

Student PRE- and POST-sampling Surveys*—Fall 2013

Pre- and post-REP student evaluations, designed to reflect the program’s impact, are distributed to each participating teacher and are written for different grade level groups: 4-6, and 7-12. 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-REP surveys that do not have a matching post-REP survey (and vice-versa) are enumerated separately, but are not included in overall calculations. This ensures that the assessments are balanced and accurate, though it also can mean some schools’ data reflect more/less students who actually participated in the program than in the surveys because they missed either the sampling day or the survey distribution. Below is the compiled assessment of the survey for each grade level participating in Fall 2013 monitoring.

KEY:

Increase (PRE → POST)	Decrease (PRE → POST)	No Change (PRE → POST)
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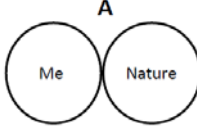
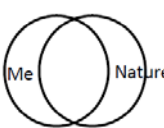
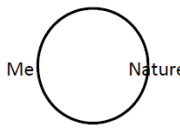
*As of Fall 2013, REP PRE- and POST-sampling surveys have been modified and are adapted (with permission) from similar surveys created and distributed by the Friends of the Chicago River.

Fall 2013 Participants:

School	City
Birmingham Covington School	Bloomfield Hills, MI
Chandler Park Academy High School	Harper Woods, MI
Crestwood High School	Dearborn Heights, MI
Intercity Baptist High School	Allen Park, MI
Oakland Schools Technical Campus, SE	Royal Oak, MI
Steppingstone School	Farmington Hills, MI
Troy High School	Troy, MI

Summary of Results: GRADE 5

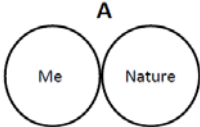

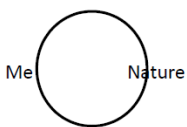
Grade:		Total number of students:						
5		65						
<i>Participating schools: Birmingham Covington School</i>								
Number of times to Rouge River (field trip)								
	0	1	2	3	4	5	5+	No Response
PRE	40	7	2	2	2	1	10	1
POST	7	33	3	4	4	1	13	0
Interest in science								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	26	19	15	3	1	1		
POST	26	16	18	3	1	1		

% change	0%	-16%	20%	0%	0%	0%
Interest in nature						
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response
PRE	26	16	17	3	2	1
POST	30	20	12	2	1	0
% change	15%	25%	-29%	-33%	-50%	-100%
Interest in school						
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response
PRE	15	18	16	8	6	2
POST	17	16	19	6	5	2
% change	13%	-11%	19%	-25%	-17%	0%
Relationship with nature						
						
PRE	9		40		16	
POST	8		40		17	
% change	-11%		0%		6%	
Q: All macroinvertebrates are equally tolerant of pollution						
	TRUE		FALSE (CORRECT)		No Response	
PRE	15		50		0	
POST	12		52		1	
% change	-20%		4%		100%	
Number of students correctly identifying ALL macroinvertebrates from list (i.e., insects , mammals, crustaceans , molluscs (snails, clams, etc.), birds, fish)						
PRE	8					
POST	12					
% change	50%					
Number of students correctly listed a source of pollution to the Rouge River						
PRE	43					
POST	56					
% change	30%					
Number of students correctly listed a corrective action for Rouge River pollution						
PRE	44					
POST	54					
% change	23%					
Percentage of students who know where to look to learn more about Rouge River pollution						
PRE	44					
POST	56					
% change	27%					
Students listing way in which participating in the REP helps the Rouge River						
Number of participants				Percentage of total		
41				63%		
"Agree" Statements						

<i>I learned something new about the Rouge River</i>	
Number	64
% of total	98%
<i>I plan to talk to friends and/or family about what I learned in the REP</i>	
Number	55
% of total	85%
<i>I learned about things I can do to make the Rouge River healthier</i>	
Number	59
% of total	91%
<i>The REP helped me to understand things I learn in my classroom better</i>	
Number	41
% of total	63%
<i>The REP helped me to think like a scientist</i>	
Number	56
% of total	86%
<i>The REP made me feel that I can make a difference in protecting the environment</i>	
Number	56
% of total	86%

