RESOURCES

TITLE | BACKWARDS PLANNING, THE LEARNING CYCLE, AND LESSON ADAPTATION

CATEGORY | Garden Educator Training

SUB-CATEGORY | Learning & Teaching Outdoors

OVERVIEW | This document outlines a series of trainings for new garden educators on lesson planning. Key topics covered include the concept of backwards planning, understanding the learning cycle, and adapting existing curriculum.

Training Rationale:

This training teaches the basics of lesson planning so that educators can create engaging lessons that build upon each other. Lesson planning is critical for creating consistency and content flow for students, helps educators reinforce learning objectives over time, and forms the backbone of any educator's teaching skill set.

Suggested Time of Year:

We suggest beginning this series of trainings early in the school year, around September or October. We also suggest leading this around the same time as a training on **Next Generation Science Standards (NGSS)** so those concepts can be referenced throughout.

Suggested Workshop Length

9 hrs, at least 3 workshops of 3 hours each.

Training Objective

Educators will learn how and why to lesson plan. They will gain an understanding of key concepts including: the learning cycle, backwards planning, how to read, adapt and create lesson plans, mapping out a scope and sequence, and the creation and assessment of learning objectives.

Training Overview:

This training defines the key aspects of lesson planning. By the end of these workshops, educators should understand that their planning is critical to student outcomes. Key questions throughout include:

- What are the guiding questions, primary learning goals and objectives, key experiences, and expected student outcomes of a lesson?
- How does an educator consider timing, classroom management, contextualizing for space and community, and objectives and outcomes in this lesson?
- How does an educator create a lesson plan with all five stages of the learning cycle?

Key terms and concepts are described here, and relevant activities for each are below:

- *The Learning Cycle* conceptualizes how people learn from experience. The main steps of the Learning Cycle consists of the following stages: Invitation, Exploration, Concept Invitation, Application, and Reflection. (The Learning Cycle is explained further in *Lesson Planning Resources*, available in the Table of Contents.)
- *Backwards Planning* is a process by which educators start with the desired outcomes and objectives for students, then craft a scope and sequence of unit(s) and lesson(s) to meet those. The training should stress the importance of effective backwards planning as students will only be as successful as the educator's plan allows.
- A *Lesson Plan* is a detailed guide for teachers on what will be covered conceptually, the objectives that will be met, and the order of operations and materials needed during the lesson. It also includes timing, student prior knowledge required, prep needed, activities, and an evaluation. Multiple lessons make up a unit.
- A *Scope and Sequence* summarizes what is to be taught and the sequence in which it will be taught. A scope and sequence shows the order of the units within a year or defined time period and the outcomes that each unit addresses. A scope and sequence is an important step in the design of effective teaching and learning programs.
- *Learning Objectives* are clear statements of what students will have learned by the end of the lesson, unit or semester. Asking the question: "How will I know if my students have learned X?"will guide assessment techniques. These could include exit tickets, demonstration, a formal quiz or test, or asking students to summarize or explain what they've learned by answering a question or writing a response.
- *Focus Questions* (or *Guiding and Essential Questions*) are questions that help students learn by stimulating inquiry. Essential questions are questions that help students push their thinking, ask questions, and draw from previous knowledge. They are usually posed at the beginning of a lesson and are open-ended; there won't necessarily be a right answer. An example of this would be "How does water affect life on earth?" Guiding questions are questions that educators can pose throughout a lesson in order to further students' thinking on a topic or draw their attention to something they perhaps hadn't considered. They usually are more closed questions and guide students to one particular answer. Examples of these include "How does water move through the water cycle? Does water stay in the same state of matter throughout the water cycle?"

Activity Ideas:

- *Learning Cycle*
  - See the BEETLES professional learning overview[1] and conduct this training. (Please note that this training is a 3.5 hour training and should be adequately planned for).
  - Practice the Learning Cycle: Take an existing lesson and cut up the steps into strips. Have educators practice the learning cycle by placing the strips in order and explaining their reasoning.
  - Reference "Using the Learning Cycle to Write Outdoor Science Lessons" in *Lesson Planning Resources*, available in the Table of Contents. Use this document to practice adding the Learning Cycle to a lesson plan.
- *Backwards Planning*
  - To invite discussion about the importance of planning, have educators react to the Grasshopper and the Ant fable from Aesop.[2]
  - Read and discuss "**Thirteen Basic, Indispensable Decisions**" from The *Skillful Teacher*[3] or another preferred resource. What might be some of the considerations in each decision? Which of these decisions feels easiest for you (as an educator) and which feel the most difficult?
  - Review this outline of Backwards Planning and apply the process to specific units or lessons:
    1. Decide on desired outcomes.
       - This considers both the unit-level and lesson-level outcomes and objectives for students.
       - What are the big picture ideas students should walk away having incorporated?
       - What are the experiences and skills students should have and master?
       - What are some essential questions to ask students?
    2. How will you know that students have learned these ideas/concepts/skills?
       - What will checking for understanding look like?
       - What will students need to do/create/say/act/think in order to demonstrate that they have met the objectives?
    3. What activities will produce the desired outcomes for students?
       - List out specific activities.

- To create a lesson plan, bucket the activities by student knowledge level, gradually increasing in depth as students grow in their comfort with the material.

- *Lesson Plans*
  - Review **Reading & Adapting a Lesson 101** below, then practice reading through and adapting a lesson from the Education Outside Curriculum.
  - Have instructors draw topics out of a hat and practice writing a new lesson plan using Education Outside Curriculum format as a guide.
  - To learn about adapting a lesson to an educator's specific site, create an activity around the question "How does this lesson, unit or scope and sequence take my particular context into account?"
  - Have educators write sample lesson plans based on the same prompt or essential question and compare and contrast. Make sure individual attention and feedback is given to each educator so they know how to improve.
- *Scope and Sequences*
  - Examine and interpret an **example scope and sequence** and have educators create one of their own.
  - Review a lesson plan and a unit plan. You can find lesson plan samples for K-5 on the California Academy of Science's website[4] and unit samples on the California Education and the Environment Initiative's website[5]. What do you see as the main objectives of the unit? How about the lessons within the units? How does a unit plan compare to a lesson plan? How can I tailor the unit plan to meet my teaching needs? What overarching questions guide this unit, and what are some relevant student responses?
  - Write unit descriptions based on relevant lesson plans.
- *Learning Objectives*
  - Given a list of sample learning objectives, have educators rank them on quality and compare answers to promote discussion of effective and clear learning objectives.
  - Discuss some of the questions pertaining to objectives in **Reading & Adapting a Lesson 101**.
- *Focus or "Guiding" and "Essential" Questions*
  - Read and discuss the following two articles:
    - Scholastic Readers: What Are Essential Questions[6]
    - Scholastic Readers: Essential Questions[7]
  - In small groups, develop questions for different lessons. Have at least two people develop questions for the same lesson and have them compare and contrast.

