**antarctica\_mass\_200204\_201706.csv (drive link)** Antarctic mass measurements over time.

Use these columns/variables:

- mass (starts from zero the first year data was taken) - Time (year)

Best chart type: Basic x/y graph.

- x-axis: time - y-axis: mass - Zoom in on interesting areas.

**billiondollardisasters-time-series.csv (drive link)** Count and cost of billion-dollar extreme weather disasters over time.

Use these variables:

- Year - [Extreme event] Count - [Extreme event] Cost Extreme events are drought, flooding, freeze, severe storm, tropical cyclone, wildfire, and winter storm.

Best chart type:

● Make several x/y graphs plotting extreme events and move them next to each other. For example:

○ Graph 1 x-axis: time

○ Graph 1 y-axis: Freeze count

○ Graph 2 x-axis: time

○ Graph 2 y-axis: Tropical cyclone count

● Make a box plot showing distribution of count or cost of extreme events over time.

○ Y-axis: Severe storm cost

○ Center: Year

○ In Measure chart menu, select “Box plot”

**greenland\_mass\_200204\_201706.csv (drive link)** Greenland ice mass variation since 2002 (measurement using NASA's GRACE satellites)

Use these variables:

- Time (year decimal) - mass (mass of ice variation in gigatonnes)

Best chart type: Scatterplot Graph 1:

- X-axis: Time - Y-axis: mass (gigatonnes)

**Kaufman2009arctic.csv (drive link)** Average temperature anomalies in the arctic.

Use these variables:

- Year

- Average

Best chart type: Basic x/y graph.

- X-axis: time - Y-axis: average Add a **Mapppd\_penguin\_portcharotsubset.csv (**[**drive link**](https://drive.google.com/file/d/1SJ4j5Ghm-zysshBPIn3aZIwxGsYPoSsI/view?usp=sharing)**)** Count of penguin nests, chicks, and adults at the Port Charot site. Subset of MAPPPDPenguin dataset, limited to one location.

Use these variables:

- penguin\_count - season\_starting (year) - common\_name (species of penguin) - count\_type (chicks, nests, adults) Using CODAP tools, you can limit the dataset to only chicks and adults, or only nests, or only one species of penguin.

Best chart type: Basic x/y graph

- X-axis: season starting - Y-axis: penguin count - Center (e.g. graph color): common\_name

**MAPPPDPenguin.csv (**[**drive link**](https://drive.google.com/file/d/1VWLxg7C-OSKHWYJl2g6CIyB80pwyOdKA/view?usp=sharing)**)** Count of penguin nests, chicks, and adults at the Port Charot site. Subset of MAPPPDPenguin dataset, limited to one location.

Use these variables:

- site - penguin\_count - season\_starting (year) - common\_name (species of penguin) - count\_type (chicks, nests, adults) Using CODAP tools, you can limit the dataset to only chicks and adults, or only nests, or only one species of penguin.

Best chart type: This dataset is very complex. Create subsets of data by location, species, or type and analyze. Or experiment with whole dataset!

**Sea-surface-temp\_fig-1.csv (**[**drive link**](https://drive.google.com/open?id=1pWK-5Eub1RGzulJ2uZ_3ZSIpuXsEs2Dn)**)**

Basic description: 135 years of average sea surface temperature. The temperature is relative to the average of 1971-2000 temperatures.

Use these variables:

- Year - Annual anomaly

Best chart type: Scatter plot

**SeaIceExtent\_1978\_2015.csv (**[**drivelink**](https://drive.google.com/open?id=1DbVFcVwSuDMM-frVaLfqxqYyI4GQOtxQ)**)**

Basic description: Monthly arctic sea ice extent (in area in square kilometers) from 1978 to 2015

Use these variables:

- analysisdate = date of calculated sea ice extent - month = month sea ice extent was collected - Area\_SqKm = Area covered by sea ice in square kilometers (numeric)

Best chart type: Scatterplot Graph 1: X-axis: analysisdate Y-axis: Area\_SqKm Graph 2: X-axis: month Y-axis: Area\_SqKm