

Using Big Idea Probes in *Carbon TIME*

Rationale

The *Carbon TIME* Big Idea Probes are formative assessment tools that we are creating in a style made popular by Page Keeley in her NSTA series, *Uncovering Student Ideas in Science*. Our rationale for using these probes is...

- Big Idea Probes can be used to make patterns in students' ideas visible to the whole class in an anonymous and "safe for students" fashion. See suggestions for use below for ideas regarding implementation.
- The probes can stimulate student-to-student discussion about specific scientific and informal ideas related to a real world question.
- The probes address content in the *Carbon TIME* units, but do not directly refer to the activities and investigations in the units. This can provide opportunities for teachers to check the extent to which students are able to apply what they're learning in *Carbon TIME* to new contexts and examples.

Suggestions for Use

Here are a few suggestions for how to use *Carbon TIME* Big Idea Probes.

- Implement the probe 2 or 3 times across the unit. The first time should be during the Expressing Ideas Phase. Re-implement after the Investigation. A final time to implement could be right before students take the unit post assessment.
- We encourage you to create a poster that has the names associated with the response options from the probe written across the bottom. Your students should each get 3 or 4 sticky notes (all the same color for the whole class). Students can write the name of the person whom they agree with (can choose more than 1) onto the sticky note(s) and hand in. The teacher can then create a bar chart on the poster that anonymously shows the distribution of choices for the class.
- Once the poster is populated, lead a discussion in which students share their choices and their reasons for their choices. Encourage students to agree or disagree with one another and to provide their reasoning and any evidence they have.
- During second and third implementations, give students different colored sticky notes and leave the original bar chart up, adding new adjacent columns of notes each time. This creates a public record of how students' ideas change over the course of the unit.
- We'd also encourage collecting students' written explanations for their choices. Students can put their names on these, as they won't be made public. These explanations can provide richer formative assessment evidence for teachers to get a sense of how the students are thinking about the big ideas in the probe.

If you have additional suggestions/ideas after trying this out, please share with your feedback about how implementation went.