Assessing Understanding:

- Exit Ticket: Have educators describe backwards planning and define a scope and sequence. Have educators explain the difference between a lesson description and a lesson plan. Have educators describe best practices for lesson planning.
- *Education Outside's Best Practices for Teaching*, available in the Table of Contents, relies heavily upon the foundation of using an effective lesson plan. We suggest using the Best Practices Rubric as a tool for a manager during lesson observations to assess whether or not the educator is implementing this framework. Lesson plans should be received ahead of time to best assess an educator's ability to create and then accurately follow the lesson plan.

References:

1. Regents of the University of California. **BEETLES**. Lawrence Hall of Science at UC Berkeley: Accessed April 2019.
2. Pinkney, J., & Aesop. (2015). The grasshopper & the ants.
3. Saphier, Jon. The Skillful Teacher: Building your Teaching Skills. Acton, MA: Research for Better Teaching Inc, 2008. Can be retrieved from https://www.siprep.org/uploaded/ProfessionalDevelopment/CDRP/Planning.pdf
4. California Academy of Sciences, 2019. Science Lesson Plans. Retrieved from https://www.calacademy.org/educators/lesson-plans
5. California Department of Resources Recycling and Recovery (CalRecycle), 2019. Science Units. Retrieved from https://www.californiaeei.org/curriculum/science-units/

6. Wilson, Leslie Owen (2019). What Are Essential Questions. The Second Principle. Retrieved from https://thesecondprinciple.com/teaching-essentials/essential-questions/
7. Wilhelm, Jeffery D. (2019). Essential Questions. Scholastic. Retrieved from https://www.scholastic.com/teachers/articles/teaching-content/essential-questions/

Additional Resources:

- Lemov, Doug. *Teach Like a Champion 2.0* : 62 Techniques That Put Students on the Path to College. San Francisco: Jossey-Bass, 2015
- Literacy Solutions. (2016). Retrieved from http://www.literacysolutions.net/2017/03/26/what-are-essential-questions/

Sample Scope and Sequence

	Week Of	Unit	Lesson
Kinder	Aug 29	Intro	*Garden Agreements*
	Sept 5	Intro	*Garden Jobs*
	Sept 12	5 Senses	*Intro*
	Sept 19	5 Senses	*Sight*
	Sept 26	5 Senses	*Smell*
	Oct 3	5 Senses	*Hearing*
	Oct 10	5 Senses	*Touch*
	Oct 17	5 Senses	*Taste*
	Oct 24	5 Senses	*Planting*
	Oct 31	Celebration	
	Nov 7	Worms & Decomposition	*Worm Observation*
	Nov 14	Worms & Decomposition	*Worm Habitat*
	Nov 21	Worms & Decomposition	*Worm Friends*
	Nov 28	Worms & Decomposition	*Decomposers*
	Dec 5	Celebration	
1st Grade	Aug 29	Intro	*Garden Agreements*
	Sept 5	Garden Jobs	*Plant Needs*
	Sept 12	Plant Structure	*Roots*
	Sept 19	Plant Structure	*Leaves*
	Sept 26	Plant Structure	*Stems 1*
	Oct 3	Plant Structure	*Stems 2*
	Oct 10	Plant Structure	*Flowers*
	Oct 17	Plant Structure	*Fruit*
	Oct 24	Plant Structure	*Seeds*
	Oct 31	Plant Structure	*Plant Parts Recipe*
	Nov 7	Plant Structure	*Plant Parts Recipe*
	Nov 14	Celebration	
	Nov 21	Weather & Tools	*Measuring in the Garden*
	Nov 28	Weather & Tools	*Weather Intro*
	Dec 5	Weather & Tools	*Rain & Clouds*
	Dec 12	Celebration	
2nd Grade	Aug 29	Intro	*Garden Agreements*
	Sept 5	Life Cycles	*Plant Parts Review*
	Sept 12	Life Cycles	*Flowers and Seeds*
	Sept 19	Life Cycles	*Plant Life Cycle*
	Sept 26	Life Cycles	*Plant Life Cycle Salad*
	Oct 3	Life Cycles	*Worm Life Cycle*
	Oct 10	Life Cycles	*Insect Anatomy*
	Oct 17	Life Cycles	*Insect Life Cycle*
	Oct 24	Celebration	
	Oct 31	Soil and Decomposition	*Decomposition Experiment 1*
	Nov 7	Soil and Decomposition	*Soil Composition 1*
	Nov 14	Soil and Decomposition	*Soil Composition 2*
	Nov 21	Soil and Decomposition	*Soil Stir Fry*

Sample Scope and Sequence

	Week Of	Unit	Lesson
2nd Grade	Nov 28	Soil and Decomposition	*Decomposition Experiment 2*
	Dec 5	Soil and Decomposition	*Solid & Liquid Pollution*
	Dec 12	Celebration	
3rd Grade	Aug 29	Intro	
	Sept 5	Plant Adaptations	*Plant Parts Inquiry*
	Sept 12	Plant Adaptations	*Plant Parts Review*
	Sept 19	Plant Adaptations	*Seed Dissection*
	Sept 26	Plant Adaptations	*Seed Dispersal*
	Oct 3	Plant Adaptations	*Adapt-A-Seed*
	Oct 10	Plant Adaptations	*Leaf Structure*
	Oct 17	Plant Adaptations	*Drought Tolerant Hunt*
	Oct 24	Plant Adaptations	*Invent a Plant*
	Oct 31	Plant Adaptations	*Field Journaling*
	Nov 7	Celebration	
	Nov 14	Weather Tools	*Thermometer Practice*
	Nov 21	Weather Tools	*Water Cycle*
	Nov 28	Weather Tools	*Rainfall*
	Dec 5	Weather Tools	*Cloud Observations*
	Dec 12	Celebration	
4th Grade	Aug 29	Intro	*Garden Agreements*
	Sept 5	Ecosystems	*Living vs Non-Living*
	Sept 12	Ecosystems	*Habitat Interactions*
	Sept 19	Ecosystems	*Planting Producers*
	Sept 26	Ecosystems	*Food Chains*
	Oct 3	Celebration	
	Oct 10	Decomposition	*Intro to Decomposition?*
	Oct 17	Decomposition	*Worms & Castings*
	Oct 24	Decomposition	*Fungus Among Us*
	Oct 31	Decomposition	*FBI Hunt*
	Nov 7	Decomposition	*Compost*
	Nov 14	Decomposition	*Testable / Non-Testable*
	Nov 21	Decomposition	*Experiment Design*
	Nov 28	Decomposition	*FBI Pizza*
	Dec 5	Decomposition	*Experiment Conclusion*
	Dec 12	Celebration	
5th Grade	Aug 29	Intro	*Garden Agreements*
	Sept 5	Plant Needs	*Plant Parts & Needs*
	Sept 12	Plant Needs	*Plant Food*
	Sept 19	Plant Needs	*Soil Nutrients 1*
	Sept 26	Plant Needs	*Soil Nutrients 2*
	Oct 3	Plant Needs	*Testable / Non-Testable*
	Oct 10	Plant Needs	*Experiment Design*

