

# BALLISTICS USING A LARGE BALL

MED 08.18



## **Material**

Item-no.	Qty.	Description
DM345-1W	1	Ballistics base unit, demo
DM345-2K	1	Ball gun, unit
P1100-1E	1	Measuring tape, L=300 cm

# BALLISTICS USING A LARGE BALL

MED 08.18

## Purpose

To demonstrate the dependence of the throw distance on the initial speed and the angle.

## Preparation

Mount the ballistics base unit on the edge of the table as shown on the image on the left.

Next mount the ball gun unit on the yellow metal profile.

With the screw on the backside any angle between 0 and 75° can be set – we set the angle to 45° and fasten the screw.

All 3 lines should be visible on the yellow metal profile, make sure that this is the case.

Push the launching piston in and fix it on the 1<sup>st</sup> notch.

Fix the measuring tape to the end of the table and place it over the table, it should be positioned so that the flight curve of the ball can be observed.

## Experiment

Place the ball on the ball gun unit as shown on the image to the right.

By pushing the launch button the launching mechanism is released as shown on the bottom picture.

Now we try to determine the throw distance of the ball.



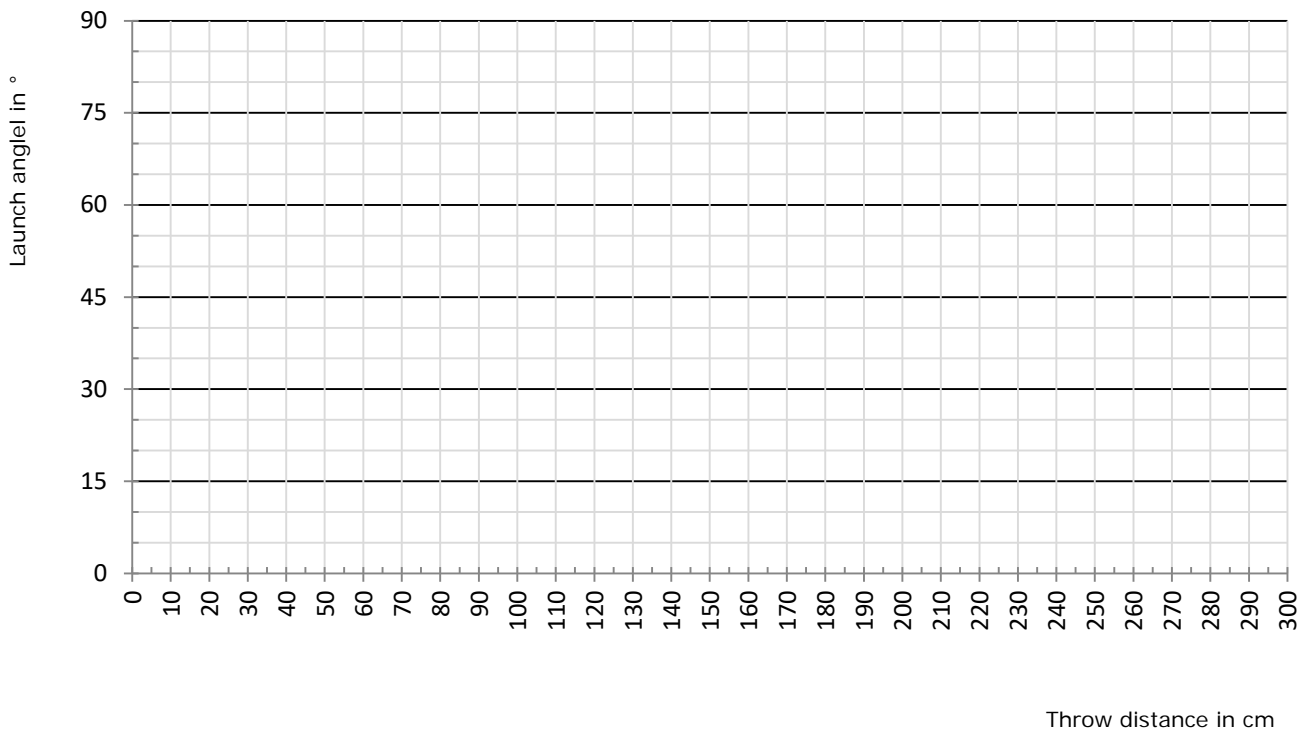
# BALLISTICS USING A LARGE BALL

Note the throw distance of the ball in the chart below.

		Launch angle				
		15°	30°	45°	60°	75°
Flight distance in cm at the launch speed	low					
	mid					
	high					

We keep the launch speed and determine the throwing distances for the other specified angles. Then we move the ball gun unit to the second line. Again we determine the throwing distances for the different angles. However it should be noted that the piston must now be pulled up to the middle notch

Afterwards we move the ball gun unit to the first line. The piston is now pulled up to the strongest level, which means that the launch speed is the highest. Again we determine the throwing distances at the different launch angles.



**Conclusion**

From the chart and the diagram we can see that the maximum throw range is reached with a launch angle of 45 °.

The higher the launch speed the greater the range.

