



Maryland and Delaware Climate Change  
Education Assessment and Research

## Assessment Strategies: A Presentation of a Research Instrument for a Learning Progression on Sea Level Rise.

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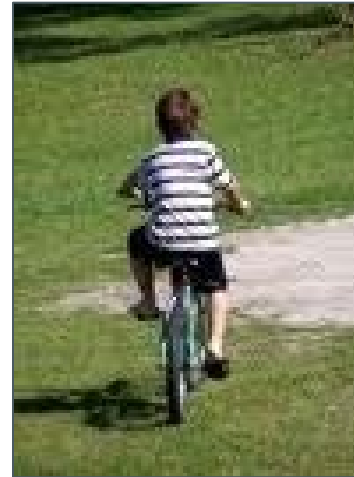
[www.ClimateEdResearch.org](http://www.ClimateEdResearch.org)

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# Learning to Ride a Bike:

What Does a Learner Need to Understand to Keep Progressing?

More sophisticated understanding over time.



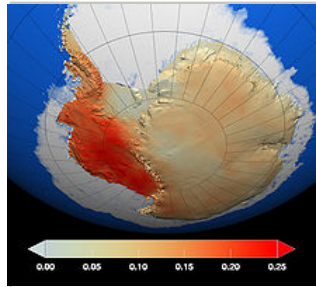


# Validating Learning Progressions

After an initial hypothesis, researchers use data on student thinking to refine and validate LPs.

Example data sources:

- Clinical Interviews
- Think Aloud Interviews
- Written Assessments
- Classroom Discourse
- Whole-Class Assessment Conversations
- Classroom Artifacts (e.g., Student Drawings)
- Ordered Multiple Choice



# Sample Question from our Research Instrument

## Level 2—Measuring and Modeling the Causes and Effects of Sea Level Rise “Melting Ice Sheets”

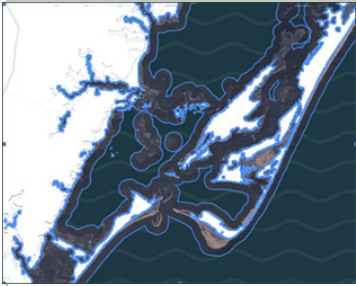
Description of Situation	<p>A large piece of a solid ice sheet on land falls into the water below. After a period of time, the ice melts and is no longer visible.</p>		
Question	<p>What happened to the ice that is no longer visible?</p>		
Answering Options		<p>The piece of solid ice is still present, but its color changed to match the surrounding ocean water.</p>	
		<p>The piece of solid ice broke down and its particles are no longer present in the ocean water.</p>	
		<p>The piece of solid ice sunk to the bottom of the ocean, which explains why it is no longer visible.</p>	
		<p>The piece of solid ice broke into small particles of liquid that have mixed into the ocean water.</p>	

\*Additional data will be collected via interviews, written assessments, etc.



## Activity: Refining the Instrument

1. Individually complete the six questions from the SLR instrument on the handout.
2. As a small group discuss the questions, and compare your thinking and interpretations of the questions.
3. Write suggestions for revision or notes for the researchers on the handout (to be collected).



# Whole Group Discussion

- How might you use the assessment questions in your own teaching?
- What are the strengths and weaknesses of this assessment?
- General comments or questions?



# Thank you!



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