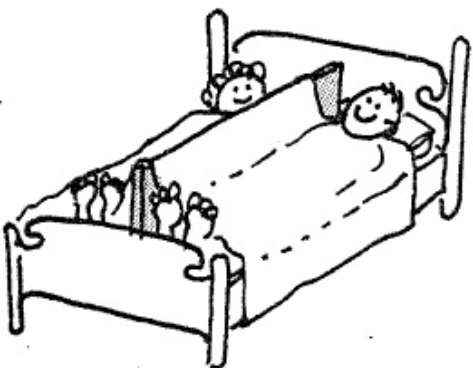


ANSWER: JAR OF ELECTRICITY

The answer is: c. A simple capacitor consists of two conducting pieces, usually metal, *close together but not in contact*. It allows the + and - electricity to get real close together, but not touching. It is the electrical equivalent of the 18th-century practice of courtship by "bundling," where opposite sexes



could lie together in the same bed provided an upright board prevented any touching. In a Leyden Jar, opposite charges are prevented from touching by means of the glass bottle. Suppose the inside is charged + and the outside - . Then electric force field lines run from the + charges on the inside foil to the -

charges on the outside foil. The charges mark the beginnings and ends of the force lines. So the force field is in the glass and the energy is in the force field. That means the energy is in the glass!

So a Leyden Jar is a bottle that holds electricity, the energy of which is not inside the bottle, but rather inside the glass. How do you empty the bottle? Simply connect wire leads from + and - sides of the glass.

The energy in a capacitor is always in the space between the opposite charges. From that you might suspect the amount of energy in a capacitor depends not only on how much electric charge is in the capacitor, but also on how much space is between the charges and what the space is filled with—like glass, air, or oil. We will investigate this in the next two questions.

