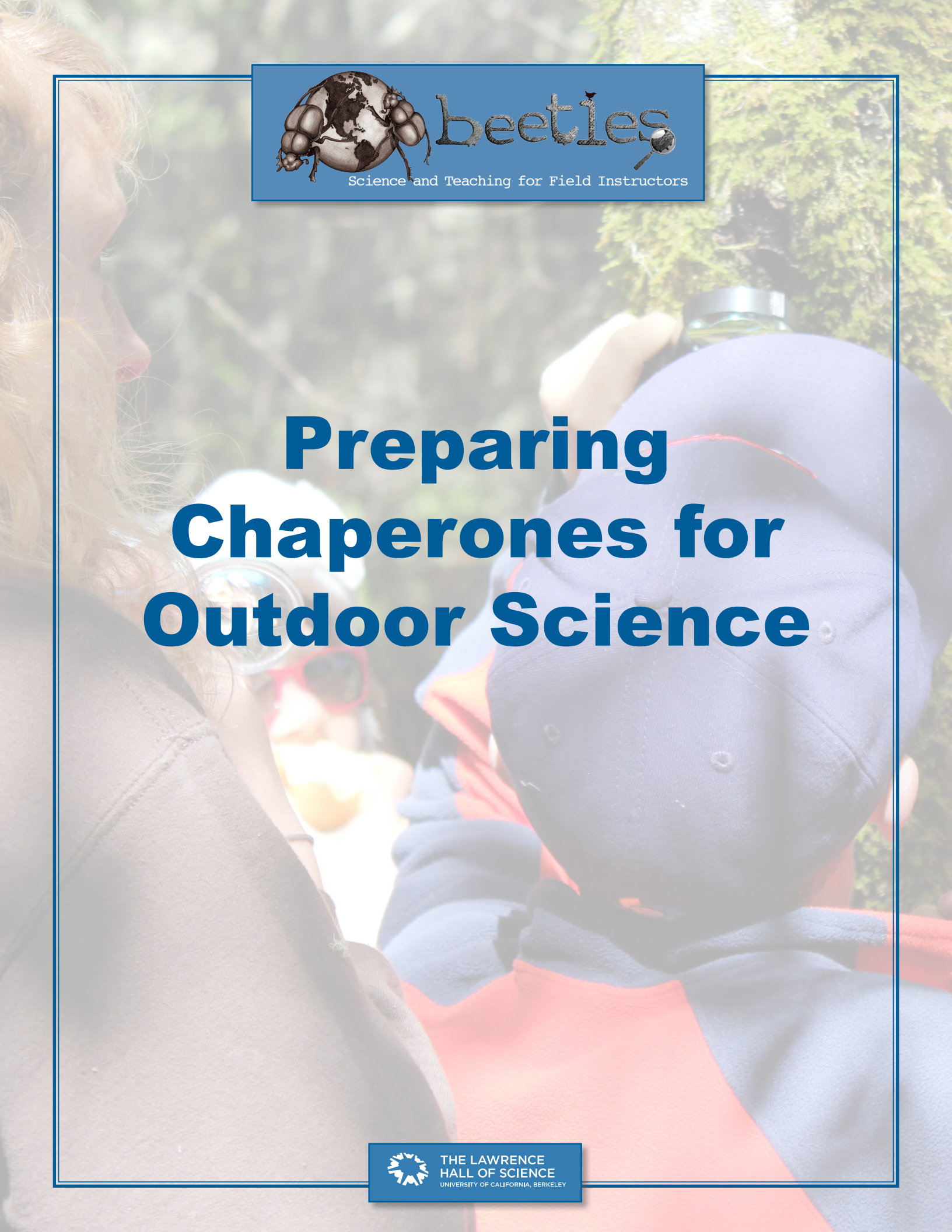

beetles

Science and Teaching for Field Instructors

Preparing Chaperones for Outdoor Science

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

ABOUT BEETLES™

BEETLES™ (Better Environmental Education Teaching, Learning, and Expertise Sharing) is a program of The Lawrence Hall of Science at the University of California, Berkeley, that provides professional learning sessions, student activities, and supporting resources for outdoor science program leaders and their staff. The goal is to infuse outdoor science programs everywhere with research-based approaches and tools to science teaching and learning that help them continually improve their programs.

www.beetlesproject.org

The Lawrence Hall of Science is the public science center of the University of California, Berkeley. *www.lawrencehallofscience.org*

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Preparing Chaperones for Outdoor Science

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Introduction

Chaperones are integral parts of outdoor science programs and can include classroom teachers, parent volunteers, young adults, or high school student volunteers in charge of supporting students. Chaperones usually take the lead on managing students during mealtimes and shower times, as well as helping groups of students build rapport and connect to one another throughout the week during downtimes.

