NGSS assessment page

[NGSS Assessment Techniques](http://www.theteachertoolkit.com/index.php/tool/student-response-cards) from NGSS@NSTA

Students can demonstrate competency with tasks such as:

* developing and refining models;
* generating, discussing and analyzing data;
* constructing spoken and written scientific explanations;
* engaging in evidence-based argumentation; or
* reflecting on their own understanding.

Options for Summary and Assessment

1. Use the LSST Assessment video and discuss it with your class.

During the video pauses, you can make use of some form of classroom response system to query the class. Some examples are: [Kahoot](https://kahoot.it/), [Clickers](https://cft.vanderbilt.edu/guides-sub-pages/clickers/), [Socrative](https://www.socrative.com/), [Poll Everywhere](https://www.polleverywhere.com/), or [student response cards](http://www.theteachertoolkit.com/index.php/tool/student-response-cards).

1. Ask students to complete a narrative summary in their Jupyter notebooks.
2. Use the set of question prompts that accompany the custom NGSS assessment rubric for the activity. These may be used for class discussion or inserted into quizzes.
3. Conduct an [Academically Productive Discussion](http://discussions4learning.com/files/D4L_AccountableTalk.pdf).
4. Have students complete a [Driving Question Board](http://static.nsta.org/files/sc1308_57.pdf) or [KLEWS chart](http://static.nsta.org/files/sc1506_66.pdf).
5. Students can create white boards or posters to present and compare their findings. This may be used in conjunction with a [Gallery Walk](https://serc.carleton.edu/introgeo/gallerywalk/index.html).
6. Students can design a game, brochure, or video explaining what they have learned.

Customizable rubric for NGSS assessment

The rubric below contains all DCIs, Crosscutting Concepts and Practices that LSST investigations are designed to address. Simply delete the rows you don’t need and modify the scoring if desired.

Scale for scoring:

0 Student demonstrates no growth, application or understanding, even with major prompting and assistance.

1. Student demonstrates partial or incomplete growth, application or understanding, but only with major prompting and assistance.

2 Student demonstrates partial or incomplete growth, application or understanding, with only minor prompting and assistance.

3 Student demonstrates competency in application or understanding without   
 assistance.

4 Student demonstrates outstanding mastery of application and understanding.

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|  | Novice  1 point | On the way  2 points | Competent  3 points | Advanced  4 points |
| **Practices** |  |  |  |  |
| Asking questions |  |  |  |  |
| Developing and using models |  |  |  |  |
| Planning and carrying out investigations |  |  |  |  |
| Analyzing and interpreting data |  |  |  |  |
| Obtaining, evaluating, and communicating information |  |  |  |  |
| Using math and computational thinking |  |  |  |  |
| Constructing explanations |  |  |  |  |
| Engaging in argument from evidence |  |  |  |  |
| **Disciplinary Core Ideas** |  |  |  |  |
| [MS-ESS1-2 1.A](http://www.nap.edu/openbook.php?record_id=13165&page=173) |  |  |  |  |
| [MS-ESS1-2 1.B](https://www.nap.edu/read/13165/chapter/11#175) |  |  |  |  |
| [MS-ESS1-3 1.B](https://www.nap.edu/read/13165/chapter/11#175) |  |  |  |  |
| [HS-ESS1-1 1.A](https://www.nap.edu/read/13165/chapter/11#173) |  |  |  |  |
| [HS-ESS1-2 1.A](https://www.nap.edu/read/13165/chapter/11#174) |  |  |  |  |
| [HS-ESS1-3 1.A](https://www.nap.edu/read/13165/chapter/11#174) |  |  |  |  |
| [HS-ESS1-4 1.B](https://www.nap.edu/read/13165/chapter/11#175) |  |  |  |  |
| [MS-PS4-1 4.A](https://www.nap.edu/read/13165/chapter/9#131) |  |  |  |  |
| [MS-PS4-1 4.B](https://www.nap.edu/read/13165/chapter/9#133) |  |  |  |  |
| [MS-PS4-1 4.C](https://www.nap.edu/read/13165/chapter/9#136) |  |  |  |  |
| [MS-PS4-2 4.A](https://www.nap.edu/read/13165/chapter/9#131) |  |  |  |  |
| [MS-PS4-2 4.B](https://www.nap.edu/read/13165/chapter/9#133) |  |  |  |  |
| **Crosscutting Concepts** |  |  |  |  |
| Patterns |  |  |  |  |
| Cause and effect |  |  |  |  |
| Scale, proportion and quantity |  |  |  |  |
| Systems and system models |  |  |  |  |
| Energy and matter |  |  |  |  |
| Structure and function |  |  |  |  |
| Stability and change |  |  |  |  |