

# Trailside Nature Activities

*Lesson plans for Trips for Kids Marin Ride Leaders*



**Adapted from the BEETLES Project**

## INTRODUCTION

One of the three pillars of providing transformative cycling experiences, as stated in our mission statement, is *instilling environmental values* in the youth we serve. Till now, that has loosely been interpreted as a ‘nature immersion’ experience, meaning that by simply taking kids into beautiful natural places, we were accomplishing that goal.

While there is some value in merely exposing youth to beautiful natural settings, in order to create a deeper and lasting connection with nature it requires conscious, facilitated activities designed to help youth interpret, engage and explore the world around them. In order to truly fulfill that pillar of our mission, we must do more to enrich the experience.

With that in mind, we have turned to a leading-edge environmental education program called BEETLES as our guiding reference on trailside nature activities. The activities described below have been modified to ensure ease of facilitation and account for the specific parameters of a typical Discover Trail Ride (our one-time, intro to mountain bike program).

From this point forward, every Discovery Trail Ride should include at least one of the activities described below. Adventure Club rides should include these activities intermittently throughout the program, until they have been completed. Training will be provided to ensure all Ride Leaders understand and are able to facilitate all activities.

The more tools we have available, the greater impact we can make. These simple but effective activities will help create more meaningful programs and create a deeper impact on our youth.

Thank you for helping our youth explore, engage and learn to love nature thus fulfilling one of our highest ideals.

For more information about the BEETLES organization and pedagogy visit:

[www.beetlesproject.org](http://www.beetlesproject.org)

# I notice, I wonder, It reminds me of...

## OVERVIEW

Developed by renowned Bay Area naturalist, John Muir Laws, and widely introduced and facilitated by Beetles, this simple activity introduces the concept of observation and associative thinking in the context of the natural world. While facilitated during an all-day, field science experience this activity can take up to 45 minutes, for our purposes, it has been modified to take as little as 10-15 minutes.

### From Beetles lesson plan:

During the activity, students choose a natural object, then make I notice . . . statements out loud with a partner and with the group. They do the same with I wonder, . . . questions and It reminds me of . . . connections. Then, students practice using these tools focused on whatever they find interesting.

Using this routine makes any field experience more student- and nature-centered. The skills of the routine can be applied during any part of a learning experience, focused on any part of nature. The routine can support social and emotional learning by offering skills for reflection and by setting a tone of learning, collaborating, and listening. The routine can also help instructors create an inclusive and culturally relevant learning environment by scaffolding cognitive thinking skills and leveraging the phrase It reminds me of . . . to encourage students to reflect on, value, and share relevant connections from their lived experiences and perspectives.

## MATERIALS

1. Found natural objects like a leaf, stick, shell, rock, etc...

## PROCEDURE

1. During a break in the riding, perhaps after lunch or at a typical stopping location, have students lay their bikes down and circle up.
2. Explain that we are going to do a quick, nature exploration activity and begin facilitating the experience.

3. Encourage students to take two minutes to go and find an interesting natural object laying on the ground. Remind them not to pick living things like flowers or bugs and small animals.
4. Once they have found their object, have them return to the circle and spend another two minutes observing it with as much attention to detail as possible.
5. Once they've done this, give them an example of an 'I notice' statement
  - a. Example: "I notice the leaf has jagged edges. It has veins the branch out from the center. It is green and brown."
  - b. They are giving objective descriptions of the object, not subjective things like "It's gross or cool."
6. Have them find a partner and share five things they notice about their object.
7. Have them return to the group and share one thing they notice with the whole group.
8. Continue this process with the 'I wonder' and 'It reminds me of'
9. To wrap up, ask students to look at their object, then look at everything around that isn't their object. There's a lot to explore out there in this world and invite students to continue using these strategies with anything they are curious about in nature.

## CONCLUSION

This simple activity helps youth develop the ability to focus on details in nature and see things from a new perspective.

## REFERENCES

1. [I Notice, I Wonder, It Reminds Me Of](#)
2. [BEETLES "I notice, I wonder, It Reminds Me Of" Student Activity In Action](#)

# Using our Nature Senses

## OVERVIEW

Developed by Tom Brown, a professional animal tracker who learned many of these skills from the Apache tribe, and widely introduced and facilitated by Beetles, this simple activity introduces the concept of nature observation using four of our senses (taste being excluded for obvious reasons). This activity should take no more than 10 - 15 minutes but will greatly enhance the participants sense of place and experience of nature. Feel free to use the laminated notes cards to facilitate this activity.

