

**NOTE: The following resources are also listed as a part of “1-6b Learning about Online Databases Part 2 - Topic Specific Sites” in the 1<sup>st</sup> Quarter of the 1st year Activities (Sophomores)**

## Science Research Program

### General Resources

Topics: Dozens of free online text books covering numerous research topics such as:

- Introduction to Scientific Research Projects (Basten)
- Large Scale Data Handling in Biology (Kozak)
- Foundations of mechanics of materials (Rushchitsky)
- Introductory Climate Science-Global Warming Explained (Sloan)
- Advanced Topics in Electrodynamics (Wilcox)
- Handbook of Statistics-An Overview of Statistical Methods (Singpurwalla)
- Introduction to Matlab (Ahlersten)
- Cancer Biology Introduction (Hejmadi)

Resource: [www.Bookboon.com](http://www.Bookboon.com)

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Topic: Similar source of free, online books that can be downloaded

Resource: <https://www.ncbi.nlm.nih.gov/books/>

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Topic: Fantastic, free resource to build a foundation of knowledge in almost any STEM area

Resource: <https://www.ck12.org/student/>

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Topic: General sources of free, research articles

Resources:

- <https://www.semanticscholar.org/>
- <https://core.ac.uk/>
- <https://doaj.org/>
- <https://www.scienceopen.com/>
- <https://eric.ed.gov/>
- <https://zenodo.org/>

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Topic: Possible projects to become involved with in conjunction with others around the country/world.

Resource: <https://www.citizenscience.gov/catalog/#>

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Topic: Big Data and Analytics. NY high school library website with fantastic resources.

Resource: <https://researchguides.harrisoncsd.org/DATA>

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Topic: U.S. Government’s open data. There is a lot of data from numerous research areas.

Resource: [www.data.gov](http://www.data.gov)

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Topic: Data on demographics, population, voting, etc..)

Resource: <https://data.census.gov/cedsci/>

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Topic: Our nation, in numbers. Government Data to Drive Fact-Based Discussions (and research)

Resource: <https://usafacts.org/>

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Topic: General search tool for data on numerous research topics

Resource: <https://datasetsearch.research.google.com/>

**NOTE: The red hyphens after each resource are for students (or teachers) to add comments regarding the site. This way the comments won’t be lost among the other text and links on the page**

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Topic: How to Get a New York Public Library card

Resource: <https://www.nypl.org/books-music-movies/ebookcentral>

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Topic: Our world in numbers.

Resource: <https://ourworldindata.org/>

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Topic: Eleven quick tips for finding research data

Resource: <https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1006038>

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Science Direct – Research on all topics (may need a subscription to fully view articles)

Resource: <http://www.sciencedirect.com/>

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Topic: Omicsonline – Research on all topics

<https://www.omicsonline.org/scientific-journals.php>

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Topic: JSTOR – Research on all topics

<http://www.jstor.org/>

## **Animal Science Resources**

Topic: Invasive species; insects, wildlife, plants, diseases

Resource: <https://www.eddmaps.org>

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Topic: USDA

Resource: <https://www.usda.gov/topics/data>

## **Behavioral Science Resources**

Topic: PTSD Clinical Trials Database: PTSD-Repository

Resource: <https://www.ptsd.va.gov/ptsdrepository/index.asp>

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Topic: Numerous research from the American Psychological Association

Resource: <http://www.apa.org/pubs/databases/>

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Topic: Numerous research from the American Speech-Language Hearing Association

Resource: <http://www.asha.org/research/researcher-tools/databases/>

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Topic: Social Science Research Network (SSRN) joined Mendeley and Elsevier

Resource: <https://www.ssrn.com/index.cfm/en/>

## **Biomedical including Cellular & Molecular Biology and Medicine & Health**

Topic: NIH Human Microbiome Project

Resource: <https://www.hmpdacc.org/>

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Topic: links to numerous databases mostly in genomics

Resource: <https://www.ncbi.nlm.nih.gov/guide/all/>

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Topic: Molecular data and the tools to analyze

Resource: <https://www.ebi.ac.uk/services>

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Topic: Centers for Disease Control (CDC) Data - A Treasure Trove!

