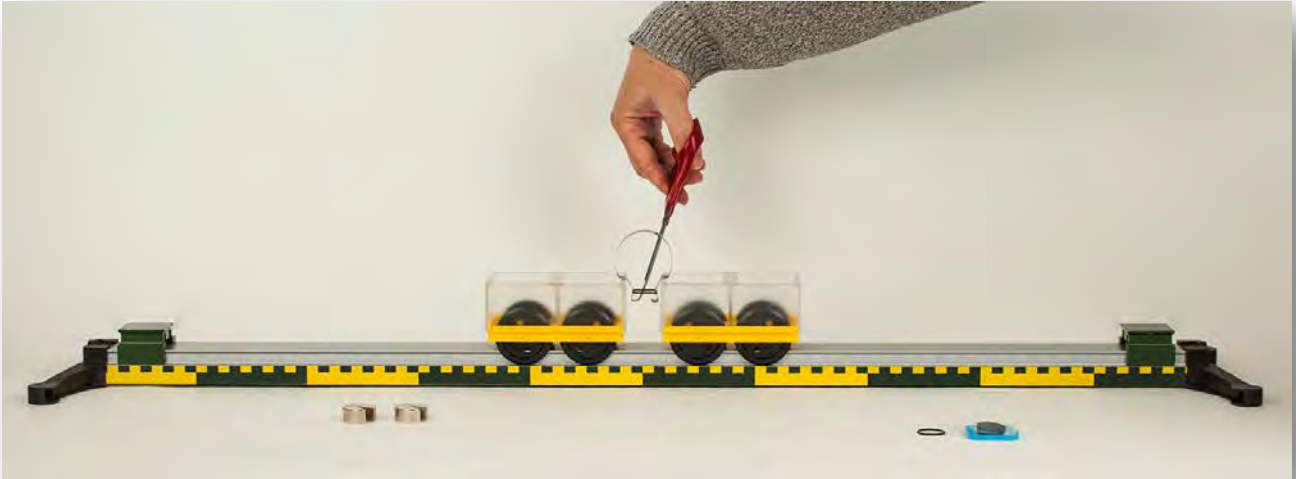


# INTERACTION AND MASS – QUALITATIVE

MED 07.04



## **Material**

Item-no.	Qty.	Description
DS101-3B	1	Stand rail with scale, L=1000 mm
DS112-1E	2	Rail claw, simple
DM300-2A	2	Dynamics trolley, demo, 50 g
P1312-2A	2	Car body for trolley SE
P1120-2F	2	Slotted weight 50 g, SE
DS102-2G	2	Clamp saddle
P1311-2E	1	Flat spring for collision experiments with trolleys
P7502-1A	1	Pair of scissors, SE
P1312-2E	1	Rubber rings for momentum, 20 pcs.

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## Purpose

If two masses are at rest and put each other in repulsive motion by mutual force, then the impulse theorem gives the statement that the amounts of the velocities behave inversely like the masses. This results in the possibility of dynamic mass determination.

## Preparation

Attach the two rail claws to the stand rail; afterwards fix the two clamp saddles to the left and right end of the stand rails. Next put the car bodies on the trolleys.

## Experiment

The trolleys have a mass of 100 g each, place them in the centre of the stand rail.

Taut the metal spring with a small rubber ring (O-ring) and place it between the two trolleys as shown on the image

Cut the rubber ring with a pair of scissors now, what is happening?

Observe the speed of the two trolleys.



## Result

The trolleys are moving away from each other at the same time.

Since the trolleys both have the same mass they are also moving with the same speed.

Mass		Relation of Mass	Speed of the trolley	
left	right		Left	right
100 g	100 g			
200 g	100 g			
100 g	200 g			

Place the slotted weights on the trolleys and repeat the experiment according to the values given in the chart.

## Conclusion

If two bodies interact the speed of the body with lesser mass is greater.