

Finding Data for NGSS-Aligned Items

NGSS assessment items typically involve presenting students with stimuli that include data or numerical models based on data.

Questions to consider before beginning a search for data:

- What type of data sets will support alignment to the selected science and engineering practice and/or disciplinary core idea (e.g., ecosystem population sizes, amount of carbon transferring between Earth systems, plant height or mass)?
- What is the best format to present data to students?
 - What does the SEP/DCI require that students do with the data?

SEARCH TIPS:

- Try an image search that includes keywords *graph* or *table*, e.g., “ecosystem population changes graph”.
- Try broadening or narrowing your search by adding or removing keywords, e.g., “estuary ecosystem population changes graph” or “predator prey population changes graph”.
- If your search terms aren’t yielding good results on the first couple of pages, try new terms and/or new engines (all web vs. image, or Google Scholar).
- Try limiting your search to more relevant sites or search engines, e.g., to find climate data, try NWS or Weather Underground; to find engineering data, try Engineering Toolbox; for data that is likely in a scientific journal (e.g., ecosystem-specific data), try Google Scholar.

Questions to consider while evaluating search results:

- Is the data presentation (graph, table, etc.) grade-level appropriate?
 - Are the units familiar to students in this grade?
 - Does the data contain terms that will be unfamiliar to students?
 - Is the visual style familiar or intuitive to students?
 - Can the data or presentation be simplified to address any of the above?
- Is the source for the data reputable?

TIPS:

- Sometimes it is quicker and simpler to “start from scratch” in reformatting a data presentation than it is to try making a given presentation work.
- Often, the data you will find contain much more than you really need. Don’t overlook a potentially good source of data because it’s “too much.” Feel free to extract only the relevant variables and a grade-appropriate number of data points.
- Sometimes a scientific principle (e.g., Newton’s second law) can be used in conjunction with other sources to generate data, e.g., a source may provide information about the mass and acceleration of bumper cars and $F=ma$ can be used to generate data about the forces involved in the collisions.