

## Brain Busters

Try these "busters" to exercise your brain ... they should help you grasp the concepts underlying Newton's Laws.

1. Can an object go round a curve without any force acting on it? Explain why.

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2. In an orbiting space shuttle you are handed two identical boxes, one filled with sand and the other with feathers. How can you tell which is which without opening the boxes?

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3. When you push a cart across a lawn at a constant velocity you have to exert a steady force. However, Newton's 1st Law says that *motion at constant velocity requires no force*. Is there an inconsistency here? Explain.

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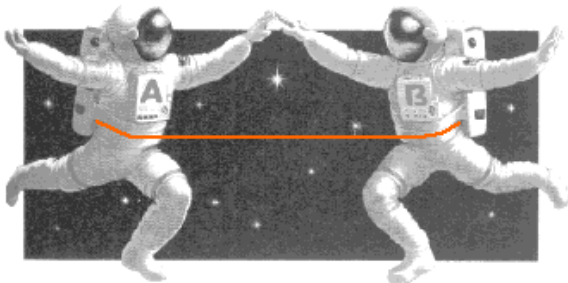
4. It's been said that "It's not the fall that hurts you but the sudden stop at the bottom". Explain this statement in terms of Newton's Laws.

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5. Andy and Brenda are astronauts floating in space. They are joined by a safety cord whose ends are connected to their waists. If Andy starts pulling on the cord, (a) does he pull Brenda towards him, or (b) does he pull himself towards Brenda, or (c) do they both move? Explain.

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