

# ASSESSING FOR STUDENT LEARNING





# GUIDING QUESTIONS

- Why is assessment important for field instructors?
- What should be assessed?
- How and when should it be assessed?



## Goals for the Session

- Experience assessment strategies for field instruction
- Learn to choose the best type of assessment for the intended purpose
- Recognize the challenge of understanding what students have learned
- Learn how assessment practices can support student learning and improve instruction



# What do we mean by “assessment”?



*Assessment can be defined as anything designed to reveal student thinking.*



The main purpose  
of assessment is...



*...to gather **evidence of student thinking** that can inform teaching and learning.*



# Modeling Assessment Strategies

During the activities, ask yourself:

- Where are the opportunities for assessment?
- How can that information be used to inform instruction?
- How do assessment activities help students learn?



# Things to think about when planning for assessment

- What are the learning goals?
- What evidence should you look for, and how will you collect it?
- When will assessment happen?

# What are the learning goals for students?

- behaviors/attitudes
- science practices
- conceptual understanding



# What evidence should you look for, and how will you collect it?

- **Group or individual assessment?**
- **Performance task?**
- **Oral or written?**



# What evidence should you look for, and how will you collect it?

## Consider group vs. individual assessments...



What evidence should you look for, and how will you collect it?

Consider evidence from performance tasks...



What evidence should you look for, and  
how will you collect it?

Consider evidence from asking broad  
questions or written prompts...



# When will the assessment happen?

Consider the timing...

- Pre-assessment
- Assessment during instruction
- Post-assessment



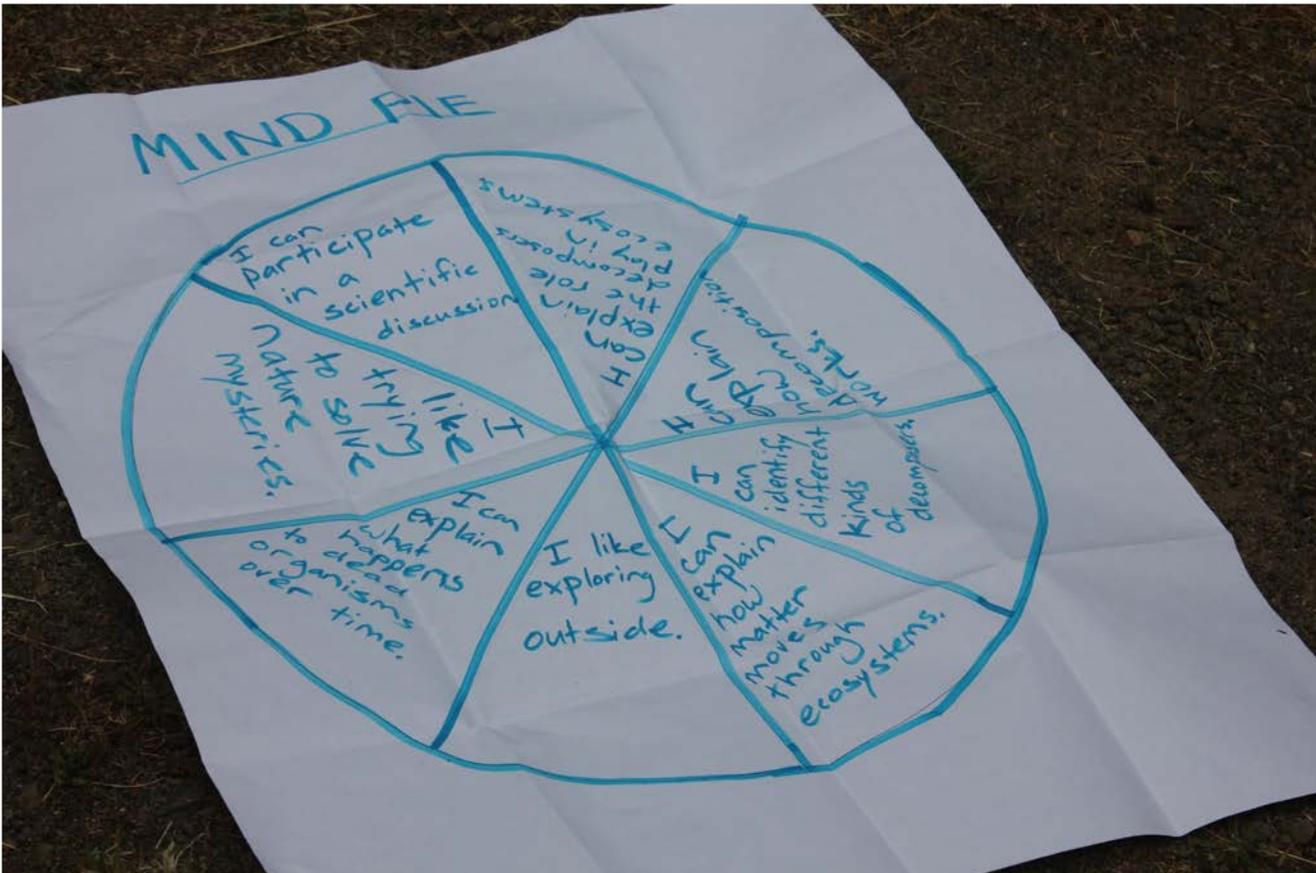
**Decomposition Mission Goals.** Students will:

- Explore, observe and compare samples of decomposing materials and use reasoning to determine the level of decomposition among them.
- Recognize decomposers as fungi, bacteria or invertebrates.
- Understand decomposition as a process of breaking down dead organisms and their waste materials into smaller and simpler forms of matter.
- Make a diagram/model showing their understanding of decomposition.
- Discuss the role decomposers play in making matter available to living plants to grow.



# Mind Pie

Flexible pre-assessment routine used at the beginning and/or end of a teaching session



# Mind Pie Prompts

- I can participate in a scientific discussion
- I like exploring outside
- I like trying to solve nature mysteries
- I can explain what happens to dead organisms over time
- I can explain how matter moves through ecosystems
- I can identify different kinds of decomposers
- I can explain how decomposition works
- I can explain the role decomposers play in ecosystems



# Decomposition Mission

## Assessments during the activity

- Decomposition displays
- Visual conceptual diagram/model for decomposition



# Walk & Talk Prompts – reflection after the activity

- *Describe something new that you learned about decomposition.*
- *How would you describe decomposition to someone who didn't know anything about it?*
- *How does a leaf become part of the soil? part of the air?*
- *How might this area look different without decomposition?*



# Assessment is a continuous process

- it happens before, during and after learning.
- it informs teaching and curriculum.
- it lets students show what they've learned.



# Making assessment part of your teaching

- Be interested in student ideas
- Find out about their lived experience/ prior knowledge before you begin
- Take notes about student talk and behavior during activities
- Ask probing questions
- Create opportunities for students to show what they've learned
- Adjust instruction accordingly



**Digging deeper  
into student  
thinking...**

**looking at  
writing in  
student field  
journals**



# Procedure for Looking at Student Work



- **Step 1. Observations:** What do you actually see in the student work? Patterns? Differences, similarities? Evidence of understanding?
- **Step 2. What does it tell you about learning & teaching?:** What might be evidence of what students do and don't understand? What experiences might have influenced what the students wrote?
- **Step 3. What can we do about it?:** What changes can be made to make the teaching more effective? What could the instructor do to move thinking forward?

## Example Assessment Prompt

Make a model/diagram of decomposition, including:

- an example of decomposition
- explanation of how decomposition happens
- decomposers
- results of decomposition