Summary of Results: GRADE 6

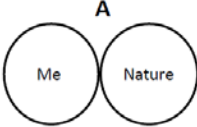
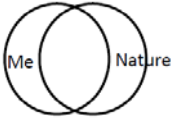
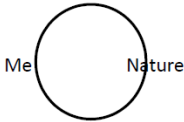
Grade: 6		Total number of students: 67						
<i>Participating schools: Birmingham Covington School; Steppingstone School</i>								
Number of times to Rouge River (field trip)								
	0	1	2	3	4	5	5+	No Response
PRE	0	9	42	6	3	0	6	1
POST	0	2	8	37	4	5	11	0
Interest in science								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	16	16	23	8	3	1		
POST	16	14	25	10	2	0		
% change	0%	-13%	9%	25%	-33%	-100%		
Interest in nature								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	18	22	16	5	5	1		
POST	15	21	21	4	3	3		
% change	-17%	-5%	31%	-20%	-40%	200%		
Interest in school								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	13	21	15	9	6	3		
POST	13	17	19	10	5	3		
% change	0%	-19%	27%	11%	-17%	0%		

Relationship with nature				
				No Response
PRE	9	43	13	2
POST	8	40	1	1
% change	-11%	-7%	38%	-50%
Q: All macroinvertebrates are equally tolerant of pollution				
	TRUE	FALSE (CORRECT)	No Response	
PRE	9	57	1	
POST	2	65	0	
% change	-78%	14%	-100%	
Number of students correctly identifying ALL macroinvertebrates from list (i.e., insects, mammals, crustaceans, molluscs (snails, clams, etc.), birds, fish)				
PRE	21			
POST	22			
% change	5%			
Number of students correctly listed a source of pollution to the Rouge River				
PRE	48			
POST	51			
% change	6%			
Number of students correctly listed a corrective action for Rouge River pollution				
PRE	54			
POST	53			
% change	-2%			
Number of students who know where to look to learn more about Rouge River pollution				
PRE	47			
POST	48			
% change	2%			
Students listing way in which participating in the REP helps the Rouge River				
	Number of participants	Percentage of total		
	53	79%		
"Agree" Statements				
<i>I learned something new about the Rouge River</i>				
Number	54			
% of total	81%			
<i>I plan to talk to friends and/or family about what I learned in the REP</i>				
Number	42			
% of total	63%			
<i>I learned about things I can do to make the Rouge River healthier</i>				
Number	51			
% of total	76%			
<i>The REP helped me to understand things I learn in my classroom better</i>				
Number	35			
% of total	52%			
<i>The REP helped me to think like a scientist</i>				

Number	50
% of total	75%
<i>The REP made me feel that I can make a difference in protecting the environment</i>	
Number	52
% of total	78%

Summary of Results: GRADE 7

Grade: 7			Total number of students: 4					
<i>Participating schools: Steppingstone School</i>								
Number of times to Rouge River (field trip)								
	0	1	2	3	4	5	5+	No Response
PRE	0	0	1	1	0	0	2	0
POST	0	0	0	1	0	1	2	0
Interest in science								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	2	1	0	1	0	0		
POST	2	2	0	0	0	0		
% change	0%	100%	0%	-100%	0%	0%		
Interest in nature								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	2	0	2	0	0	0		
POST	2	1	1	0	0	0		
% change	0%	100%	-50%	0%	0%	0%		
Interest in school								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	1	1	1	1	0	0		
POST	1	2	0	0	1	0		
% change	0%	100%	-100%	-100%	100%	0%		
Number of students correctly listed a source of pollution to the Rouge River								
PRE	4							
POST	3							
% change	-25%							
Percentage of students correctly listing a corrective action for pollution source listed above								
PRE	100%							
POST	67%							
% change	-33%							
Of those listing problem above, number of students who can AGREE with following statements:								
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree			
<i>I am confident in my ability to research problem</i>								
PRE	1	3	0	0	0			
POST	0	2	1	0	0			

