**Characteristics of Living Things: Notes and Worksheet** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Instructions: For each of the following things, check whether it exhibits each characteristic. Be prepared to share your ideas.*

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|  | **Made of Cells** | **Take in Nutrients** | **Use Energy** | **Produce Waste** | **Respond to Stimuli** | **Grow and Develop** | **Reproduce** | **Living? (Y/N)** |
| **How do you know?** | What is a cell?  Unicellular organisms are made of  Multicellular: | What are nutrients?  Examples:  Consumers get their nutrients and energy by:  Producers get their nutrients and energy by: | | What is waste?  Examples: | What is a stimulus?  Internal stimulus:  External stimulus: |  | What does it mean to reproduce? |  |
| 1. Wood |  |  |  |  |  |  |  |  |
| 1. Rock |  |  |  |  |  |  |  |  |
| 1. Frog |  |  |  |  |  |  |  |  |
| 1. Leaf |  |  |  |  |  |  |  |  |
| 1. Worm |  |  |  |  |  |  |  |  |
| 1. Pencil |  |  |  |  |  |  |  |  |
| 1. Cactus |  |  |  |  |  |  |  |  |
| 1. Paper |  |  |  |  |  |  |  |  |
| 1. iPhone |  |  |  |  |  |  |  |  |
| 1. T-shirt |  |  |  |  |  |  |  |  |
| 1. Car |  |  |  |  |  |  |  |  |
| 1. Book |  |  |  |  |  |  |  |  |

1.1 – Characteristics of Living Things (Science 8) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_\_\_

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| 1. **Living Things are Made of Cells**  * **Cells** are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ unit (“building blocks”) of all living things * Cells are very small (could fit 10-10000 cells in \_\_\_\_\_\_\_\_\_\_\_) * A cell is like a ‘bag’ filled with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and other structures * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ organisms are made of a single cell only.  Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ organisms are made of multiple cells. Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  1. **Living Things Take in Nutrients**  * **Nutrients**: substances that living things need but \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for themselves. Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * **Consumers:** get their nutrients and energy by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (e.g. hamster, human) * **Producers:** can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ using the Sun’s energy and nutrients from their surroundings (e.g. plants)  1. **Living Things Use Energy**  * Living things need energy (from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to power their daily activities. * Examples of activities that use energy: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. **Living Things Produce Waste**  * **Waste:** substances that living things produce and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  1. **Living Things Respond to Stimuli**  * **Stimulus** (pl. stimuli): anything that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a living thing to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a certain way * *Internal stimulus*: information about your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * *External stimulus*: information about your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  1. **Living Things Grow and Develop**  * Increase in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and/or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Heal (repair wounds) * Become more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ over time (includes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)  1. **Living Things Reproduce**  * **Reproduce**: produce more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Many different reproduction strategies exist, including with and without a mate   Living things exhibit **all 7** characteristics of living things. If something is missing even one of the characteristics, it **is not alive**. |

**Practice:**

1. Determine which of the characteristics of living things are displayed by each of the following: wood, rock, frog, leaf, worm, pencil, cactus, seed, cell phone, t-shirt, car, book
2. Explain why nutrients and waste are opposites. Use examples of each in your answer.
3. How are growth/development and reproduction similar? How are they different?
4. Bella the Bee and Charlie the Clover are good friends. One day, Charlie is having difficulty breathing, so Bella gives him some oxygen to try and help him out. Charlie becomes even more sick as a result. Explain what is going on here, in terms of the characteristics of living things. Use appropriate vocabulary in your answer.