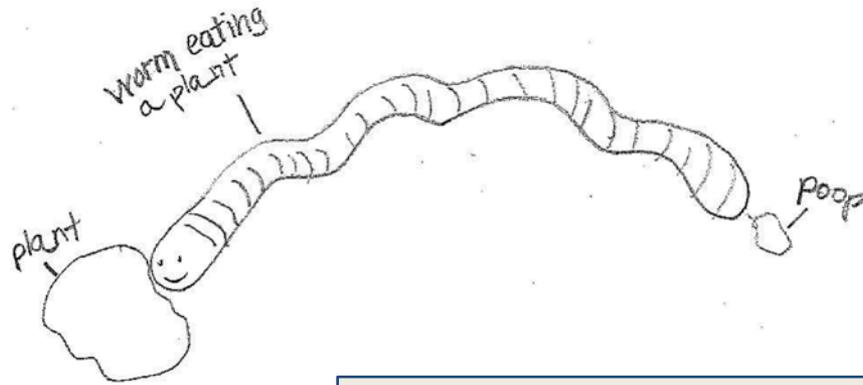
## Decomposition Definition

Decomposition is the process of rotting or decaying. When dead organisms and their wastes break down into smaller simpler forms of matter, such as nutrients, carbon dioxide, water, and organic matter, they become part of soil, air, and water, and we say they are decomposing.

