

Blinky Lights Lab

You and your group will be assigned a station to complete a specific action and have it captured for the camera. After all the class pictures are captured, they will be made accessible for you to download to answer the questions below. Answer the questions in *complete sentences* and *clearly explain* your reasoning for each using the nature of the Blinky Lights.

Angled Projectile

1. What is the shape of the path of the projectile left by the lights?
2. What do you notice about the rise of the projectile (first half) and the fall of the projectile (second half)?
3. Compare the speeds at the highest point to the lowest part of the path. What do you notice?
4. What causes the changes in speed that you see?

Hula Hoop

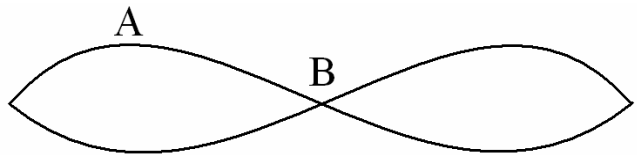
5. What do you notice about the speed of the hula hoop closest to the person?
6. What do you notice about the speed of the hula hoop farthest from the person?

Bike Wheel

7. What do you notice about the speed of the lights on the bike wheel closest to the axle?
8. What do you notice about the speed of the lights on the bike wheel farthest from the axle?

Standing Wave:

9. Describe the motion of the lights at A.
10. Describe the motion of the lights at B.



Car down a Ramp:

11. As the car falls down the ramp, what do you notice about its motion? How can you tell?
12. What would happen if we increased the height of the ramp?
13. What would happen if we increased the mass of the car?

Pendulum:

14. What do you notice about the fall (first half) and rise (second half) of the pendulum's path?
15. Where is the pendulum moving the fastest and how do you know?
16. Where is the pendulum moving the slowest and how do you know?

Car moving straight:

17. Describe the car's motion and justify using the path left by the lights.
18. Using the fact that the lights blink 100 times in a second, and the meter stick in the shot, estimate the velocity of the car.

Disc and Ring:

19. Which object reached the bottom of the ramp first?
20. If you're told the mass of the two objects is the same, what do you think is the cause of the different velocities?