

## Newton's Cradle

You may work with a team during this activity.

1. For each of the following trials, allow the balls to stop on their own. Assume that all of the balls have identical mass.
2. Trial 1: Displace 1 of the balls and allow it to collide with the remaining 4 balls. Record your observations.
3. Trial 2: Displace 2 of the balls and allow them to collide with the remaining 3 balls. Record your observations.
4. Trial 3: Displace 3 of the balls and allow them to collide with the remaining 2 balls. Record your observations.
5. Trial 4: Displace 4 of the balls and allow them to collide with the remaining ball. Record your observations.
6. Explain whether or not Newton's cradle demonstrates conservation of momentum. Yes or no answers are not acceptable.
7. Are the collisions between the balls elastic or inelastic? How do you know? Explain.
8. Explain whether or not kinetic energy is conserved. Yes or no answers are not acceptable.
9. Would the results differ if we used balls of different masses? Explain. Yes or no answers are not acceptable.