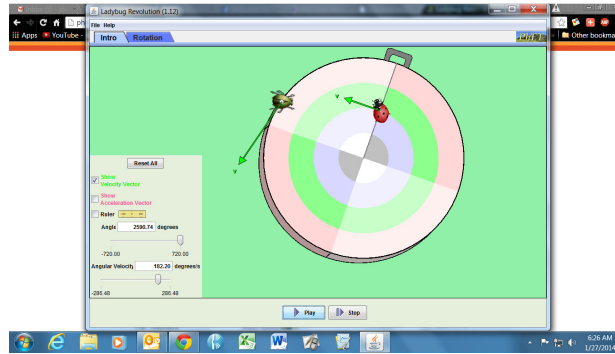# Phet Lab: Lady Bug Revolution

Explain these two velocities:

Angular velocity:

Linear velocity:

1. **From where do you measure angular velocity?**

2. **What units do you use for angular velocity?**

3. **From where do you measure linear velocity?**

4. **What units do you use for linear velocity?**

5. **If two bugs are located on the rotating disks the same radial distance from the center, what can you conclude about their angular velocities and linear velocities?**

6. **If you move one bug farther from the center, what two variables change?**

7. **What variable stays the same?**

8. **Try to adjust the speed and location of a bug so that it skids off the rotating disk. Describe those conditions.**

9. **Now change the radius only until it no longer skids off. How did it change?**

10. **Now change the angular velocity only until it no longer skids off. How did it change?**

11. **Can you change the linear velocity directly? If not, what does the linear velocity depend on?**

12. **Is the centripetal force directed towards or away from the center?**

13. **If a bug skids off the rotating disk, what can you conclude about the friction force compared to the centripetal force? (Which one keeps the bug from sliding out?)**

14. **If you put a heavier (more mass) bug on the rotating disk, which variables would be affected:**
    a. **Radius**
    b. **Angular velocity**
    c. **Linear velocity**
    d. **Centripetal Force**