## PROCEDURE

1. During a break in the riding, perhaps after lunch or at a typical stopping location, have students lay their bikes down and find a quiet place to stand apart from each other.
2. Explain that we are going to experience nature with four of our senses to see what we can discover and observe and begin facilitating the experience.
3. **Listen:**
  - a. Let's stand still, and close our eyes in silence.
  - b. Hold up a finger for each different sound you hear.
  - c. Focus on each sound one at a time. What do you notice about each sound? Is it: High? Low? Loud? Long? Short? Is it one sound or a combination of sounds?
  - d. Now try using the Ear of the Musician. Listen to the sounds as if they were music. Notice the blend of sounds, the spaces between sounds and patterns they form. Notice the beauty of the sounds together.
  - e. **Deer Ears:**
  - f. Open your eyes and cup your hands behind your ears and push them forward in the direction of sounds you want to focus on. We call it Deer Ears.
4. **Touch:**
  - a. Close your eyes again.
  - b. Notice what you feel in your feet. Legs. Arms. Head.
  - c. What does the air feel like against your skin? In your nostrils as you breathe?
  - d. Can you feel the Sun? If so, where do you feel it?

- e. How does the ground feel beneath your feet? Soft or hard?
  - f. Open your eyes and pick up something nearby. Notice its texture, temperature, smoothness or roughness—notice everything you can through touch.
  - g. What does it feel like against your arm, neck, cheek?
  - h. Choose a very different object and do the same, comparing it with the feel of the other object.
5. **Smell:**
- a. Can you smell anything in the air?
  - b. Can you notice temperature and humidity differences by smelling?
  - c. Check out the smells of some nearby objects. You may choose to crush part of a leaf to smell it.
6. **Vision:**
- a. Focus on just the colors around you. Notice all the different variations in browns, greens, etc.
  - b. Now try to ignore the colors, and focus in on just the shadows and light around you, like in a black and white photo.
  - c. **Owl Eyes:**
  - d. Don't focus on anything, but instead try to look at everything in front of you at the same time. e. When you notice motion, you might then focus on that object.
  - e. Ask for a few additional prompts from participants. • Ask if a couple of participants want to add any sensory/observation prompts. Keep this brief.
7. Explain that by intentionally using your senses in different ways, you tend to notice more. You can do this by focusing on one particular sense, or by taking in multiple senses.
8. Use a Tom Brown quote to highlight that you can also improve your observations by shifting perspectives: “To see the world from ever-new vantage points is one of the most basic lessons in nature observation.” -Tom Brown’s Field Guide to Nature Observation and Tracking

## CONCLUSION

This meaningful activity helps youth develop the ability to observe the natural world through four senses, exploring nature in a way they likely haven't experienced.

## REFERENCES

- 3. [Making Observations](#)



# NSI: Nature Scene Investigator

## OVERVIEW

While this activity can take between 45-60 minutes in its full length, we have modified it to take between 10-15 minutes during our trail rides. This activity works best as a guided conversation when you encounter something unusual or particularly interesting on the trail like a deer skeleton, a tree struck by lightning, woodpecker holes, Turkey feathers, etc. Your job is to guide students as a *Nature Scene Investigator*, focusing on observations and formulating scientific questions to uncover *what happened here?*

### From Beetles lesson plan:

This activity sets an exciting tone of exploration and discovery, encouraging an inquiry mindset in students that helps establish a community of curious, active learners. Students gain tools to explore the natural world—and are inspired to discover and attempt to explain the abundant nature mysteries that surround us. NSI works well at the start of a field experience, to get students excited about nature mysteries. It provides an opportunity for an instructor to coach students in inquiry skills, by using the language of science and engaging in scientific discussions.

Students focus on a mystery object, generate observations, questions, evidence based explanations and share what they already know from other sources with their partner. Once students are familiar with these practices, they can use them to investigate and make explanations about anything they find in nature through their field experience(s).

Students will:

- Formulate their own observations, questions, and explanations from evidence about what they find in nature.
- Participate in a scientific discussion using language of uncertainty.
- Learn that not all sources of information are equal.

## MATERIALS

2. Interesting nature scenes like animal skull or carcass, recently dead tree,

woodpecker holes, animal tracks, etc..

## PROCEDURE

1. If you come across something of particular interest during your ride, have students lay their bikes down off the trail and circle up.
2. In an excited tone, explain that something has happened here! “Look, it’s a Nature scene! Let’s become Nature Scene Investigators and see if we can uncover what happened.”
3. Have students gather around the scene and explain that first, before we make any conclusions, we’re going to make some observations.
4. Give them examples of observations they could make with their partner:
  - a. Color, size, smell, pattern, weird markings, texture, durability, weight and density.
  - b. Make sure it is a safe object to touch first. Please do not let kids touch something like a dead animal obviously!
  - c. Also, make sure kids never taste any object on the trail! (other than blackberries under our supervision for example)
5. Have each student share one observation that hasn’t previously been mentioned about the scene.
6. Next, explain that we will make a hypothesis of what happened here using statements of uncertainty like:
  - a. The evidence seems to show...
  - b. I think...because...
  - c. Possibly...
  - d. In my experience...
  - e. I wonder if...
  - f. Maybe... Or....
7. Each student should then make a hypothesis about what happened here using one of the statements and share with the group.
8. To conclude, congratulate the group on coming up with some excellent observations and hypotheses about the nature scene. “You all have a future in detective work if you choose to pursue it!”

## CONCLUSION

This activity is a fun way for youth to partner up to learn how to make science based



observations and questions about mysterious natural objects, skills they can carry with them each time they explore outdoors.