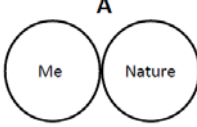
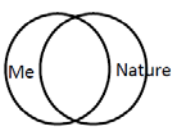
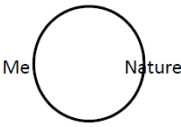
<i>I am sure that I could explain to others why this problem is important</i>						
PRE	2	1	1	0	0	
POST	1	0	0	2	0	
<i>I know where I could find help and resources to take action on this problem</i>						
PRE	0	1	2	1	0	
POST	0	0	1	2	0	
Relationship with nature						
						
PRE	1		3		0	
POST	0		2		2	
% change	-100%		-33%		100%	
Q: When testing for the presence of dissolved oxygen, doing the test more than once will give the most accurate result						
	TRUE (CORRECT)			FALSE		
PRE	4			0		
POST	4			0		
% change	0%			0%		
Q: All macroinvertebrates are equally tolerant of pollution						
	TRUE			FALSE (CORRECT)		
PRE	0			4		
POST	0			4		
% change	0%			0%		
Number of students correctly identifying ALL macroinvertebrates from list (<i>i.e.</i> , insects, mammals, crustaceans, molluscs (snails, clams, etc.), birds, fish)						
PRE	2					
POST	3					
% change	50%					
Number of students correctly listing a source of nitrates to the Rouge						
PRE	2					
POST	2					
% change	0%					
Number of students correctly listing an action to limit nitrates in the Rouge						
PRE	2					
POST	2					
% change	0%					
Students listing way in which participating in the REP helps the Rouge River						
Number of participants			Percentage of total			
3			75%			
Follow-up Question: Extent of Experience with the REP						
<i>I learned something new about the Rouge River</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	0	1	3	0	0	0
% of total	0%	25%	75%	0%	0%	0%

<i>I plan to talk to friends and/or family about what I learned in the REP</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	0	0	2	2	0	0
% of total	0%	0%	50%	50%	0%	0%
<i>I experienced a feeling of connectedness with the Rouge River</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	0	1	1	2	0	0
% of total	0%	25%	25%	50%	0%	0%
<i>I reflected on new ideas about how my actions affect the river</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	0	2	2	0	0	0
% of total	0%	50%	50%	0%	0%	0%
<i>I learned what actions to take to make the Rouge healthier</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	0	3	1	0	0	0
% of total	0%	75%	25%	0%	0%	0%
<i>I would choose to participate in more projects to help the Rouge</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	1	2	0	0	1	0
% of total	25%	50%	0	0	25%	0%
<i>REP monitoring made a difference in the health of the Rouge</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	2	2	0	0	0	0
% of total	50%	50%	0%	0%	0%	0%
<i>REP monitoring involved people/organizations from the community</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	0	0	0	4	0	0
% of total	0%	0%	0%	100%	0%	0%
<i>The REP helped me feel that I could make a difference in society</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	0	0	2	2	0	0
% of total	0%	0%	50%	50%	0%	0%
<i>In the REP, I met people/encountered things I normally wouldn't have</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	1	0	0	3	0	0
% of total	25%	0%	0%	75%	0%	0%
<i>The REP challenged me to think like a scientist</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	0	3	1	0	0	0
% of total	0%	75%	25%	0%	0%	0%

<i>The REP was directly related to classroom work</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	0	1	2	1	0	0
% of total	0%	25%	50%	25%	0%	0%
<i>The REP helped me understand classroom material better</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	0	2	0	0	1	1
% of total	0%	50%	0%	0%	25%	25%
<i>I had the opportunity to participate in river-related discussions/activities BEFORE our field trip</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	2	0	1	0	0	1
% of total	50%	0%	25%	0%	0%	25%
<i>I had the opportunity to participate in river-related discussions/activities AFTER our field trip</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	3	1	0	0	0	0
% of total	75%	25%	0%	0%	0%	0%

