Cubes: Slicings, Projections, and Foldouts II

Counting:
1. How many vertices, edges, and squares does a cube have?
2. How many vertices, edges, and squares, and cubes does a hypercube have?
3. How many vertices, edges, etc... should a 5-cube have?
4. Can you come up with formulas for an "n-cube"?
5. How many symmetries of the hypercube can you find?

Projections:
1. What are some different drawings you can make for a hypercube?
2. Can you make any symmetrical drawings?
3. Can you draw a cube without retracing or lifting your pencil off of the paper? What about a hypercube?

Foldouts:
1. How many ways are there to arrange 8 cubes in space so that each cube shares a face with another cube?
   1. How many of these configurations can be folded up into a hypercube?

Slicing:
1. Which rectangular prisms can you get by slicing a hypercube? Cube? Right? Non-right?
2. What kinds of tetrahedra can you get?
3. Which polyhedra are slices of a hypercube?
4. How many regular polyhedra can you find?
5. Can you find the volume of any of your slices?