Name:

Inertia & Motion! (Teacher Version)

Let's Talk About It!

Predict:
What do you think will happen when an end of the beads is pulled out?

Observe:
What did you see in the video?

Explain:
How can you explain what you've seen?
The Inertia Beads are yanked out by someone pulling on them, and then they'll continue moving in that way unless they're stopped according to ***inertia****.*

Inertia Zoom Ball!

Materials:

- Scissors
- Two 2L Plastic Bottles
- Masking Tape
- Coloured Paper and Ribbons (for decoration)
- Two 12-foot strings
- Straws (for handles)








Instructions:

1. With a grown-up's help, cut the bottoms from two soda bottles.

2. Tape the bottles end to end so they form a football shape. Decorate the bottles, if you'd like!

3. Thread the two strings through the necks.

4. Tie the pieces of straw into a circular pattern to make two handles at each end. Now, zoom!

Source: Hauser, Jill. Gizmos & Gadgets. Charlotte: Williamson Publishing Co., 1999. Print.

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Talk About It!

1. How does this toy work?
   The pushing action of the strings sets the bottle in motion. When it reaches the other end, an opposite pushing action from the second player stops the ball for a moment before sending it back to the first player.
2. Where does the ball get its energy to move from?
   The energy from students moving their arms is transferred into the string, sending the ball away from them.

Newton's Corner

Have you ever wondered about motion and energy? Sir Isaac Newton did. He came up with three simple laws that explain how things move around. When Newton was 23, he had to leave University because many people were very sick. Newton kept working at his mom's farm, and made these amazing discoveries while being there!

Everyday Inertia

How is inertia at play in the following pictures?

a) *The figure skater gives herself a push and glides fairly easily across the ice. Since friction is quite low on ice, her motion will continue in a straight trajectory unless she steers herself or another outside force affects her.*

b) *When you get far enough from Earth in space, its gravitational pull becomes negligible. So if a rocket propels itself forward with a burst and then coats, there are no external forces to stop it or change its course. It will continue forward.*

c) *When driving a vehicle at some speed and forced to suddenly brake (or if the car hits something), the car stops/slows quickly, but the passengers will keep moving forward in the same direction and at the same speed due to inertia.*

Source: Hauser, Jill. Gizmos & Gadgets. Charlotte: Williamson Publishing Co., 1999. Print.

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Image Sources:

Let's Talk About It:

1. Steve Spangler Science: https://www.stevespanglerscience.com/lab/experiments/newtons-inertia-beads

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2. Creating More Questions: http://www.creatingquestions.com/2011/04/hw-bring-in-2-liter-bottles-of-soda.html
3. iTapes: http://itapes.in/about-us.php
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5. Sin Wah: http://www.sin-wah.com/ribbons.html
6. Second Law Media: http://www.secondlawmedia.com/how-much-time-does-it-take-to-manage-a-ppc-campaign/
7. Bulk Bar Products: http://bulkbarproducts.com/products/Straws

Newton's Corner:

1. Newtons: http://www.newtons.net.au

Everyday Inertia:

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2. Alpha Coders: http://wall.alphacoders.com/by_sub_category.php?id=201783
3. Inter Car Net: http://www.inter-car.net/intercar/economic-main.html