

Name: _____

Period: _____ Date: _____

GIANCOLI READING ACTIVITY

Section 8-5 to 8-6

- Big Idea(s):
 - Interactions between systems can result in changes in those systems.
 - Changes that occur as a result of interactions are constrained by conservation laws.
- Enduring Understanding(s):
 - A net torque exerted on a system by other objects or systems will change the angular momentum of the system.
 - The angular momentum of a system is conserved.
- Essential Knowledge(s):
 - The angular momentum of a system may change due to interactions with other objects or systems.
 - Alternatively, the angular momentum of a system can be found from the product of the system's rotational inertia and its angular velocity.
 - The angular momentum of a system is determined by the locations and velocities of the objects that make up the system.
 - The rotational inertia of an object or system depends upon the distribution of mass within the object or system.
 - Changes in the radius of a system or in the distribution of mass within the system result in changes in the system's rotational inertia, and hence in its angular velocity and linear speed for a given angular momentum.
 - Examples should include elliptical orbits in an Earth-satellite system. Mathematical expressions for the moments of inertia will be provided where needed. Students will not be expected to know the parallel axis theorem.
- Learning Objective(s):
 - The student is able to plan a data collection and analysis strategy to determine the change in angular momentum of a system and relate it to interactions with other objects and systems.
 - The student is able to describe or calculate the angular momentum and rotational inertia of a system in terms of the locations and velocities of objects that make up the system. Students are expected to do qualitative reasoning with compound objects. Students are expected to do calculations with a fixed set of extended objects and point masses.
- Read section 8-5 to 8-6 in your textbook.
- Use the attached Frayer Model worksheets to explore the terms assigned to you.
- Terms:
 - rotational inertia/moment of inertia

- b. Newton's Second Law for Rotation
 - c. Problem Solving Process for Rotational Motion
8. This assignment may be typed or neatly printed. Drawings may be freehand, but try to make use of the 'Shapes' or 'Insert Clipart' functions of MS Word. If you submit this assignment electronically, the filename must be in the following format, "LastnameFirstinitialPerXReadActX-X". You do not need include a copy of these instructions with the assignment you hand in.

Definition

Characteristics

WORD

Examples

Non-examples

Definition

Characteristics

WORD

Examples

Non-examples

<u>Definition</u>	<u>Characteristics</u>
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