



beetles

Science and Teaching for Field Instructors

Student Activity Guide

Group Agreements for Science Discussions

A productive, collaborative learning culture—one in which students actively participate and feel comfortable sharing their ideas and thinking with one another—is key to supporting students’ success in any learning experience, including outdoor science experiences. Introducing group agreements for science discussions sets up a productive learning culture by making critical thinking skills and science and engineering practices visible and accessible to students. Agreements also give students tools that support them to be aware of how their participation affects group dynamics, inviting them to co-create an equitable and inclusive learning environment.

In *Group Agreements for Science Discussions*, students think about characteristics of discussions they’ve participated in or teams they’ve been a part of that were successful or productive, and others that weren’t. Then, they discuss specific group agreements that will support them in participating in the outdoor science discussions they’ll be having throughout the field experience. Next, they think about what it might look like to put each agreement into practice. Later in the field experience after students have participated in some science discussions, students reflect at both an individual and group level on how they did at using the agreements and how this process impacted the group’s learning.

Students will...

- Think about which group and individual behaviors support successful discussions.
- Discuss a list of group agreements for science discussions.
- Think about and discuss how to put group agreements into practice during a science learning experience.
- **OPTIONAL:** Pick one of these agreements to focus on in an upcoming discussion or experience.

Grade Level:

Grades 4-8. Adaptable for younger or older students.



Timing:

20–35 minutes

Related Activities:

Argumentation Routine, Thought Swap (formerly Walk & Talk), Most Successful Organism Discussion, Fire Management Discussion



Materials:

See the Materials and Preparation section on page 3 for details.

Tips:

To ensure a successful experience, review the teaching tips found on page 2 and throughout this guide.



Setting:

Anywhere a group can circle up comfortably and hear one another.



Equity, Inclusion, and Cultural Relevance (informed by Youth Outside):

This activity has been designed to demonstrate how to create an equitable, inclusive, and culturally relevant teaching and learning experience. Read more on page 13.

NEXT GENERATION SCIENCE STANDARDS

FEATURED PRACTICE

This activity supports students in deepening their capacity to engage in the Science and Engineering Practice of *Engaging in Argumentation from Evidence*. For additional information about NGSS, go to page 15 of this guide.



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Group Agreements for Science Discussions

ACTIVITY OVERVIEW

Group Agreements for Science Discussions	Learning Cycle Stages	Estimated Time
Thinking About Successful Discussions and Teamwork	Invitation	5-10 minutes
Introducing Group Agreements	Exploration Concept Invention	15-20 minutes
Reflecting and Wrapping Up	Reflection	5-10 minutes (later in the field experience)
TOTAL		~25-40 minutes

Note: the Application learning cycle stage of this activity occurs as students call on group agreements and participate in discussions in the course of other activities.

Read the Instructor Support Section. Beginning on page 9, you'll find more information about pedagogy and standards.

Introduce agreements early on, at a time when students can focus.

Introducing group agreements early on in the field experience sets the expectation that discussion will be a key part of the group's learning. It scaffolds skills that students can use to participate in discussions throughout the field experience.

Offering science discussion agreements and other program expectations.

Some programs offer general group agreements or behavior expectations for students. In this case, it's still valuable to introduce science discussion agreements, too. Science discussion-specific agreements, such as sharing and asking for evidence or disagreeing productively, aren't typically included in general group agreements and are critical thinking skills that will support students' participation in science learning experiences. If you don't want to have two sets of agreements, consider choosing a couple of science agreements to add to your general set of expectations.

General practices, not required behaviors. These group agreements are examples of some skills and attitudes that can support students' successful participation in science discussions. Frame each agreement as a tool that students can use, (not a rigid or singular way of participating), then ask students for examples of what it could look like to follow the agreement. This gives students the agency to put each agreement into practice in ways that are authentic to them and inclusive of their culture and background.

Field Card. On page 18 of this guide, you'll find a condensed, pocket-sized version of the lesson that you can carry in the field.

TEACHING TIPS

PREPARATION

1. **Group agreements can vary—choose a set that will meet the needs of your students.** There are several sets of group agreements educators use to successfully support science discussions. See page 11 for alternative group agreements you could use. Choose the agreements that make the most sense for you and your audience or come up with your own agreements that meet your needs.
2. **Pick a time and location when and where students are most likely to be able to be engaged and focused.** Think ahead about a location and setting where students will be able to engage in discussion. This could be in or near a classroom or indoor area before students head out for the field experience so they're less likely to be distracted. Instructors have also found success introducing these group agreements after an initial team-building exercise when students can use the agreements to guide their thinking about working together.
3. **Create a sign with your chosen group agreements.** A sign that shows your group agreements will support all students (especially emerging multilingual learners) in processing the instructions of the activity. It also helps the group remember your agreements throughout the field experience.
4. **OPTIONAL: Write each agreement on index cards or sentence strips.** If you think your students might struggle with discussing agreements in a large group or might benefit from some pair shares before a large-group discussion, consider writing each agreement on a few index cards or sentence strips. Before discussing agreements in the large group, give pairs time to look at the cards. Invite pairs to choose agreements they find interesting or familiar and then discuss why the agreement might be important for the group and what it might look like to follow it. Then, briefly discuss each agreement as a group, listening to ideas from a few students and reframing their ideas for clarity as necessary.

MATERIALS

For instructor:

- 1 piece of cardstock, recycled cardboard, or small poster board on which to write the group agreements (Note: This should be something sturdy enough that you can carry it for reference throughout the field experience.)
- pen or permanent marker
- OPTIONAL: index cards or sentence strips with your group agreements written on them

Student-generated agreements. Some instructors or programs might choose to have students come up with their own group agreements for discussions. This can increase student buy-in and ownership in the agreements, but it also takes more time and requires active facilitation from the instructor. See page 11 of the Instructor Support section for more on how to guide students to generate agreements.

Practices vs. agreements. If you think the term *practices* will be easier for your group to understand than the term *agreements*, use that term. We intentionally chose not to use the term *norms* because it can send a message that there is one normal or accepted way to participate in discussions, leading students with cultural practices that don't match what has been put forth as normal to feel marginalized. For more on why we chose not to use the term *norms*, see page 15 of the Instructor Support section.

TEACHING NOTES

Logistics of the *Thought Swap* routine (formerly known as *Walk & Talk*). See the BEETLES Activity *Thought Swap* for the logistics of this discussion routine. Wondering why we changed the name from *Walk & Talk*? As part of an effort to use more inclusive language in our resources, we changed the name so we were not normalizing walking and talking as the only ways of moving and communicating.