Although field instructors are primarily in the role of teaching, facilitating, and leading activities during learning experiences, chaperones also play a critical role in supporting the function of a group during student learning experiences. A chaperone who enthusiastically participates in group activities and is able to help students engage in the program can really improve a field experience, while a chaperone who is distracting or who acts without an awareness of the instructor's goals can make a program far more difficult.

Most programs have systems in place for training chaperones in the logistics of their program, safety protocols, procedures, expectations, social-emotional learning, how to support homesick kids, and more. Ideally, chaperones should also have some training on how to build community and rapport in the group they're assigned to work with during downtime, as well as other topics that will help them to successfully create positive experiences for students.

It's helpful, and critical, to give chaperones some specific support and ideas about how to help students engage with nature and with the learning activities of your program. If your chaperones don't know anything about your program's goals for outdoor science learning, and don't have any guidance for how to support those goals aside from just paying attention to student behavior, they'll be less effective allies for the instructor. Before a field experience, helping chaperones to think about how to be an enthusiastic member of the group learning community, and how to engage with students during learning experiences, nature exploration, and discussions, is time well spent.

Where's the content?

Sometimes folks who are new to BEETLES student activities ask, "Where's the content?" or "Where's the science?" Some people think of science content exclusively as facts and names of organisms, and think teaching science is the process of delivering facts, definitions, and names to students. Telling students names, facts, and concepts—even if you tell them in engaging and entertaining ways—tends to result in short-term memorization (at best) that is often quickly forgotten, instead of achieving deep, meaningful learning.

(continued on page 5)

This short guide includes three versions of what an instructor or program leader could do with chaperones to prepare them specifically to support outdoor science learning and the group's nature exploration.

Short Version (3–5 minutes). This version is meant for a field instructor to use when there's only a little time available for engaging with chaperones on how to support learning experiences. This version could be used by an individual instructor who pulls their chaperones to the side just before leading a field experience (while the students are gathering). It could also be integrated as a supplement to a longer training for chaperones that is already a part of a program. It may not seem like a lot of time, but even a few minutes focused on how they can be supportive can really influence their participation and help improve the success of the experience.

Less Short Version (10–15 minutes). This version offers a slightly more in-depth treatment of some of the topics covered in the short version. Like the short version, it could be facilitated by an individual instructor with just their chaperones, or integrated into a program-wide chaperone training.

Long Version (45–75 minutes). This version is for programs or instructors who have some substantial time set aside to prepare chaperones, enough that they are able to cover all important program logistics and have time left to take a "deeper dive" into supporting learning experiences. In addition to lots of tips, it includes 3 mini-model activities for chaperones to participate in, and time to discuss the value of these types of activities.

Other Lengths of Chaperone Support Experiences. Time available for chaperone training varies greatly. Some programs have an entire day to work with chaperones before an experience begins; others only have a couple of minutes with chaperones before getting out in the field. Rather than provide write-ups for every possible length of time, we recommend you adapt the material we've created to make a version of this kind of training that works for your program.

If your program does have a full day or more of training time with chaperones, some BEETLES materials that could be included in a "Deluxe" version of chaperone trainings include:

- *NSI: Nature Scene Investigators* BEETLES student activity (with debrief discussion about the benefits of coaching students in looking for nature mysteries, and in science talk).
- *Questioning Strategies* BEETLES professional learning session (either the whole thing or just the section on Roles of Instructors).
- *Making Observations* BEETLES professional learning session (which includes *I Notice, I Wonder, It Reminds Me Of*).

A note about chaperone trainings. These are not scripts meant to be read out loud to chaperones. They are points to cover, and an example of how you might say them. Look at the bold headings and the text beneath them, and jot down some bullet points to guide you when you're talking with chaperones about supporting learning experiences.

Where's the content?