Resources: <https://www.cdc.gov/datastatistics/index.html>

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Topic: Physionet: Archive of digital recordings of physiologic signals, library of software for signal processing/analysis. Open Access.

Resources: <https://physionet.org/content/>

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Topic: Database research from Journal of Biological Databases and Curation

Resource: <http://database.oxfordjournals.org/>

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Topic: PubMed – Research from numerous biomedical topics

Resource: <http://www.ncbi.nlm.nih.gov/pubmed>

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Topic: Free medical databases

Resources: Some of the following do contain the same/similar resources as others but in case one doesn't work

- <https://shsulibraryguides.org/c.php?g=86718&p=1692269>

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- <https://csulb.libguides.com/c.php?g=39192&p=249955>

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- <https://musclibguides.com/c.php?g=290948&p=4276402>

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- [https://www.medscape.com/viewarticle/451577\\_3](https://www.medscape.com/viewarticle/451577_3)

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- <https://www.cdc.gov/dhdsr/maps/gisx/resources/phr-databases.html>

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- <https://openfMRI.org/dataset/>

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- [https://eresources.nlm.nih.gov.nlm\\_eresources/](https://eresources.nlm.nih.gov.nlm_eresources/)

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- [https://en.wikipedia.org/wiki/List\\_of\\_biological\\_databases](https://en.wikipedia.org/wiki/List_of_biological_databases)

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## **Computational Biology & Bioinformatics**

Topic: NIH Human Microbiome Project

Resource: <https://www.hmpdacc.org/>

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Topic: Bioinformatics

Resource: <https://guides.library.uncc.edu/c.php?g=173181&p=1143648>

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Topic: USDA

Resource: <https://www.usda.gov/topics/data>

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## **Computer Science**

Topic: Computer Science & Statistics

Resource: [www.kaggle.com](http://www.kaggle.com)

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Topic: Volunteers to find computer science mentors

Resource: <https://code.org/volunteer/local>

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Topic: Free, online program to learn how to code

Resource: [www.CodeAcademy.com](http://www.CodeAcademy.com)

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Topic: Data Science Competitions for you to hone your skills

Resource: <https://towardsdatascience.com/10-data-science-competitions-for-you-to-hone-your-skills-for-2020-32d87ee19cc9>

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## **Earth & Planetary (Space) Sciences**

Topic: A lot of water, oceanic, climate, storms, environmental, etc. data

Resource: [www.ncdc.noaa.gov/cdo-web/](http://www.ncdc.noaa.gov/cdo-web/)

Topic: Geothermal datasets

Resource: <http://geothermaldata.org/>

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Topic: Weather datasets

Resource: <https://www.climate.gov/maps-data/datasets>

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Topic: Climate Datasets

Resource: <https://climatedata-catalogue.wmo.int/assessed-datasets>

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Topic: Rainfall, water use, water quality, etc.

Resource: <https://waterdata.usgs.gov/nwis>

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Topic: Department of Energy datasets

Resource: <https://www.energy.gov/data/open-energy-data>

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Topic: Landsat dataset links

Resource: <https://landsat.gsfc.nasa.gov/data/where-to-get-data/>

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Topic: Datasets are divided into the categories of Atmosphere, Ocean, Land, Astronomy, Models and Simulations, and Extras.

Resource: <https://sos.noaa.gov/Datasets/>

Topic: The Paleobiology Database is a public database of paleontological data that anyone can use, maintained by an international non-governmental group of paleontologist, which lets you filter fossil occurrences by time, space, and taxonomy, and displays their modern and paleogeographic locations;

Resource: <https://paleobiodb.org/#/>

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Topic: The USGS Earth Explorer data portal is your one stop shop for obtaining geo-spatial datasets from our extensive collections. Users can navigate via interactive map or text search to obtain Landsat satellite imagery, Radar data, UAS data, digital line graphs, digital elevation model data, aerial photos, Sentinel satellite data, some commercial satellite imagery including IKONOS and OrbView3, land cover data, digital map data from the National Map, and many other datasets.