Summary of Results: GRADE 8

Grade: 8		Total number of students: 3						
<i>Participating schools: Steppingstone School</i>								
Number of times to Rouge River (field trip)								
	0	1	2	3	4	5	5+	No Response
PRE	1	0	0	0	0	0	2	0
POST	1	0	0	0	0	0	2	0
Interest in science								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	2	1	0	0	0	0		
POST	3	0	0	0	0	0		
% change	50%	-100%	0%	0%	0%	0%		
Interest in nature								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	0	1	1	1	0	0		
POST	0	1	1	1	0	0		
% change	0%	0%	0%	0%	0%	0%		
Interest in school								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	1	2	0	0	0	0		
POST	1	2	0	0	0	0		
% change	0%	0%	0%	0%	0%	0%		

Number of students correctly listed a source of pollution to the Rouge River					
PRE	2				
POST	3				
% change	50%				
Percentage of students correctly listing a corrective action for pollution source listed above					
PRE	33%				
POST	67%				
% change	34%				
Of those listing problem above, number of students who can AGREE with following statements:					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
<i>I am confident in my ability to research problem</i>					
PRE	1	0	1	0	0
POST	0	1	2	0	0
<i>I am sure that I could explain to others why this problem is important</i>					
PRE	0	1	1	0	0
POST	0	1	1	0	1
<i>I know where I could find help and resources to take action on this problem</i>					
PRE	0	1	0	1	0
POST	0	0	2	1	0
Relationship with nature					
					
PRE	0	3	0		
POST	0	3	0		
% change	0%	0%	0%		
Q: When testing for the presence of dissolved oxygen, doing the test more than once will give the most accurate result					
	TRUE (CORRECT)			FALSE	
PRE	3			0	
POST	3			0	
% change	0%			0%	
Q: All macroinvertebrates are equally tolerant of pollution					
	TRUE			FALSE (CORRECT)	
PRE	0			3	
POST	0			3	
% change	0%			0%	
Number of students correctly identifying ALL macroinvertebrates from list (i.e., insects, mammals, crustaceans, molluscs (snails, clams, etc.), birds, fish)					
PRE	2				
POST	1				
% change	-50%				
Number of students correctly listing a source of nitrates to the Rouge					
PRE	2				
POST	1				

% change	-50%				
Number of students correctly listing an action to limit nitrates in the Rouge					
PRE	1				
POST	0				
% change	-100%				
Students listing way in which participating in the REP helps the Rouge River					
Number of participants			Percentage of total		
2			67%		
Follow-up Question: Extent of Experience with the REP					
<i>I learned something new about the Rouge River</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	2	0	1	0
% of total	0%	67%	0%	33%	0%
<i>I plan to talk to friends and/or family about what I learned in the REP</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	2	0	1	0
% of total	0%	67%	0%	33%	0%
<i>I experienced a feeling of connectedness with the Rouge River</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	1	0	2	0	0
% of total	33%	0%	67%	0%	0%
<i>I reflected on new ideas about how my actions affect the river</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	0	2	1	0
% of total	0%	0%	67%	33%	0%
<i>I learned what actions to take to make the Rouge healthier</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	0	1	2	0
% of total	0%	0%	33%	67%	0%
<i>I would choose to participate in more projects to help the Rouge</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	1	1	0	1
% of total	0%	33%	33%	0%	33%
<i>REP monitoring made a difference in the health of the Rouge</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	1	2	0	0
% of total	0%	33%	67%	0%	0%
<i>REP monitoring involved people/organizations from the community</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	0	2	1	0
% of total	0%	0%	67%	33%	0%
<i>The REP helped me feel that I could make a difference in society</i>					

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	1	0	0	1	1
% of total	33%	0%	0%	33%	33%
<i>In the REP, I met people/encountered things I normally wouldn't have</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	1	1	1	0
% of total	0%	33%	33%	33%	0%
<i>The REP challenged me to think like a scientist</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	2	0	1	0
% of total	0%	67%	0%	33%	0%
<i>The REP was directly related to classroom work</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	2	1	0	0
% of total	0%	67%	33%	0%	0%
<i>The REP helped me understand classroom material better</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	0	2	1	0
% of total	0%	0%	67%	33%	0%
<i>I had the opportunity to participate in river-related discussions/activities BEFORE our field trip</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	0	2	0	0	1
% of total	0%	67%	0%	0%	33%
<i>I had the opportunity to participate in river-related discussions/activities AFTER our field trip</i>					
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Number	1	2	0	0	0
% of total	33%	67%	0%	0%	0%

