

MSP Pathways Project 2013 Teacher Survey

I. Introduction and Background Questions

Welcome to the MSP Pathways Project 2013 Teacher Survey. This survey should be completed by all teachers in the project at the end of the school year.

THANK YOU for completing the survey. It provides us with essential information to help maximize the value of the MSP Pathways Project to students and teachers.

***1. Please write your full name. Only project researchers have access to your names, and we will only use your name to track who has (or hasn't) taken the survey. Your name will be detached from your responses prior to data analysis and will not be used in our reports.**

***2. Where do/did you teach?**

- California
- Colorado
- Maryland
- Michigan
- New York
- Other

If other State, please specify:

II. Knowledge and Skills of Teachers

The MSP Pathways Project focuses on these large topics within environmental science:

Carbon - carbon cycling in the environment; photosynthesis, respiration, storage; climate change

Water - Water cycling in the environment; moving water pathways and processes; substances in water

Biodiversity – Species populations and communities in the environment; evolution and adaptations; food and interaction webs

1. Briefly explain how you these large topics - Carbon, Water and Biodiversity - relate to each other.

MSP Pathways Project 2013 Teacher Survey

2. Please explain how you think understanding Carbon, Water and Biodiversity relate to improving someone's environmental science literacy.

3. To focus your answers to the following questions, bring to mind the class you have taught recently that includes the most environmental science.

Write the name of the class:

Please answer the next three questions with the class you identified above in mind.

4. Which topic do you emphasize the most in your teaching in that class?

- Carbon
- Water
- Biodiversity

5. In 50 words or less, write ONE important understanding for this topic that you think students in this particular class should master by the end of your instruction. Be as specific as possible, considering the grade, students, and context of your class.

6. If you had to convince students in the class that the understanding you described above was important for or applies to their everyday lives, what would your argument be?

MSP Pathways Project 2013 Teacher Survey

7. Please complete the following phrases about your thinking about Learning

Progressions:

a. I used to think Learning Progressions were

b. Now I think Learning Progressions are

8. Please describe how you used Learning Progressions in your science teaching over the past year.

9. Please describe how your participation in the MSP Pathways Project influenced your use of Learning Progressions over the past year, if at all.

III. Curriculum Implementation

Please tell us about your implementation of the Teaching Experiments (TE) and other teaching you've done as a result of your participation in the project.

1. Please indicate the extent to which you taught the Carbon Teaching Experiment (TE).

I didn't teach it at all I taught a small part of it I taught much or all of it

Carbon TE

If you answered "not at all" or "small part", please explain why you didn't teach more of the TE.

MSP Pathways Project 2013 Teacher Survey

7. Please describe any new assessment techniques that you used, if at all, based on your participation in the MSP Pathways Project.

IV. Teaching Practices

We would like to find out how you teach environmental science (including ecology, evolution, biology of whole organisms, earth science topics, etc.). Please think about the class you teach that includes the most environmental science when answering the questions in this section. This should be the same class that you listed in Part II of the survey.

MSP Pathways Project 2013 Teacher Survey

1. Please indicate your level of use of each of the following teaching practices in the class in which you taught the most environmental science, using the scale:

1 = never

2 = very rarely or only a little

3 = somewhat or occasionally – two or three times a month

4 = frequently – almost every week, a very important practice

5 = essential practice, used very frequently - almost every day or two

	1 - never	2 - rare	3 - some	4 - frequent	5 - essential
a) When preparing to teach a topic or unit, I try to identify a few big ideas based on my own understanding of the subject.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) When teaching a topic or unit, I focus on basic principles, theories and/or ways of thinking rather than on vocabulary or facts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) I plan my instruction based on what I expect my students already know and where they are in a path towards more sophisticated understanding of the topic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) I use assessments of my students at the beginning and/or during my units to guide my selection of instructional strategies and sequences.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) I provide opportunities for my students to think aloud about key ideas in a unit and then respond right away.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) I provide opportunities for my students to think aloud about key ideas in a unit and then respond through subsequent instruction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) I use homework and/or quizzes to gauge student understanding and then adjust my teaching accordingly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h) I provide my students with opportunities to ask their own questions and then investigate them through first hand inquiry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i) I provide my students with opportunities to learn with authentic phenomena outside - in the schoolyard, neighborhood or in the field.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j) I provide my students with opportunities to learn with authentic phenomena in the lab (inside).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k) I link environmental science to real world problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l) I link environmental science to students' culture and place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m) I engage students in articulating and defending claims using	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

MSP Pathways Project 2013 Teacher Survey

evidence-based reasoning.

n) I engage students in using scientific explanations and evidence to make predictions about impacts of human actions on environmental systems.

o) I engage students in evaluating credibility of non-scientific arguments made about environmental issues in the media and online.

p) I engage students in evaluating credibility of scientific arguments using criteria of the scientific community (e.g., replication, peer review, experimental design, etc.).

q) I engage students in distinguishing between questions that can be addressed by science and those that cannot.

r) I engage students in supporting their scientific arguments using quantitative reasoning.

