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|  | PHYSICS 1 (3rd Quarter) | |  |  |
| Module # | 10 | **Name:** | Francis Billones |
| Module Title | uniform Circular Motion | **Section:** | 9 – Lithium |
| Lesson # | 10.2 | **Date:** | January 28, 2021 |
| Lesson Title | ACTIVITY: UNIFORM CIRCULAR MOTION | | |

**B. Determination of the relationship between the radius and the tangential speed**

Repeat procedure A but this time, keep the weight in the paper cup constant at about 4 - 8 coins on top of the initial counterbalance. Vary the radius by 10 cm until you complete Table 2.

Table 1. Relationship between the Centripetal Force and the Tangential Speed

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Mass of the counterbalance (g)** | **Centripetal force (N)** | **Number of revs**  **in 5.0 s** | **Angular speed (rev/s)** | **Radius (cm)** | **Tangential speed (cm/s)** |
| 60g | 0.0588 N | 5.2 | 1.04 rev/s | 35cm | 228.7 cm/s |
| 72g | 0.07056 | 5.5 | 1.1 rev/s | 35cm | 241.9 cm/s |
| 84g | 0.08232 N | 5.6 | 1.12 rev/s | 35cm | 246.3 cm/s |
| 96g | 0.09408 N | 6 | 1.2 rev/s | 35cm | 263.9 cm/s |

Table 2. Relationship between the Radius and the Tangential Speed

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Radius**  **(cm)** | **Centripetal force**  **(N)** | **Number of revs**  **in 5.0 s** | **Angular speed**  **(rev/s)** | **Tangential speed (cm/s)** |
| 35 | 0.09408 N | 6 | 1.2 | 263.9 cm/s |
| 25 | 8 | 1.6 | 251.3 |
| 15 | 11 | 2.2 | 207.3 cm/s |
| 5 | 16 | 3.2 | 100.5 cm/s |