Summary of Results: GRADE 10

Grade: 10		Total number of students: 113					
<i>Participating schools: Crestwood High School; Intercity Baptist High School</i>							
Number of times to Rouge River (field trip)							
	0	1	2	3	4	5	5+
PRE	74	32	5	0	0	0	2
POST	48	41	21	1	0	0	2
Interest in science							
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response	
PRE	55	40	17	1	0	0	

POST	62	34	15	1	1	0
% change	13%	-15%	-12%	0%	100%	0%
Interest in nature						
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response
PRE	42	43	23	5	0	0
POST	45	42	23	2	1	0
% change	7%	-2%	0%	-60%	100%	0%
Interest in school						
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response
PRE	31	37	28	11	5	1
POST	41	35	25	6	5	1
% change	32%	-5%	-11%	-45%	0%	0%
Number of students correctly listed a source of pollution to the Rouge River						
PRE	102					
POST	109					
% change	7%					
Percentage of students correctly listed a corrective action for pollution source listed above						
PRE	86%					
POST	89%					
% change	3%					
Of those listing problem above, number of students who can AGREE with following statements:						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
<i>I am confident in my ability to research problem</i>						
PRE	26	64	9	1	0	2
POST	50	48	10	0	0	1
Relative % change	21%	-19%	0%	-1%	0%	-1%
<i>I am sure that I could explain to others why this problem is important</i>						
PRE	30	49	19	2	0	2
POST	46	57	5	1	0	0
Relative % change	13%	4%	-14%	-1%	0%	-2%
<i>I know where I could find help and resources to take action on this problem</i>						
PRE	14	43	35	6	2	2
POST	31	51	22	2	1	2
Relative % change	14%	5%	-14%	-4%	-1%	0%
Relationship with nature						
						
PRE	22	70	21			
POST	9	84	20			
% change	-59%	20%	-5%			

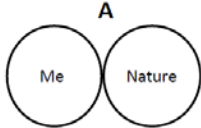
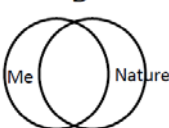
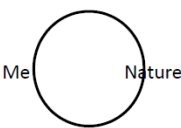
Q: When testing for the presence of dissolved oxygen, doing the test more than once will give the most accurate result						
	TRUE (CORRECT)			FALSE		
PRE	109			4		
POST	113			0		
% change	4%			-100%		
Q: All macroinvertebrates are equally tolerant of pollution						
	TRUE		FALSE (CORRECT)		No Response	
PRE	13		99		1	
POST	11		101		1	
% change	-15%		2%		0%	
Number of students correctly identifying ALL macroinvertebrates from list (i.e., insects, mammals, crustaceans, molluscs (snails, clams, etc.), birds, fish)						
PRE	24					
POST	81					
% change	238%					
Number of students correctly listing a source of nitrates to the Rouge						
PRE	49					
POST	90					
% change	84%					
Number of students correctly listing an action to limit nitrates in the Rouge						
PRE	51					
POST	87					
% change	71%					
Students listing way in which participating in the REP helps the Rouge River						
Number of participants				Percentage of total		
76				67%		
Follow-up Question: Extent of Experience with the REP						
<i>I learned something new about the Rouge River</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	78	35	0	0	0	0
% of total	69%	31%	0%	0%	0%	0%
<i>I plan to talk to friends and/or family about what I learned in the REP</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	33	57	20	3	0	0
% of total	29%	50%	18%	3%	0%	0%
<i>I experienced a feeling of connectedness with the Rouge River</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	31	38	27	10	6	1
% of total	27%	34%	24%	9%	5%	1%
<i>I reflected on new ideas about how my actions affect the river</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	53	45	9	6	0	0
% of total	47%	40%	8%	5%	0%	0%
<i>I learned what actions to take to make the Rouge healthier</i>						

