

1. Elaborate Major Ideas

- *What is the intended meaning of the element of the core idea?*
- *Is there one idea or several separate ones in the statement?*
- *What terminology is explicitly used in the core idea?*

2. Define Boundary Conditions

- *What peripheral ideas or terms are not essential for understanding the core idea?*

3. Describe Prior Knowledge

- *What other knowledge and skills (both from this topic and from other topics) do students need in order to achieve an understanding of this core idea?*

4. Identify Student Challenges

- *Are there any commonly-held ideas that differ in important ways from the scientifically accepted understanding?*
- *What methods can be used to determine students current understandings?*
- *In what ways can instruction directly address or leverage students current understandings?*

5. Brainstorm Phenomena

- *What phenomena would provide an example of this core idea?*