Sample Scope and Sequence

	Week Of	Unit	Lesson
5th Grade	Oct 17	Plant Needs	*Plant Part Recipe*
	Oct 24	Plant Needs	*Experiment Conclusion*
	Oct 31	Celebration	
	Nov 7	Water Systems	*Water in our Garden*
	Nov 14	Water Systems	*How Water Flows*
	Nov 21	Water Systems	*Where does water come from?*
	Nov 28	Water Systems	*Permeable Surfaces*
	Dec 5	Water Systems	*Water Pollution*
	Dec 12	Celebration	

Activity Ideas:

Part One: Assumptions & Beliefs has several great reflection questions that can be included as individual or pair-share activities during part one of this training. Examples from the book include:

- "Write down your values and beliefs about students and learning. If it suits your learning style, use 'mind maps' to brainstorm and record visually, on the rays flowing out from the center, your own beliefs about students' needs in the classroom learning environment. Other options are to craft your beliefs from your favorite quotes or poems or to make a list or outline of your beliefs."[1] Rethinking Classroom Management includes ample examples of this activity to share with participants, including mind maps, a classroom leadership philosophy, and one teacher's pledge to students.
- "From your own experience as a student, what do you recall teachers doing that you would or would not choose to include in your own classroom/teaching repertoire?"[1]
- Practice a few icebreakers with participants. There are several great icebreaker examples in Life Lab's *The Growing Classroom*, such as "Group Juggle," and "The Wind Blows For Me."[3] This is helpful for everyone to get to know each other during the training, and provides participants with examples that they can take back to their outdoor classrooms. Ask participants to reflect on how they felt before and after participating in the icebreaker. How might students feel before and after participating in icebreakers with a new class/teacher?

Part Two: The Four Ps of Prevention

- Provide time for educators to work in small groups to write a draft of their garden agreements, using the examples provided as a guide. (For this exercise, it is helpful if educators are somewhat familiar with their outdoor classrooms and have an idea of the rules in place at their school.) Allow time for them to practice one way they might introduce garden agreements to their classes, using *Education Outside's Best Practices for Teaching* as a guide.

Assessing Understanding:

- Exit Ticket: Ask educators to describe one thing they will commit to doing in order to develop personal relationships with students.
- During the activity time when educators are practicing ways to introduce garden agreements, circulate to assess understanding.

References:

1. Smith, R. (2004). *Conscious Classroom Management: Unlocking the Secrets of Great Teaching*. San Rafael, California: Conscious Teaching Publications.
2. Sequeira Belvel, P. (2010). *Rethinking Classroom Management*. California: Corwin.
3. Jaffe, R., Appel, G. (2007). *The Growing Classroom*. South Burlington, Vermont: National Gardening Association.

RESOURCES

TITLE | MAKING IT STICK

CATEGORY | Garden Educator Training

SUB-CATEGORY | Learning & Teaching Outdoors

OVERVIEW | This document outlines the "Making it Stick" training for garden educators. The training introduces a framework for teaching "sticky" lessons based on the article "Teaching That Sticks" and the book *Made to Stick*, by Chip Heath and Dan Heath.

Training Rationale:

This training was consistently one of the most highly rated by Education Outside garden educators. It provides an easy-to-use framework that helps educators ensure that students retain knowledge they learn and build upon it in subsequent lessons.

Suggested Time of Year:

September/October. We suggest offering this training early in the school year but after educators have taught a few lessons. This allows educators to evaluate the lessons they've taught thus far and allows them to immediately apply the framework to their future lessons.

Suggested Workshop Length:

3 hrs

Training Objective:

Garden educators will be able to apply the framework of SUCCES (Simple, Unexpected, Concrete, Credible, Emotional, Story) to teach sticky lessons that students remember.

Training Overview:

The bulk of this workshop is spent summarizing the SUCCES framework outlined in "Teaching That Sticks"[1] and providing a variety of examples. Leading this workshop will require a thorough reading of this resource. What is written here is only a brief summary.

- **Simple**: Distill one main takeaway for students based on the lesson objective. For example, if the objectives are: "Students will be able to explain the function of a plant stem and understand that it moves water and nutrients from the bottom of the stem to the top. They will also be able to set up an experiment to demonstrate how a stem moves water" the educator might distill in this way: "Stems are water elevators. They move water from the roots up the plant").

- **Unexpected**: As written in "Teaching That Sticks," "*The Ah ha!* Experience is much more satisfying when it's preceded by the Huh? Experience."[1] At Education Outside we emphasized the importance of creating knowledge gaps as the process of resolving mysteries is very similar to practicing science. Provide several examples of mysteries that create knowledge gaps, such as: Where are all the baby pigeons? Where do all the leaves go when they fall off of a tree?
- **Concrete**: In "Teaching That Sticks"[1] the Heath brothers write, "The more sensory hooks we can put into an idea, the better it will stick." To explain this concept, show examples of visuals, including diagrams, icons, and characters that make abstract concepts grounded in sensory reality.
- **Credible**: *The Education Outside Curriculum* linked in the Table of Contents includes numerous examples of concrete lessons that allow students to see for themselves the concept being discussed. For example, instead of talking about erosion students, can make their own "cities" in the soil and observe the effects of water flowing over their landscapes. Instead of talking about the function of a stem, students can observe water moving up a stem by placing celery in colored water.
- **Emotion**: "Emotion transforms the idea from something that's analytical or abstract or theoretical and makes it hit us in the gut (or in the heart)"[1]. Stories are often a great way to incorporate emotion into lessons. Add extra emotion by naming characters after students in the class or using mascots (i.e. Carly the Carrot, Wanda the Worm, etc.)
- **Story**: As written in "Teaching That Sticks,"[1] "The moment you start sharing a personal story with the class, [students] instantly snap to attention." There are several examples of lessons that include stories in the *Education Outside Curriculum* linked in the Table of Contents, including Grade 2: Insect Life Cycles.

