

11.9: Thinking about the material

Reflect and research

1. Compare the steering wheels of a small car and a large transport truck. What are the differences, and why?
2. List 2 kitchen utensils that use torque to “get the job done”.

To try at home

1. Take a large textbook and consider the 3 axes that are parallel to the sides of the textbook and go through the center of mass. By rotating the book along the three axes successively, determine the axis about which the moment of inertia of the textbook is the largest.
2. Confirm that the moment of inertia of a rod is smaller if the rod is rotated about its center of mass than if it is rotated by one of its ends.

To try in the lab

1. Propose an experiment to measure the moment of inertia of an object and to compare that to a model prediction.
2. Construct a comeback can, then model the forces which make the toy’s peculiar motion possible.

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