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	77	30	6	0	0	0
% of total	68%	27%	5%	0%	0%	0%
<i>I would choose to participate in more projects to help the Rouge</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	54	38	18	3	0	0
% of total	48%	34%	16%	3%	0%	0%
<i>REP monitoring made a difference in the health of the Rouge</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	59	41	12	0	1	0
% of total	52%	36%	11%	0%	1%	0%
<i>REP monitoring involved people/organizations from the community</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	44	43	23	2	1	0
% of total	39%	38%	20%	2%	1%	0%
<i>The REP helped me feel that I could make a difference in society</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	44	56	10	2	1	0
% of total	39%	50%	9%	2%	1%	0%
<i>In the REP, I met people/encountered things I normally wouldn't have</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	34	48	21	9	1	0
% of total	30%	42%	19%	8%	1%	0%
<i>The REP challenged me to think like a scientist</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	53	45	9	5	1	0
% of total	47%	40%	8%	4%	1%	0%
<i>The REP was directly related to classroom work</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	57	41	12	2	0	1
% of total	50%	36%	11%	2%	0%	1%
<i>The REP helped me understand classroom material better</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	62	44	6	1	0	0
% of total	55%	39%	5%	1%	0%	0%
<i>I had the opportunity to participate in river-related discussions/activities BEFORE our field trip</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	54	33	13	10	3	0
% of total	48%	29%	12%	9%	3%	0%
<i>I had the opportunity to participate in river-related discussions/activities AFTER our field trip</i>						

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	51	32	14	4	4	8
% of total	45%	28%	12%	4%	4%	7%

Summary of Results: GRADE 11

Grade: 11		Total number of students: 55						
<i>Participating schools: Chandler Park Academy High School; Crestwood High School; Oakland Schools Technical Campus SE; Troy High School</i>								
Number of times to Rouge River (field trip)								
	0	1	2	3	4	5	5+	No Response
PRE	45	8	2	0	0	0	0	0
POST	22	30	2	0	0	0	0	1
Interest in science								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	23	16	13	1	1	1		
POST	23	18	11	1	1	1		
% change	0%	13%	-15%	0%	0%	0%		
Interest in nature								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	17	20	16	0	2	0		
POST	21	20	10	3	0	1		
% change	24%	0%	-38%	100%	-100%	100%		
Interest in school								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	15	19	12	7	1	1		
POST	21	18	9	4	2	1		
% change	40%	-5%	-25%	-43%	100%	0%		
Number of students correctly listed a source of pollution to the Rouge River								
PRE	51							
POST	54							
% change	6%							
Percentage of students correctly listing a corrective action for pollution source listed above								
PRE	76%							
POST	91%							
% change	15%							
Of those listing problem above, number of students who can AGREE with following statements:								
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response		
<i>I am confident in my ability to research problem</i>								
PRE	11	33	7	0	0	0		
POST	19	31	3	1	0	0		

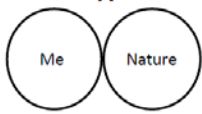
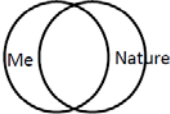
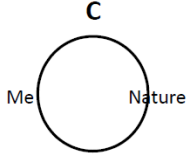
Relative % change	13%	-8%	-8%	2%	0%	0%
<i>I am sure that I could explain to others why this problem is important</i>						
PRE	11	30	10	0	0	0
POST	22	27	4	1	0	0
Relative % change	19%	-9%	-13%	2%	0%	0%
<i>I know where I could find help and resources to take action on this problem</i>						
PRE	7	22	19	3	0	0
POST	15	25	11	1	1	1
Relative % change	14%	3%	-17%	-4%	2%	2%
Relationship with nature						
						
