In this unit, you will explore Gauss's Law in integral form.

What is flux and how do you us the "use what you know" method to calculate it? How and when can you use symmetry arguments about a charge distribution to predict the direction and functional dependence of the electric field.

Key Activities/Problems

- Flux through a Paraboloid
- Visualizing Flux through a Cube
- Symmetry Arguments for Gauss's Law
- Gauss's Law on a Cylindrical Shell

At the end of this unit, you should be able to:

- Give the directed area elements on surfaces of cubes, cylinders, and spheres;
- Employ the use what you know method to find the flux through surfaces;
- Recognize when you have sufficiently high symmetry to use Gauss's Law in integral form to find the electric field around static charge distributions and then be able to calculate this field;
- Make clear, correct symmetry arguments about the direction and functional dependence of the electric field around static charge distributions with sufficiently high symmetry.