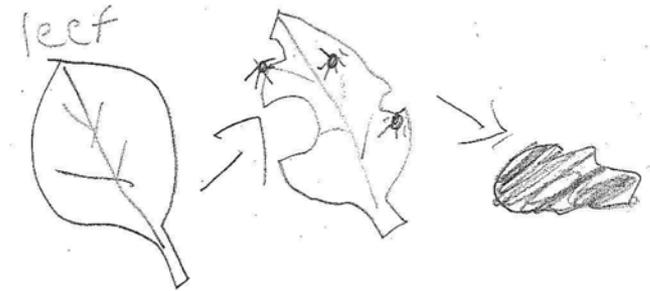


# Sample Student Work

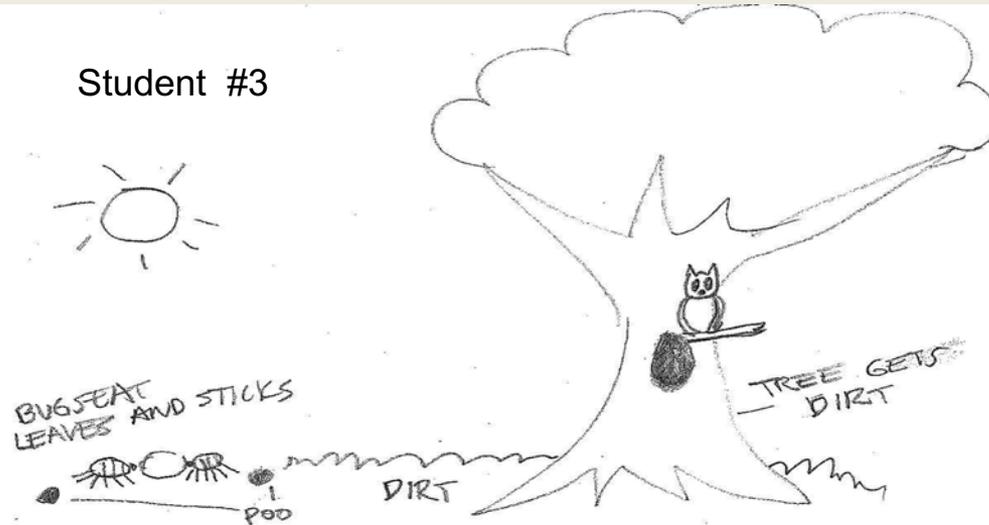
Student #1



Student #2



Student #3



## ***Explanations from observation:***

### **“all examples are terrestrial:”**

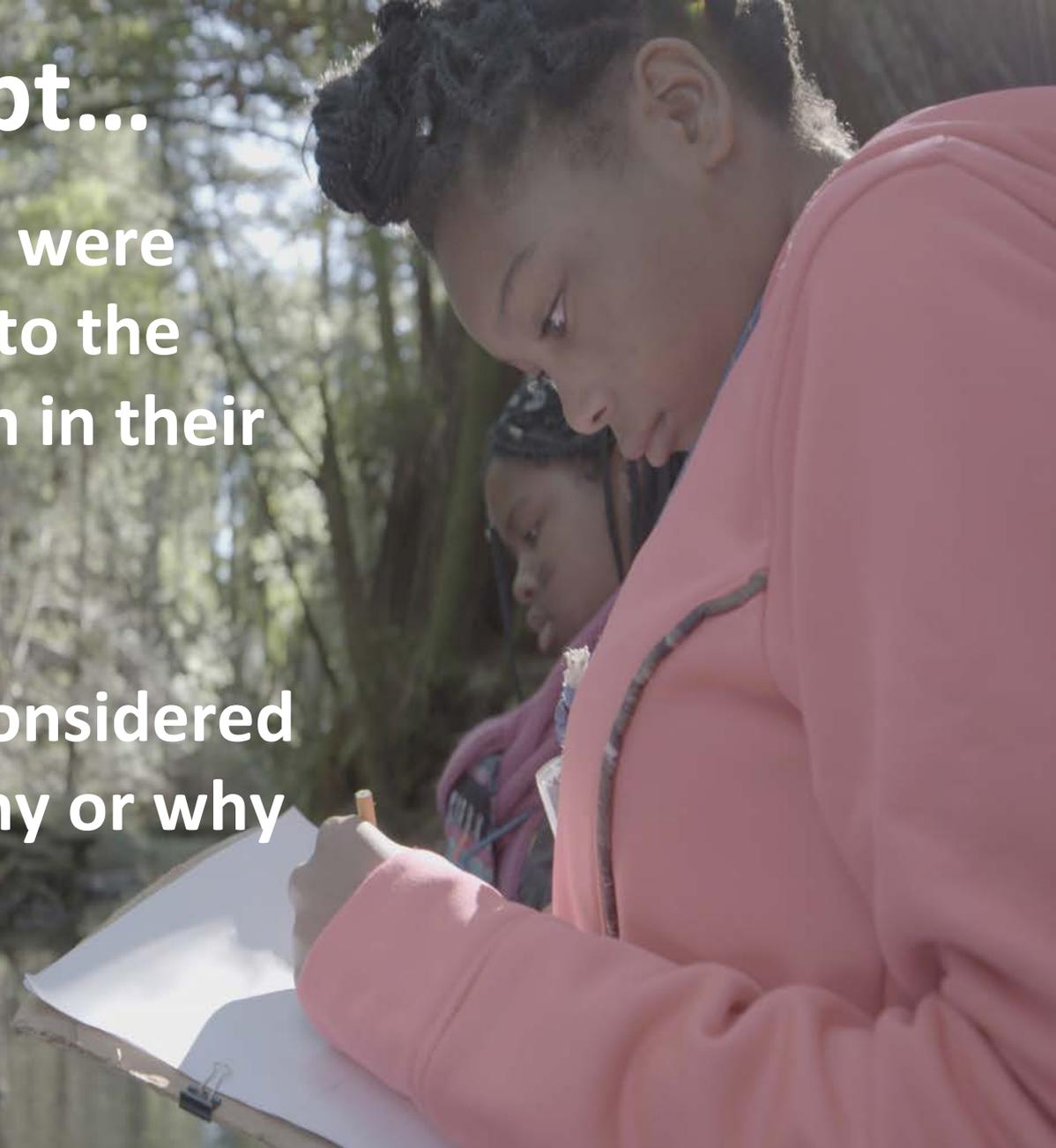
1. Students (and maybe the instructor) may not understand that decomposition also happens in water
2. Students (and maybe the instructor) may not understand that decomposition doesn't always include soil
3. Instructor probably led the activity in a terrestrial setting
4. Instructor probably did not include bodies of water (streams, ponds, the ocean, etc.) in experiences or examples
5. Maybe students did know about aquatic examples, but just didn't include them
6. Maybe instructor taught it, but the students are a slow group and didn't get it
7. Student 1 probably knew about aquatic examples, because he's smart, but he didn't show it. Students 2 & 3 probably don't know about aquatic examples, because they're not as sharp



# The prompt...

Fifth grade students were asked to respond to the following question in their field journals:

- Can humans be considered decomposers? Why or why not?