Thinking about teamwork instead of discussions. If your students don't have experience participating in discussions, shift the question and ask instead about a group they've been in (such as a team, a class, a musical group, their family, their friends, etc.). Some ideas they share may not apply as much to discussions, but the question will get students thinking about working together and connecting these ideas to their own experiences.

Connect back to students' ideas. Wherever possible, make connections between the agreements you introduce and the ideas students shared in the initial *Turn & Share* about behaviors that can lead to productive discussions.

Group agreements can vary. See page 11 for other sets of group agreements you could use to support students in participating in science discussions. Choose the agreements that make the most sense for you and your audience or come up with your own agreements.

Thinking About Successful Discussions and Teamwork

1. **Ask students to *Turn & Share* or *Thought Swap* (formerly known as *Walk & Talk*) about a discussion or conversation they have had that felt productive and positive and the kinds of behaviors that made this possible.** Ask students the following:
 - ▶ *Think back on a discussion you've participated in or a conversation in which people were able to share ideas and learn together. What were things people did to make the discussion work that way? What kinds of behaviors made it possible for different people to share ideas and learn?*
 - ▶ *Now, think about a discussion you've participated in when you weren't comfortable sharing. Why do you think that was?*
2. **Hear a few responses, asking follow-up questions and intentionally calling on several students.** Students will be sharing from their experiences when answering these questions, and their perspectives may differ. Each student's perspective and experience is valid, so make sure to be accepting of different student responses. If you find yourself looking for someone to respond with the right answer, that may be a sign that you may need to reword your question to allow for a bigger range of possible responses.
3. **Share that during the field experience, the group will work together as a team to learn science and other topics and discuss and share ideas.**
4. **Share that group agreements can help the group discuss interesting ideas, work together as a team, and use science to learn about the world around them.**
 - ▶ *Have you ever been in a discussion where only a few people shared, and you didn't get the chance to share an idea you had? Or, have you done a group project when people didn't listen to one another's ideas?*
 - ▶ *We're going to come up with group agreements that will help us discuss cool and interesting ideas, work together, and learn.*

Introducing Group Agreements

1. **Introduce each agreement, invite students to *Think, Pair, Share* about what they think that agreement means.** Then elaborate on, provide examples of, or act out each agreement as necessary. Review each agreement. Ask students to quietly think about what they think each agreement means and then discuss it in pairs. Next, listen to ideas from students about what each agreement means or what it could look like to follow it. After a few students share, add context from the points below or share or act out examples of what it could look like to follow the agreement. Strike a balance between listening to students' ideas, thoroughly explaining each agreement yourself, and giving several examples of different ways students could make use of each agreement. The goal is to reach a point at which the group is clear about each agreement without dragging the process out too long.

Below is a set of common group practices for science discussions and examples of what an instructor might say and do to explain each one. We

recommend starting with the first four agreements shown. Then, make a decision based on the needs of your group. If they are still focused and engaged, you might want to add one or two more agreements. If students are having trouble staying engaged, or if you think they'd benefit from focusing on just a few agreements for now, stop there. You can always introduce more agreements later in the field experience.

- **Listen actively and share ideas.** Ask:

- ▶ *What do you think listen actively and share ideas means? Why is that important for our group?*

Add the following ideas if students don't mention them:

- ▶ *To have a discussion, we have to share our ideas. Our group is stronger if we hear one another's ideas and perspectives.*
- ▶ *If people share ideas, we could have some really interesting discussions, and we will learn from one another.*
- ▶ *If people don't share ideas or if only a few people do, then our discussions won't be as interesting, and we will miss out on hearing important perspectives.*
- ▶ *If you want interesting discussions, please share! Don't worry about having the right idea to share.*
- ▶ *Your ideas will make the discussion richer. We want to hear them. There is value in every idea on the topic we're discussing.*
- ▶ *In order to have a discussion, we also need to listen to one another. Listening can look different for different people. Some people might listen best while looking directly at the person sharing. Others might do better looking away now and then or holding a small stick or object to help them focus their attention. So, we say, "Listen actively" to mean that every person should make an effort to listen in a way that works for them. What are some different ways that active listening might look like or sound like? What might make the person sharing feel like they're not being listened to? [Listen to students' ideas and act out or ask a student to act out some of the different ways to listen actively that the group brings up.]*

- **Share and ask for evidence.** Ask:

- ▶ *What do you think it means to share and ask for evidence? Why is that important for our group?*

Add the following ideas if students don't mention them:

- ▶ *In science discussions when we share our ideas, we need to include evidence or reasoning. Do not just say something like, "An elephant made that mark," if it's not based on evidence.*
- ▶ *When you make an explanation, you need to share your evidence or your thinking behind it by saying something like, "I think those marks on the bark may have been caused by squirrels, because I've seen squirrels here, and I've seen them run up and down trees before."*
- ▶ *This helps us to understand what you are thinking and to work toward a deeper understanding as a group. If someone shares an idea without evidence we can respectfully ask, "What's your evidence for that?" or "What makes you think that?"*

TEACHING NOTES

Keep it moving. Students might have a lot of ideas to share in response to each agreement, and there's a lot an instructor could also say about each of the points here. Keep the conversation moving. If it drags on, students might tune out or lose interest. Hear a couple of student ideas, add some information and examples if students' didn't include a key aspect of an agreement, and then move on.

Why not say, "Listen politely"? Avoid telling students to listen politely because this sends the message that there is only one type of behavior that is acceptable. Instead, ask students to share ideas about what it might look like to listen actively and make it clear that there are many acceptable behaviors.

Different ways of listening. Listening well is key to participating in discussions, but be aware that different cultures have different ways of listening respectfully. For example, in some cultures, interrupting someone and sharing ideas quickly is a common and expected behavior; in other cultures, it is seen as rude. In some cultures, it is expected to make eye contact with a person when they are sharing; in other cultures, this is not an expectation. Create an inclusive environment for students by explicitly acknowledging that there are different ways to listen well.

Some useful definitions. If your students aren't familiar with the terms evidence and explanation, take the time to offer some definitions and discuss examples. Then, use these terms with students while investigating something interesting to them.

Data: Factual information such as observations, measurements, and test results.

Evidence: Data that help answer a question, form an explanation, or disprove an explanation.

Explanation: An evidence-based story about how or why something in the natural world appears or happens. A scientific explanation must connect data or phenomena (a real-world example or observation) with accepted scientific knowledge.

TEACHING NOTES

An alternative to step up, step back.

The agreement *Take space, make space* is another name for the commonly used group agreement *Step up, step back*. *Take space, make space* is an alternative that's more inclusive, acknowledging that not everyone moves by taking steps.

Demographics and student participation.

