Projectile Motion Simulation Worksheet
Name: _____
Date: _____

Instructions: Use the Projectile Simulator at Projectile Simulator. Complete the tasks below and answer the questions based on your observations.

Part 1: Setting Up the Simulation

1. **Launch Speed:** Set the launch speed to 20 m/s.
2. **Launch Angle:** Start with a launch angle of 45 degrees.
3. **Launch Height:** Keep the launch height at 0 meters.

Question 1: What is the range of the projectile when launched at 20 m/s and 45 degrees?
Answer: _____
Question 2: What is the maximum height reached by the projectile?
Answer: _____
Question 3: How long does the projectile remain in the air (time of flight)?
Answer: _____

Part 2: Experimenting with Variables

Task 1: Change the launch angle to 30 degrees and keep the launch speed at 20 m/s. Record your observations.
Question 4: What is the new range of the projectile?
Answer: _____
Question 5: How does the maximum height compare to when the angle was 45 degrees?
Answer: _____

Task 2: Change the launch speed to 30 m/s while keeping the angle at 45 degrees.
Question 6: What is the new range of the projectile?
Answer: _____
Question 7: What effect did increasing the launch speed have on the time of flight?
Answer: _____

Part 3: Analyzing Projectile Motion

Question 8: Describe how changing the launch angle affects the range of the projectile.
Answer: _____

_____

Question 9: If you wanted to maximize the range of a projectile, what launch angle would you choose? Why?
Answer: _____

_____

Reflection

Question 10: In your own words, explain what you learned about projectile motion from this simulation.
Answer: _____

_____

Submit your completed worksheet to the teacher.