



What is it about?

- Early science education fosters natural curiosity and develops skills like collaboration, communication and critical thinking.
- There is a need for Next Generation Science Standards (NGSS)-aligned formative assessments for the early grades that are accessible across the spectrum of language and literacy development.
- SRI designed 32 standards-aligned assessment tasks, rubrics, and accompanying resources across life, earth, and physical science for 1st graders.

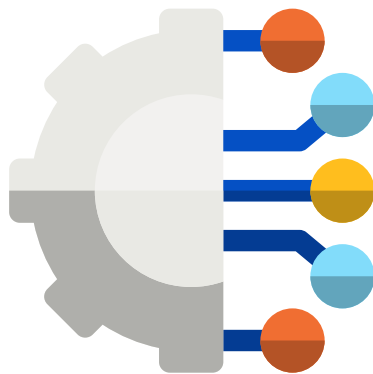
Why is it useful?

- Small group assessments provide students with opportunities to demonstrate science proficiency through collaborative work.
- Individual checks are used to gather personalized evidence of student learning.
- Instructional supports help teachers engage students using multiple modalities (e.g., drawing, speaking, circling, writing).

What does it include?

- 32 individual and small group formative assessment tasks.
- Accompanying resources (e.g., suggested scripts, short videos, short stories, manipulatives, images, discussion guides, student worksheets)
- Easy to use color-coded rubrics that highlight degrees of proficiency in all three dimensions of the NGSS.

How were the assessments created?



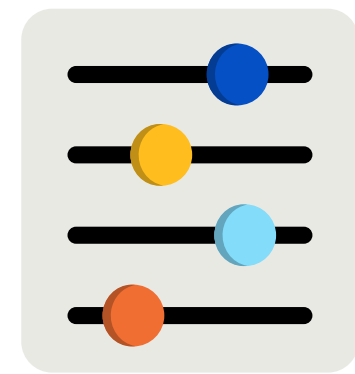
Develop

Determine NGSS performance expectations, articulate a conceptual assessment framework, create formative assessments



Test

Interviews with content experts and teachers, professional development workshops, cognitive lab study, classroom pilot study, and field study with first grade teachers and students



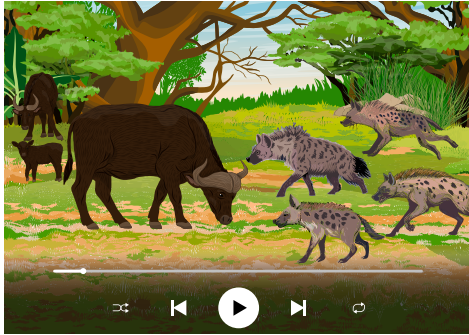
Refine

Improve instructional guidance, student materials, and rubrics for clarity and relevance

What do the assessments look like?

Pairing Instructional Videos With Science Talk

Play the video of the offspring buffalo:
[Buffalo protecting their young.mov](#)

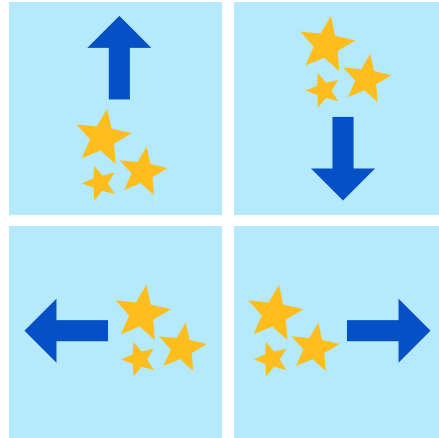


SAY: Turn to a neighbor and tell them: What did the parent buffalo do when they saw the hyenas get close to them?

NOTE: Help students articulate out loud: They made a circle around the offspring to protect them. They tried to scare off the hyenas by running towards them and stomping at them

Combining Drawing, Pattern Recognition, and Science Talk

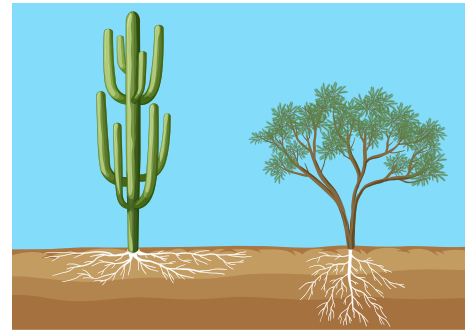
Circle one box below that best shows the direction the stars are moving across the sky



Work with your group to write or draw one constellation that someone looking at the night sky would see during each month below.

Promoting Scientific Creativity Through Design and Collaboration

In your worksheet, circle a type of roots that probably won't fall when there's a strong wind or be washed away by flood.



Now, think about how roots help a plant stay strong in the ground. We're going to use this idea to build a house that won't fall over in strong wind or floods. First, let's design it in your group.

Offering Multiple Ways for Students to Express Their Understanding

Which materials let light pass through them so you can see the book?
Circle the Smiley Face for **YES**, and the Frowny Face for **NO**

Materials	Yes, I can see the book	No, cannot see the book
Aluminum foil		
Baking paper		
Cardboard		
Regular paper		

What are teachers saying about it?

"I realized there's some really good science and engineering practice standards in there! So not only is it planning an investigation and carrying it out, but I also asked the kids to essentially argue with evidence."

"One thing that I like about these assessments is it gives variation to the instructional choices that you make. It's better to have some variety so that you can increase student engagement."

"I was giving the tasks, I would ask the kids what they thought of it, they told me how much they enjoyed it and asked if they get to be in the next group!"



This work is funded by the National Science Foundation, Award # 2201051



For more information about these resources and related work at SRI, scan this QR code.