PRE	16	32	7			
POST	10	35	10			
% change	-38%	9%	43%			
Q: When testing for the presence of dissolved oxygen, doing the test more than once will give the most accurate result						
	TRUE (CORRECT)		FALSE		No Response	
PRE	52		3		0	
POST	53		1		1	
% change	2%		-67%		100%	
Q: All macroinvertebrates are equally tolerant of pollution						
	TRUE		FALSE (CORRECT)		No Response	
PRE	11		44		0	
POST	4		50		1	
% change	-64%		14%		100%	
Number of students correctly identifying ALL macroinvertebrates from list (<i>i.e.</i> , insects , mammals, crustaceans , molluscs (snails, clams, etc.), birds, fish)						
PRE	10					
POST	32					
% change	220%					
Number of students correctly listing a source of nitrates to the Rouge						
PRE	23					
POST	40					
% change	74%					
Number of students correctly listing an action to limit nitrates in the Rouge						
PRE	24					
POST	41					
% change	71%					
Students listing way in which participating in the REP helps the Rouge River						
Number of participants			Percentage of total			
39			71%			
Follow-up Question: Extent of Experience with the REP						

<i>I learned something new about the Rouge River</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	37	16	2	0	0	0
% of total	67%	29%	4%	0%	0%	0%
<i>I plan to talk to friends and/or family about what I learned in the REP</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	15	27	10	3	0	0
% of total	27%	49%	18%	5%	0%	0%
<i>I experienced a feeling of connectedness with the Rouge River</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	11	26	17	1	0	0
% of total	20%	47%	31%	2%	0%	0%
<i>I reflected on new ideas about how my actions affect the river</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	23	26	6	0	0	0
% of total	42%	47%	11%	0%	0%	0%
<i>I learned what actions to take to make the Rouge healthier</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	32	20	2	1	0	0
% of total	58%	36%	4%	2%	0%	0%
<i>I would choose to participate in more projects to help the Rouge</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	22	25	6	2	0	0
% of total	40%	45%	11%	4%	0%	0%
<i>REP monitoring made a difference in the health of the Rouge</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	27	17	11	0	0	0
% of total	49%	31%	20%	0%	0%	0%
<i>REP monitoring involved people/organizations from the community</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	20	16	15	3	1	0
% of total	36%	29%	27%	5%	2%	0%
<i>The REP helped me feel that I could make a difference in society</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	14	35	6	0	0	0
% of total	25%	64%	11%	0%	0%	0%
<i>In the REP, I met people/encountered things I normally wouldn't have</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	10	19	20	6	0	0
% of total	18%	35%	36%	11%	0%	0%

<i>The REP challenged me to think like a scientist</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	13	28	12	2	0	0
% of total	24%	51%	22%	4%	0%	0%
<i>The REP was directly related to classroom work</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	22	27	4	1	1	0
% of total	40%	49%	7%	2%	2%	0%
<i>The REP helped me understand classroom material better</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	18	27	7	2	1	0
% of total	33%	49%	13%	4%	2%	0%
<i>I had the opportunity to participate in river-related discussions/activities BEFORE our field trip</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	25	23	3	4	0	0
% of total	45%	42%	5%	7%	0%	0%
<i>I had the opportunity to participate in river-related discussions/activities AFTER our field trip</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	28	15	3	2	3	4
% of total	51%	27%	5%	4%	5%	7%

Summary of Results: GRADE 12

Grade: 12		Total number of students: 65						
<i>Participating schools: Chandler Park Academy High School; Crestwood High School; Oakland Schools Technical Campus SE; Troy High School</i>								
Number of times to Rouge River (field trip)								
	0	1	2	3	4	5	5+	No Response
PRE	50	10	3	1	0	0	0	1
POST	17	38	6	4	0	0	0	0
Interest in science								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	31	19	12	2	0	1		
POST	38	12	14	1	0	0		
% change	23%	-37%	17%	-50%	0%	-100%		
Interest in nature								
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response		
PRE	22	28	13	2	0	0		
POST	29	22	12	1	1	0		