Student participation in discussions can be affected by gender, race, class, and other identities. The agreement *Take space, make space* can break up existing patterns and make for a more equitable discussion environment by giving students a tool to make space for others to participate. You can support this by using wait time (waiting 3 or more seconds after posing a question to call on someone) and by actively trying to call on students who tend to be marginalized in science learning experiences, such as students of color and girls. If only a few students raise their hands every time there is an opportunity to share, try building in more opportunities for pair or small-group conversations. Or say, "I'm going to wait until we have a few more hands up," or "Would someone who has not shared yet like to share before I see hands from those who have already shared?" Before moving on to a new topic, you can also pause and say, "I'm going to wait a moment in case there's someone who hasn't had the chance to share yet who wants to share."

- **Disagree productively to deepen understanding.** Ask:
 - ▶ *What do you think it means to disagree productively to deepen understanding? Why is that important for our group?*

Add the following ideas if students don't mention them:

- ▶ *An important part of science is considering different ideas and explanations, trying to figure out what might be wrong with each new idea as you try to work toward the best possible explanation given the evidence you have.*
- ▶ *Disagreeing in a science discussion is a chance to listen to someone else's idea and to try to understand what they are thinking. We say, "Disagree productively" because the goal of disagreement in a science discussion is to try to come to a deeper understanding and find the best explanation possible.*
- ▶ *We can keep that goal in mind by disagreeing respectfully and productively and not saying things like, "You're wrong!" or "That's stupid."*
- ▶ *What might be some other ways of disagreeing in a non-respectful way? What might be some ways to respectfully disagree or disagree productively? ["I see your point, but I have a different idea" "I'd like to disagree because" "In my experience, . . ." etc.]*

- **Take space, make space.** Ask:

- ▶ *What do you think it means to take space and make space? Why is that important for our group?*

Add the following ideas if students don't mention them:

- ▶ *The more voices shared in a discussion, the more perspectives we will get. If you notice that you are sharing a lot more than others, try pausing to wait until others have had the chance until you share your ideas.*
- ▶ *If you are not sharing much, we invite you to take space and share! Or, think about why you are or aren't sharing.*
- ▶ *We don't want to put people on the spot by saying that you have to share in the group, but we do want everyone to have space if they want to share.*
- ▶ *Each one of us has a perspective to contribute, and if we intentionally take space sometimes and also make space for others, we can get a diversity of perspectives and learn more as a group.*

- **Keep an open, curious mind.** Ask:

- ▶ *What do you think it means to keep an open and curious mind? Why is that important for our group?*

Add the following ideas if students don't mention them:

- ▶ *Have you ever been around someone who won't change their mind, even when the evidence goes against their idea? Pretty frustrating, huh?*
- ▶ *It's important in science discussions (and in life!) to keep an open mind.*
- ▶ *Changing our minds can sometimes be seen as a sign of weakness, but changing your mind can actually be a tremendous strength. It is a sign of open-mindedness, flexibility, and scientific thinking. Try to be willing to change your mind and be curious about other people's ideas, experiences, and explanations. The more curious we are about others' thinking, the more we can learn.*

- **Build on others' ideas.** Ask:

- ▶ *What do you think build on others' ideas means? Why is that important for our group?*

Add the following ideas if students don't mention them:

- ▶ *It's not a real discussion if people just take turns sharing their own ideas without responding to one another. Let's try to listen to other people's ideas and sometimes build on them, such as: "Building on what Rahul said about squirrels making the marks on that tree, I'd like to add that I noticed the bark is missing where the squirrels scratched. I've heard that squirrels build nests, and I wonder if maybe they use shredded-up bark from the tree for their nests."*

2. **Invite students to add more agreements to the list, calling upon their life experiences and backgrounds.** Ask students if they have any more agreements they want to add to the list. Encourage them to think about practices or agreements from their family, classroom, or another group like a sports team or music group.
 - ▶ *What are some practices or expectations from your home life, class, or another group like a sports team or musical group, that you think could help us learn together in discussions and group activities?*
3. **Offer the idea that group agreements are challenging skills that everyone is learning and working on.** Each of these agreements, such as *listening actively* or *building on others' ideas* are skills that can be challenging to learn to do well. Share that each activity is a chance for students to work on their discussion skills.
4. **Encourage students to support one another, acknowledging that it's okay if they aren't perfect. Offer the idea that the group can help one another notice how they are doing.**
 - ▶ *It's okay if we're not all perfect all the time. As a group, we are here to learn and support one another. We can help one another notice when we're doing a good job and when we could do better with one of these agreements, but didn't realize it at the time.*
5. **OPTIONAL: Invite students to pick one agreement on which to focus during a discussion or learning experience. Then, give them a moment to silently think about it or discuss it with a partner.** While students should try to use all the agreements, they could choose one to focus on, trying to get better at it as a skill throughout the learning experience. Give students a moment to think about one group agreement they want to focus on and then give them time to think about it quietly or share it with a partner.
6. **Ask students if they have questions about the group agreements.** Then, move on with the learning experience.
7. **Refer back to the group agreements throughout the field experience, especially if the group reaches a moment of disagreement or difficulty.** Point out when the group is using an agreement in a discussion. If the group is struggling during a discussion, refer back to the agreements

TEACHING NOTES

Adding agreements later. All these agreements are useful for participating in science discussions, but introducing too many at once can be overwhelming for students. If students are starting to get antsy, or you think it's too much for your students to start using all these agreements at once, consider skipping *Build on others' ideas* and *Keep an open, curious mind*. Or, consider introducing them later in the field experience after the group has had the chance to participate in a few discussions.

Prompts to guide discussions about agreements. "Two questions I use to help guide groups in coming up with agreements for working together are: What do I need to feel seen and heard? What does the group need to be productive and efficient in working together?" —José González, founder of Latino Outdoors

Optional focus. Asking students to focus on one agreement during a learning experience can help them learn and develop their discussion skills. However, that might be overwhelming for students to think about at this stage of learning. You could also ask students to pick an agreement to focus on later or at another point during the learning experience. If you ask students to focus on one agreement, be sure to include the optional step in which they reflect on how it went for them afterward. Reflecting on what they did, how it impacted their learning or the group, and what they might do next time is a critical part of how students improve as learners.

TEACHING NOTES

Integrating science discussion agreements with other program expectations. Many programs have agreements and expectations that focus on general behaviors and are used by everyone in the program. Specific group agreements that offer skills and practices for science discussions can offer support for your more general goals by helping to create an inclusive and productive learning culture for groups of students.