# How to Write a Good Prompt

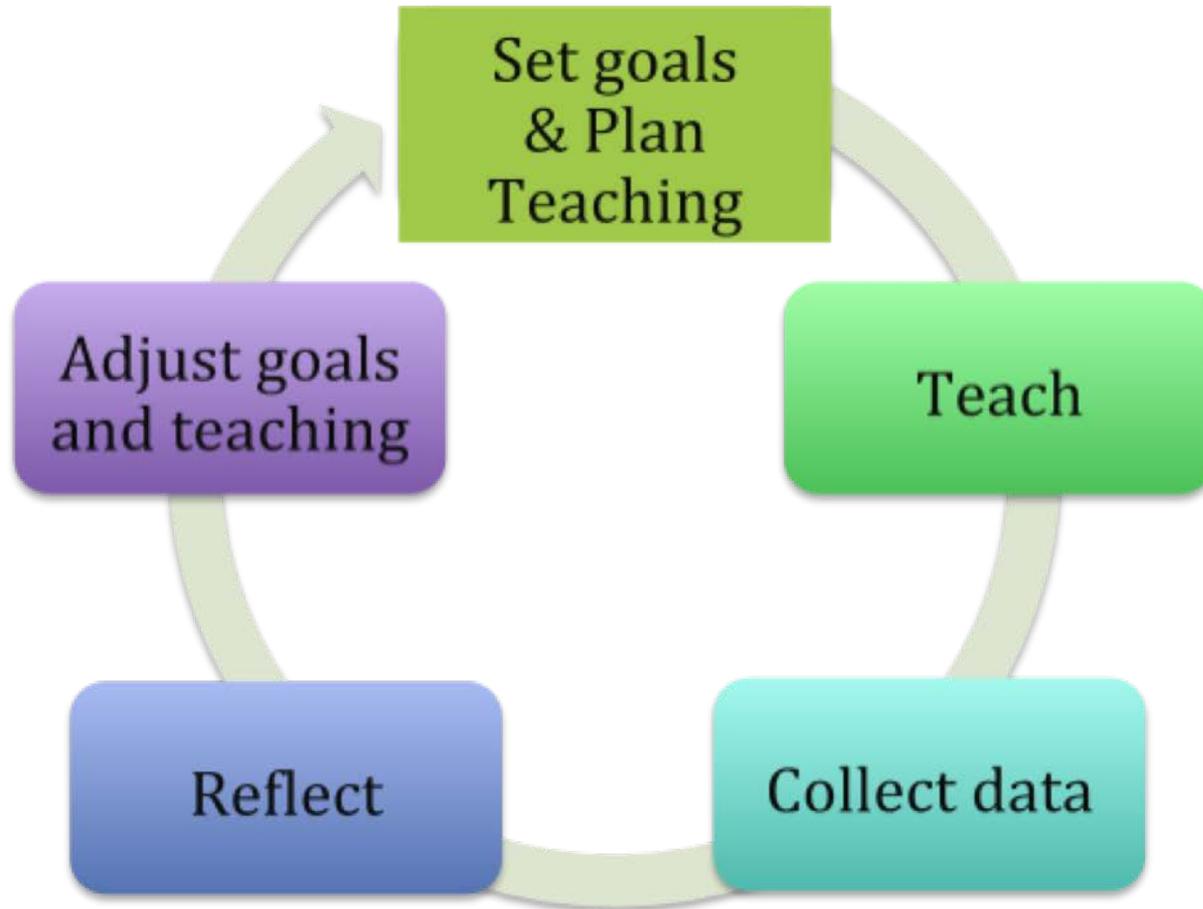
- There should be multiple ways to answer the prompt
- Make sure the science is sound
- Use accessible language
- Make expectations clear to students



# Much of embedded assessment is about:

- Being curious about student ideas
- Asking broad questions, and listening to responses
- Asking follow-up questions to get students to explain their thinking
- Giving students opportunities to discuss student-to-student, and listening in
- Paying attention to how students make sense of experiences

