1. 46.8 J

2. Nuclear fission is a type of nuclear energy that involves splitting atoms.

3. The thermal energy in a substance is the total kinetic energy of all the particles in the substance. If you warm a substance or object each particle speeds up, the average speed of the particles increases, and so does the total speed of the particles.

4. Chemical energy because when you consume food, the particles make a chemical reaction that releases the chemical energy into your body. The food that you eat, the cells of your body, and substances that make a lightstick glow is called chemical energy. Also chemical energy is a form of potential energy because it results in the positions of the particles within a material.

5. All particles of matter are always in constant motion. However the particles of the rock possess kinetic energy as they vibrate in place. The particles also contain potential energy due to their position and arrangement. This form of stored energy is responsible for keeping the particles bonded together.

6. They would need to keep track of it because they need to know if it works, moves, runs a factory, and they need to know how much power and force it has on the machine so it doesn’t explode and kill them all.

Fun Fact Did you know most of the energy that you observe is mechanical energy? Some other forms of energy are associated with tiny particles, such as atoms and molecules, that make up objects. These forms include nuclear, thermal, chemical, electric, and electromagnetic energy.