MSP Pathways Project 2013 Teacher Survey

**2. To what extent has the MSP Pathways Project INFLUENCED your use of the teaching practices described in each statement in the class you named and most recently taught?
Please use this scale:**

- 1 - not at all**
- 2 - somewhat**
- 3 - moderately**
- 4 - a great deal**

	1 - not at all	2 - somewhat	3 - moderately	4 - a great deal
a) When preparing to teach a topic or unit, I try to identify a few big ideas based on my own understanding of the subject.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) When teaching a topic or unit, I focus on basic principles, theories and/or ways of thinking rather than on vocabulary or facts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) I plan my instruction based on what I expect my students already know and where they are in a path towards more sophisticated understanding of the topic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) I use assessments of my students at the beginning and/or during my units to guide my selection of instructional strategies and sequences.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) I provide opportunities for my students to think aloud about key ideas in a unit and then respond right away.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) I provide opportunities for my students to think aloud about key ideas in a unit and then respond through subsequent instruction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) I use homework and/or quizzes to gauge student understanding and then adjust my teaching accordingly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h) I provide my students with opportunities to ask their own questions and then investigate them through first hand inquiry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i) I provide my students with opportunities to learn with authentic phenomena outside - in the schoolyard, neighborhood or in the field.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j) I provide my students with opportunities to learn with authentic phenomena in the lab (inside).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k) I link environmental science to real world problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l) I link environmental science to students' culture and place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m) I engage students in articulating and defending claims using evidence-based reasoning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

MSP Pathways Project 2013 Teacher Survey

n) I engage students in using scientific explanations and evidence to make predictions about impacts of human actions on environmental systems.

o) I engage students in evaluating credibility of non-scientific arguments made about environmental issues in the media and online.

p) I engage students in evaluating credibility of scientific arguments using criteria of the scientific community (e.g., replication, peer review, experimental design, etc.).

q) I engage students in distinguishing between questions that can be addressed by science and those that cannot.

r) I engage students in supporting their scientific arguments using quantitative reasoning.

3. Please describe how specific aspects of the MSP Pathways Project - summer and school year workshops, in-school support, curriculum materials, supplies - have positively influenced, if at all, your use of these practices.

4. If you had to convince your principal to support your continued involvement in the MSP Pathways Project using evidence of student learning or your growth as a teacher, what would you include in your argument? Please be specific.

V. Constraints and Supports For Environmental Science Teaching

In this section we ask about factors that limit and support your use of the following instructional practices in your teaching of environmental science. In particular, we are interested in your experiences as you have worked to implement these instructional practices:

- a) pre-assessing students' prior learning about key ideas in the subject
- b) focusing instruction on a few key ideas, principles or thinking skills
- c) teaching about environmental science through hands-on and outdoor experiences
- d) linking environmental science to real problems in the local, nearby environment.

MSP Pathways Project 2013 Teacher Survey

1. For these instructional practices, please rate each of the factors below using the scale:

1 = Limits or Constrains

2 = No Impact

3 = Promotes or Supports

N/A = Not Applicable

	1 - Constrains	2 - No impact	3 - Supports	N/A
a) the availability of organisms and habitats to study at or near my school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) the availability of funds to take students on field trips or to buy supplies and equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) support from school administrators, principals, department chairs, and other teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) the curriculum and/or state standards I am required to teach by my district	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) my environmental science knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) my personal commitment to the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) my understanding of student thinking or learning in environmental science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h) my ability to teach with hands-on and outdoor approaches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i) adequate time for preparation and planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j) adequate time for using the practices listed (pre-assessing students, focusing on key ideas, hands-on and outdoor teaching, linking to real problems)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k) my ability to differentiate instruction in response to my assessment of students' thinking or learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l) my motivation to teach the subject using the four practices (pre-assessing students, focusing on key ideas, hands-on and outdoor teaching, linking to real problems)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m) my confidence that students will learn and succeed if taught using the four practices (pre-assessing students, focusing on key ideas, hands-on and outdoor teaching, linking to real problems)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n) the training I have received from professional development experiences within the MSP Pathways Project	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
o) the training I received in college and the practical wisdom and skills from my teaching experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

MSP Pathways Project 2013 Teacher Survey

2. Please describe briefly how your experience in the MSP Pathways Project influenced the factors that limit or support your use of these practices in your environmental science teaching.

VI. Supporting Information

In this section we ask you to describe the class or classes in which you teach the most environmental science. Please give your best estimate for each item.

1. Please provide the following estimates about the class in which you teach the most environmental science as part of the Pathways Project. This should be the same class as your referred to in answering the questions earlier in this survey. If you taught one or more of the Teaching Experiments in a different class, please go to the next question to tell us about that class, too.

Name of class	<input type="text"/>
Number of students enrolled in class	<input type="text"/>
Average daily attendance (%)	<input type="text"/>
% Females/males	<input type="text"/>
Race/ethnicity composition (%'s)	<input type="text"/>
% English language learners	<input type="text"/>
% free or reduced lunch	<input type="text"/>
% designated as gifted	<input type="text"/>
% designated as special education	<input type="text"/>

2. OPTIONAL: Please provide the following estimates about the other class in which you taught one or more of the Teaching Experiments.

Name of class	<input type="text"/>
Number of students enrolled in class	<input type="text"/>
Average daily attendance (%)	<input type="text"/>
% Females/males	<input type="text"/>
Race/ethnicity composition (%'s)	<input type="text"/>
% English language learners	<input type="text"/>
% free or reduced lunch	<input type="text"/>
% designated as gifted	<input type="text"/>
% designated as special education	<input type="text"/>

MSP Pathways Project 2013 Teacher Survey

THANK YOU!

THANK YOU for completing the survey. We really appreciate your help. If you have any questions, please do not hesitate to contact your site's MSP Pathways Project Professional Development leaders or providers.

KBS (Michigan): Sara Syswerda, parrsar1@msu.edu, 616-322-3632

BES (Maryland and New York): Bess Caplan, caplanb@caryinstitute.org, 410-448-5663 ext. 125

SBC (Santa Barbara): Michele Johnson, mjohnson@msi.ucsb.edu, 805-893-3163

SGS (Colorado): Amanda Morrison, Amanda.J.Morrison@ColoState.EDU, 970-491-3552

Wyoming: Sylvia Parker, sparker@uwoyo.edu, 307-766-6671