

# Developing Meaningful Science Assessments

## Prompt Checklist



The task prompts support 3D sensemaking and are accessible to a wide range of students.

This tool is designed to support evaluation and revision of the prompts in a science assessment task. The checklist includes qualities of prompts that support students in three-dimensional (3D) sensemaking using the science and engineering practices (SEPs), disciplinary core ideas (DCIs), and crosscutting concepts (CCCs), as well as qualities of prompts that make assessments more accessible to diverse learners. A version of this tool with space to document evidence and provide feedback is available [HERE](#).

| Support 3D Sensemaking |                                                                                                                                                                                                              |                          |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>A</b>               | Prompts are 2D and 3D to elicit reasoning.                                                                                                                                                                   | <input type="checkbox"/> |
| <b>B</b>               | Prompts build in complexity through the task. (e.g., prompts early in the task could use SEPs and CCCs as scaffolds, including eliciting student thinking at a lower grade-band element).                    | <input type="checkbox"/> |
| <b>C</b>               | Prompts build on students' background knowledge and experiences in ways that affirm students' interests and identities.                                                                                      | <input type="checkbox"/> |
| <b>D</b>               | Prompts build on what students know, can do, and have had an opportunity to learn in the classroom.                                                                                                          | <input type="checkbox"/> |
| <b>E</b>               | Prompts are designed to elicit evidence of student understanding across a learning progression (e.g., multiple prompt types are used, prompts vary in complexity).                                           | <input type="checkbox"/> |
| <b>F</b>               | Together, across the task, prompts and scenario chunks provide students with multiple forms of evidence from which to construct meaning (sense-make) to explain a phenomenon or find solutions to a problem. | <input type="checkbox"/> |
| <b>G</b>               | Throughout the task, prompts support incremental progress so that by the end of the task, students explain the phenomenon or provide a solution to the problem.                                              | <input type="checkbox"/> |
| <b>H</b>               | Task includes open-ended prompts that explicitly ask students to demonstrate their understanding, extend their thinking, and/or justify their responses/reasoning.                                           | <input type="checkbox"/> |
| <b>I</b>               | Each dimension of the PE(s) or 3D learning target assessed is evaluated in one or more prompts.                                                                                                              | <input type="checkbox"/> |

## Support Accessibility

|          |                                                                                                                                                                         |                          |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>A</b> | Prompts use as many words as needed and no more.                                                                                                                        | <input type="checkbox"/> |
| <b>B</b> | Each prompt (question or statement) is clearly marked and separated from the text. Students are asked to respond to one prompt at a time.                               | <input type="checkbox"/> |
| <b>C</b> | Descriptions (text or spoken) for all images, graphics, videos, and/or animations are provided.                                                                         | <input type="checkbox"/> |
| <b>D</b> | There are explicit links between information provided in text and any accompanying representation of that information in illustrations, equations, charts, or diagrams. | <input type="checkbox"/> |

## Support Diverse Sensemaking

|          |                                                                                                                                                                                                                    |                          |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>A</b> | When new information/evidence is introduced, at least two (2) modalities are used for representation (e.g., images, diagrams, video, simulations, textual descriptions).                                           | <input type="checkbox"/> |
| <b>B</b> | Prompts are written to elicit multiple modes for students to represent their thinking.                                                                                                                             | <input type="checkbox"/> |
| <b>C</b> | Prompts are cognitively demanding for all learners, including students who are English learners or are working below or above grade level.                                                                         | <input type="checkbox"/> |
| <b>D</b> | Prompts use grade-level academic vocabulary with embedded support for the words and symbols (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations).          | <input type="checkbox"/> |
| <b>E</b> | Key information in the dominant language (e.g., English) is also available in first languages (e.g., Spanish, Chinese, Arabic) for learners with limited English proficiency and in ASL for learners who are deaf. | <input type="checkbox"/> |

## References

- Achieve. (2016). *Science Task Screener*. NextGenScience.  
[https://www.nextgenscience.org/sites/default/files/resource/files/Achieve%20Task%20Screener\\_Final\\_9.21.18.pdf](https://www.nextgenscience.org/sites/default/files/resource/files/Achieve%20Task%20Screener_Final_9.21.18.pdf)
- CAST (2018). *Universal design for learning guidelines version 2.2*. <http://udlguidelines.cast.org>
- Fine, C. G. M., & Furtak, E. M. (2020). *The SAEBL Checklist: Science classroom assessments that work for emergent bilingual learners*. *The Science Teacher*, 87(9), 38-48.
- Fitzgerald, M. S., & Palincsar, A. S. (2019). *Teaching practices that support student sensemaking across grades and disciplines: A conceptual review*. *Review of Research in Education*, 43(1), 227-248.

# Developing Meaningful Science Assessments

## Prompt Checklist

### Authors

Sara Cooper, Katie Van Horne, Aneesha Badrinarayan, John Spiegel

### Suggested Citation

Cooper, S. Van Horne, K., Badrinarayan, A., Spiegel, J. (2023). *Developing meaningful science assessments: Prompt checklist*. Retrieved from [www.contextus.science](http://www.contextus.science) on [ENTER DATE].

### Terms of Use

Except where otherwise noted, this work is licensed under a [Creative Commons Attribution 4.0 International license](https://creativecommons.org/licenses/by/4.0/).

[www.contextus.science](http://www.contextus.science)