About My NASA Data

Earth System Approach

My NASA Data provides educators and students in grades 3-12 with accessible and usable authentic NASA Earth data. Incorporating real NASA satellite data offers valuable Earth science learning experiences and empowers learners with the resources to access and effectively use this authentic data. This project, led by NASA Langley Research Center Science Directorate, utilizes curated datasets, visualizations, and tools like the Earth System Data Explorer, to help students develop a deeper understanding of Earth's systems and the scientific process. These resources also support science curricula and cultivate crucial data literacy skills for future STEM engagement and workforce readiness.

Learners advance from basic visual interpretation to complex data analysis, all while exploring relevant Earth science phenomena. By utilizing NASA videos, visualizations, and datasets, individuals can engage with the data at an appropriate level, progressing from making sense of short videos to analyzing more intricate visualizations and datasets.

My NASA Data resources incorporate NASA Earth data in diverse formats to promote science learning through real-world data. All the content is aligned to science topics, or phenomena, and linked to one or more spheres of Earth as a system. There are connecting resources that support doing authentic science and learning about STEM careers. Ready-to-use classroom resources provide all necessary data for activities. Flexible resources, like the Data Literacy Cubes or the Earth System Data Explorer, allow for customized data analysis and interpretation.

Image

If you looking for an immersive way to get to know My NASA Data check out the My NASA Data Guided Tour.

My NASA Data features the following content types in each of the sphere pages:

Click on the down arrow next to the topics below to learn more about each one.

Learn about our Different Types of Lesson Plans and Activities!

1. **Mini Lessons**
   - Short, student facing, resources that feature content to help teachers and students access NASA data in a variety of formats. They offer pre-generated graphs, mapped visualizations, animations, and processed data based on NGSS phenomena, providing the learner with the opportunity to explore concepts without being encumbered by visualization interfaces. These flexible resources provide guiding questions and other teacher tools so you can use them to open or close your class activity.
   - What is a Mini Lesson provides more information.
2. **Interactives**
   - My NASA Data interactives are student facing interactive lessons. Students

can digitally engage with interactive slide decks or our StoryMaps. The StoryMaps maps are longer and are immersive data-rich experiences that engage students in data models in a 5E learning cycle. These, too, are aligned with NGSS 3 Dimensions and Earth Systems phenomena that a focus on data collection and analysis.
    - What is an Interactive provides more information.
    - What is a StoryMap provides more information on the StoryMaps.
3. **Lesson Plans**
    - Our lesson plans are teacher facing and feature a variety of NASA and related lesson plans for grades 3-12 that align with NGSS Earth Systems phenomena and embed NASA data, images, and content in the lesson so you do not have to access a visualization tool to pull data for students. Most of the lessons incorporate maps and data without having to teach students spreadsheet skills, have 1:1 student/computer ratio, or rely on computers that may have outdated/incompatible software.
    - What is a Lesson Plan provides more information.

Looking for more ways to incorporate student friendly data in your instruction?

1. **Data Visualization: Earth System Data Explorer**
    - A visualization tool that allows users to interact with NASA Earth Science satellite data. This tool allows users to explore the data and create graphs, data tables, and mapped images of NASA Earth science data to help students understand the data.
    - The tool can be used to generate content for your instruction, or you can have students use the tool.
    - More information and frequently asked questions can be found on the Earth System Data Explorer page.
    - For a list of all datasets available, organized by Earth System Sphere, visit the Data Collections: Earth System Data Explorer page.
    - The Tutorials page offers a video tutorial.
2. **Data Literacy Cubes**
    - The Data Literacy Cube resource complements the Earth System Data Explorer and guides students' exploration of graphs, data tables, and mapped images of NASA Earth science data.
    - The cubes can be used with the Earth System Data Explorer, other content on the site, or your own Earth data resources.
    - Leveled question sheets provide opportunities for students to connect with data, regardless of language proficiency or academic skill. These tools were created with the Next Generation Science Standards in mind. They help students develop their *Data Analysis and Interpretation* skills, as well as help them to recognize patterns, cause & effect, stability & change, and more!
    - The full Data Literacy Cube Guide is available under the resources menu.
3. **Earth System Satellite Images**
    - The Earth System Satellite Images help students observe and analyze global Earth and environmental data, understand the relationship among six different environmental variables, and explore how the data change seasonally and over longer timescales.
    - These are available without using the Earth System Data Explorer.
    - There are six lesson plans utilizing the curated images for the following variables.

- The lessons and more information can be found on the Analyzing Global Patterns with the Earth System Satellite Images page.

Want to learn about STEM careers and how to do authentic science?

1. **STEM Career Connections**
   - My NASA Data (MND) offers resources to help students explore careers related to Earth Systems missions at NASA. Students may review job profiles within the four disciplines of STEM (*Science, Technology, Engineering, and Mathematics*) aligned with projects in the Atmosphere, Biosphere, Cryosphere, Geosphere, and Hydrosphere and learn about real NASA employees who serve in those careers. Information on work description, job significance to NASA Earth Science, salaries, educational requirements, and more are provided.
   - These connections are linked in each sphere.
   - See all STEM Career Connections
2. **Global Learning and Observations to Benefit the Environment (GLOBE) Connections**
   - GLOBE participants actively collect surface-based environmental observations from around the world using methodology developed by research scientists with GLOBE's education emphasis in mind. These data are uploaded to GLOBE's open-source database and made freely available to everyone.
   - My NASA Data's GLOBE Connections highlight related GLOBE data measurement protocols, activities, and resources that support the learning and exploration of featured phenomena of the Atmosphere, Biosphere, Cryosphere, Geosphere, and Hydrosphere...right in your backyard!
   - See all GLOBE Connections

Frequently Asked Questions

What are the NASA Images and Media Usage Guidelines?

For information on using content from My NASA Data, please check the NASA Images and Media Usage Guidelines.

How do I cite use of My NASA Data Earth System Data Explorer Data?

When My NASA Data products are used in a publication, we request the following acknowledgment be included:
"These data were obtained from the NASA Langley Research Center (LaRC) My NASA Data Project funded by NASA Science Mission Directorate Science Activation Award: GLOBE Mission Earth award No. NNX16AC54A."

For complete data citation information please visit the Earth System Data Explorer Data Citations page.

Can I use My NASA Data resources in presentations, training, and publications?

The My NASA Data Project kindly requests a reference, web link and/or a summary of any conference presentations, trainings, published papers or reports or a brief description of other uses (e.g., posters, oral presentations, etc.) of data products that we have distributed. This will help us determine the use of our resources, which is helpful in optimizing product development. It also helps us to assess our value to the community. Please contact us at My NASA Data for additional information on sending reference material.

Acknowledgement: My NASA Data is funded by NASA Science Mission Directorate Science Activation Award: GLOBE Mission Earth award No. NNX16AC54A.