54**	**Other: 13**	**1st Time- 177**	**Total- 224**

1.	*What is a watershed?*								
	Pre-Survey	Correct: 185	Incorrect: 39	Percent: 83%	**Percent Difference: 10% Increase**				
	Post-Survey	Correct: 209	Incorrect: 15	Percent: 93%					
2.	*What do we do to determine the health of a river?*								
	Pre-Survey	Correct: 74	Incorrect: 150	Percent: 33%	**Percent Difference: 27% Increase**				
	Post-Survey	Correct: 134	Incorrect: 90	Percent: 60%					
3.	*Which of the following would indicate a healthy river?*								
	Pre-Survey	Correct: 167	Incorrect: 57	Percent: 75%	**Percent Difference: 8% Increase**				
	Post-Survey	Correct: 185	Incorrect: 39	Percent: 83%					
4.	*The following pH will indicate an UNHEALTHY river:*								
	Pre-Survey	Correct: 158	Incorrect: 66	Percent: 71%	**Percent Difference: 15% Increase**				
	Post Survey	Correct: 191	Incorrect: 33	Percent: 85%					

7.	*How do you feel about science?*				
		Love It	**Like It**	**Neutral**	**Dislike It**	**Hate It**
	Pre-Survey	75	109	29	7	3
	Post-Survey	**96**	**98**	**19**	**8**	**2**

8.	*How do you feel about participating in this project? // How did you feel about participating in this project?*

Rouge Education Project Evaluation Summary Report – Fall 2012

Key:
Increase (yellow)
Decrease (red)
No Change

		Very Excited	Excited	OK	Not So Excited	Not Excited At All
	Pre-Survey	44	120	56	1	2
	Post-Survey	**64**	**104**	**49**	**5**	**0**
	Do you think your grade in science will improve after participating in the Rouge Education Project?					
		Definitely	Maybe	Unsure	Unlikely	Definitely Not
9.	Pre Survey	57	122	31	13	0
	Post Survey	**109**	**85**	**16**	**11**	**2**

Crestwood High School								
Dearborn Heights, MI								
Males- 60	Females- 57	8th Grade- 0	9th Grade- 0	10th Grade- 87	11th Grade- 21	12th Grade- 9	1st Time- 99	Total- 117

	What is a watershed?				
1.	Pre-Survey	Correct: 92	Incorrect: 25	Percent: 75%	**Percent Difference: 20% Increase**
	Post-Survey	Correct: 111	Incorrect: 6	Percent: 95%	

	What do we do to determine the health of a river?				
2.	Pre-Survey	Correct: 41	Incorrect: 76	Percent: 35%	**Percent Difference: 37 % Increase**
	Post-Survey	Correct: 84	Incorrect: 33	Percent: 72%	

	Which of the following would indicate a healthy river?				
3.	Pre-Survey	Correct: 92	Incorrect: 25	Percent: 75%	**Percent Difference: 14% Increase**
	Post-Survey	Correct: 104	Incorrect: 13	Percent: 89%	

	The following pH will indicate an UNHEALTHY river:				
4.	Pre-Survey	Correct: 88	Incorrect: 29	Percent: 75%	**Percent Difference: 21% Increase**
	Post Survey	Correct: 112	Incorrect: 5	Percent: 96%	

	How do you feel about science?				
		Love It	Like It	Neutral	Dislike It	Hate It
7.	Pre-Survey	41	63	12	0	1
	Post-Survey	**63**	**50**	**3**	**1**	**0**

8.	*How do you feel about participating in this project? // How did you feel about participating in this project?*

Rouge Education Project Evaluation Summary Report – Fall 2012

Key:
Increase (yellow)
Decrease (red)
No Change

		Very Excited	Excited	OK	Not So Excited	Not Excited At All
	Pre-Survey	17	69	29	1	1
	Post-Survey	**35**	**63**	**18**	1	**0**
9.	*Do you think your grade in science will improve after participating in the Rouge Education Project?*					
		Definitely	Maybe	Unsure	Unlikely	Definitely Not
	Pre Survey	33	64	16	4	0
	Post Survey	**84**	**29**	**4**	**0**	0