Activity Ideas:

- Before introducing the framework, have educators reflect on a concept or lesson that they learned in elementary school and vividly remember to this day. Ask them to share with each other and determine what these lessons had in common. In looking for the major themes, they will discover some of the traits that make lessons sticky.
- After introducing the framework, model what it looks like by teaching two versions of a model lesson, one that's sticky and one that's not.
- At the end of the workshop, ask educators to adapt a lesson that they plan to teach in the near future in order to make it stickier. Encourage them to apply the framework of SUCCES. Make time to allow them to practice modeling part of their lesson in small groups or pairs.

Assessing Understanding:

- Exit Ticket: Ask garden educators to write a few sentences describing one change they're planning to make to an upcoming lesson in order to make it stickier.
- *Education Outside's Best Practices for Teaching*, available in the Table of Contents, references the SUCCES framework, particularly the sections on creating an engaging invitation using different learning modalities. We suggest using the Best Practices Rubric as a tool during lesson observations to assess whether or not the garden educator is implementing the framework.

References:

1. *Teaching That Sticks*. (2010). Retrieved May 22, 2019, from https://heathbrothers.com/download/mts-teaching-that-sticks.pdf
2. Heath, C., Heath, D. (2007). *Made to Stick*. New York, NY: Random House

RESOURCES

TITLE | TEACHING NEXT GENERATION SCIENCE STANDARDS OUTSIDE

CATEGORY | Garden Educator Training

SUB-CATEGORY | Learning & Teaching Outdoors

OVERVIEW | This document outlines a training for garden educators on what the Next Generation Science Standards (NGSS) are and how lesson plans can incorporate NGSS concepts. Education Outside partnered with the San Francisco Unified School District (SFUSD) to lead this training. We suggest contacting someone in your school district or city to see if they can lead a training on NGSS or other standards. If this is not possible, we suggest using the training resources listed as a starting point for discussions.

Training Rationale:

In 2013, California adopted the Next Generation Science Standards (NGSS) for K-12 schools. The NGSS emphasize 3-D learning; integrating core ideas, practices, and crosscutting concepts for real world applications. The NGSS present a great opportunity for garden educators to leverage the hands-on value of the garden to support formal education standards. This training provides educators with an introduction on how to integrate NGSS into garden experiences and a way to understand and communicate the value of garden-based education to formal educators.

Suggested Time of Year:

September/October. We suggest offering this training early in the school year.

Suggested Workshop Length:

3 hrs

Training Objective:

Garden educators will learn the basics of NGSS and how to apply these standards to lessons in the outdoor classroom. They will be able to explain what Disciplinary Core Ideas, Cross-Cutting Concepts and Science and Engineering Practices are and will explore how to incorporate them into individual lesson objectives and outcomes. Educators will understand how the NGSS principle of learning-science-by-doing-science functions in the outdoor classroom and will practice articulating to school community members how classes in the garden are aligned with NGSS.

Training Overview:

This training explains what the NGSS are and defines crosscutting concepts, disciplinary core ideas and science and engineering practices across the elementary grade levels. It also reviews curriculum and lessons to demonstrate and explore the ways in which the NGSS are incorporated into lessons. We suggest reviewing the details of the NGSS on-line prior to leading this training. Some key terms are defined here for reference:

- *Crosscutting Concepts* are “concepts that hold true across the natural and engineered world.”

- *Science and Engineering Practices* are "what students do to make sense of phenomena. They are both a set of skills and a set of knowledge to be internalized."
- *Disciplinary Core Ideas* (DCIs) are "necessary for understanding a given science discipline."[1]

Students need to understand all three concepts to be proficient in science. Educators should understand this model and practice applying it to existing and new curriculum.

Activity Ideas:

- Disciplinary Core Idea Scavenger Hunt: Have garden educators review existing lessons on their own with the goal of finding select standards (For example: Have eduators review the kindergarten and first grade units from the *Education Outside Curriculum*, available in the Table of Contents. Once educators have discussed what the DCIs mean and how they show up, have educators break into groups to answer questions such as, "*Where in the kindergarten unit can you find activities that address the NGSS DCI: 'Organization for Matter and Energy Flow in Organisms?'"*). In small groups, have educators discuss why they chose some activities and not others. As a large group, brainstorm ways to incorporate additional activities into existing lesson plans.
- Run BEETLES Professional Learning Sessions, especially *Making Observations and Evidence and Explanations*[2].
- Have the group design two-minute challenges, as explained in *Education Outside's Best Practices for Teaching* linked in the Table of Contents, that involve common outdoor classroom materials such as soil, rocks, leaves, tape, rubber bands, and magnifying lenses. Ask them to design challenges that would require students to use the NGSS science and engineering practices (i.e. ask questions, develop and use a model, etc.).
- NGSS Scientific Practices Circus (this activity is adapted from California Academy of Sciences[3]): Create a rotation of eight stations with different lesson activities, each involving a different NGSS scientific practice. For example, one station might ask educators to look at holes in the leaves of a plant and ask participants to brainstorm as many explanations as they can for how the holes got there. Another station might have a worm bin available and ask participants what they notice and what they wonder. Have educators visit each station to perform the activities. For each station, ask educators to determine the primary NGSS scientific practice being used, discuss what grade level(s) the activity would be best suited for, and brainstorm how one might adapt the activity to make it more successful.

Assessing Understanding:

- Exit Ticket(s):
  - Have educators name as many scientific practices as they can.
  - Have educators explain the differences between disciplinary core ideas, cross cutting concepts, and scientific and engineering practices.
  - Have educators write how they would explain to an adult audience (i.e. Principal or interested parent) in three sentences or less what the NGSS are and how they relate to their lesson(s).
  - Have educators write how they would explain to a student in three sentences or less what the NGSS are and how they relate to their lesson(s).