(continued from page 4)

"Content" is much more than just facts about science. For example, in the BEETLES activity Discovery Swap, students learn content throughout the entire activity. When students construct explanations about how a structure or behavior might help an organism, they're not only learning about that organism and how it survives in its environment; they're learning how to construct an explanation, including using evidence and reasoning to support their explanation. When students discuss their thoughts about how creek organisms might survive with their peers, or in the large group, they learn how to communicate ideas, how to listen to others, and how to work toward a deeper understanding. All of that is content. Being transparent about learning goals for chaperones and helping them to recognize different ways students learn content will also help them to better support specific activities.

Chaperone Support: Short Version (3–5 minutes)

Notes to the instructor are in italics. All else is written as spoken by the instructor.

Thanks! Let's change some lives! Thanks for being here! We're so grateful for your support. This experience can be life changing for students. This is a place where they can make shifts in who they are, and have a different experience of themselves than they do in the classroom. Students who don't normally talk to each other may connect. Students who struggle in the classroom often thrive and shine out here. Students who have never seen themselves as "sciencey" or "outdoorsey" may begin to. Kids who are often left out may make new friends and feel included, or even become leaders. Your presence makes all of this more possible. There are some things you can do specifically during learning experiences to help us out!

Being curious, engaged, and enthusiastic. The best way you can support students is through genuine curiosity, engagement, and enthusiasm. We're trying to build a learning community within the group, and you're an important part of it! We're also trying to help students become engaged and curious about nature, science, their own ideas, and ideas of others. You are role models, and students will notice what you do. If you are engaged with what we're doing, following instructions, and being enthusiastic, it helps the students see it as a worthwhile thing to do. If you are disengaged, students get the opposite message. So we ask you to simply do what the students are doing, and do it enthusiastically.

Helping to support and refocus students. We're here to support every student in the group, and different students need different types of support. To figure out how to support students individually, notice how they show up during learning experiences. Are they acting out? Withdrawn? Left out? Respond compassionately to these behaviors, and try to find a way to engage them in what the group is doing. Everyone likes to learn, but sometimes people develop habits that get in the way of that. If a student is spacing out, agitating, distracting, or disturbing others find a way to engage them in what the group is doing. For a withdrawn student, you might go over and say, "Whoa, did you see this? What do you think it is? Can you find me three more?" For a student who's being left out, you might call them in, saying "Hey, Jared, come help us figure this out!" For a student who's acting out, find some way to give them responsibility or ask for their help. Use your enthusiasm to include students who are distanced (either by choice or by exclusion). If you notice a student talking when they should be listening, try standing next to them, or putting a hand on their shoulder.

Regardless of who the student is, pump them up and appreciate them if they change their behavior and engage in some way—everyone thrives on knowing that someone notices they are participating. If you show students that you expect they can learn, want to learn, and have something positive to contribute to the group, this can turn them around. Once we've made a personal connection with them, we can draw on that to engage them in the group in positive ways.

Figuring things out and gaining transferable skills. The way we teach here might be a little different than you've experienced. Our goals are for students to explore nature, notice things, become curious, come up with questions, figure things out, and discuss ideas. We want them to learn some science ideas, but also and more importantly, to get better at some science skills. We'll give them lots of time to discuss ideas, and to explore nature to learn through their own observations. This experience is just a beginning for the students, and the goal is for them to leave eager to use their skills in other parts of nature, and in learning in general.

These approaches are based on research about how people learn, but if you're used to seeing a teacher lecture and students listen, just know that what we're doing will look different. We want to have students focused on some ideas and aspects of nature, and since we're outside, students can also follow their own curiosity. At times students might be checking out different things and talking to each other. It might seem a little chaotic at first, but that's what we want to happen.

Being a co-explorer and asking questions. During our learning experiences, students will be exploring a lot. For example, I might have sent them all out to find spider webs, observe them, and make comparisons between them in small groups. When students are exploring, you can help by asking questions, and being a co-investigator with them. Instead of telling students what you know about whatever they're exploring, do the opposite. Focus on things you don't know, and try to figure them out *with* students. Listen to their questions, or ask them questions.

Here's an example. [*Pick up an interesting stick or something else nature-ey, then ask the chaperones some broad questions,* like: "What do you notice? What patterns can you see? Do you have an explanation for that?"] These kinds of questions can be answered in many different ways so every student can have something to contribute when we ask it; they also make students observe more deeply. That's why we want to focus more on those kinds of questions when students are exploring, not questions that have one answer, like "What is it?" or "How much does it weigh?" You can use this sheet [*show Chaperone Tips sheet on page 16*] to help you come up with ideas for questions to ask students when they're exploring in nature. If students ask you a question, it's usually best to not answer it (at least not right away) but to ask questions so they observe, think, and figure things out themselves.