% change	32%	-21%	-8%	-50%	100%	0%
Interest in school						
	Very interested	Interested	Moderately interested	Somewhat interested	Not interested	No Response
PRE	14	20	22	6	3	0
POST	16	23	16	8	2	0
% change	14%	15%	-27%	33%	-33%	0%
Number of students correctly listed a source of pollution to the Rouge River						
PRE	58					
POST	62					
% change	7%					
Percentage of students correctly listing a corrective action for pollution source listed above						
PRE	86%					
POST	85%					
% change	-1%					
Of those listing problem above, number of students who can AGREE with following statements:						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
<i>I am confident in my ability to research problem</i>						
PRE	17	34	5	0	0	2
POST	25	34	3	0	0	0
Relative % change	11%	-4%	-4%	0%	0%	-3%
<i>I am sure that I could explain to others why this problem is important</i>						
PRE	16	27	11	2	0	2
POST	27	27	6	2	0	0
Relative % change	16%	-3%	-9%	0%	0%	-3%
<i>I know where I could find help and resources to take action on this problem</i>						
PRE	9	20	19	8	0	2
POST	19	29	11	3	0	0
Relative % change	15%	13%	-15%	-9%	0%	-3%
Relationship with nature						
						
PRE	11	44	10			
POST	7	47	11			
% change	-36%	7%	10%			
Q: When testing for the presence of dissolved oxygen, doing the test more than once will give the most accurate result						
	TRUE (CORRECT)			FALSE		
PRE	64			1		
POST	63			2		
% change	-2%			100%		
Q: All macroinvertebrates are equally tolerant of pollution						

	TRUE	FALSE (CORRECT)				
PRE	8	57				
POST	1	64				
% change	-88%	12%				
Number of students correctly identifying ALL macroinvertebrates from list (i.e., insects, mammals, crustaceans, molluscs (snails, clams, etc.), birds, fish)						
PRE	22					
POST	37					
% change	68%					
Number of students correctly listing a source of nitrates to the Rouge						
PRE	23					
POST	40					
% change	74%					
Number of students correctly listing an action to limit nitrates in the Rouge						
PRE	23					
POST	37					
% change	61%					
Students listing way in which participating in the REP helps the Rouge River						
Number of participants		Percentage of total				
43		66%				
Follow-up Question: Extent of Experience with the REP						
<i>I learned something new about the Rouge River</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	43	20	0	0	0	2
% of total	66%	31%	0%	0%	0%	3%
<i>I plan to talk to friends and/or family about what I learned in the REP</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	15	29	17	1	1	2
% of total	23%	45%	26%	2%	2%	3%
<i>I experienced a feeling of connectedness with the Rouge River</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	10	24	21	7	1	2
% of total	15%	37%	32%	11%	2%	3%
<i>I reflected on new ideas about how my actions affect the river</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	21	29	10	3	0	2
% of total	32%	45%	15%	5%	0%	3%
<i>I learned what actions to take to make the Rouge healthier</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	32	26	4	1	0	2
% of total	49%	40%	6%	2%	0%	3%
<i>I would choose to participate in more projects to help the Rouge</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response

Number	24	29	10	0	0	2
% of total	37%	45%	15%	0%	0%	3%
<i>REP monitoring made a difference in the health of the Rouge</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	24	24	13	1	1	2
% of total	37%	37%	20%	2%	2%	3%
<i>REP monitoring involved people/organizations from the community</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	17	15	15	11	5	2
% of total	26%	23%	23%	17%	8%	3%
<i>The REP helped me feel that I could make a difference in society</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	22	20	15	4	2	2
% of total	34%	31%	23%	6%	3%	3%
<i>In the REP, I met people/encountered things I normally wouldn't have</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	16	24	12	7	4	2
% of total	25%	37%	18%	11%	6%	3%
<i>The REP challenged me to think like a scientist</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	26	24	10	2	1	2
% of total	40%	37%	15%	3%	2%	3%
<i>The REP was directly related to classroom work</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	26	24	9	3	0	3
% of total	40%	37%	14%	5%	0%	5%
<i>The REP helped me understand classroom material better</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	26	24	9	4	0	2
% of total	40%	37%	14%	6%	0%	3%
<i>I had the opportunity to participate in river-related discussions/activities BEFORE our field trip</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	30	24	4	4	1	2
% of total	46%	37%	6%	6%	2%	3%
<i>I had the opportunity to participate in river-related discussions/activities AFTER our field trip</i>						
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Response
Number	31	26	2	0	1	5
% of total	48%	40%	3%	0%	2%	8%