Start with a Simpler Case: The electrostatic potential due to a particle with charge q is:

$$V(r) = \frac{kq}{r}$$

where k is the electrostatic constant and r is the distance from the particle.

On your whiteboard, identify all the points with the same value of potential around a single point charge. Repeat for several different values of potential.

- What shapes have you drawn?
- If you wanted the difference in potential represented by the shapes to be equal, how are they spaced?

Add Complexity: Draw equipotential surfaces for the potential due to 4 particles with equal, positive charge arranged in a square.
Examine a New Case: Repeat for a quadrupole: 2 positively charged particles and 2 negatively charged particles arranged in a square, with "like" charged particles on opposite corners.
Extend to New Surfaces: The red surface represents the potential of a quadrupole in the plane of the charges (at $z = 0$ cm). What would the potential look like in the $z = 1$ cm plane? What would be different? What about the $z = -1$ cm?