Date: 

Title: Energy changes during a collision. (Theme 1)

Aim: To investigate the apparent loss of energy of a glider after colliding.

Apparatus: Air track, glider, card, bumper, light gate, data logger, top pan balance, spirit level.

Method:
1. Set the data logger to measure speed.
2. Measure the mass of the glider by using the top pan balance.
3. Push the glider and note its speed before and after it collides.

Results:
Mass of glider = _______ g = _________ kg
Velocity of glider before collision = __________ m/s.
Velocity of glider after collision = __________ m/s.

Calculation: 
Kinetic Energy (before collision) = ½ m v^2 = ___________________________ J
Kinetic Energy (after collision) = ½ m v^2 = ___________________________ J
Kinetic Energy ('lost' during collision) = ___________________________ J

Percentage energy loss = \[ \frac{\text{K.E. lost}}{\text{K.E. before}} \times 100\% = \frac{\text{J}}{\text{J}} \times 100\% = \text{_______}\% \]

Precautions: List any suitable precautions you have taken.

Conclusion: Answer in full in your own words.

State the law of conservation of energy.
What happens to the kinetic energy which is 'lost' during the collision?
Does the gravitational potential energy change after the collision? Explain.