References:

1. NGSS Lead States. 2013. *Next Generation Science Standards*: For States, By States. Retrieved from https://www.nextgenscience.org/
2. Regents of the University of California. 2019. BEETLES. *Making Observations*. Retrieved from http://beetlesproject.org/resources/for-program-leaders/making-observations/.
3. California Academy of Sciences. Educator Trainings. Retrieved from: https://www.calacademy.org/sites/default/files/assets/docs/pdf/sepcircus_lessonplan.pdf

Additional Information:

- NGSS Lead States. 2013. Next Generation Science Standards: For States, By States. *Quality Examples of Science Lessons*. Retrieved from https://www.nextgenscience.org/resources/examples-quality-ngss-design.

RESOURCES

TITLE | RESTORATIVE PRACTICES

CATEGORY | Garden Educator Training

SUB-CATEGORY | Learning & Teaching Outdoors

OVERVIEW | This document outlines a Restorative Practices training for garden educators. Education Outside partnered with the San Francisco Unified School District (SFUSD) to lead this training. We suggest contacting someone in your school district or city to see if they can lead a training on Restorative Practices. If this is not possible, we suggest using the training resources listed as a starting point for discussions.

Training Rationale:

The San Francisco Unified School District Board of Education adopted resolutions to support full implementation of Restorative Practices at all schools in the district in an effort to shift approaches to disruptive student behavior and decrease suspensions. It was essential to provide training in Restorative Practices to Education Outside garden educators who worked within the district in order for them to maintain continuity with school and district culture, and we found the framework to be an effective tool to use in the outdoor classroom to support positive student behavior. If your school or school district uses an alternative framework to support social emotional learning and positive responses to disruptive student behavior, adjust this training accordingly.

Suggested Time of Year:

September/October

This training is related to the following additional *Learning and Teaching Outdoors* trainings: **Building a Foundation for Effective Classroom Management, Behavior Management, Trauma Informed Practices**. It is also related to the Diversity Equity and Inclusion trainings, available in *Leadership for Community Engagement* linked in the Table of Contents. We recommend leading separate trainings for each of these topics, allowing educators to build on the knowledge gained in each. Please see the *Training Calendar Scope and Sequence*, available in the Table of Contents, for a recommended scope and sequence for these interrelated trainings.

Suggested Workshop Length:

2 hrs

Training Objective:

Educators will learn the principles of Restorative Practices and understand the benefits of using Restorative Practices with students. They will learn and practice proactive and responsive techniques, including affective statements, community building circles, and restorative conversations.

RESOURCES

TITLE | BEHAVIOR MANAGEMENT

CATEGORY | Garden Educator Training

SUB-CATEGORY | Learning & Teaching Outdoors

OVERVIEW | This document outlines a training for garden educators that allows them to practice various classroom management techniques learned in previous trainings, such as [illegible] and [illegible].

Training Rationale:

Trainings such as Building a Foundation for Effective Classroom Management, Restorative Practices and Trauma Informed Practices provided Education Outside garden educators with a variety of techniques to use when addressing disruptive student behavior. We found it necessary to provide additional time during training for garden educators to practice implementing these various techniques by acting out scenarios that might arise, or had previously arisen, in the outdoor classroom.

Suggested Time of Year:

September/October. We recommend leading this training in a series with the aforementioned related trainings, allowing instructors to build on the knowledge gained in each. Please see the *Training Calendar Scope and Sequence*, available in the Table of Contents, for a recommended scope and sequence for these trainings.

Suggested Workshop Length:

2 hrs

Training Objective:

Educators will practice responding to disruptive student behavior through a variety of scenarios.

Training Overview:

This training focuses on how to respond to disruptive behavior during class when prevention strategies have not worked. First, the facilitator acts out a few skits to illustrate different scenarios that might arise in an outdoor classroom and how a garden educator might respond positively. This portion of the training requires 1-3 volunteers from the audience or staff to act as the student(s). Acceptable teacher responses in these skits can vary, as illustrated in the Behavior Management Response Sheet . Between each skit, have participants debrief their observations in pairs and discuss other possible responses. The following list includes outlines of five skits:

- **Scenario 1: Student complains that they're hot.**
Response: Empathize with the student. When a student complains, they are communicating a message to you and want to know you heard it, even if they you can't do anything about it.

"I wish we had a swimming pool for you to jump in right now! I wish I had an ice cold smoothie for everyone to drink, and a huge tree with lots of shade."

- **Scenario 2: Student throws a fit when the teacher asks him to put the extra shovel away.**
Response: Name the impact, state your care, and give the student a choice between two options that work for you.

"Alec, when you are using two shovels it makes me worried that you're going to hurt yourself. I don't want you to hurt yourself! You have two choices: you can put one away, or take a 'cool off' in the peace corner. Which would you prefer?"

- **Scenario 3: Student has been consistently disruptive during class.**
Response: Give extra attention. All students need love, even the ones that seem like they don't care about your class. This helps build the relationship, which addresses behavior issues down the line.

"Alec, I was hoping you could stay after class and help me take care of the plants for a few minutes. I love having your help and I think the plants would love it too. Let's look at this plant. If you rub the leaves, you'll notice they smell like lemons!"

- **Scenario 4: Student starts acting violent during class.**
Response: Call for help and explain what's happening to other students. Do not restrain the student acting out.

"Alec is having a hard time, so we're going to give him some space. I'm going to go take everyone back inside and Ms. Smith is going to stay with him here in the outdoor classroom so he can cool down."

- **Scenario 5: Student continues to throw violent fits during class.**
Response: Remove the student from class temporarily. Name the behavior and impact to the student and propose a solution to the classroom teacher and school administration.

[To classroom teacher] "Alec has been having a hard time in garden class. I'm not prepared to give him what he needs, and it's significantly detracting from the experience for everyone else. I would like to have him sit out the next few classes and spend these with the social worker. I can have him come out for his own personal class before everyone else comes out so he still feels included. I will come and get him 15 minutes before everyone else comes out. Can you have the social worker retrieve him from the garden 5 minutes before the rest of the class comes out?"

[To Alec] "Alec I love having you in class. I've noticed it's been hard for you to follow rules, so for the next few weeks you will have personal garden classes on your own where we will practice how to be safe in the Outdoor Classroom. I'm very excited to have you in the garden and to take care of the plants with you."

Activity Ideas:

After acting out the five example skits above, have participants form small groups and practice scenarios of their own. Each participant should have a chance to act as the instructor in the skit, while the other participants act as students. After each skit, the group should debrief how the instructor responded with the following guiding questions: "What worked and what didn't?" "What would be optimal?" "What tools from the **Building a Foundation for Effective Classroom Management** or **Restorative Practices** trainings were used, and are there other tools that could be implemented?" The instructor can then act out the skit again, this time with a different response. Provide copies of the **Behavior Management Response Sheet** seen at the bottom of this document for reference during this activity.