Intercity Baptist High School Allen Park, MI									
Males- 8	Females- 12	8th Grade- 0	9th Grade- 0	10th Grade- 20	11th Grade- 0	12th Grade- 0	1st Time- 5	Total- 20	

1.	*What is a watershed?*				
	Pre-Survey	Correct: 14	Incorrect: 6	Percent: 70%	**Percent Difference: 15% Increase**
	Post-Survey	Correct: 17	Incorrect: 3	Percent: 85%	
2.	*What do we do to determine the health of a river?*				
	Pre-Survey	Correct: 7	Incorrect: 13	Percent: 35%	**Percent Difference: No Change**
	Post-Survey	Correct: 7	Incorrect: 13	Percent: 35%	
3.	*Which of the following would indicate a healthy river?*				
	Pre-Survey	Correct: 8	Incorrect: 12	Percent: 40%	**Percent Difference: 20% Increase**
	Post-Survey	Correct: 16	Incorrect: 4	Percent: 80%	
4.	*The following pH will indicate an UNHEALTHY river:*				
	Pre-Survey	Correct: 4	Incorrect: 16	Percent: 20%	**Percent Difference: 15% Increase**
	Post Survey	Correct: 7	Incorrect: 13	Percent: 35%	

7.	*How do you feel about science?*					
		Love It	Like It	Neutral	Dislike It	Hate It
	Pre-Survey	4	10	3	3	0
	Post-Survey	4	**9**	3	**4**	0
8.	*How do you feel about participating in this project? // How did you feel about participating in this project?*					

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Rouge Education Project Evaluation Summary Report – Fall 2012

Key:
Increase
Decrease
No Change

		Very Excited	Excited	OK	Not So Excited	Not Excited At All
	Pre-Survey	4	11	5	0	0
	Post-Survey	6	6	8	0	0
9.	*Do you think your grade in science will improve after participating in the Rouge Education Project?*					
		Definitely	Maybe	Unsure	Unlikely	Definitely Not
	Pre Survey	2	13	4	1	0
	Post Survey	1	15	1	2	1

Oakland Schools Technical Campus, Southeast Royal Oak, MI									
Males- 3	**Females- 8**	**8th Grade- 0**	**9th Grade- 0**	**10th Grade- 0**	**11th Grade- 8**	**12th Grade- 3**	**1st Time- 10**	**Total- 11**	

	What is a watershed?				
1.	Pre-Survey	Correct: 8	Incorrect: 3	Percent: 73%	**Percent Difference: 18% Increase**
	Post-Survey	Correct: 10	Incorrect: 1	Percent: 91%	

	What do we do to determine the health of a river?				
2.	Pre-Survey	Correct: 3	Incorrect: 8	Percent: 27%	**Percent Difference: 55% Increase**
	Post-Survey	Correct: 9	Incorrect: 2	Percent: 82%	

	Which of the following would indicate a healthy river?				
3.	Pre-Survey	Correct: 7	Incorrect: 4	Percent: 64%	**Percent Difference: 9% Increase**
	Post-Survey	Correct: 8	Incorrect: 3	Percent: 73%	

	The following pH will indicate an UNHEALTHY river:				
4.	Pre-Survey	Correct: 11	Incorrect: 0	Percent: 100%	**Percent Difference: 27% Decrease**
	Post Survey	Correct: 8	Incorrect: 3	Percent: 73%	

	How do you feel about science?				
		Love It	Like It	Neutral	Dislike It	Hate It
7.	Pre-Survey	8	2	1	0	0
	Post-Survey	7	3	1	0	0

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Rouge Education Project Evaluation Summary Report – Fall 2012

8.	How do you feel about participating in this project? // How did you feel about participating in this project?				
		Very Excited	Excited	OK	Not So Excited	Not Excited At All
	Pre-Survey	3	7	1	0	0
	Post-Survey	3	7	1	0	0
9.	Do you think your grade in science will improve after participating in the Rouge Education Project?				
		Definitely	Maybe	Unsure	Unlikely	Definitely Not
	Pre Survey	3	5	3	0	0
	Post Survey	3	6	2	0	0

Steppingstone School
Farmington, MI

Males-	Females-	8th Grade- 1	9th Grade-	10th Grade-	11th Grade-	12th Grade-	1st Time- 0	Total- 1

