Scale 4: Stars and Grains of Sand

Data. The following data will be useful to you as you do this activity.

- According to the CIA, the total length of sandy beach on Earth is about 360,000 kilometers.
- A typical beach width is about 50 meters, and typical depth of dry sand is about 2 meters.
- Sand grains vary in size from about 0.1 to 2 millimeters in diameter; for this activity, use an average size of about 0.5 millimeters.
- There are about 100 billion galaxies in the observable universe, and you can assume that a typical galaxy has about 100 billion stars.

Activity. Use the given data to calculate the approximate number of grains of dry sand on all Earth's beaches combined. Compare to the number of stars in the observable universe. Show all your work. Comment on your results.