## REFERENCES

1. [Nature Scene Investigators: NSI](#)
2. [https://www.youtube.com/watch?time\\_continue=10&v=hSrQbrYwuvA&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=10&v=hSrQbrYwuvA&feature=emb_logo)

# Questioning Strategies

## OVERVIEW

As TFK Ride Leaders, we aspire to more than just facilitating biking experiences. It is our opportunity and duty to help our kids connect with the natural world around them. In order to be successful in that goal, we must understand how our facilitation approach impacts that outcome. One important aspect of creating a more meaningful connection is understanding how the questions we ask, aid or detract from that experience.

From Beetles:

This session focuses on how to use questions to encourage student exploration and discourse. Part of the session delves into how an instructor's different prompts and behaviors may encourage or discourage student exploration and learning. Participants discuss the effects of two main categories of questions—"broad" and "narrow" questions—on student discourse. Participants analyze the impact of questions on student thinking and behavior, and use this information to make thoughtful decisions about when to use different types of questions in instruction. Participants also explore typical roles instructors can take on (such as "the sage on the stage," "the guide on the side" or "the entertainer"), and how these roles can either draw out students' ideas and discourse or, in the extreme, shut down students' ideas.

## PROCEDURE

Ride Leaders should understand the difference between being a *sage on stage vs. a guide on the side* and broad vs. narrow questions when implementing programs.

### **Sage on Stage vs Guide on the Side**

Whenever possible, we should try to avoid being what's known as "Sage on Stage", that is, someone who stands up as an authority figure, ready to fill the empty vessel of the child's mind with facts and figures. While this is a common approach to teaching, it does not engage the student in using their own abilities to make observations and ask questions. Likely, they will forget the name of that flower you told them, but they are more likely to remember the experience of observing that flower in great detail while coming to their own epiphanies about its essence and special qualities.

In that light, we should strive to act as a "Guide on the side", guiding our students to make discoveries on their own. Using broad questions, we help facilitate an experience

and atmosphere that fosters learning and individual thought. See below for examples of broad questions that will aid in this process.

### **Broad vs. Narrow questions:**

- Broad
  - Has no specific answer
  - Requires higher level of thinking, exploration, observation and opinion
  - Promotes divergent thinking
- Narrow
  - Have a specific answer
  - Answer requires recall of information
  - Promotes group response and convergent thinking

Examples of broad, open - ended questions:

- What do you notice?
- What do you wonder?
- What does that remind you of?
- How might you explain that?
- How is this similar/different from...?
- What do you think about that idea?
- Do you agree with...?
- Tell me more about that.
- Can you explain/show me your evidence for that?
- How can you be more sure?

## **CONCLUSION**

The success and impact of the experience depends largely on our ability to create nurturing learning environments that engage youth in using their own senses and minds, as opposed to just imparting information as the authority figure.

## **REFERENCES**

1. [Questioning Strategies](#)
2. [BROAD QUESTIONS](#)
3. [NARROW QUESTIONS](#)

# Group Management Strategies

## OVERVIEW

Groups Management is one of the most important aspects of a Ride Leader's duty. In order to create a safe atmosphere of learning, which enables that transformative experience we strive to create, it is imperative that we understand best practices for positive group management.

From Beetles:

Every instructor has to struggle with and figure out how to approach student management, which is not a small challenge, and knowing how to engage students in meaningful ways is a huge part of that. This guide presents a student-centered approach to engagement and management, an approach focused more on creating an environment conducive to student learning, and less on how to “deal with” or discipline students if they're not behaving the way you'd like. This is a guide on how to engage students positively from the beginning by creating an environment in which they have the highest chance of being the best versions of themselves, so that everyone in the group can have a positive experience and learn.

How do you do that? Basically, you do it by:

- Taking care of student's safety, social, and emotional needs throughout everything you do.
- Setting up a balance in student learning experiences between structure and student autonomy.
- Engaging in culturally responsive and student-centered teaching.
- Creating a positive, intellectually stimulating learning environment.
- Creating a group that actively and intentionally promotes the inclusion of every member.

## TOP TIPS

- Intrinsic motivation is when we do something because we find it interesting. It means doing things “for their own sake.”
- Extrinsic motivation is when we do things for some kind of external reward, such as to please others, get good grades, receive prizes, or avoid punishment.
  - Ultimately, we want students to act based on intrinsic motivation. We want students to be engaged with exploring nature and talking to each other about ideas just because it’s interesting. If students are intrinsically motivated to explore nature at your program, they’re more likely to do more of it on their own when they leave. If it’s mostly extrinsic motivation, not so much.
- Show students that you value their cultural assets, prior knowledge, perspectives, experiences, and home language.
- Avoid making assumptions about students’ gender
- Think about how to provide all students access to engaging experiences with science
- Pay particular attention to those who tend to get called on less often or are reluctant to speak.

## REFERENCES

Because this is such an important topic, please read through the entire BEETLES lesson plan here : [Engaging and Managing Students in Outdoor Science](#)

## CONCLUSION

With a deeper understanding of positive group management, we will be able to create a safe, nurturing environment where students thrive and our programs create a lasting positive impact.