1.	What is a watershed?			
	Pre-Survey	Correct: 0	Incorrect: 1	Percent: 0%	Percent Difference: 100% Increase
	Post-Survey	Correct: 1	Incorrect: 0	Percent: 100%	

2.	What do we do to determine the health of a river?			
	Pre-Survey	Correct: 1	Incorrect: 0	Percent: 100%	Percent Difference: No Change
	Post-Survey	Correct: 1	Incorrect: 0	Percent: 100%	

3.	Which of the following would indicate a healthy river?			
	Pre-Survey	Correct: 0	Incorrect: 1	Percent: 0%	Percent Difference: 100% Increase
	Post-Survey	Correct: 1	Incorrect: 0	Percent: 100%	

4.	The following pH will indicate an UNHEALTHY river:			
	Pre-Survey	Correct: 1	Incorrect: 0	Percent: 100%	Percent Difference: No Change
	Post Survey	Correct: 1	Incorrect: 0	Percent: 100%	

7.	How do you feel about science?				
		Love It	Like It	Neutral	Dislike It	Hate It
	Pre-Survey	1	0	0	0	0
	Post-Survey	1			0	0

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8.	How do you feel about participating in this project? // How did you feel about participating in this project?				
		Very Excited	**Excited**	**OK**	**Not So Excited**	**Not Excited At All**
	Pre-Survey	1	0	0	0	0
	Post-Survey	1	0	0	0	0
9.	Do you think your grade in science will improve after participating in the Rouge Education Project?				
		Definitely	**Maybe**	**Unsure**	**Unlikely**	**Definitely Not**
	Pre Survey	1	0	0	0	0
	Post Survey	1	0	0	0	0

Troy High School
Troy, MI

Males- 31	Females- 31	8ᵗʰ Grade- 0	9ᵗʰ Grade- 0	10ᵗʰ Grade- 0	11ᵗʰ Grade- 20	12ᵗʰ Grade- 42	1ˢᵗ Time- 52	Total- 62

1.	What is a watershed?			
	Pre-Survey	Correct: 58	Incorrect: 4	Percent: 94%	**Percent Difference: 1% Increase**
	Post-Survey	Correct: 59	Incorrect: 3	Percent: 95%	
2.	What do we do to determine the health of a river?			
	Pre-Survey	Correct: 19	Incorrect: 43	Percent: 31%	**Percent Difference: 16% Increase**
	Post-Survey	Correct: 29	Incorrect: 33	Percent: 47%	
3.	Which of the following would indicate a healthy river?			
	Pre-Survey	Correct: 51	Incorrect: 11	Percent: 82%	**Percent Difference: 1% Decrease**
	Post-Survey	Correct: 50	Incorrect: 12	Percent: 81%	
4.	The following pH will indicate an UNHEALTHY river:			
	Pre-Survey	Correct: 44	Incorrect: 18	Percent: 71%	**Percent Difference: 10% Increase**
	Post Survey	Correct: 50	Incorrect: 12	Percent: 81%	

7.	How do you feel about science?				
		Love It	**Like It**	**Neutral**	**Dislike It**	**Hate It**
	Pre-Survey	17	28	12	3	2
	Post-Survey	19	27	11	3	2

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8.	*How do you feel about participating in this project? // How did you feel about participating in this project?*					
		Very Excited	**Excited**	**OK**	**Not So Excited**	**Not Excited At All**
	Pre-Survey	19	27	15	0	1
	Post-Survey	**19**	**27**	**14**	**2**	**0**
9.	*Do you think your grade in science will improve after participating in the Rouge Education Project?*					
		Definitely	**Maybe**	**Unsure**	**Unlikely**	**Definitely Not**
	Pre Survey	18	32	6	6	0
	Post Survey	**20**	**28**	**6**	**7**	**1**

University of Michigan-Dearborn								
Dearborn, MI								
Males- 3	Females- 10	8th Grade-0	9th Grade- 0	10th Grade- 0	11th Grade- 0	College- 13	1st Time- 11	Total- 13

1.	*What do we do to find out if water is polluted?*			
	Pre-Survey	Correct: 13	Incorrect: 0	Percent: 100%
	Post-Survey	Correct: 11	Incorrect: 2	Percent: 85%

