

Sec.: _____ Name: _____

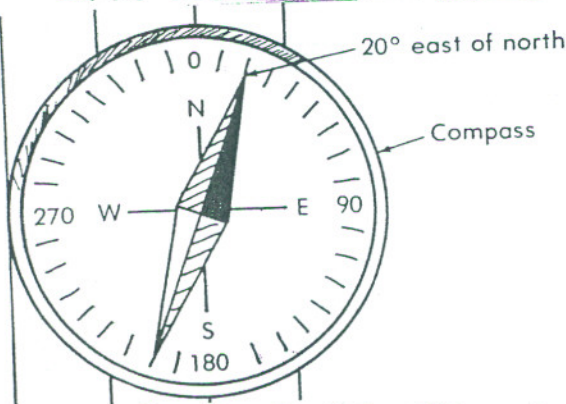
Experiment: Earth's Roundness & Magnetism
(E. Science 9-23-1b)

Purpose: To determine the roundness of Earth and to use a compass to map the magnetic field in your classroom.

Materials: string (little stretchability)
meter stick two globes basketball

Methods: **Part A: "Roundness" of Earth**

- Using the string, measure the circumference of the globe at the equator (in cm). Record this measurement in the data table.
- Measure the circumference of the globe along the prime meridian and International Date Line (180° meridian). Record these measurements in the data table.
- Determine the "**roundness ratio**" of the globe by dividing its larger circumference by its smaller circumference. Continue all division to four decimal places.
- Repeat this procedure with a basketball. Use any two circumferences that are at right angles (90°) to each other. Record in Results.
- Calculate Earth's roundness ratio by using Earth's dimensions in results.



Part B: Earth's Magnetism

- Observe the floor plan of the classroom in the results section. Notice the labeled north, south, east, and west directions.
- Notice the locations of the desks and some counters and the numbers associated with each location.
- Take a compass reading at each numbered locations and record these in results table. Align the compass with north according to the setting given on the floor plan. Then read how many degrees east or west of north the magnetic north is. (see figure).

Results: **Part A: "Roundness" of Earth**

Object	equatorial circumference	polar circumference	roundness ratio
Globe #1	_____ cm	_____ cm	_____
Ball	_____ cm	_____ cm	_____
Globe #2	_____ cm	_____ cm	_____
Earth	39 843 km	39 776 km	_____