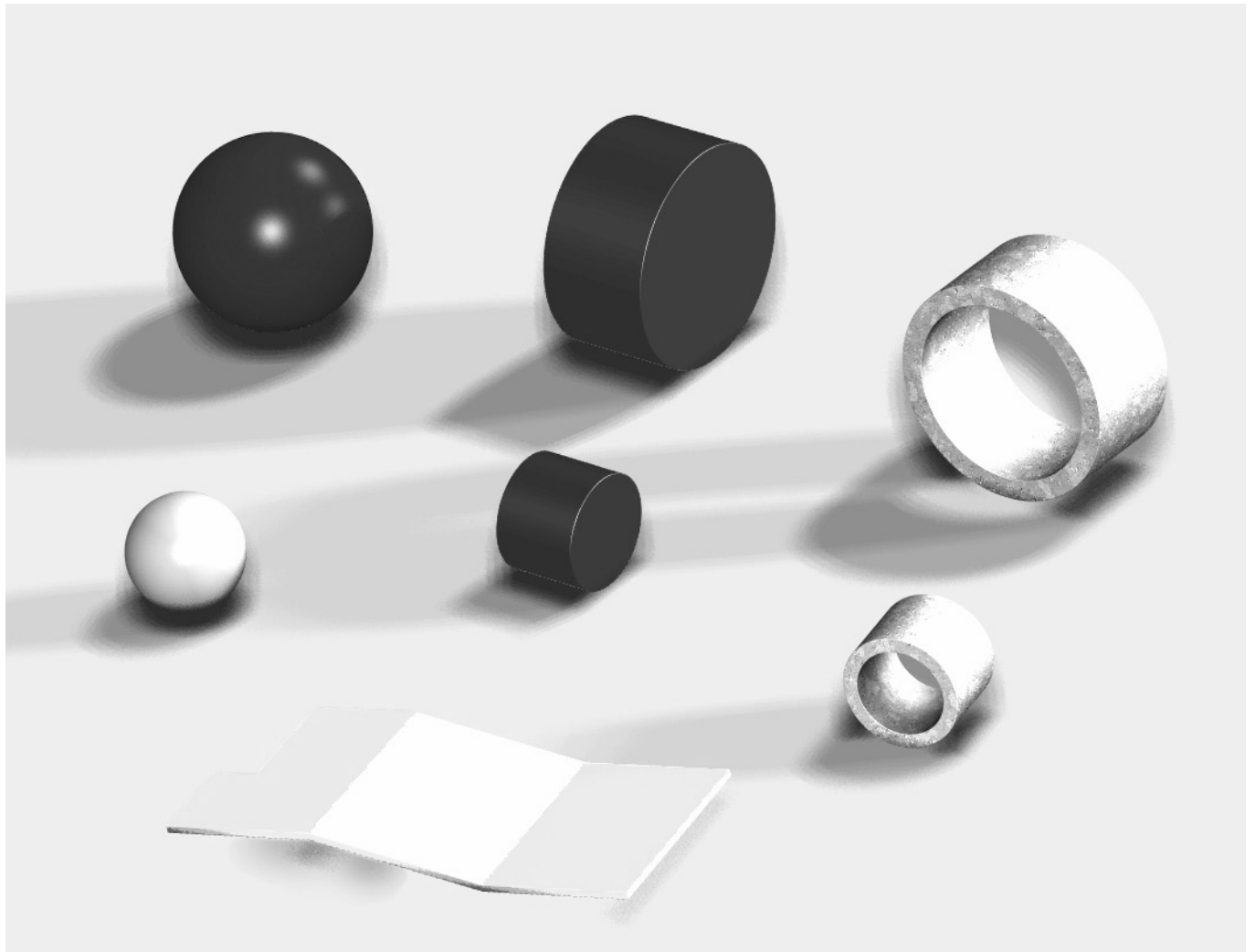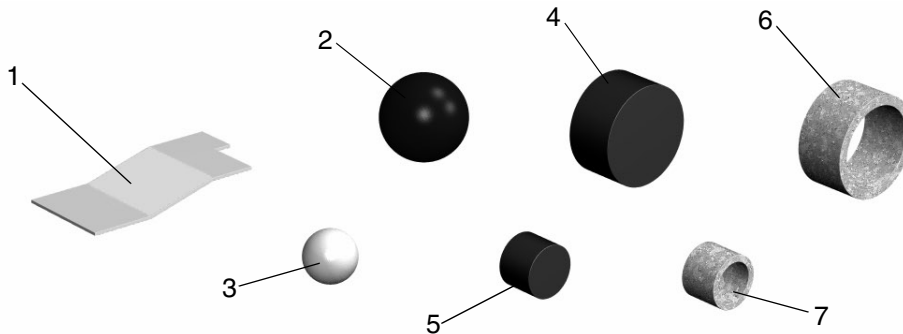# ROTATIONAL INERTIA SET