Percent Difference: 15% Decrease

2.	*What is something a river needs to be healthy?*			
	Pre-Survey	Correct: 3	Incorrect: 10	Percent: 23%
	Post-Survey	Correct: 4	Incorrect: 9	Percent: 31%

Percent Difference: 8% Increase

3.	*Which of the following would indicate a healthy river?*			
	Pre-Survey	Correct: 9	Incorrect: 4	Percent: 64%
	Post-Survey	Correct: 6	Incorrect: 7	Percent: 46%

Percent Difference: 18% Decrease

4.	*The following pH will indicate an UNHEALTHY river:*			
	Pre-Survey	Correct: 10	Incorrect: 3	Percent: 77%
	Post Survey	Correct: 13	Incorrect: 0	Percent: 100%

Percent Difference: 23% Increase

7.	*How do you feel about science?*				
		Love It	**Like It**	**Neutral**	**Dislike It**	**Hate It**
	Pre-Survey	4	6	1	1	0

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	Post-Survey	2	9	1	0	0
8.	*How do you feel about participating in this project? // How did you feel about participating in this project?*					
		Very Excited	**Excited**	**OK**	**Not So Excited**	**Not Excited At All**
	Pre-Survey	0	6	6	0	0
	Post-Survey	0	1	8	2	0
9.	*Do you think your grade in science will improve after participating in the Rouge Education Project?*					
		Definitely	**Maybe**	**Unsure**	**Unlikely**	**Definitely Not**
	Pre Survey	0	8	2	2	0
	Post Survey	0	7	3	2	0

Selected 8-12th Grade Written Responses

#5: Why is it important to keep the river healthy and what will YOU do to improve the health?
PRE:

- It is important because the animals need to survive and I will not throw trash into the river.
- I believe it is important to keep it healthy because it is a part of our ecosystem and many species live in it. I will help by not polluting it. The Rouge River directly impacts the surrounding area as a water source. I will not dump anything in it.
- It is important to keep the Rouge healthy so that you can preserve habitats. I will pick up trash.
- It is important because fish and other organisms live in the Rouge River. We don't want an unhealthy river because then they'll die. I will not throw any garbage into the river.
- It's important to keep Rouge healthy because it's part of our ecosystem. I will discourage people to use destructive fertilizer.
- It's important to maintain water quality to protect the biodiversity of species, because diversity decreases as water quality decreases. By keeping it clean, we will ensure a healthy supply of water. I will participate in this project to keep the river healthy.
- It's important because the river leads to our lakes, which is our and other states' source of water. I won't use harsh chemicals that go into the water.
- It is a vital part of our ecosystem that serves as the habitat for many organisms. I will keep it clean by not polluting it.
- Because it is important to have a safe river so more people can enjoy it and do activities. If it is unhealthy some will get sick.
- The river could become toxic and dangerous, potentially contaminating our water supply. I will try not to use nitrogen/phosphorus fertilizer and not litter in the river.

- Keeping the river healthy keeps ecosystems maintained so no organism dies off or dominates. I will not pollute the environment because all pollution in the watershed would drain into the river.
- The Rouge River maintains many organisms' habitat and plays an important role in our ecosystem. I will not pollute the river, prevent pollution by others, and clean the chemicals.
- It is part of the watershed that we live in/near and is home to many living organisms. Spread awareness.
- It is an important water source for nearby wildlife and is a fairly unique system.
- Humans create the majority of wastes, therefore it is our responsibility to take care of it.
- Because it keeps our environment healthier and cleaner for future generations.
- The Rouge River is a source of nutrients for some plant and animals in our area. I won't put garbage into the street sewer systems.
- It supplies our drinking water & helps our environment.
- Because rivers are a source of freshwater, that we need to drink. Also rivers contain many different species of plants & animals who need healthy water to survive. To keep the Rouge healthy, I don't litter or pollute it.
- It is important b/c there are animals and living things that depend on the river. Funding organizations or helping in cleaning the river.
- Because we want it to look good and we don't want people to get sick. No trash!
- It is an important part of the downriver area's ecosystem supporting a variety of animal and plant life.
- It ultimately runs into larger bodies of water, and if it is polluted, it will affect animals/fish along the way. Don't throw garbage in it.