Maintaining group agreements. Group agreements aren't as effective if you introduce them first thing with students and then never bring them up again. Be intentional in supporting students to follow the group agreements and to start building the skills to participate in discussions. Find opportunities to refer back to the agreements throughout the learning experience. If a student makes a comment or participates in a way that connects to one of the agreements (e.g., using evidence in their statement or adding to someone's idea), consider pointing this out to the group. See page 12 of the Instructor Support section for more on how to maintain group agreements throughout a field experience.

and encourage the group to use them (without singling out any individual students for failing to meet one of the agreements).

Reflecting and Wrapping Up

1. **After group discussions, take a moment to refer back to the agreements, noticing how the group did as a whole (without singling out any individual students for failing to meet one of the agreements). Point out examples of when the group has a successful discussion or uses one of the agreements.**
 - ▶ *How do you think we did as a group in using our agreements in that discussion?*
 - ▶ *Are there any agreements that, as a group, you think we used really well? What about agreements that, as a group, we could get better at or use more effectively next time?*
2. **Toward the end of a discussion or a field experience, invite students to reflect on how they did with using the group agreements:**
 - ▶ *Take a moment to think about our group agreements. How do you think you did at using them?*
 - ▶ *Were there any specific times that you can remember using one or more of the agreements? How did that impact your experience or the group?*
 - ▶ *Were there any opportunities you missed to use a group agreement?*
 - ▶ *It's okay if you missed an opportunity or feel you have room to grow. (We all do!) These can be challenging skills to learn, but they are learnable and important.*
 - ▶ *What are goals you might set for yourself the next time you're participating in a discussion like this one?*
3. **OPTIONAL: Toward the end of a field experience, invite students to reflect on how using group agreements helped them learn together.**
 - ▶ *How do you think the group agreements helped us to work together and learn?*

Instructor Support

Teaching Knowledge

Why Include Discussion in Science Teaching?

Learning is a social process, and discussion . . .

- **. . . supports deep conceptual learning.** Learning occurs through discourse within social interactions (Rogoff, 1998; Vygotsky, 1978). When students share what they already know about something, it helps them get ready to make connections between new ideas and what they already know and to build a more accurate understanding. Engaging in discussions and conversations about ideas supports creative and complex thinking. When students make connections between their own ideas and those of their peers, they create more meaningful conceptual frameworks. Noticing disagreements between their ideas and those of others supports students in building common understanding and developing more accurate understandings of concepts. Research has found that giving students opportunities to discuss ideas and analyze the arguments of others helps them develop more accurate scientific knowledge than they get through memorization.
- **. . . provides a window into students' thinking and ideas. For instructors,** any kind of student discussion can provide a window into students' prior knowledge, skill level, personality, and lived experiences. Discussions provide insights into students' ideas, which can then be used to guide instruction. Student discussion is an essential part of teaching that is truly responsive to individual student's backgrounds and lived experiences.
- **. . . fosters student-centered learning.** When student ideas and input are at the heart of learning environments and science experiences, students get the message that their thinking counts and that they are capable of making sense of the natural world. Student-centered instruction and discussion-based learning takes into account the importance of the social context of learning, plays to the strengths of students from cultures that particularly emphasize verbal processing, and promotes collaboration as students co-construct understanding with their peers.
- **. . . supports social and emotional learning (SEL).** Participating in discussions offers students opportunities to practice SEL competencies such as Communication, Perspective-Taking, Reflection, Evaluation, and Empathy. Discussions also offer students opportunities to practice Self-Awareness and Social Awareness through thinking about how much they are participating and their impact on others.

Group Agreements for Science Discussions

"Students have to feel a sense of trust that their ideas will be taken seriously and that disagreements will be handled respectfully, so that ideas—not individuals—are challenged." —TERC Talk Science Primer

TEACHING NOTES

More on SEL and discussions. Want to learn more about the connections between SEL and discussions? Check out *Supporting Social and Emotional Learning in Outdoor Science and Environmental Education Programs* [<http://beetlesproject.org/resources/supportingSEL/>]. The BEETLES activity *Social Emotional Learning Routine* [<http://beetlesproject.org/resources/for-field-instructors/selroutine/>] also offers a structure for guiding students to identify and reflect on SEL skills they can work on while participating in outdoor science learning experiences, including discussions.

Support for leading discussions.

Leading science discussions is a skill that takes practice and intention. The TERC Talk Science Primer (https://inquiryproject.terc.edu/shared/pd/TalkScience_Primer.pdf) and BEETLES resources on leading discussions (<http://beetlesproject.org/resources/integrating-discussion-instruction/>) offer ways to deepen your science discussion leading skills.

TEACHING NOTES

Group agreements for science discussions . . .

- **. . . support student engagement and management.** Group agreements or practices can be critical to students' success and participation in learning experiences. Program leaders have observed that field instructors who communicate clear expectations to students (and then hold them accountable) tend to have more successful discussions and more collaborative groups of students; this is corroborated by research in classrooms. Field instructors who skip setting group agreements or do not communicate any expectations to students tend to struggle more with student discussions and with student management. Some programs or instructors have shared that they avoid setting expectations because they want their students to have fun. However, agreements to guide participation can actually lead to more fun for all students—lack of structure or ideas about how to participate can be intimidating. Having agreements outlined clearly can also relieve social worries by showing students ahead of time what is expected of them. When students know what the expectations are and that they and others will be held accountable for them, they can feel more supported to take productive risks, take on academic challenges, or try out new ways of participating.
- **. . . help build a learning community and culture of science discussion.** Bringing up expectations and agreements specific to participating in discussions is a chance for a group of students to think about what it means to be part of a learning community. As students think about how to build on one another's ideas and work together toward deeper understanding, they are thinking about how to work as a team and how to participate in a collaborative learning community.
- **. . . scaffold skills needed for participating in science discussions and learning experiences.** Participating in group discussion isn't easy. Group agreements make thinking tools available to students. Specific practices for science discussions offer students scaffolded examples of how they can participate in the learning experience by using scientific thinking skills. As they use these skills, students who might not have thought of themselves as science kids or good at science may develop science identities and realize that they are capable of scientific thinking. Group agreements also give students tools to join discussions. These tools can then be transferred across learning settings and disciplines and support students to become more independent learners in general.
- **. . . highlight and scaffold SEL competencies.** Group agreements can accelerate students' SEL growth by increasing their awareness of specific SEL competencies required for participating in discussions, such as Perspective-Taking, Social Awareness, Communication Skills, and Self-Awareness. Group agreements also offer students specific behaviors they can use to put SEL competencies into practice as they engage in academic learning and can shine a light on group dynamics and dominant cultures that affect how students participate in all group activities.