# Steps for Reflective Teaching Practice



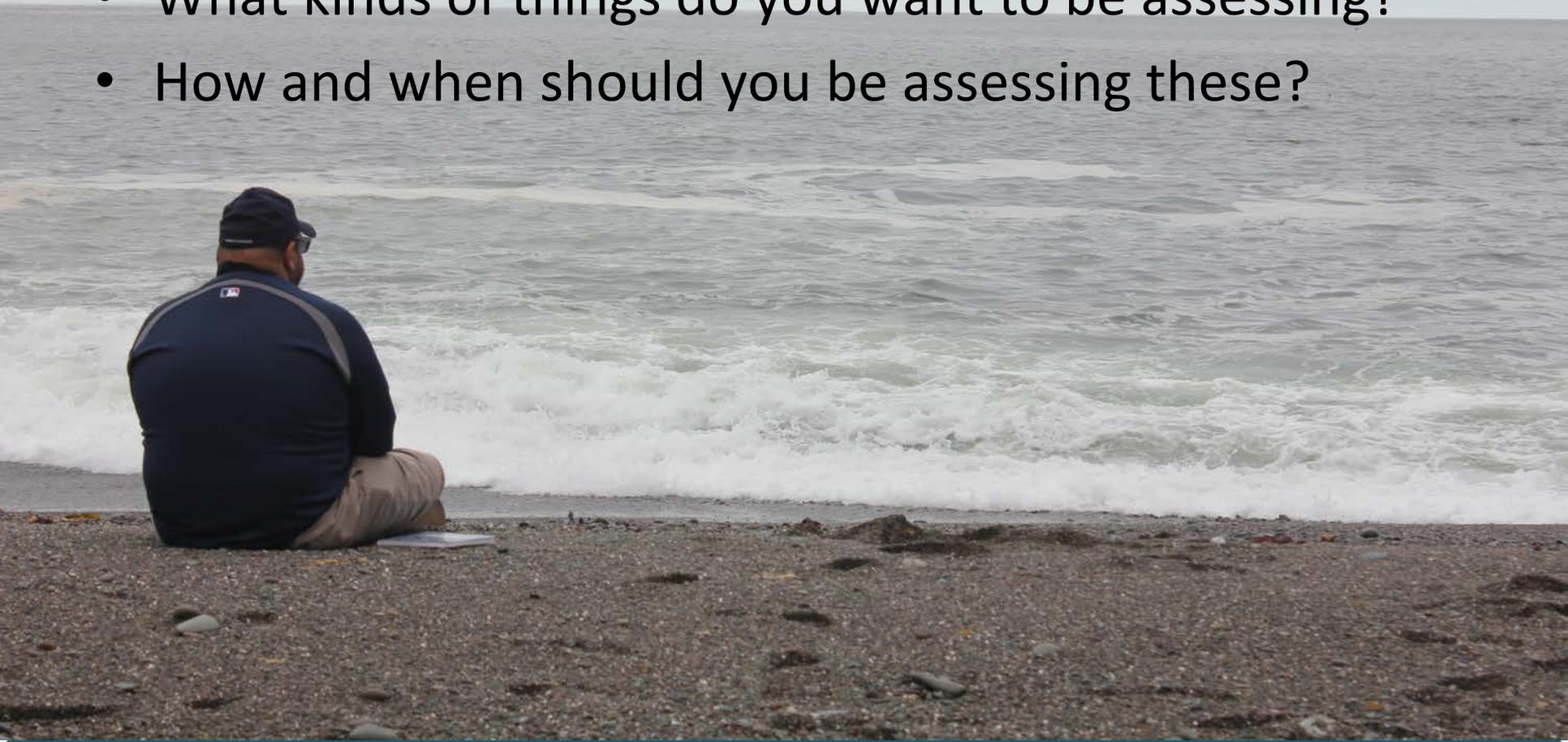
# Assessment is a highly effective instructional practice

Assessing for learning is indistinguishable from quality instruction.



# Reflection

- How can you incorporate embedded assessments to learn about student learning and your own teaching?
- What kinds of things do you want to be assessing?
- How and when should you be assessing these?



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