Use the following four scenarios:

- **Scenario 1**: A student approaches you during an activity, points at another student and says, "She called me stupid." How do you respond?

- **Scenario 2**: It's the beginning of class. Your students are seated, but there's a lot of side chatter and you're having a difficult time getting their attention. What do you do?
- **Scenario 3**: During an activity, a student starts tipping over benches during class and crying/yelling at the top of their lungs. How do you respond?
- **Scenario 4**: Your last class with this group was chaotic. No one was following directions, several students cried the whole time, and one student was getting into all of your materials and dumping them out. The class is coming out for the next lesson. How would you address them when they arrive in the outdoor classroom?

Assessing Understanding:

- Exit Ticket: Ask instructors to describe how they responded in their skit scenarios in their small groups. What patterns did they notice in their responses? Did they use any techniques from the **Building a Foundation for Effective Classroom Management** or **Restorative Practices** trainings? What felt successful?
- *Education Outside's Best Practices for Teaching*, available in the Table of Contents, includes sections on behavior management and relationships. We suggest using the best practices rubric as a tool during lesson observations to assess whether or not the instructor is using effective tools for behavior management when interacting with students.

BEHAVIOR MANAGEMENT RESPONSE SHEET:

WHAT TO DO WHEN YOU DON'T KNOW WHAT TO DO

LEVEL 1 DISRUPTIONS: "Common Conflicts"		
TYPE of DISRUPTION	*EXAMPLE*	RESPONSE
ONE STUDENT: **Complaining**	*I'm cold/* *I don't want to be her partner*	**EMPATHIZE** - When students complain, they are sending you a message that they want you to acknowledge. -"I'm cold!" Response: Create a wish with them. "You sound cold! I wish I had a blanket to wrap you up in and a cup of hot cocoa for you to drink!" -"She won't be my partner:" Response: "That sounds like it doesn't feel good! Let's find someone who would be a better partner for you."
SEVERAL STUDENTS: **Interpersonal conflicts**	*They hit me/* *I don't want to be their partner*	**STUDENTS RESOLVE** - Remind them to try to solve it on their own; often they just wanted to tell an adult and will move on after doing so - Ask them, "Did you tell her how that made you feel?" - Encourage them to Ro Sham Bo to resolve small disputes - Paint a peace path on your yard, and teach them how to use it to help them resolve conflicts on their own. A peace path would include the following statements: ● I feel _____ when you _____ ● I hear that you feel _____ when I _____ ● Next time I'd like you to _____ ● Next time I agree to _____ ● (Hug, handshake or high five)
WHOLE CLASS: **Not Listening**	*Can't get students' attention*	**TRY SOMETHING ELSE** - Stay calm; students mimic your energy and tone of voice - Sometimes students just need to get some wiggles out before they're able to pay attention. See if you can find a short task that will meet their needs and then they can be ready to re-engage. - Have them "start over" and "practice" routines, like entering the garden or doing their garden jobs until they get it right. - If you find yourself saying the same thing over and over, stop saying it and try something else, or do something unexpected (sing, stand on a chair, whisper). -Positive reinforcement! Notice the students who are exhibiting the behavior you want, call them out by name. "I love that David is raising his hand." You can do this even for tasks students haven't done yet, "Simone, I love it when you wait for me to call on you. Can you try that again?" - Make sure that your lesson contains an inherently interesting component. Though this may seem obvious, when you have a prop/picture/activity that catches their eye, it's much easier to sustain attention. -Name the behavior and the impact. "When you don't listen to the directions, it takes us a lot longer to get through the activity and you all miss out on time to do garden jobs. I want you to get to do garden jobs, but in order to get there, I need you to listen to my directions and help your neighbors stay on task as well."

LEVEL 2 DISRUPTIONS: "Escalated Conflicts"		
TYPE OF DISRUPTION	*EXAMPLE*	RESPONSE
ONE - SEVERAL STUDENTS: **Disruptions**	*Students who are unsafe, who have behavioral meltdowns, who are disrespectful*	**GIVE LOVE and ATTENTION and STAY CALM** - If a student is doing something unsafe, explain why you don't like the behavior in a calm voice. "When you sit at the top of that wall, it makes me scared that you're going to fall and hurt yourself. I would be so sad if you hurt yourself. I would prefer it if you stood next to me so I know you're safe." - Neutral attention, "I see you're drawing a yellow flower." Positive attention can be triggering for some students; neutral observations give attention and love without triggering trauma. -When students are openly disrespectful to your face, you can respond by saying, "I care about you too much to argue." Or, "Bummer," in the most sad and sincere way. This gives the student the message that you care about them without giving them anything to react against. -Continue to work to build the relationship. Send high fliers simple notes, "I missed having you in garden class today! from Teacher _____." Another option is to keep them after class for a few minutes to do a simple activity together. Make eye contact with them and smile, "Good morning, it's good to see you!" Give them positive attention whenever possible.
ONE - SEVERAL STUDENTS: **Distractions**	*Multiple students who can't follow directions, or are triggered*	**MEET STUDENTS WHERE THEY'RE AT** - Build a "peace corner" in your garden where disruptive students can go to cool off. (See *DEI: Creating Inclusive Outdoor Classrooms* linked in the Table of Contents for more information.) -Scaffold to accommodate kids who are easily triggered. For example, if a student throws a fit when you ask them to pass a bowl during a cooking lesson, maybe get two bowls and let them continue holding one. -Reduce complexity of task/set students up for success. Sometimes students act out because they cannot complete the task, and get frustrated. -Co-regulation: pair several very calm students (and ideally those with social clout) with the one triggered student. This can help calm the triggered student. - Following directions takes cognitive work: Have soothing activities that are inherently interesting for students who can't handle complex tasks that day (e.g. seed sorting, digging, nature art). -Give them a choice between two options that work well for you. "Would you like to give the ball to me or put it away yourself?"
WHOLE CLASS **Not listening + Chaos**	*Whole class isn't listening, too many fires at once*	**BUILD SAFETY AND PREDICTABILITY** -Prep consequences. "If X happens, we're going to do Y." (If people start talking too much, we're going to take garden breaths.) -Know when to engage and when not to; sometimes ignoring a minor disruption is the best approach to conserve your energy and keep the class moving. -Practice basic skills. Play the game *Match Me,* which consists of asking students to do what you're doing without using words (A variation of Simon Says). Learn one tool/skill at a time. -In chaotic settings, explain what you're going to do, not what you want them to do. Instead of saying, "Everyone go to the pollinator garden," you announce, "I'm going to go to the pollinator garden." This helps students retain a sense of autonomy, and makes it seem like whatever you're doing is exciting and interesting.

