Cycle 21 CM & Rotation

Rotational Inertia & Angular Momentum

1. When a figure skater pulls their arms inward, what happens to…

Angular Velocity: □ increases □ decreases □stays the same
Rotational Inertia: □ increases □ decreases □stays the same
Angular Momentum: □ increases □ decreases □stays the same

2. Why do gymnasts tuck in when they do a backflip?

3. Matching:

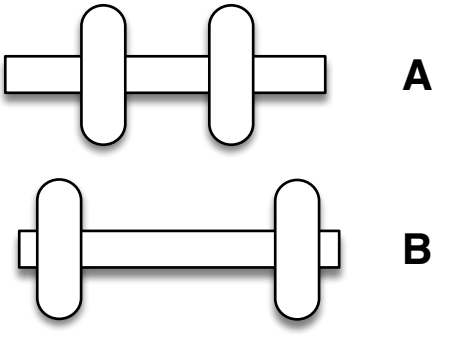
_____ Easier to start rotating. A. Mass far out.

_____ Easier to stop rotating. B. Mass close in.

_____ Tougher to start rotating.

_____ Tougher to stop rotating.

4. Here are two dumbells. They have the same two weights attached. Which one has the greater rotational inertia? What does that mean about changing its rate of rotation?



5. One bike has tires that are smaller (have the mass close in.) The other has large radius tires (mass far out.) Which bike is for quick starts & stops & tricks? Which one is for long distance riding?

WAR	YEARS	DEAD
REVOLUTIONARY	1775-1783	4,435
CIVIL WAR	1861-1865	191,963

Text

6. The Revolutionary War and the Civil War were both fought with muskets. What was the one change that made the muskets so much more accurate and deadly?

7. What do football quarterbacks do to keep the ball moving straight? What principle does that rely on?

8. What do you think we do with our satellites to keep them oriented straight?