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1. Record your measurements in the table below:

| Mass <br> name of swinger? <br> (child or adult) | Chain Length <br> regular or shortened? | Rate <br> how many swings <br> in 60 seconds? |
| :---: | :---: | :---: |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

2. Graph your results by coloring the number of boxes up to the pendulum rate (number of swings in 60 seconds) in the table below:

| 75 |  |  |  |
| :---: | :---: | :---: | :---: |
| 70 |  |  |  |
| 65 |  |  |  |
| 60 |  |  |  |
| 55 |  |  |  |
| 50 |  |  |  |
| 45 |  |  |  |
| 40 |  |  |  |
| 35 |  |  |  |
| 30 |  |  |  |
| 25 |  |  |  |
| 20 |  |  |  |
| 15 |  |  |  |
| 10 |  |  |  |
|  | Swinger 1 | Swinger 2 | Swinger 3 |

3. Were all the rates the same? What affected the rate of the pendulum swing?
4. How many swings did Swinger 1 have in one minute ( 60 seconds)? How many would they have in one hour at the same rate? (Reminder: 60 minutes $=1$ hour)
5. Brainstorm ideas for your new invention, the Amazing Human-Powered Swing Clock, below:
6. Draw your design for the Amazing Human-Powered Swing Clock below:
7. For what timekeeping purpose(s) could your the Amazing Human-Powered Swing Clock be used?
