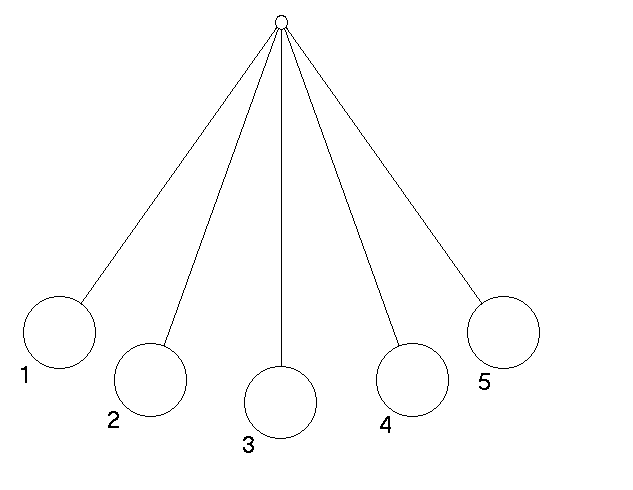
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**M/J Physical Science Adv.: Mechanical Energy Notes**

1. **Mechanical Energy**
   1. How do we define mechanical energy?
2. **Kinetic Energy**
3. Describe kinetic energy.
4. What does the word “kinetic” mean?
5. What factors influence kinetic energy?
6. Write the equation for kinetic energy.
7. What units must you use in order to have “Joules” as the unit of kinetic energy?
8. **Kinetic Energy Calculations**
9. A 0.6 kg basketball is thrown at a velocity of 9 m/s. How much Kinetic Energy does it have? (ALWAYS SHOW YOUR WORK!)
10. A 7 kg bowling ball is rolling down the lane with a velocity of 8 m/s. How much Kinetic Energy does it have? (ALWAYS SHOW YOUR WORK!)
11. **Potential Energy**
12. Describe potential energy.
13. Explain the difference between the two types of potential energy.
14. **Gravitational Potential Energy**
15. What factors influence gravitational potential energy?
16. Write the equation for gravitational potential energy.
17. What does “g” mean? What is its value (including units)?
18. Write an alternative equation for potential energy using the weight of an object.
19. How does gravitational potential energy relate to “work”?
20. **Potential Energy Calculations**
21. A 0.6 kg basketball is held above a player’s head. The ball is 2 m above the ground. How much potential energy does it have? (ALWAYS SHOW YOUR WORK!)
22. A 1.0 kg textbook is placed on a shelf 1.5 m above the ground. How much potential energy does it have? (ALWAYS SHOW YOUR WORK!)
23. **Mechanical Energy Conversions**
24. What type of energy did the clay ball from the lab have before you dropped it?
25. As the clay ball fell, what happened to the GPE?
26. Describe the energy conversions involved in the launch of your figurine in the lab. Draw a diagram to help explain.
27. Use the diagram of a pendulum swinging left to right (shown below) to answer the following questions:
    * 1. Where is the KE at its maximum? Why?
      2. Where is the GPE at its maximum? Why?
      3. Where does it have both KE and GPE?