

Suggestions and Considerations for Using a Probe

What is a Probe?

- A mathematics probe is a short, highly focused diagnostic assessment designed to elicit common understandings and misunderstandings in a topic of mathematics.
- Each of the items in a probe includes two parts, a selected response and an explanation.
 - The *selected response* includes carefully selected choices including the correct response and distractors (wrong answers) that elicit particular misunderstandings.
 - The *explanation* asks students to explain their reasoning for choosing a selected response.

Why Administer a Probe?

- The selected response format allows for analysis of individual student's understanding as well as identifying patterns in a class.
- The explanations allow you to look more deeply at student thinking, both understandings and misunderstandings.
- Probes are administered to find out about students' understandings and misunderstandings and thus provide helpful information for planning instruction and interventions. Probes are not meant to be graded.

When to Administer a Probe?

- A probe can be administered before a unit of study to assess prerequisite knowledge and understandings and to target intervention prior to the unit of study.
- A probe can be administered during instruction as a formative assessment of progress toward learning goals and to plan next steps in instruction.
- A probe can be re-administered at the end of a unit by either asking students to reflect on previous responses or by giving the same or a revised version of the probe.

Who Should You Give the Probes to?

- Start small—administer a probe to just one class or one small and targeted group of students.
- Probes are helpful to use with struggling students because they can provide insights into the students' misunderstandings.

How to Administer a Probe?

- Introduce the probe to students and be clear about the purpose of the probe and how you will use the information. Clarify that the probe is not a test.
- Give students the paper and pencil version to complete.
- Be careful not to provide hints or suggestions while students are completing a probe.
- For students who have difficulty writing, have students work with a scribe. Alternatively, use the probe as an interview and have the student talk about his/her thinking as he/she completes the probe.
- For students who are not accustomed to explaining their thinking, a probe can be challenging. Support students in building this skill over time.

What to do After Administering a Probe?

- Sort the student work to determine categories of understandings and misunderstandings.
- Use this information to determine ways to target instruction to address the needs identified by the probe.

How to Re-administer a Probe?

- Re-administer the same probe after instruction to find out about changes in students' understandings.
- Another option is to give students back their probe and asking them to reflect on their original responses. For example: *Given what you have learned, would you make any changes to your original response? If so, describe the changes you would make and your reasons for making them.*