Participating strategically and mindfully in discussions. In addition to exploration, we'll also do a lot of discussion in our learning experiences, in pairs, and with the whole group. In pair discussions, please partner with a student and participate fully, but give students lots of time to share their ideas. During whole group discussions, it's OK to share an interesting question or an idea, but hold back from taking over the discussion, or contributing more than a couple times. Our goal is to help empower students to share their ideas and think together, so it's important to listen more than speak!

What to expect: Terrain and pace. *Explain generally what chaperones can expect in terms of terrain and pace. Explaining the value of the slow, less destination-oriented pace of an exploration hike or field learning experience, as well as giving a heads up about possibly challenging terrain, is especially helpful.*

What to expect: Activity-specific learning goals and logistics. *Explain to chaperones any specific goals you have for students, such as crosscutting concepts or science practices you're focusing on, or skills you hope they develop. Explain any logistics about specific activities that chaperones might need to know about in advance.*

Wrapping up. In general, please be curious, engaged, and enthusiastic. Interact with students, help refocus or support them in engaging in learning experiences. Be a co-explorer with students, figuring things out with them and participating mindfully in discussions. Thanks so much!

Chaperone Support: Less Short Version (10–15 minutes)

Notes to the instructor are in italics. All else is written as spoken by the instructor.

Thanks! Let's change some lives! Thanks for being here! We're so grateful for your support. This experience can be life changing for students. This is a place where they can make shifts in who they are, and have a different experience of themselves than they do in the classroom. Students who don't normally talk to each other may connect. Students who struggle in the classroom often thrive and shine out here. Students who have never seen themselves as "sciencey" or "outdoorsey" may begin to. Kids who are often left out may make new friends and feel included, or even become leaders. Your presence makes all of this more possible. There are some things that you can do specifically during learning experiences to help us out!

Being curious, engaged, and enthusiastic. We're trying to build a learning community within the group, and you're an important part of it! We're also trying to help students become engaged and curious about nature, science, their own ideas, and ideas of others. You're role models, and students will notice what you do, and it can really affect the quality of the field experience. If you talk about not liking bugs, or being upset about comfort, this will influence students' attitudes. Be enthusiastic and positive about what we're doing. If a student is squeamish, you might tell them you feel squeamish too, but you're trying to put that aside to become more curious about bugs.

Please participate actively in everything we do with students. If you're engaged with what we're doing, following instructions, and being enthusiastic, it helps students see it as a worthwhile thing to do. If you are disengaged, students get the opposite message. So the best way you can help out is to simply do what the students are doing, and do it enthusiastically. The more you do this, the more engaged you'll become, and the more you'll probably enjoy the experience yourself!

Interacting and connecting with students. Hang out with the students instead of adults. You might start out by approaching a student who is alone while we're waiting to begin, or lagging as we're hiking, and engaging them by asking them questions. During a name game, you might try to notice kids who're on the outskirts and look to them as leaders by asking them questions like, "How do we play this?" Over time, try to get little moments of connection with everyone. The more connections you make, the more you'll really care about the students, and the more effective you'll be in supporting their learning experiences.

Helping to support and refocus students. We're here to support every student in the group, and different students need different kinds of support. Noticing how students are showing up in the group can help us figure out how to support them. Is the student acting out? Withdrawn? Seeming left out? Everyone likes to learn, but sometimes people develop habits that get in the way of participating in learning experiences. If a student is spacing out, agitating, distracting, or disturbing others, find a way to engage them in what the group is doing. Ask questions like, "Did you see this? What do you think it is? Can you find me three more?" Give them a purpose or responsibility in the group. Use your enthusiasm it's contagious. Use it to get the kid excited about something they wouldn't otherwise be excited about. Pump them up—everyone thrives on knowing that someone notices they are participating. If a student is talking when they should be listening, try standing next to them, or putting a hand on their shoulder.

If you get students engaged, showing them that we expect they can learn and want to learn and cooperate, it can turn them around. Making a personal connection draws them out positively.

