DoD STARBASE
A Department of Defense Youth Program

AURORA POWER!

Scientists use decimal numbers a lot when measuring objects or processes! Because it allows for more accuracy.

This activity uses data from the National Oceanic and Atmospheric Administration (NOAA) POES satellite to compare the Northern Lights displays in terms of how many watts of energy they produce.

You will use the data collected to make comparisons in the auroras. For example:

How much more powerful has an aurora with 987.45 gigawatts (Gw), than an aurora with 324.98 gigawatts?

987.45 gigawatts
- 324.98 gigawatts
662.47 gigawatts
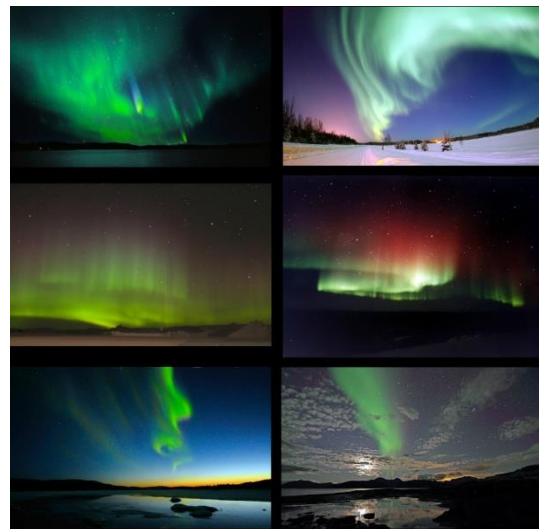
Auroras are very common to see in northern regions of Canada and Alaska. They light up the skies in swirling color.

Note: *A kilowatt is one thousand watts, but a gigawatt is one billion watts! A kilowatt of electricity can run a small house, but a gigawatt can run a small city.*

This table lists some major storms detected by the NOAA POES satellite, and the total power that they produced in gigawatts (Gw). Use this table to answer the questions below.

Date	Power in GW
04-11-01	528.1
04-18-01	828.3
11-24-01	497.7
02-18-00	17.6
08-27-01	96.5
11-06-01	484.7
05-23-02	387.3
02-05-02	244.8
09-04-02	580.2

What was the difference in power between the strongest and weakest aurora detected?

If 48 storms like the one on 02-10-00, were combined, how much different would they be than the power from the strongest storm in the table?

What is the sum of the power for all nine storms?

How many times more powerful was the 04-18-01 storm than the storm detected on 08-27-01?