Resource: <https://www.usgs.gov/science-support/osqi/yes/Resource-teachers/earth-explorer>

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Topic: The Geosciences Node of NASA's Planetary Data System (PDS) archives and distributes digital data related to the study of the surfaces and interiors of terrestrial planetary bodies.

Resource: <https://pds-geosciences.wustl.edu/>

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Topic: NASA/Jet Propulsion Laboratory Image Data

Resource: <https://photojournal.jpl.nasa.gov/>

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Topic: CRISM (Compact Reconnaissance Imaging Spectrometer for Mars)

Resource: <http://crism.jhuapl.edu/>

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Topic: Mars data

Resource: <https://www.mars.asu.edu/data/> <https://pds-geosciences.wustl.edu/> YOUTUBE video explaining some uses of MOLA (Mars Orbiter Laser Altimeter) data: [https://www.youtube.com/watch?v=kzdO9PANu\\_8&feature=youtu.be](https://www.youtube.com/watch?v=kzdO9PANu_8&feature=youtu.be)

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Topic: Infrared Astronomy Data

Resource: <https://irsa.ipac.caltech.edu/frontpage/>

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Topic: LOLA PDS Data Node: This website contains an archive of the data obtained by the Lunar Orbiter Laser Altimeter (LOLA), an instrument onboard the NASA Lunar Reconnaissance Orbiter (LRO) mission. It also hosts higher-level products (LRO Radio Science Archive; Planetary Geodesy Data Archive; GRAIL Data Archive of gravity fields), all to the standards of the Planetary Data System (PDS).

Resource: <http://imbrium.mit.edu/>

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Topic: Columbia University's Lamont-Doherty Earth Observatory, a treasure trove of databases and information on: Ocean Sediment Core Repository; Biology & Paleo Environment; Geochemistry; Marine Geology & Geophysics; Ocean & Climate Physics; Office of Marine Operations; Seismology, Geology, & Tectonophysics; Publications Database

Resource: <https://www.ldeo.columbia.edu/>

## Engineering

Topic: Tinkercad (an online engineering design tool not data): Tinkercad is a free, easy-to-use app for 3D design, electronics, and coding. It's used by teachers, kids, hobbyists, and designers to imagine, design, and make anything!

Resource: <https://www.tinkercad.com/>

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TinkerCad worksheets: [https://drive.google.com/drive/folders/1yp0ovOFDVwEh8mNVVwVAUhEHCHQL\\_D6v](https://drive.google.com/drive/folders/1yp0ovOFDVwEh8mNVVwVAUhEHCHQL_D6v)

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Engineering design worksheets: <https://drive.google.com/drive/folders/1uWtCGr-iAZalfdT8QkzUOXqisSAEMQJ1>

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Arduino Activities: <https://drive.google.com/drive/folders/1x-8JkIvn7abqVz2vT-uhW40jcKt9jBIL>

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Topic: Numerous research ideas from the Institute of Electrical and Electronics Engineers

Resource: <https://www.ieee.org/index.html>

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## Environmental & Sustainable Resources

Topic: Ideas for sustainable development projects: UN Sustainable Development Goals

Resource: <https://sustainabledevelopment.un.org/sdgs>

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Topic: U.S. Department of Agriculture

Resources: <https://www.usda.gov/topics/data>

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## Plant Science (Botany)

Topic: Invasive species; plants, diseases, insects, wildlife

Resources: <https://www.eddmaps.org/>

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Topic: “weeds”

Resources: <http://wssa.net/wssa/weed/composite-list-of-weeds/>

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Topic: USDA data

Resources: <https://www.usda.gov/topics/data>

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Topic: Cornell Cooperative Extension is the primary source, particularly for New York State but not exclusively, on agriculture and food systems, including plant diseases and insect pests.

Resources: <https://cce.cornell.edu/>

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