Alternate Sets of Agreements

There are many useful agreements for science discussions. If a different set of agreements will work better for your students, use them. As you introduce whichever agreements you decide to use, take the time to probe students' thinking, ask them for examples of what it could look like to follow the agreements, add on to clarify expectations, make sure there is a common understanding, and make room for many ways to participate. For example, *Disagree productively* and *Everyone participates* both need clarification to make sure they don't just reinforce dominant cultural norms.

Set 1

- Listen actively and share ideas.
- Share and ask for evidence.
- Keep an open, curious mind.
- Disagree productively.
- Work toward a deeper understanding.

Set 2

- Everyone participates.
- Support claims with evidence.
- Challenge ideas, but respect the person.
- Revise and rethink often.

Student-Generated Agreements

Inviting students to come up with their own group agreements can be a tricky but rewarding process. Giving students agency in coming up with the agreements can lead to more buy-in and engagement. It is also a way to validate students' lived experiences and have the values and practices of the group emerge from the individuals within it. This approach also takes more time; if it is not facilitated carefully, it can reinforce the existing dominant culture of the group (which might not be inclusive of all students) instead of creating an equitable and inclusive learning environment.

Since the group will not yet have in place agreements (such as *Take space, make space*) that are designed to help participation be more equitable, it is on you as the instructor to make sure there are equitable opportunities for all voices to contribute to the conversation as the agreements are created by the group. As is written in this activity, give students the opportunity to discuss what they think each agreement means and what it might look like in practice. This gives you the chance to reflect back to students and highlight ideas or nudge them in a more inclusive direction.

A general approach and sequence to student-generated agreements for discussions might look like the following:

1. **Students Turn & Share or Think, Pair, Share.** Give students time to *Turn & Share* or *Think, Pair, Share* about discussions or groups they have been involved with that have been productive and worked well together.

TEACHING NOTES

Reflecting on unconscious bias. Try to respond evenly to students of different genders, races, and backgrounds. This takes practice, care, and reflection. Research has shown that teachers consistently call on and respond more enthusiastically to answers from male students even when they are trying not to. (For more on this research, check out the Background Section of *Promoting Discussion* and/or the book *Failing at Fairness: How Our Schools Cheat Girls* by Myra and David Sadker.) Reflect and notice the following over time: Are there patterns in how you respond to students? Are they intentional? How might this be influencing your students' participation? If you want to learn more about creating an inclusive learning experience, see page 13 of the Instructor Support section.

TEACHING NOTES

Listening and responding to students. How you respond to student observations and comments matters. Create a culture in which students feel safe sharing ideas by frequently asking broad questions that have multiple acceptable responses and by giving all students neutral, consistent, accepting responses to these questions. When we react to student responses to broad questions by showing a preference for some responses over others, such as, “Yes, that’s right” or “No, but keep thinking,” we’re sending the message that only certain ideas are acceptable. When we give neutral, accepting responses such as, “Hmm...interesting. Can you say more?” or “Thank you for sharing. What do others have to say?” we encourage a group culture of participation and sharing.

2. **Students Turn & Share about agreements or practices.** Ask students to *Turn & Share* about agreements or practices that would help the group discuss ideas well together. Invite the group to think about their experiences with groups they have been part of such as their families, classrooms, sports teams, music groups, or others.
3. **Take in ideas from the group.** As students bring up ideas, ask them follow-up questions to find out what they’re thinking. Don’t dismiss ideas that seem unfamiliar to you; instead, probe students’ thinking. Model curiosity and inclusivity by asking follow-up questions such as, “Say more about how that has helped you in past situations,” or “What’s been your experience with that?”
4. **Find ways to work with ideas students bring up.** After a student shares and elaborates on an idea, ask, “Does anyone want to build on that?” or “Was anyone thinking of a similar idea they want to add on to this?”
5. **Refine the phrasing of student-generated agreements.** You might need to refine the phrasing of the agreements that students generate in order to come up with a set that everyone can remember and agree to. This might include combining ideas that are similar and condensing the agreements to a list that is manageable for students to remember and apply.
6. **Be aware of dominant cultural expectations that arise.** Gently redirect any ideas brought up by students that unintentionally reinforce dominant cultural expectations or that could unintentionally shut down participation of one or more identities that are represented in the group. For example, if a student says, “Make eye contact while someone is talking,” you might say, “I notice you are bringing up eye contact, which is a way some people show they are paying attention. I appreciate that you are helping us think about how important it is to listen in discussions, but paying attention looks different for people from different cultures and backgrounds. It might not be natural for some people to make eye contact all the time, even if they are paying attention really well. Could we say instead, ‘Actively pay attention?’ and remember that that might look different for each of us?”
7. **Add agreements to fill in any gaps.** After students come up with ideas, add some agreements to fill in any gaps. For the science discussion agreements, make sure to include some that relate to sharing ideas and asking for evidence. Make sure there are agreements that give students tools to seek equity in participation, such as *Make space, take space*.

Maintaining Group Agreements

Group agreements aren’t as effective if you introduce them first thing with students and then never bring them up again. For students to follow the group agreements and start building the skills associated with each agreement, you’ll need to be intentional about it. Here are some ways to support students to stay engaged with group agreements during a group learning experience:

- Refer back to the agreements throughout the learning experience. If a student makes a comment or participates in a way that connects to one of the agreements (e.g., using evidence in their statement, using a phrase such as *I see your point, but I'd like to respectfully disagree because . . .*), consider pointing this out to the group.
- If you have several days with your group of students, give them time at the end of each day to reflect on how they did as individuals with group agreements and to discuss how they think the group did.
- Remind students of the group agreements if they aren't using them, or if they consistently miss opportunities to use one or more agreements (e.g., forgetting to share evidence). Don't call out individual students for not using a group agreement; keep these statements generalized and refer to the group—for example, you could say, "It seems like in our last discussion, we shared a lot of ideas but didn't often include the evidence we used to come to those conclusions. Let's try to remember to use evidence more in our next discussion."
- Encourage students to bring up if they think the group is missing opportunities to put one or more agreements in discussions, but support and facilitate students to avoid doing this in an accusatory way.

Supporting Equitable, Inclusive, and Culturally Relevant Learning Experiences

This BEETLES student activity has been intentionally designed to create an equitable, inclusive, and culturally relevant learning experience for a community of learners. BEETLES design principles [<http://beetlesproject.org/about/how-do-we-approach-teaching/>] ensure that each student activity is student-centered and nature-centered. This enables all learners to access, participate, and engage in the learning experience.