POST:

- Many forms of life depend on a healthy river. I will learn more about how to help keep the river clean.
- To help support plant and animal life and keep the environment healthy. I will try to sweep up when I fertilize and pick up litter so it doesn't go into our bodies of water.
- I will keep from littering because it goes in to our water.
- So future generations can use it for recreational activities. I will not pollute it!
- It is important to keep the Rouge River healthy to increase biodiversity, as all species have the right to exist.
- It is important to keep the Rouge River healthy because the wildlife and aquatic life of the river want it to be healthy. I can stop dumping chemicals in the river to make it healthier.
- It is important because it impacts our entire ecosystem. I will passively keep it healthy by not polluting it.
- It's important to keep the Rouge healthy because it affects our plants and maybe even our drinking water. I will not throw trash everywhere.

- I believe that the Rouge River is a uniquely diverse body of water that is central to the watershed we live in. I will participate in lovely projects such as this very educational Rouge Education Project to ensure that the Rouge remains healthy forever.
- It is important to keep the river healthy so the organisms living in the river can thrive. I will make sure I don't litter in the river
- It is important to sustain aquatic ecosystems. I will commit myself to raise awareness about the Rouge and the health of the aquatic ecosystems.
- It is important to keep it healthy to have the satisfaction of doing something good. I will often make many observations myself as time passes and keep an eye on it myself.
- It is important to maintain the quality of the water so biodiversity will not decrease. Water should be healthy so it's fit for human use. I will take care to be aware of my actions and their effects on water quality.
- It is important to keep the River healthy because it flows into the great lakes, which is our drinking water. I won't put anything in/on the ground that I don't want in my water.

#6: What do you think you will enjoy/not enjoy about the REP?
PRE:

- I will enjoy learning what bugs live in the Rouge River.
- I will certainly not enjoy this experience; I spent 7 weeks doing water filtration research and am rather sick of water labs.
- I will enjoy exploring the river. If it's anything like the leaf collection project though, it will likely be tough and frustrating.
- I just like being outside and in the water.
- I think using the waders to discover aquatic life will be cool, along with sampling the water.
- I have been around the river all my life so it will be interesting to see how safe it was to be in it during my childhood.
- I will enjoy learning about my local environment. In middle school I used to swim in the rouge for fun so I would like to learn about what I put myself in.
- I will enjoy working in an outdoor environment.
- I will enjoy trying to make the river a better environment to live in for the creatures.
- I will enjoy going out to the Rouge and learning about it as well as hang with friends. I will not enjoy if I get dirty.
- I think learning about the various organisms will be very interesting and will definitely enlighten me about the Rouge River.
- I want to put on the boots and collect things.
- I will enjoy everything.
- Enjoy – seeing another part of the area I live in & seeing what state the river is in. Not enjoy – seeing how poor of a state the river is probably in.
- I love going on these types of field trips, so I'll enjoy all of it!
- I think I will enjoy taking tests and finding results.

- Learning more about the environment and how to keep it healthy.

POST:

- It was a little chilly but I learned a lot about how clean our bodies of water are and how to test this.
- I enjoyed it because I'm actually learning interesting stuff.
- I enjoyed doing all of the tests and enjoyed doing the final project but I did not enjoy getting my clothes all dirty outside.
- I enjoyed doing the tests. But more than that I enjoyed doing fieldwork, which is better than learning while sitting in a classroom, especially for a subject like environmental science.
- I enjoyed everything!
- I enjoyed throwing the thermometer into the water.
- I enjoyed that we got to go outside and actually run the test – usually teachers do the test and give the data.
- I enjoyed being outdoors. It was also interesting to sample the insects.
- I enjoyed looking at the different creatures that we found in the river, but I wish we had more time.
- I enjoyed learning things about the rouge such as the way the impoundment and river had similar data.
- Going down to the river was fun. The project was a lot of work.
- I enjoyed the test but the project was a little overwhelming.
- Improved knowledge of river ecosystems.
- Finding a huge crayfish!
- I enjoyed collecting insects.
- I liked searching for bugs and other creatures.