Figuring things out and gaining transferable skills. The way we teach here might be a little different than you've experienced. Our goals are for students to explore nature, notice things, become curious, come up with questions, figure things out, and discuss ideas. These approaches are based on research about how people learn. As an instructor I'd like the students to learn science concepts, and get better at a lot of science skills and practices, which are found in the Next Generation Science Standards. I'm not just going to give students information and terms and expect them to memorize this. We want deeper learning than that. I'm going to give them lots of time to discuss ideas, and to explore nature to learn through their own observations.

Our hope is that this experience is just a beginning for the students, and my goal is for them to leave eager to use their skills in other parts of nature, and in learning in general. One of the advantages of being outdoors is that there's interesting stuff to investigate everywhere, so students can follow their own curiosity. At times students might be checking out different things and talking to each other. It might look a little chaotic to you, but that's what we want to happen!

Being a co-explorer and asking questions. When students are exploring, you can help by asking questions, and being a co-investigator with them. Instead of telling what you know to students, you can do the opposite. Focus on things you don't know, and try to figure them out with students. Here's an example. [*Pick up an interesting stick or something else nature-ey, then, model broad questions, like:* "What do you notice? What makes you think that? What patterns can you see?"] Focus more on those kinds of questions, not questions that have one answer, like "What is it?" or "How much does it weigh." Questions like "What do you notice?" can be answered in many different ways and don't require a ton of background knowledge to answer, so all students will be able to answer it.

You can use this sheet [*show Chaperone Tips sheet on page 16*] to help you come up with ideas for questions to ask students when they're exploring in nature. If students ask you a question, it's usually best to not answer it (at least not right away) but to ask questions to get them observing and thinking and figuring things out.

Participating strategically and mindfully in discussions. During discussions, sometimes chaperones aren't sure how to participate. We'll have a lot of discussions between pairs. When that happens, please partner with a student and participate fully. Discuss the question as peers, making sure you give students lots of time to share their ideas. During whole group discussions, it's OK to share an interesting question or an idea, but hold back from taking over the discussion, or contributing more than a couple times. Our goal is to help empower students to share their ideas and think together, so it's important to listen to the students!

What to expect: Terrain pace. *Explain generally what chaperones can expect in terms of terrain and pace. Explain the value of the slow, less destination-oriented pace of an exploration hike or field learning experience, as well as give a heads up about possibly challenging terrain, is especially helpful.*

What to expect: Activity-specific learning goals and logistics. *Explain any specific goals you have for students, such as crosscutting concepts or science practices you're focusing on, or skills you hope they develop. Explain any logistics about specific activities that chaperones might need to know about in advance.*

Wrapping up. So, in general, please be curious, engaged, and enthusiastic. Interact with students, help refocus or support them in engaging in learning experiences. Be a co-explorer with students, figuring things out with them and participating mindfully in discussions. Thanks so much!

Chaperone Support: Long Version (45–75 minutes)

During this presentation, do your best to model the strategies with the chaperones that you want them to use with students. This method is more effective for your chaperone's learning, and they can begin to get an idea for how student learning experiences might look.

Times may vary, depending on how much dialogue happens. Notes to the instructor are in italics. All else is written as spoken by the instructor.

Overview

- **Introduction** (5–10 minutes)
- **About Discussion** (5–10 minutes)
- **Exploring: Being a Co-Explorer and Asking Questions** (20–40 minutes)
- **Engagement & Management** (5 minutes)
- **Learning Goals** (3–5 minutes)
- **Wrap Up** (5 minutes)

Introduction

Turn & Talk: Being a Chaperone. *Ask chaperones to find someone they don't know very well to discuss the following questions. (If you're waiting for stragglers to arrive, you can have those who are present begin discussing these questions while they're waiting, and others can join as they arrive.) Be sure that you, and any co-leaders you may have, partner with a chaperone for these Turn & Talks:*

- What do you think might be the most exciting and most challenging parts of being a chaperone during the field experience you'll be participating in?
- Describe a mentor in your life who helped you or a group to learn. What did they do that made them successful as a mentor for you?

Get the group's attention and ask a few to share out their ideas from the Turn & Talk discussions.

