“Research data [...] is collected, observed, or created, for purposes of analysis to produce original research results.”

“Recorded factual material commonly accepted in the scientific community as necessary to validate research findings...”

“Materials generated or collected during the course of conducting research...”

**Definitions**

**Observational**: Data captured in-situ, can not be recaptured, recreated or replaced.

**Experimental**: Data collected under controlled conditions, in situ or lab-based. Should be reproducible, but can be expensive.

**Simulation**: The process of taking a large amount of data and using it to mimic real-world scenarios or conditions.

**Derived / Compiled**: Reproducible, but can be very expensive.

**Reference / Canonical**: Static or organic collection [peer-reviewed] datasets, probably published.

**Metadata**: Structured information associated with data for purposes of discovery, description, use, management, and preservation.

**DO NOT CONFUSE**

- **Data point** vs. **Dataset**
- **Raw data** vs. **Processed data**
- **Database** vs. **Data archive**
- **Plan and design** vs. **Discover and reuse**
- **Review data** vs. **Archive and preserve**
- **Use, organize and store** vs. **Publish and share**
- **Collect data** vs. **Validate data**
- **Create metadata** vs. **Capture data and metadata**
- **Derive and visualize data** vs. **Interpret, process, and analyze data**
- **Polish data; Validate and verify data; Create user documentation; Publish and share; Select appropriate access to data; Promote data; Peer-review publications**

**RESEARCH DATA LIFECYCLE**

1. Acquire existing third-party data
2. Use licenses and copyrights
3. Reuse and repurpose data
4. Discover data sources
5. Follow-up research
6. Cite data
7. Write a Data Management Plan (DMP)
8. Consider ethics authorizations
9. Explore existing data sources
10. Create naming convention
11. Find storage solutions
12. Choose metadata
13. Choose software
14. Check IP issues
15. Collect data
16. Validate data
17. Create metadata
18. Store and backup
19. Derive and visualize data
20. Capture data and metadata
21. Interpret, process, and analyze data
22. Polish data; Validate and verify data; Create user documentation; Publish and share; Select appropriate access to data; Promote data; Peer-review publications

**Credits and sources**

1. [libguides.macalester.edu/data](http://libguides.macalester.edu/data)
2. [go.epfl.ch/rdm-fastguide06](http://go.epfl.ch/rdm-fastguide06)
3. [data-archive.ac.uk](http://data-archive.ac.uk)
4. [go.epfl.ch/rdm-readme](http://go.epfl.ch/rdm-readme)

**Contact and info**

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- [researchdata@epfl.ch](mailto:researchdata@epfl.ch)