

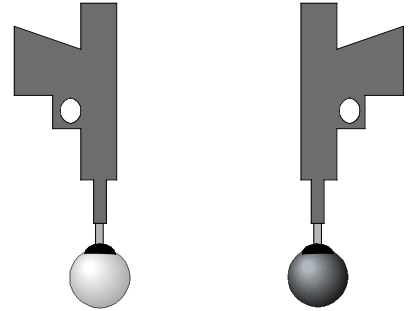
THE NEWTONIAN SHOT

A DEMONSTRATION OF FORCE, MASS, AND ACCELERATION

Name: _____ Per: _____ Date: _____

THE SET-UP

Two dart guns are aimed at the floor. The dart of one of the guns has a light cork or wood ball attached to it; the other's dart has a heavy steel or lead ball attached to it.



THE QUESTION

If the dart guns are fired at the same time, which dart will hit the ground first: the light dart or the heavy dart? (Don't answer yet!)

THE POSSIBILITIES

Name three hypothetical outcomes and present arguments in favor of each outcome (even the ones you don't believe are correct).

1. OUTCOME:

RATIONALE:

2. OUTCOME:

RATIONALE:

3. OUTCOME:

RATIONALE:

THE PREDICTION

Which outcome do you think is most likely? 1 2 3

-- STOP! -- Wait for the actual demonstration!

THE RESOLUTION

Which outcome actually occurred?

On the diagram to the right, draw a "freeze-frame" showing the positions of both darts when the first dart hits the bottom surface.

Why? (And if your prediction wasn't correct, what required modification?)