

Contraction of a Skeletal Muscle Answer Key

1. Chemical reactions occur when bonds are formed between reactant molecules. Muscle contractions rely on chemical bonding between two reactant molecules (actin and myosin). Energy changes also occur as ATP molecules are broken down, releasing chemical energy and heat. As are all chemical reactions, the bonding between actin and myosin is reversible, as the muscle relaxes.
2. A ratchet is a tool that allows the production of a series of movements in one direction only. The myosin head undergoes a series of flexes as it moves the actin filament along in the same way.
3. The ATP provides the energy that repositions the myosin head before each flex.