Thanks! Let's Change Some Lives. Thanks for being here! Thanks for your time! We're so grateful for your support. This experience can be life changing for some kids, and life impacting for others. We can do it because of you. It's an experience that can help students make shifts. Students who don't normally talk to each other may connect. Students who struggle in the classroom often thrive and shine outdoors. Students who have never seen themselves as "sciencey" or "outdoorsey" may begin to. Kids who are often left out may make new friends and feel included, or even become leaders. Students may become turned on to curiosity and learning. That's huge, and your help is part of what makes all that happen!

About Discussion

Discuss benefits of discussion activity. What do you think the benefits might be of doing an activity with students like the one we just did, where I asked you a question, had you share first with a partner, and then share with the group? [*Listen to their ideas.*]

After multiple people in the group have shared about the benefits of a discussion, bring up any of these points, but only if they haven't already been mentioned:

- Learners think about and share what they know about the topic.
- Everyone gets a chance to participate and share ideas.
- Discussion activities get learners interested in the topic.
- Students can rehearse in a safe, two-person discussion before sharing with the whole group.
- It's great for English language learners to talk in a low-anxiety, one-on-one setting.
- Peer-to-peer discussion is important for learning.
- The instructor gets to talk to a variety of students and hear their ideas.
- It helps form social connections in the group.
- It allows the group to hear many ideas (during whole-group share-outs) and see different ideas valued.

Learning by talking is an important part of learning. What you just did—talking with a partner then sharing out—is something you'll also be doing with students. We know from research that talking about ideas with peers is an important part of learning. We also know that talking about ideas with someone who knows more than we do is important.

Pair with students and participate fully. During discussions, sometimes chaperones aren't sure how to participate. We'll have a lot of discussions between pairs. When that happens, please partner with a student and participate fully. Engage in authentic discussion with students as co-investigators trying to figure things out.

Be authentic and appropriate. In any discussion, be authentic in what you share (but be mindful of appropriateness). You may need to moderate the level of what you say and your vocabulary, as compared to how you might talk to your peers, but be careful not to talk down to students, and do acknowledge the cleverness in each student's thinking.

Do more listening than talking. Make sure you give students lots of time to share their ideas. Pay attention to what students are saying, and notice their understandings, confusions, and clever ideas. Our goal is to help empower students to share their ideas and think together, so it's important to listen to them!

Participate thoughtfully and strategically in whole-group discussions. During whole-group discussions, it's OK to share an interesting question or an idea, but hold back from taking over the discussion, or contributing more than a couple of times. Participate strategically and thoughtfully, moderating how much and when you speak up. If you have an interesting question or idea that might take the discussion further, it's OK to share but don't take over, or step in with your ideas immediately before students have had a chance to share their thoughts. Don't jump in with "answers."

Exploring: Being a Co-Explorer and Asking Questions

I Notice, I Wonder, It Reminds Me Of. *Lead the BEETLES student activity, using the lesson write-up and including Inquiry Fever.*

At the end of the activity ask: What do you think the benefits might be of doing an activity with students like the one we just did?

Share some of the following benefits. *Refrain from sharing any benefits yourself at first. After multiple people in the group have shared, bring up any of these points, but only if they haven't already been mentioned:*

- The activity helps students get past seeing nature as a "green blur."
- It's student-and-nature-centered, not instructor-centered.
- It gives some structure of what to look for/focus on (if students were sent out without any tools, they might not know what to do).
- It makes it easier for students to take the "risk" of interacting and sharing ideas.
- Focusing on asking questions causes us to make more and deeper observations.
- Saying observations etc. out loud encourages collaboration and helps students focus and remember their ideas.
- By spending time with something (even a leaf!), students develop a relationship with it.

Be a co-investigator. When students are exploring, you can help by asking questions, and being a co-investigator with them. Instead of telling students what you know about nature, do the opposite and focus on things you don't know, and then try to figure them out with students. Here's an example. [*Pick up an interesting stick or something, and model broad questions,* like "What do you notice?" (a great catch-all question), "What makes you think that?" or "What patterns can you see?" *Also, model figuring things out together, like* "I wonder if maybe…" "I see what you're talking about." "What if…?"]

Ask open-ended questions. Focus more on the kinds of questions that could lead students to have a variety of responses, such as "What do you notice?", not questions that have one answer, like "What is it?" or "How much does it weigh?" You can use this sheet [*show Chaperone Tips sheet on page 16*] to help you come up with ideas for questions to ask students when they're exploring in nature. It has a section of questions to ask to encourage exploration, called Exploration Questions. It also has a section of Follow-up Questions. These are questions can be used to keep exploration going and can help take a student deeper with their thinking.