When learners engage directly with nature, they all have access to learning, regardless of their prior knowledge or experiences. Centering learning on students' in-the-moment observations of nature builds an inclusive learning experience by focusing the conversation on an experience shared by every student, as opposed to relying on students' prior knowledge or past experiences. As students engage with nature, instructors are in the role of the "guide on the side." This approach shifts power from the instructor to learners, challenges the typical learning situation in which the instructor is the only expert, encourages students to share their ideas and experiences, and makes learning a more decentralized and collaborative experience.

When learners think like a scientist and practice academic language, they develop critical thinking skills that support them to become more independent learners—learners who have skills and thinking tools they use to learn, regardless of the level of support available from a teacher or instructor. Giving students the opportunity to think like a scientist by making observations, asking questions, and constructing explanations supports students' growth as learners and offers them the opportunity to build critical thinking skills and learning behaviors they can apply in any context. Many students in schools that have historically been under-resourced due to racist

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“Classroom studies document the fact that underserved English learners, poor students, and students of color routinely receive less instruction in higher order skills development than other students.” (Allington and McGill-Franzen, 1989; Darling-Hammond, 2001; Oakes, 2005) —Zaretta Hammond, *Culturally Responsive Teaching & the Brain*

school funding policies, redlining, income inequality, and police profiling have fewer opportunities to develop as independent learners. Specifically ensuring that students in these kinds of schools have opportunities to develop as independent learners is an issue of equity. Learning and practicing critical thinking skills in an engaging outdoor context supports students to succeed back in their classrooms, in science, and in other academic disciplines. Offering opportunities for students to discuss ideas with their peers and knowledgeable adults makes science more accessible by connecting it to students’ own actions and discoveries in the moment—not to knowledge they may not have or experiences they may not have had.

Through discussion, learners make connections to prior knowledge, share their lived experiences, listen to different perspectives, and have time to process the material. Productive discussions in which many voices are heard, and the group builds off one another’s ideas, create an experience in which students see themselves and one another as sources of expertise. This ensures that instructors don’t fall back on positioning themselves as the only source of accurate or important information. Participating in discussions also supports students to develop cognitive rigor and the ability to take on more advanced learning tasks. Discussions make student thinking and ideas visible to the instructor. When instructors value, appreciate, better understand, and connect to students’ lived experiences, they create a more inclusive and culturally relevant learning space. Finally, multiple opportunities for discussion provide time and space for neurodiversity—allowing students to process information in different ways. Using discussion strategies such as *Turn & Share* or *Thought Swap* (formerly known as *Walk & Talk*) that are part of every BEETLES student activity can help ensure that students have these kinds of opportunities for discussion.

Specifically, this activity promotes an equitable, inclusive, and culturally relevant learning experience by:

- offering agreements, such as *Take space, make space*, that invite students to be aware of the goal of having equitable participation in discussions.
- discussing what it can look like to put agreements into practice and offering specific behaviors that students can use to take an active role in creating an equitable learning space (e.g., sharing less if they have already shared a lot).
- scaffolding skills, such as sharing evidence, that support students to participate in science discussions and academic discussions in which they may engage in the future.
- framing science learning as a collaborative process, encouraging students to share their ideas and lived experiences, and inviting students to see themselves and one another (not just the instructor) as sources of expertise.
- interrupting the exclusionary idea that being good at science means being good at memorizing facts.
- supporting students to develop skills, such as sharing evidence and paying attention to participation, that are also important in non-science endeavors in life.

- inviting the instructor to reflect on how their unconscious biases may affect student participation.
- offering carefully worded agreements and intentionally avoiding agreements that could reinforce dominant cultural expectations (e.g., *Listen politely*).
- offering and inviting many examples for ways that students could put agreements into practice.
- explicitly inviting individuals with a range of cultures, backgrounds, and lived experiences to put agreements into practice through a range of behaviors, countering the exclusionary idea that there is one right way to behave during a science discussion.

Overall, these factors contribute to creating a student-centered approach in which “the ultimate goal . . . is to help students take over the reins of their learning.” (Zaretta Hammond, *Culturally Responsive Teaching & the Brain*, 2014). This approach to teaching supports students in becoming independent learners who are able to succeed, regardless of any individual teacher or learning context. BEETLES has intentionally designed the sequence and structure of this activity to support learning experiences where all students feel capable of success and have the tools to carry that success into other domains.

Using student-centered and nature-centered learning approaches is just one piece of the work we can do to create equitable, inclusive, and culturally relevant learning experiences. Instructors must also work to become more aware of their own unconscious biases and triggers around culture, identity, and race that impact their interactions with students and affect their students’ sense of inclusion.

Why we chose the term *agreements* instead of *norms*. Many books, programs, and schools use the term *discussion norms* to describe group agreements. We intentionally chose not to use the term *norms* because it can send a message that there is one normal or accepted way to participate in discussions. This can lead to a marginalization of students of color from diverse backgrounds because “the dominant, normal culture is typically white, if it is unspoken” (Solomon, Portelli, Daniel, and Campbell, 2005). Group agreements can subtly shift the group culture to be more inclusive by deliberately highlighting different ways of being and acting as acceptable and by placing value on making space for different perspectives. You could also refer to them as practices or ground rules.

Connections to the Next Generation Science Standards (NGSS)

BEETLES student activities are designed to incorporate the three-dimensional learning that is called for in the Next Generation Science Standards (NGSS). Three-dimensional learning weaves together Science and Engineering Practices (what scientists do), Crosscutting Concepts (thinking tools scientists use), and Disciplinary Core Ideas (what scientists know). Students should be exploring and investigating rich phenomena and figuring out how the natural world works. The abilities involved in using Science and Engineering Practices and Crosscutting Concepts—looking at nature and figuring things

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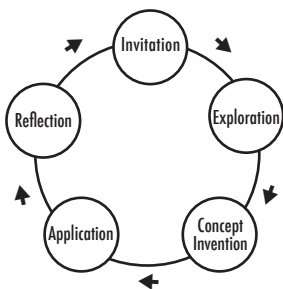
Resources on unconscious bias. There are many great resources on understanding and shifting unconscious bias. Here are a few books and organizations we have looked to consistently to work on our own unconscious bias and to better understand how it can affect teaching and learning in the outdoors:

- *White Fragility* by Robin DiAngelo
- *Culturally Responsive Teaching and the Brain* by Zaretta Hammond
- Youth Outside [<http://www.youthoutside.org/>]
- The Avarna Group [<https://theavarnagroup.com/>]
- Center for Diversity & the Environment [<https://www.cdeinspires.org/>]

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About the Next Generation Science Standards (NGSS) The development of the Next Generation Science Standards followed closely on the movement to adopt nationwide English language arts and mathematics Common Core standards. In the case of the science standards, the National Research Council (NRC) first wrote a *Framework for K-12 Science Education* that beautifully describes an updated and comprehensive vision for proficiency in science across our nation. The *Framework*—validated by science researchers, educators and cognitive scientists—was then the basis for the development of the NGSS. As our understanding of how children learn has grown dramatically since the last science standards were published, the NGSS has pushed the science education community further towards engaging students in the practices used by scientists and engineers, and using the “big ideas” of science to actively learn about the natural world. Research shows that teaching science as a process of inquiry and explanation helps students to form a deeper understanding of science concepts and better recognize how science applies to everyday life. In order to emphasize these important aspects of science, the NGSS are organized into three dimensions of learning: Science and Engineering Practices, Crosscutting Concepts and Disciplinary Core Ideas (DCI’s). The DCI’s are divided into four disciplines: Life Science (LS), Physical Science (PS), Earth and Space Science (ESS) and Engineering, Technology and Applied Science (ETS).

