NGSS assessment page

NGSS Assessment Techniques   
from <http://ngss.nsta.org/conducting-assessments.aspx>

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; and
* 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, an effective assessment strategyis to make use of some form of free response system to query the class about which students had the right idea. Options for this may be the use of Kahoot, Clickers, Socrative, Poll Everywhere, or student response cards such as seen in these links:   
[http://uminntilt.com/2014/08/20/color-coded-cards-the-low-tech-clicker/](https://uminntilt.com/2014/08/20/color-coded-cards-the-low-tech-clicker/)

<http://www.theteachertoolkit.com/index.php/tool/student-response-cards>

Alternatively, you can use an [Academically Productive Discussion](http://discussions4learning.com/files/D4L_AccountableTalk.pdf).

2. Ask students to complete a narrative summary in their Jupyter notebooks   
and submit it to you.

3. 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).

4. Use white boards or posters to have students present their findings. This   
 may be used in conjunction with a [Gallery Walk](https://serc.carleton.edu/introgeo/gallerywalk/index.html).

5. Use the set of question prompts that are aligned with the custom NGSS assessment rubric for the activity.

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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 |  |  |  |  |
| **Connections to Engineering** |  |  |  |  |
| Interdependence of Science, Engineering, and Technology |  |  |  |  |
| Influence of Engineering, Technology, and Science on Society and the Natural World |  |  |  |  |

6. Create your own rubric from this generic NGSS assessment template: