 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Relate the impact of different types of waves on living cells to their frequency and the energy carried by the wave.



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| --- | --- | --- | --- | --- |
| Know | |  | Apply  2  1 | |
| Ideas | |  |  |  |
| K1 | When a wave travels through a substance, particles move to and fro. Energy is transferred in the direction of movement of the wave. Waves of higher amplitude or higher frequency transfer more energy. |  | A1 | Explain differences in the damage done to living cells by light and other waves, in terms of their frequency. |
|  |  |  | A2 | Explain how audio equipment converts sound into a changing pattern of electric current. |
|  | |  |  |  |
| Key words | |  |  |  |
| K2 | **Ultrasound:** Sound waves with frequencies higher than the human auditory range. |  |  |  |
| K3 | **Ultraviolet (UV):** Waves with frequencies higher than light, which human eyes cannot detect. |  |  |  |
| K4 | **Microphone:** Turns the pressure wave of sound hitting it into an electrical signal. |  |  |  |
| K5 | **Loudspeaker:** Turns an electrical signal into a pressure wave of sound. |  |  |  |
| K6 | **Pressure wave:** An example is sound, which has repeating patterns of high-pressure and low-pressure regions. |  |  |  |

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| 3 | Extend |  |  |  |
| E1 | Suggest reasons why sound waves can agitate a liquid for cleaning objects, or massage muscles for physiotherapy. |  |  |  |
| E2 | Evaluate electricity production by wave energy using data for different locations and weather conditions. |  |  |  |
| E3 |  |  |  |  |
|  |  |  |  |  |
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|  |  |  |  |  |
| E4 |  |  |  |  |
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