**Part 1. Calculate the Potential Energy of the Car at each height:**

**(weight should be the SAME for all three)**

| **Ramp Height (meters)** | **Mass of Car (kilograms)** | **Weight of Car in Newtons (mass x 10)** | **Potential Energy ( PE = wh)** |
| --- | --- | --- | --- |
| **0.05 m** | **0.056 kg** | **0.56 N** | **0.028 J** |
| **0.10 m** | **0.056 kg** | **0.56 N** | **0.056 J** |
| **0.15 m** | **0.056 kg** | **0.56 N** | **0.084 J** |

**Part 1. Calculate the Kinetic Energy of the Car at each height:**

| **Height** | **Mass of Car (kilograms)** | **Average Speed (m/s)** | **Kinetic energy (KE = ½ mv2)** |
| --- | --- | --- | --- |
| **1** | **0.056 kg** |  |  |
| **2** | **0.056 kg** |  |  |
| **3** | **0.056 kg** |  |  |

**Part 1. Compare PE and KE for Part 1**

| **Height** | **Potential Energy** | **Kinetic Energy** | **Where is the missing Energy?** |
| --- | --- | --- | --- |
| **1** | **0.028 J** |  |  |
| **2** | **0.056 J** |  |  |
| **3** | **0.084 J** |  |  |

To convert speed from cm/s to m/s divide by 100 ex. 25 cm/s i s 0.25 m/s

**Part 2. Calculate the Potential Energy of the Car for each mass:**

**(height should be the SAME for all 3)**

| **Ramp Height (meters)** | **Mass of Car (kilograms)** | **Weight of Car in Newtons (mass x 10)** | **Potential Energy ( PE = wh)** |
| --- | --- | --- | --- |
| **0.15 m** | **0.056 kg** | **0.56 N** | **0.084 J** |
| **0.15 m** | **0.256 kg** | **2.56 N** | **0.384** |
| **0.15 m** | **.456 kg** | **4.56 N** | **0.684 J** |

**Part 2. Calculate the Kinetic Energy of the Car at each height:**

| **Height** | **Mass of Car (kilograms)** | **Average Speed (m/s)** | **Kinetic energy (KE = ½ mv2)** |
| --- | --- | --- | --- |
| **1** | **0.056 kg** |  |  |
| **2** | **0.256 kg** |  |  |
| **3** | **0.456 kg** |  |  |

**Part 1. Compare PE and KE for Part 1**

| **Height** | **Potential Energy** | **Kinetic Energy** | **Where is the missing Energy?** |
| --- | --- | --- | --- |
| **1** | **0.084 J** |  |  |
| **2** | **0.384** |  |  |
| **3** | **0.684 J** |  |  |

To convert speed from cm/s to m/s divide by 100 ex. 25 cm/s i s 0.25 m/s