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LEVEL 3 DISRUPTIONS: "When you need help"		
TYPE of DISRUPTION	*EXAMPLE*	RESPONSE
ONE - SEVERAL STUDENTS **Consistent disruption**	*Consistent unsafe behaviors*	**GET SUPPORT FOR YOUR HIGH FLIERS** - Though it never feels good, you can try telling teachers that consistently disruptive students don't get to participate in garden class for several weeks. This way class is successful for everyone else. If you have the capacity you can: -Hold make-up garden classes with disruptive students before everyone comes out. If you're busy, another time could also work. This only needs to be 5-10 minutes to be special. You can practice routines with them and give them lots of focused attention. -Have disruptive students go and hang out with another adult in the school that they have a relationship with, e.g. principal, social worker, afterschool staff during your normal class time. -Be careful with messaging about why the student is missing garden class. You can frame it as a "personal garden lesson." It is not a punishment; you are helping these students be successful. -Continue to build a positive relationship with the disruptive student(s) on the side by sending them notes, making eye contact, giving them attention. -If the practice lessons go well, you can re-introduce the disruptive students back into your regular class.
IN THE MOMENT **Violence**	*Kid is throwing rocks in class*	- SEPARATE STUDENTS TO ENSURE SAFETY -Explain what's happening to other students, "We're going to leave the room so _____ can have some space." -Get support from your school. Have phone numbers of who to call if you have serious issues coming up with students (secretary, behavior support, etc.). If your school has walkie-talkies, get one and use it. You can also send a pair of students you trust to the office to find a specific adult or alert the principal's office.
PREVENTION and REPAIR **Violence**	*A recent fight in class; what you'd do before next lesson*	**MAKE A PLAN** **-**Make a plan with the teachers of your difficult classes. "This class has been difficult. What else can I do when things get chaotic? If you don't have an idea, what can I do to support you?" -Talk to the teacher about how to talk about high-flier to other kids. For example, if _____ is having a meltdown, they might suggest you say to the rest of the class,"I don't think _____ wants to participate today but we're going to take a brain break so we can stay on track." -After difficult episodes, prepare kids for a contingency plan the next time you meet for class, "Last week we had a hard lesson. This week if it's hard again, we're going to _____." (take a brain break, etc.) -Join classes' community circles at the beginning and end of the day whenever possible, especially for your most disruptive classes. (For more on community circles, see the *Restorative Practices* training overview.)

RESOURCES

TITLE | FACILITATING INQUIRY

CATEGORY | Garden Educator Training

SUB-CATEGORY | Learning & Teaching Outdoors

OVERVIEW | This document outlines a training for garden educators on the importance of facilitating inquiry in the garden as a fundamental science skill for students to master and for educators to practice embedding in lessons.

Training Rationale:

Inquiry is a critical skill for students to develop in science classes. Inquiry encourages students to ask questions, design experiments and examine results, all of which increase students' natural curiosity and comfort with a scientific mindset. In short, how students learn is just as important as what they learn.

Suggested Time of Year:

September/October. We suggest offering this training early in the school year.

Suggested Workshop Length:

3 hrs

Training Objective:

Educators will be able to define inquiry, describe the inquiry process, and apply inquiry strategies to improve lesson plans.

Training Overview:

In this training, educators will investigate the importance of effectively facilitating inquiry in the outdoor classroom. Inquiry is an approach to learning that involves a process of exploring the natural or material world, asking questions, making discoveries, and testing those discoveries in the search for new understanding.[1] During this training, educators should both participate in authentic inquiry experiences and learn the rationale behind the inquiry process. Education Outside believed that students learn best through lessons that prioritize exceptional hands-on, inquiry-based, experiential learning methods. From this type of learning, students are able to see science as happening in the world around them and identify it as a part of their lives.

Activity Ideas:

- Use the BEETLES Professional Learning Sessions, especially Promoting Discussion and Questioning Strategies.[2]
- Have instructors form small groups to read and discuss the Exploratorium articles referenced below[3, 4] using a jigsaw. A jigsaw is a way to break up learning a topic into smaller pieces and makes learners dependent on each other for success. In this example, we would suggest that the whole group split into smaller pairs or trios and divide up sections of the articles. They would have time to read it on their own, discuss it, and then teach it to the larger group.

- Have instructors visit a physical space (i.e. a museum, park, zoo) and explore what exhibits or things sparked curiosity for them by examining what they saw and heard and what it made them think of.
- Have instructors look at a lesson plan and redesign the lesson plan to incorporate the inquiry framework.

Assessing Understanding:

- Exit Ticket: Have instructors define inquiry and explain how they will incorporate an inquiry framework into an upcoming lesson.

References:

1. Exploratorium, Institute for Inquiry. *What Is Inquiry?* Retrieved from https://www.exploratorium.edu/sites/default/files/pdfs/ifi/What-is-Inquiry.pdf.
2. Regents of the University of California, the BEETLES Project, 2019. *Questioning Strategies.* Retrieved from http://beetlesproject.org/resources/for-program-leaders/questioning-strategies/
3. Exploratorium, Institute for Inquiry. *What is Inquiry?* Retrieved from https://www.exploratorium.edu/sites/default/files/pdfs/ifi/What-is-Inquiry.pdf.
4. Exploratorium, Institute for Inquiry. *Structure for Inquiry.* Retrieved from https://www.exploratorium.edu/sites/default/files/pdfs/ifi/InquiryStructure.pdf

Additional Resources:

- BSCS (2006). "Why Inquiry Matters." Retrieved from http://www.virginia.edu/blandy/blandy_web/education/Bay/Why_Inquiry_Matters_BSCS.pdf. Accessed April 2019.

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RESOURCES

TITLE | COOKING OUTSIDE WITH STUDENTS

CATEGORY | Garden Educator Training

SUB-CATEGORY | Learning & Teaching Outdoors

OVERVIEW | This document outlines a training covering best practices for cooking outside with students, including time to practice sample recipes from the Education Outside Curriculum. This training is cross-listed in Program: Cooking Outside.