Don't provide all the information to student questions. If students ask you a question about nature or science content, it's usually best to not answer it, at least not right away. This is a great opportunity to take their inquiry further. Though your first instinct might be to whip out your phone and look to Google, please don't! That can happen back at home. Part of what we want for students during their time in our program is to learn how to come up with questions, then investigate them by observing. Instead of answering, try asking questions to help students observe, think, and figure things out. If it seems appropriate to share an answer, do it after they have observed and thought a bit.

Having a Question Keeper: *Some instructors ask their chaperone to be the "Question Keeper" of the day. They have the responsibility of writing down any questions asked by members of the group. Keep an eye out for opportunities throughout the day to investigate these questions further.*

Encourage students to figure things out. The way we teach here might be a little different than you've experienced. Our goals are for students to explore nature, notice things, become curious, come up with questions, figure things out, and discuss ideas. This method is based on research about how people learn.

Develop students' science exploration skills. As instructors we want students to learn about certain science concepts, and we also have a lot of science skills and practices we want them to get better at, which are in the Next Generation Science Standards. But we're not just going to tell students stuff and expect them to memorize it. We're going for deeper learning than that. We want to give them lots of time to discuss ideas and explore nature to learn through their own observations. Our hope is that this experience is just a beginning for the students, and that they leave eager to use their skills in other parts of nature, and in learning in general.

Accept a little bit of chaos. One of the advantages of being outdoors is that there's interesting stuff to investigate everywhere, so students can follow their own curiosity, which might lead them in different directions. At times students might be checking out different things and talking to each other. It might look a little chaotic to you, but that's what we want to happen!

Be willing to not know. As a chaperone, it might seem like you're supposed to know more than students, or be able to answer all their questions. But in this program, we're trying to seek out the edges of our understanding of how nature works. One of the traits we'll be teaching students is the scientific practice of humility about our understandings. If a student asks a question and you don't know the answer, say that you don't know! Modeling humility about knowledge is an honest and important thing to do with youth. Tell students you're not sure, and ask them what kinds of observations you could all make to try to figure out the answer, or at least get closer to understanding. You'll be modeling how to not know, how to be humble in the face of knowledge, and how to inquire.

Practice being chaperones. OK, let's give you some practice with this! Everyone pair up, now label yourselves as "A" or "B." The As are going to be the students, with Bs as chaperones. Let's say that I just told you to go make observations of different types of leaves in the area, and to compare them to each other to try to figure out why they might have different shapes. Use the questions on the Chaperone Tips sheet (*see page 16*), and ask the "students" (As) questions to help them explore! We'll switch roles in about three minutes.

Discuss the experience. Ask questions such as: What was that experience like for you? Did you learn anything? Did anything surprise you? [*Listen to their responses.*]

Gently guide student curiosity. Did anyone notice a "student" get distracted away from the leaves they were supposed to focus on by something else? How did you deal with it? One of the best things about being outdoors is that there is so much interesting stuff everywhere. That means students can follow their own interests, and their interests may be very different. Sometimes we can just let them follow those interests. But there are times when we'll be asking students to all focus on one topic, such as leaves, spider webs, fungi, lichen, or stream features.

If students get authentically engaged in observing some part of nature that isn't a part of the activity as explained by the instructor, don't reprimand them; just gently guide them back towards the prompt, with language like "Those are some really interesting observations you've made about that! Let's come back to that later. Right now, the group is observing lichens [*for instance*]. What do you notice about them?"

Engagement & Management

Supporting students. We're here to support every student in the group, and some students need that support more than others. One of our jobs is to notice how students are doing in the group, and give support to students who need it most, such as a student who is acting out, is withdrawn, or seems left out. Everyone likes to learn, but sometimes people develop habits that get in the way of that.

Helping refocus students. If a student is spacing out, agitating, distracting, or disturbing others, approach them and ask questions like, "Did you see this? What do you think it is? Can you find me three more?" Give them a purpose, or find a way for them to help out. Use your enthusiasm—it's contagious. Use it to get the kid excited about something they wouldn't otherwise be excited about. If you notice a student talking when they should be listening, try standing next to them.

During small group work. At times we'll be having discussions or explorations with students in small groups (around 3–4 students assigned to a task). During this time, circulate among groups and check in to see how they're doing. Spend extra time with groups that might need some extra support. If you notice that no one is participating, or that one student is dominating, step in and facilitate their dialogue a little bit.

