

# Know Questions

Check your understanding of the concepts in the **Mechanical Advantage Unit** by answering these questions:

1. **You can use gears in your robot to \_\_\_\_\_.**
  - a. create a torque advantage
  - b. create a speed advantage
  - c. create either torque or speed advantages, depending on what the robot needs to do
  - d. None of the above
2. **If you were riding a bicycle, how would you be using gears?**
  - a. Changing gears lets you pedal more easily or makes you need more force to pedal.
  - b. Changing gears lets your pedaling make you move farther or shorter distances.
  - c. Changing gears lets you pedal easily up steep hills or quickly across even surfaces.
  - d. All of the answers are correct.
3. **If gears are connected together as in a gear box, how do you calculate the total gear ratio?**
  - a. Add each gear ratio in the chain
  - b. Multiply each gear ratio in the chain
  - c. Divide the teeth on the first driving gear by the teeth on the final, output gear
  - d. None of the answers are correct.
4. **True or False: A gear box can demonstrate a high or low gear configuration.**
  - a. True
  - b. False
5. **Which configuration will result in the highest torque output?**
  - a. Large driving gear, large driven gear
  - b. Large driving gear, small driven gear
  - c. Small driving gear, small driven gear
  - d. Small driving gear, large driven gear
6. **The driven gear \_\_\_\_\_.**
  - a. does the turning
  - b. is always larger than the driving gear
  - c. is always smaller than the driving gear
  - d. is turned by the driving gear