

Mechanics

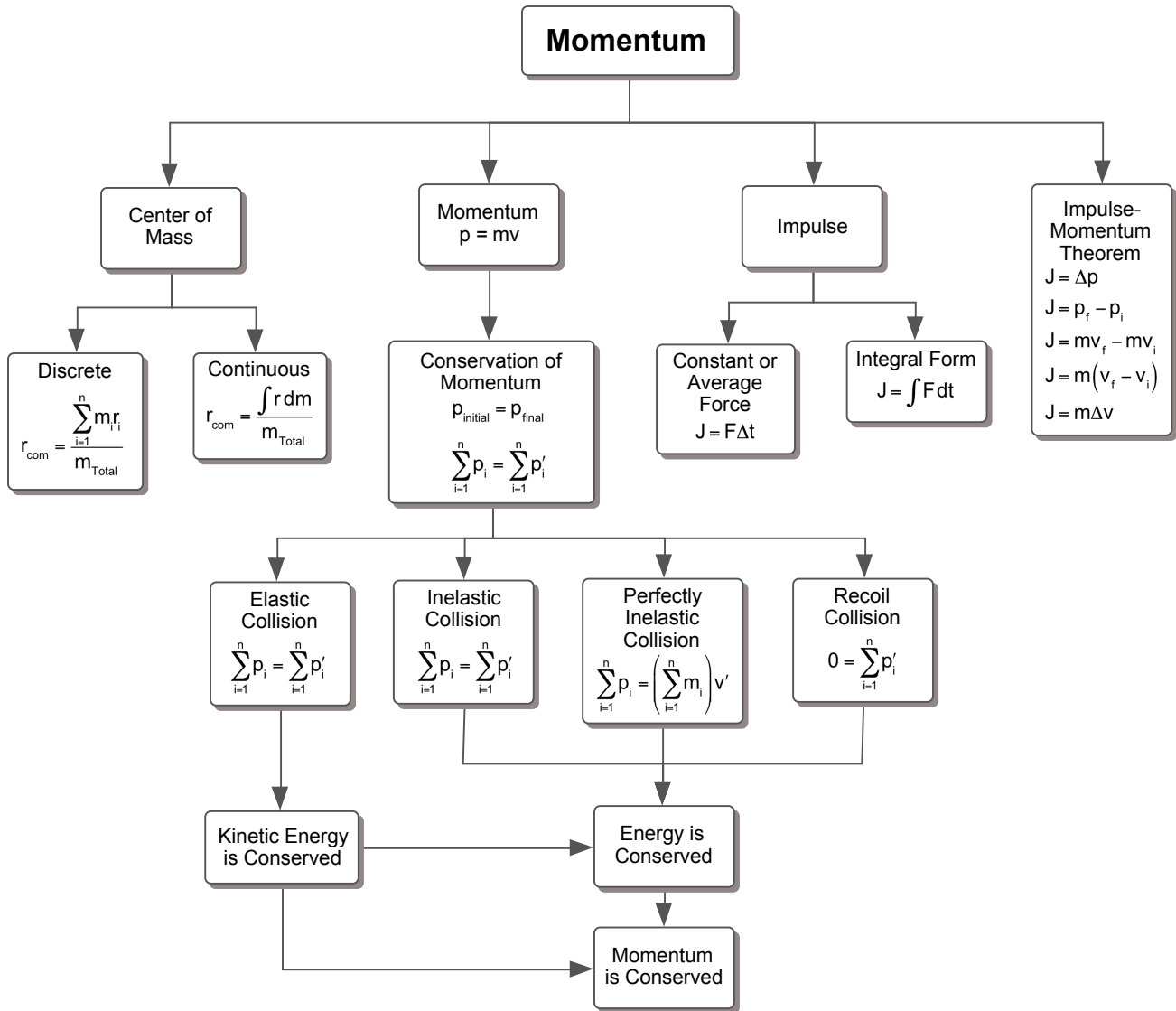
Enduring Understanding - Momentum is transferred when objects interact.

Essential Questions

- 1. Where must the center of mass lay?
- 2. What the relationship between Newton's Second Law and the conservation of momentum?
- 3. Which has a greater impact on the motion of an object: the force applied or the time applied?
- 4. What are the implications of Newton's Third Law of Motion?



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Type of Collision Problems

Step #1

How can the bullet acquire energy (velocity)?

- o given an initial velocity
- o an energy transformation
- o gravitational
- o elastic

Step #2

How might the target and bullet collide?

- o hit and stick
- o hit and bounce
- o hit and pass through

Step #3

What the situations could be encountered after the collision?

- an energy exchange
 - o swing
 - o loop
 - o hill
 - o curved-vertical path
- an energy transformation
 - o slides on a rough surface.
- projectile motion