Training Rationale:

After carefully planting seeds and watching fruits and vegetables grow in the outdoor classroom, students are always excited to harvest and cook. However, cooking lessons can be intimidating for new garden educators because they require ample planning and strong classroom management. This training is important for teaching instructors how to plan and execute successful cooking lessons with students, and helping them avoid common pitfalls.

Suggested Time of Year:

November/December. We suggest offering this training around the time that garden educators will be cooking with students. Most Education Outside garden educators did cooking celebrations with students at the end of the semester, so November was an appropriate time for this training.

Suggested Workshop Length:

2 hrs

Training Objective:

Educators will be able to describe best practices for cooking outside and will feel prepared to cook with students.

Training Overview:

During this training, provide an overview of Education Outside's *Best Practices for Cooking Outside*, available in the Table of Contents, and spend the majority of the time on modeling cooking lessons and allowing hands-on time to practice a few recipes as described below. When reviewing the *Best Practices for Cooking Outside* we suggest emphasizing safety, particularly practicing good hygiene, using knives safely, and checking for allergies.

Activity Ideas:

- Split into groups and assign each group a section of the Best Practices to read and present to the full group.

- Practice a few recipes that require different types of preparation and student jobs. With each recipe, model different aspects of the *Best Practices for Cooking Outside*, such as using knives with students, dividing students into groups using job cards, and cleaning with students. If there are multiple facilitators, split into small groups and rotate through two to three stations, each with a different recipe. *Recipes for Cooking in the Outdoor Classroom*, available in the Table of Contents, includes several recipes that can be used for this training. We suggest something like the following:
    - A simple recipe with few ingredients: Herb Butter, Pesto
    - A simple recipe with students using knives or other cutting tools: Radish Salsa, Fruit Salad, Life Cycle Salad
    - A more complex recipe requiring heat: Stir Fry, Fried Rice

Assessing Understanding:

- Exit Ticket: Ask instructors to describe three key practices to ensure that cooking lessons are safe.

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RESOURCES

TITLE | TRAUMA INFORMED PRACTICES

CATEGORY | Garden Educator Training

SUB-CATEGORY | Learning & Teaching Outdoors

OVERVIEW | Education Outside contracted with Dr. Martha Merchant, licensed clinical psychologist and consultant with UCSF HEARTS (Healthy Environments And Response to Trauma in Schools)[1], to lead a training on trauma informed practices for garden educators. We suggest contacting someone in your school district or city to lead a similar training. If this is not possible, we suggest using the training resources listed as a starting point for discussions.

Training Rationale:

During annual feedback surveys, Education Outside garden educators consistently wrote that trauma informed practices trainings were highly relevant to their jobs and critical to their success. This topic is important for all garden educators to better understand student behavior and support students and school communities that have experienced various forms of trauma (i.e. abuse, neglect, societal oppression, natural disaster, violence, poverty, etc.)

Suggested Time of Year:

November/December, with additional training(s) throughout the school year. It is helpful to touch on this topic multiple times throughout the year for two reasons. First, as instructors gain more teaching experience they'll have more "hooks" on which to hang the workshop information. Second, in subsequent trainings, the trainer can ask instructors for scenarios that have arisen during their classes and spend time discussing how to handle these scenarios in future classes.

The Trauma Informed Practices Training is related to the Restorative Practices and Behavior Management trainings within this PDF, as well as the Diversity Equity and Inclusion trainings, which are available in *Leadership for Community Engagement* linked in the Table of Contents. We recommend leading separate trainings for each of these topics, allowing instructors to build on the knowledge gained in each. Please see the *Training Calendar Scope and Sequence*, available in the Table of Contents, for a recommended scope and sequence for the aforementioned interrelated trainings.

Suggested Workshop Length:

3 hrs for the first training, with additional 2-3 hr trainings throughout the school year.

Training Objective:

Educators will learn how trauma and stress affect the brain and how this can manifest in students/classrooms and in themselves. They will also learn techniques for de-escalating situations that arise in the classroom and supporting all students so that they feel safe and are able to learn.

Training Overview:

The following list outlines some of the questions to address during a trauma informed practices training.

1. How do trauma, chronic stress, and the "fight, flight or freeze" response affect the brain and body?
2. How can we shift our perspectives from "What is wrong with you?" to "What has happened to you?" How does this shift in perspective foster connection and compassion between instructors and students?
3. How can we prevent escalation in ourselves and in students when students become triggered or agitated?
4. How do societal oppressions cause trauma, and how does stress exacerbate implicit bias?
5. How do we ensure students feel physically, socially and emotionally safe so that they are able to learn?
6. How can we promote resilience in students, and how can we help students develop a sense of agency?
7. How can we help students build skills in self-management, self-awareness and social awareness?

Activity Ideas:

- Practice "brain breaks" and other mindfulness practices, including belly breathing, yoga/stretching, and playing with play-doh or other tactile objects.
- Make cool-down/peace corner kits to incorporate into the outdoor classroom. (For more on this, reference *Building Culturally Responsive and Inclusive Outdoor Classrooms*, available in the Table of Contents.)
- Have instructors complete a self-care assessment and write a personalized self-care checklist to use in the future.

Assessing Understanding:

- Exit Ticket: Ask instructors to write about a real or hypothetical situation during which a student became triggered or agitated in class. How did/would they have responded previously, and how would they respond after this training? What's one strategy or tool they will try to implement in their outdoor classroom?
- *Education Outside's Best Practices for Teaching*, available in the Table of Contents, includes sections on behavior management and student relationships. We suggest using the best practices rubric as a tool during lesson observations to assess whether or not the instructor is using trauma-informed practices and creating a space where all students feel safe and able to learn.

References:

1. *About Martha Merchant*, *Psy.D., Clinical Psychologist.* Retrieved May 22, 2019, from https://www.docmartha.org/about

Additional Resources:

- There are many additional books, websites and video resources recommended by Dr. Martha Merchant on her website.[1] The following is a short list:
  - Assessing and Treating Youth Exposed to Traumatic Stress, by Victor Carrion
  - *Culturally Responsive Teaching & The Brain*, by Dr. Zaretta Hammond
  - *Reaching and Teaching Children Who Hurt: Strategies for Your Classroom*, by Susan Craig
  - T*he Boy Who Was Raised as a Dog: And Other Stories from a Child Psychiatrist's Notebook--What Traumatized Children Can Teach Us About Loss, Love, and Healing*, by Dr. Bruce Perry and Maia Szalavitz

Education Outside does not specifically endorse any particular resource or contractor. We share this information to illustrate our approach to this topic.