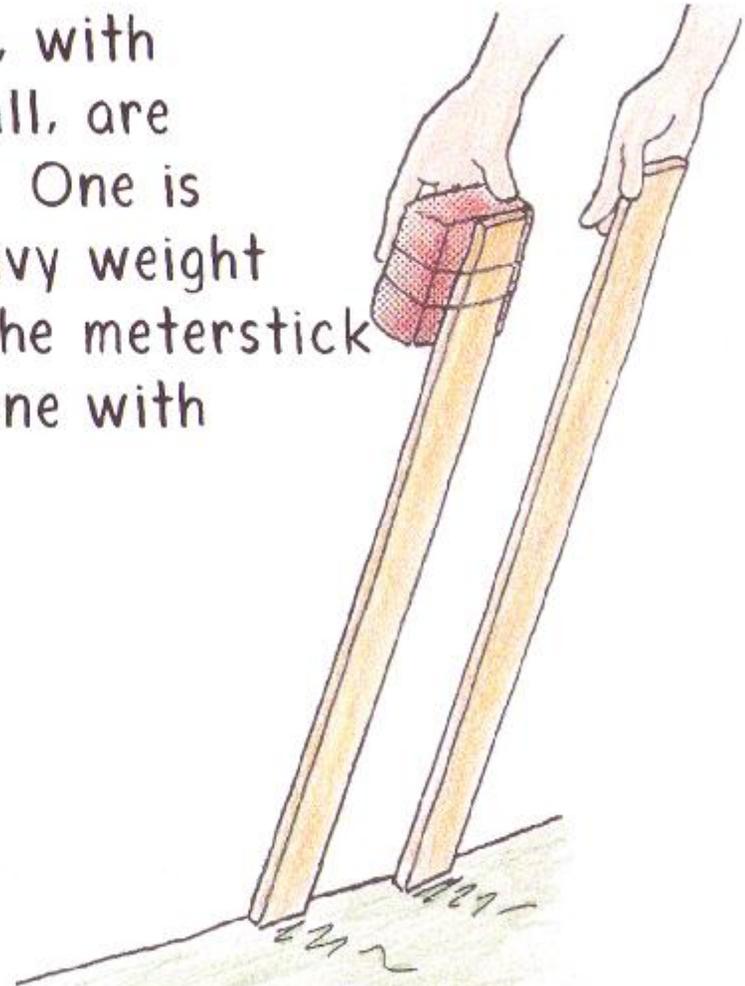


NEXT-TIME QUESTION

A pair of upright metersticks, with their lower ends against a wall, are allowed to fall to the floor. One is bare, and the other has a heavy weight attached to its upper end. The meterstick to hit the floor first is the one with

- a) the attached weight.
- b) no weight.
- c)... both the same.

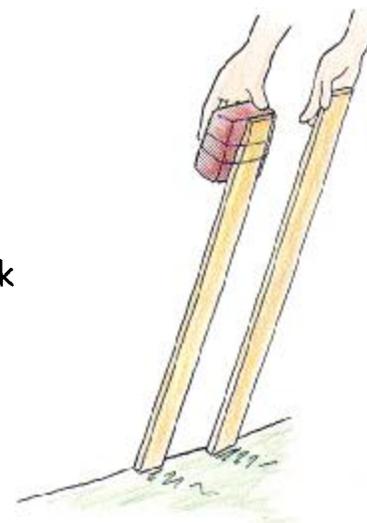
Try it and see!



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Answer: b

In falling, both metersticks rotate about an axis at the lower end where the wall and floor meet. Their rate of rotation depends on their rotational inertias. The meterstick with the heavy weight at its upper end has more rotational inertia and is more lazy in rotating about its lower end. So the bare meterstick rotates to the floor in the shortest time.



Just as important is the torque that acts on each stick. Even though the weighted stick has a greater torque, it's not enough greater to change the outcome. But that's another story.

Hewitt
Drewit!