Read more About the *Next Generation Science Standards* at <http://www.nextgenscience.org/> and <http://ngss.nsta.org/>



out, using certain lenses to guide thinking, and understanding ecosystems more deeply—are mindsets and tools students can take with them and apply anywhere to deepen their understanding of nature, and they’re interesting and fun to do!

Group Agreements is a routine that can be used throughout instruction to support the kinds of three-dimensional learning experience called for by the NGSS. To experience three-dimensional learning, students need to engage in practices to learn important science concepts (Disciplinary Core Ideas) and make connections to the big ideas in science (Crosscutting Concepts). In short, students should be using the tools of science to explore and investigate rich phenomena, trying to figure out how the natural world works.

This activity is not a three-dimensional learning experience in and of itself, but it can be used as a tool to build students’ discussion skills and engage in the NGSS Science and Engineering Practice *Engaging in Argument from Evidence*.

Featured Science and Engineering Practice

Engaging in Argument from Evidence. Although *Group Agreements for Science Discussions* is not a three-dimensional learning experience, it can support students in developing skills that are key to the Science and Engineering Practice *Engaging in Argument from Evidence*. The *Framework for K-12 Science Education* highlights the importance of reasoning and argument in deciding which is the best explanation for a natural phenomenon. According to the *Framework*, engaging in argument is critical to students’ understanding of the nature of science. Scientific knowledge evolves as scientists uncover new evidence and engage in argument about competing claims. That’s why scientific argumentation is central to building scientific understanding. Group agreements for science discussions scaffold skills required for engaging in argumentation, such as building on the ideas of others, disagreeing to work toward a deeper understanding, and sharing ideas. As students discuss what it looks like to put the agreements into practice, they build an understanding of how science discussions happen and set themselves up for success in future science learning experiences. Engaging students in Asking Questions. According to the *Framework*, students not only need to ask questions about the phenomena they see in the natural world, they also need to categorize questions as scientific (testable, answerable through observations and experience) or nonscientific (questions that aren’t answerable through direct observation). To fully engage in this practice, students need to consider how they might answer their own questions.

Activity Connections

This activity, along with *Social Emotional Learning Routine*, scaffolds skills of discussion that can support student participation in other activities such as *Thought Swap* (formerly *Walk & Talk*), *Argumentation Routine*, *Most Successful Organism Discussion*, *Fire Management Discussion*, and any other BEETLES activity.

Learning Cycle: In a sequence of activities, *Group Agreements for Science Discussions* functions primarily as an Invitation and Reflection.

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Group Agreements for Science Discussions

Thinking About Successful Discussions and Teamwork

1. Ask students to *Turn & Share* or *Thought Swap* (formerly known as *Walk & Talk*) about a discussion or conversation they have had that felt productive and positive and the kinds of behaviors that made this possible.

▶ *Think back on a discussion you've participated in or a conversation in which people were able to share ideas and learn together. What were things people did to make the discussion work that way? What kinds of behaviors made it possible for different people to share ideas and learn?*

▶ *Now, think about a discussion you've participated in when you weren't comfortable sharing. Why do you think that was?*

2. Hear a few responses, asking follow-up questions and intentionally calling on several students.
3. Share that during the field experience, the group will work together as a team to learn science and other topics and discuss and share ideas.
4. Share that group agreements can help the group discuss interesting ideas, work together as a team, and use science to learn about the world around them.

▶ *Have you ever been in a discussion where only a few people shared, and you didn't get the chance to share an idea you had? Or, have you done a group project when people didn't listen to one another's ideas?*

▶ *We're going to come up with group agreements that will help us discuss cool and interesting ideas, work together, and learn.*

Introducing Group Agreements

1. Introduce each agreement, invite students to *Think, Pair, Share* about what they think that agreement means. Then elaborate on, provide examples of, or act out each agreement as necessary.

- **Listen actively and share ideas.** Ask:

▶ *What do you think listen actively and share ideas means? Why is that important for our group?*

Add the following ideas if students don't mention them:

▶ *To have a discussion, we have to share our ideas. Our group is stronger if we hear one another's ideas and perspectives.*

▶ *If people share ideas, we could have some really interesting discussions, and we will learn from one another.*

▶ *If people don't share ideas or if only a few people do, then our discussions won't be as interesting, and we will miss out on hearing important perspectives.*

▶ *If you want interesting discussions, please share! Don't worry about having the right idea to share.*

▶ *Your ideas will make the discussion richer. We want to hear them. There is value in every idea on the topic we're discussing.*

▶ *In order to have a discussion, we also need to listen to one another. Listening can look different for different people. Some people might listen best while looking directly at the person sharing. Others might do better looking away now and then or holding a small stick or object to help them focus their attention. So, we say, "Listen actively" to mean that every person should make an effort to listen in a way that works for them.*

▶ *What are some different ways that active listening might look like or sound like? What might make the person sharing feel like they're not being listened to? [Listen to students' ideas and act out or ask a student to act out some of the different ways to listen actively that the group brings up.]*

- **Share and ask for evidence.** Ask:

▶ *What do you think it means to share and ask for evidence? Why is that important for our group?*

Add the following ideas if students don't mention them:

▶ *In science discussions when we share our ideas, we need to include evidence or reasoning. Do not just say something like, "An elephant made that mark," if it's not based on evidence.*

▶ *When you make an explanation, you need to share your evidence or your thinking behind it by saying something like, "I think those marks on the bark may have been caused by squirrels, because I've seen squirrels here, and I've seen them run up and down trees before."*

▶ *This helps us to understand what you are thinking and to work toward a deeper understanding as a group. If someone shares an idea without evidence we can respectfully ask, "What's your evidence for that?" or "What makes you think that?"*

- **Disagree productively to deepen understanding.** Ask:

▶ *What do you think it means to disagree productively to deepen understanding? Why is that important for our group?*

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Add the following ideas if students don't mention them:

▶ An important part of science is considering different ideas and explanations, trying to figure out what might be wrong with each new idea as you try to work toward the best possible explanation given the evidence you have.