Connecting with students. Pump up students and develop a relationship with them. Everyone thrives on knowing that someone notices them, and notices that they're participating. If you get students engaged by showing them we expect they can learn, cooperate and want to be involved, this can turn them around. If we make a personal connection with them, they're more likely to be engaged.

Empowering "problem children." Students with lots of energy that may be labeled as "problems" or distractions in a traditional classroom often thrive in this kind of environment, but only if given permission and encouragement to follow those innate tendencies. Students with lots of energy or little interest in book learning are often the most adventurous and dynamic while outside, and are prone to finding lots of cool critters, making observations that others miss, serving as an emotional and positive rallying force in the group, or directing their energy towards being inclusive of everyone in the group. Encourage and honor these behaviors.

Learning Goals

Becoming curious, thinking, and discussing. Our goals during nature/outdoor science learning are less about students memorizing facts, and more about the students being curious, exploring and checking things out, thinking about/discussing ideas, and deepening their understanding of important concepts. Our learning experience is less focused on "This is

particular kind of tree, and that's different kind of tree," and more about "What do you notice? What can we discover together?"

Learning how to learn. Students will certainly be learning important concepts and facts but that's not where the most important learning will happen. A major goal is for students to learn how to learn: To learn how to share ideas through discussion. To learn how to investigate. To learn how to think things through. These abilities can potentially affect their academic success and learning throughout their lives.

Becoming a learning community. We'll be trying to create a learning community within the group, in which we learn from each others' ideas and perspectives, and support each other in learning. You can play an important role in our learning culture by joining in, figuring things out along with students, asking them to share about their thinking, and being willing to seek out the edges of your understanding!

Wrap Up

Be curious, engaged, and enthusiastic role models. We're trying to help students become engaged and curious about nature, science, their own ideas, and ideas of others. You're role models. Students will notice what you do. The way you respond to what's going on can really affect the quality of the hike. If you talk about not liking bugs, that will influence their attitude. On the other hand, if a student is squeamish, you might tell them that you feel squeamish too, but are trying to put that aside to become more curious about bugs. Empathizing with the students inspires them to do the same.

Please participate. We ask you to participate actively in everything we do with the students. If you are engaged with what we're doing, following instructions, and being enthusiastic, it helps the students see it as a worthwhile thing to do. If you are disengaged, students get the opposite message. So the best way you can help out is to simply do what the students are doing, and do it enthusiastically. The more you do this, the more engaged you'll become and the more you'll enjoy the experience yourself.

Interact with students. We'd like to ask you to avoid hanging out with other adults. Hang out with the students instead. You might start out by approaching a student who is alone while we're waiting to begin, or who's lagging as we're hiking. Ask them questions, such as during a name game find some way to engage with them by asking , "How do we play this?" Over time, try to get little moments of connection with everyone. The more connections you make, the more you'll really care about the students, and the more effective you'll be in supporting them.

Thanks again! There's actually research about student outcomes improving when chaperones are participating alongside them. Just by being there and participating, you'll be helping out.

Research: *If you're curious to know more about this research, it's from a report by the National Fish and Wildlife Foundation titled* Environmental Education and Community Stewardship Report: Encourage Role Models. *"When students develop role models, programs are effective (Dillon et al., 2007; Cross et al., 2012). For instance, when students' regular teachers actively participate in field trips alongside environmental education instructors, students' outcomes are strong (Stern et al., 2008)."*

Note: Print and cut out 1 copy of this tip sheet for each chaperone accompanying your group.

Chaperone Tips

Thanks so much for helping make our field experience a success!

How to participate:

- Be curious, engaged, & enthusiastic
- Interact with students
- Help refocus and support students
- Figure things out with students
- Ask questions of students
- Explore with students
- Participate in discussions without taking over
- Pair with students, circulate, and facilitate dialogue when necessary during discussions and small-group work

Questions to support exploration:

- What do you notice?
- What do you wonder about it?
- What does it remind you of?
- How does it compare to _____ ?
- How might you explain that?

Ask any question you are really wondering about!

Follow-up questions:

- Say more about that…
- What makes you say that?
- What's your evidence for that?
- How could we be more sure?
- What do you think about _____ ?
- What else do you know about this?