NAME: Class Period:

“Wave On a String” PHET Simulation Data Tables – Oscillate Wave with Fixed End

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| TRIAL # | Amplitude | Frequency | Tension | Wavelength  (Use top ruler) | Normal/Slow Motion |
| 1 | 0.25 cm | 0.80 Hz | High |  | Normal |
| 2 | 0.50 cm | 0.80 Hz | High |  | Normal |
| 3 | 0.75 cm | 0.80 Hz | High |  | Normal |
| 4 | 1.00 cm | 0.80 Hz | High |  | Normal |
| 5 | 1.25 cm | 0.80 Hz | High |  | Normal |

Observations

What happened to the wavelength when you changed the amplitude?

What is amplitude?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| TRIAL # | Amplitude | Frequency | Tension | Wavelength  (Use top ruler) | Normal/Slow Motion |
| 6 | 0.50 cm | 0.50 Hz | High |  | Normal |
| 7 | 0.50 cm | 1.00 Hz | High |  | Normal |
| 8 | 0.50 cm | 1.50 Hz | High |  | Normal |
| 9 | 0.50 cm | 2.00 Hz | High |  | Normal |
| 10 | 0.50 cm | 2.50 Hz | High |  | Normal |

Observations

What happened to the wavelength when you changed the frequency?

What happened to the beads on the string when you changed the frequency?

What is frequency?

“Wave On a String” PHET Simulation Data Tables – Manual Wave with Fixed End

|  |  |  |  |
| --- | --- | --- | --- |
| TRIAL # | Tension | Wavelength  (Use top ruler) | Normal/Slow Motion |
| 11 | High |  | Slow Motion |
| 12 | High |  | Slow Motion |
| 13 | High |  | Slow Motion |
| 14 | High |  | Slow Motion |
| 15 | High |  | Slow Motion |

Observations

What happened to the size of the wavelength, were all of the waves the same size?

Using what you’ve been learning about waves, explain what is happening to the wave size?

|  |  |  |  |
| --- | --- | --- | --- |
| TRIAL # | Tension | Time | Normal/Slow Motion |
| 16 | High |  | Slow Motion |
| 17 | High |  | Slow Motion |
| 18 | High |  | Slow Motion |
| 19 | High |  | Slow Motion |
| 20 | High |  | Slow Motion |

Observations

What was the average amount of time it took for the initial wave to return to the wrench?

Was the wave the same size when it returned as when it was initiated by the wrench? Explain.

What three things have you learned from this simulation?