Electricity vs Gravity
Worksheet 6

1. Two books, initially on the floor, are picked up and placed on a shelf 2.0 m off the floor. One, *Twenty Other Things I Like To Do With That Stuff Between My Toes*, has a mass of 1.0 kg. The other, *Why Physics Rules The Universe*, has a mass of 2.0 kg. The gravitational field strength near the surface of the Earth is approximately 10 N/kg.

   a. Calculate the gravitational force acting on each book as it rests on the shelf. What factors determine the size of this force?

   b. Calculate the change in each book's gravitational potential energy as a result of being picked up off the floor and placed on the shelf. What factors determine the size of this change?

   c. What is the difference in gravitational potential (potential energy per unit mass) between the floor and the shelf (use data from each book to calculate this)? What factors determine the size of this difference?

   d. How does gravitational potential differ from gravitational potential energy?