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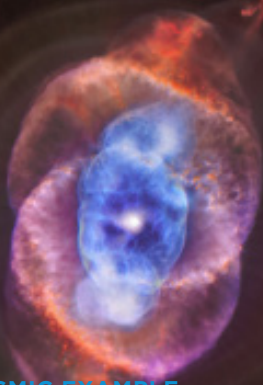
ASTROLYMPICS

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**Definition:** how much mass is in a certain volume

**Units:** kilograms per cubic meter ( $\text{kg/m}^3$ ); grams per cubic centimeter ( $\text{g/cm}^3$ )



### **COSMIC EXAMPLE**

Neutron star: These stellar cores, which often emit X-rays that Chandra can detect, are some of the densest objects in the Universe.  $1 \times 10^{18} \text{ kg/m}^3$  (1,000,000,000,000,000,000  $\text{kg/m}^3$ )



### **PARALYMPIC EXAMPLE**

Sailing: Boats are largely hollow and float because their total volume has a much lower density than water. Air:  $1.2 \text{ kg/m}^3$ ; Water:  $1,000 \text{ kg/m}^3$