Theme Music: Kenny Rogers  
Every Time Two Fools Collide

Cartoon: Jef Mallett  
Frazz

Detention again, Caulfield?  
Mrs. Olsen was spreading ignorance.

I was explaining to Sammy how you can’t measure time with a distance unit like you can’t measure weight with a speed unit and then she goes and uses a weight unit to tell me how loud I am!

So you took it upon yourself to...  
I may have used "brain" and "miligram" in the same sentence.

Ooh. You’re going to be in here at least a cubit.  
Now you’re just baiting me.
Outline

- Recap: Mechanical Energy Conservation
- Examples
- Collisions
Collisions

■ When the objects in a system collide, conservation laws limit what can happen.

■ If all external forces cancel, momentum will be conserved.

■ If all forces are conservative (no friction, drag, or deformation), mechanical energy will be conserved.
Inelastic Collisions

- If two objects collide and stick together, the collision is called inelastic.
- In this case, momentum conservation tells all we need to know. ME is not conserved.

\[ mv = (m + M)V \]

\[ V = \frac{m}{m + M}v \]
Elastic Collisions

- If two objects collide and bounce off, without losing any mechanical energy, the collision is called elastic.
- In this case, we have to use both momentum and energy conservation.
Superelastic Collisions

- If two objects collide and bounce off, and mechanical energy is added in the interaction the collision is called **superelastic**.
- In this case, we might have to use both momentum and energy conservation.