

Golf Range Lab Simulation

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Use the Golf Range gizmo to fill out the following table.

$v_i =$ _____

Angle (degrees)	Time in Air (___)	Total Horizontal Distance (___)	Maximum Height (___)	Horizontal Position for Peak of Flight (___)
0				
10				
15				
20				
25				
30				
35				
40				
45				
50				
55				
60				
65				
70				
75				
80				
85				
90				

1. How does the horizontal position for the peak of the flight compare to the total horizontal distance traveled?
2. Graph the following: Time vs. Angle, Maximum Height vs. Angle, Total Horizontal Distance vs. Angle.
3. What is the angle for the maximum time in the air? Explain why.
4. What is the angle for the greatest maximum vertical position? Explain why.
5. What is the angle for the greatest Total Horizontal Distance? Explain why.

6. What is the relationship between angles that produce the same Total Horizontal Distance? Do these angles also produce the same times? Explain.

7. Find the horizontal and the vertical components for the 30° , 45° and 60° .

8. Without air, is there anything that would change the horizontal motion after the ball is launched? What is the horizontal acceleration of the ball in the air?

9. Without air, is there anything that would change the vertical motion after the ball is launched? What is the vertical acceleration of the ball?

10. When air is included, is the angle for the maximum horizontal distance the same? Explain.

11. Raise the launch point to at least 25 m and turn off the air. What does this do to the angle for the maximum horizontal distance?