Model No. ME-9774

ROTATIONAL INERTIA SET

Model No. ME-9774

*Use Replacement Model Numbers to expedite replacement orders.

What's included:	Part No.
1) Release	648-08194
2) Large Solid Sphere (Diameter = 10cm; Mass = 810g)	699-143
3) Small Solid Sphere (Diameter = 5cm; Mass = 110g)	699-142
4) Large Disk (Diameter = 10cm; Mass = 370g)	648-08193
5) Small Disk (Diameter = 5cm; Mass = 70g)	648-08192
6) Large Ring (Diameter = 10cm; Mass = 230g)	648-08191
7) Small Ring (Diameter = 5cm; Mass = 90g)	648-08190

Introduction:

The Rotational Inertia Set includes two solid spheres, two solid disks, two rings, and a release mechanism. There is a large set of a sphere, disk, and ring, all having the same radius and there is a small set of a sphere, disk, and ring, all having the same radius. These objects are designed to be used to demonstrate the difference in rotational inertia of different shaped objects.
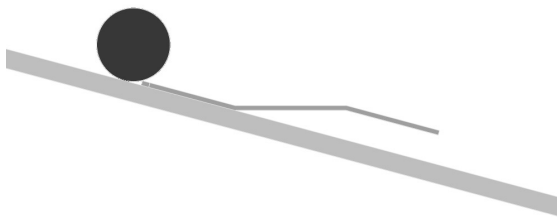
Suggested Demonstration:

Set two objects (i.e., the ring and the disk of same radius) at the top of an inclined ramp. Use the straight side of the release mechanism to hold the objects in place on the ramp (see Figure 1). This will allow you to release both objects from rest at the same time in the same position. Ask the students which object will reach the bottom of the ramp first. Release the objects by pulling the release mechanism away from the objects.
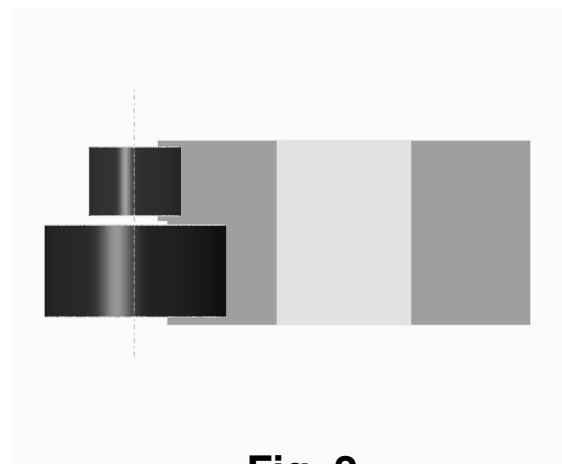
When using two objects of different radii (i.e., the small disk and the large disk), use the stepped end of the release mechanism to hold the objects at the same starting position (see Figure 2).

Note that the results are not affected by the mass or radius of the object. The shape or distribution of the mass determines the outcome. The sphere will reach the bottom first, followed by the disk, and the ring will be last.

An interesting addition to this demonstration is to compare a Dynamics Cart with the sphere. The Dynamics Cart will win the race with the sphere because the cart has very little mass that is rotating.

Fig. 1

Fig. 2