▶ Disagreeing in a science discussion is a chance to listen to someone else's idea and to try to understand what they are thinking. We say, "Disagree productively" because the goal of disagreement in a science discussion is to try to come to a deeper understanding and find the best explanation possible.

▶ We can keep that goal in mind by disagreeing respectfully and productively and not saying things like, "You're wrong!" or "That's stupid."

▶ What might be some other ways of disagreeing in a non-respectful way? What might be some ways to respectfully disagree or disagree productively? ["I see your point, but I have a different idea . . ." "I'd like to disagree because . . ." "In my experience, . . ."]

- **Take space, make space.** Ask:

▶ What do you think it means to take space and make space? Why is that important for our group?

Add the following ideas if students don't mention them:

▶ The more voices shared in a discussion, the more perspectives we will get. If you notice that you are sharing a lot more than others, try pausing to wait until others have had the chance until you share your ideas.

▶ If you are not sharing much, we invite you to take space and share! Or, think about why you are or aren't sharing.

▶ We don't want to put people on the spot by saying that you have to share in the group, but we do want everyone to have space if they want to share.

▶ Each one of us has a perspective to contribute, and if we intentionally take space sometimes and also make space for others, we can get a diversity of perspectives and learn more as a group.

- **Keep an open, curious mind.** Ask:

▶ What do you think it means to keep an open and curious mind? Why is that important for our group?

Add the following ideas if students don't mention them:

▶ Have you ever been around someone who won't change their mind, even when the evidence goes against their idea? Pretty frustrating, huh?

▶ It's important in science discussions (and in life!) to keep an open mind.

▶ Changing our minds can sometimes be seen as a sign of weakness, but changing your mind can actually be a tremendous strength. It is a sign of open-mindedness, flexibility, and scientific thinking. Try to be willing to change your mind and be curious about other people's ideas, experiences, and explanations. The more curious we are about others' thinking, the more we can learn.

- **Build on others' ideas.** Ask:

▶ What do you think build on others' ideas means? Why is that important for our group?

Add the following ideas if students don't mention them:

▶ It's not a real discussion if people just take turns sharing their own ideas without responding to one another. Let's try to listen to other people's ideas and sometimes build on them, such as: "Building on what Rahul said about squirrels making the marks on that tree, I'd like to add that I noticed the bark is missing where the squirrels scratched. I've heard that squirrels build nests, and I wonder if maybe they use shredded-up bark from the tree for their nests."

2. Invite students to add more agreements to the list, calling upon their life experiences and backgrounds.

▶ What are some practices or expectations from your home life, class, or another group like a sports team or musical group, that you think could help us learn together in discussions and group activities?

3. Offer the idea that group agreements are challenging skills that everyone is learning and working on.

4. Encourage students to support one another, acknowledging that it's okay if they aren't perfect. Offer the idea that the group can help one another notice how they are doing.

▶ It's okay if we're not all perfect all the time. As a group, we are here to learn and support one another. We can help one another notice when we're doing a good job and when we could do better with one of these agreements, but didn't realize it at the time.

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5. OPTIONAL: Invite students to pick one agreement on which to focus during a discussion or learning experience. Then, give them a moment to silently think about it or discuss it with a partner.
6. Ask students if they have questions about the group agreements. Then, move on with the learning experience.
7. Refer back to the group agreements throughout the field experience, especially if the group reaches a moment of disagreement or difficulty.

Reflecting and Wrapping Up

1. After group discussions, take a moment to refer back to the agreements, noticing how the group did as a whole (without singling out any individual students for failing to meet one of the agreements).
 - ▶ *How do you think we did as a group in using our agreements in that discussion?*
 - ▶ *Are there any agreements that, as a group, you think we used really well? What about agreements that, as a group, we could get better at or use more effectively next time?*
2. Toward the end of a discussion or a field experience, invite students to reflect on how they did with using the group agreements:
 - ▶ *Take a moment to think about our group agreements. How do you think you did at using them?*
 - ▶ *Were there any specific times that you can remember using one or more of the agreements? How did that impact your experience or the group?*
 - ▶ *Were there any opportunities you missed to use a group agreement?*
 - ▶ *It's okay if you missed an opportunity or feel you have room to grow. (We all do!) These can be challenging skills to learn, but they are learnable and important.*
 - ▶ *What are goals you might set for yourself the next time you're participating in a discussion like this one?*
3. OPTIONAL: Toward the end of a field experience, invite students to reflect on how using group agreements helped them learn together.
 - ▶ *How do you think the group agreements helped us to work together and learn?*

ABOUT BEETLES™

BEETLES™ (Better Environmental Education Teaching, Learning, and Expertise Sharing) provides environmental education programs nationally with research-based approaches and tools to continually improve their programs.

www.beetlesproject.org

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Special Acknowledgments: We want to acknowledge Youth Outside (youthoutside.org) in supporting us to develop more equitable, inclusive, and culturally relevant instructional materials. To learn more about our collaboration with Youth Outside, see: <http://beetlesproject.org/beetles-collaboration-youth-outside/>.



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The following programs contributed to the development of these materials by field testing and providing invaluable feedback. For a complete list of contributors and additional partners, please see beetlesproject.org/about/partners/

California: YMCA Camp Campbell, Rancho El Chorro Outdoor School, Blue Sky Meadow of Los Angeles County Outdoor Science School, YMCA Point Bonita, Walker Creek Ranch, Santa Cruz County Outdoor Science School, Foothill Horizons Outdoor School, Exploring New Horizons Outdoor Schools, Sierra Nevada Journeys, San Joaquin Outdoor Education, YMCA Camp Arroyo, Shady Creek Outdoor School, San Mateo Outdoor Education, Walden West Outdoor School, Westminster Woods.

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Photos: Pages 1 and 2 by Kevin Beals. **Icons:** Backpack by Rémy Médard; Growth by Arthur Shlain; Cut by Nathan Thomson; Outside by Petr Holusa; Park by Antar Walker; Time by Wayne Middleton; & Diversity by Cara Foster all from The Noun Project.

Funding from 2012-2019 for BEETLES publications such as this one has been generously provided by the S.D. Bechtel, Jr. Foundation, The Dean Witter Foundation, Pisces Foundation, the Mary A. Crocker Trust, and the National Science Foundation under Grant No. 1612512. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.



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