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| **5th Grade Science** | |
| **Standard** | **3.0 Items** |
| **R**5.5(A) classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy;  (images have been sourced linked) | **Option 1**    Science STAAR Test 2015 image  1a. Choose three of these items to sort least to greatest based on mass.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  1b. Classify these items based on their attraction to a magnet.   |  |  |  | | --- | --- | --- | | Item | Attracted | Not Attracted | | Copper Penny |  |  | | Rubber Eraser |  |  | | Cotton ball |  |  | | Brass Key |  |  | | Plastic ruler |  |  | | Iron nail |  |  | | Metal paper clip |  |  | | Rubber band |  |  |   1c. Classify the following items based on their relative density.     |  |  |  | | --- | --- | --- | | Item | Less dense than water | More dense than water | | plastic duck |  |  | | cork |  |  | | steel spoon |  |  | | iron nail |  |  | | wooden spoon |  |  | | clay ball |  |  |   1d. Fill in the table with the answers to these testing questions:   * Does it have a fixed shape? * Does it have a fixed volume?  |  |  |  |  | | --- | --- | --- | --- | |  | solid | liquid | gas | | Fixed shape |  |  |  | | Fixed volume |  |  |  |   1e. Classify the items based on their solubility.   |  |  |  | | --- | --- | --- | | Items | Will dissolve in water | Won’t dissolve in water | | Marble |  |  | | Sugar cube |  |  | | Rice |  |  | | Salt |  |  | | Lemon juice |  |  | | Toothpick |  |  |   1f. Name two household items that are good conductors of electrical energy.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  1g. Name two household items that are good conductors of thermal energy.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Option 2**    Science STAAR Test 2015 image  1a. Which group of items is sorted from least to greatest by mass.   1. key, cotton ball, rubber band 2. rubber band, key, cotton ball 3. key, rubber band, cotton ball 4. cotton ball, rubber band, key     Science STAAR Test 2015 image  1b. Choose the object that is not attracted to a magnet.   1. Iron nail 2. Copper Penny 3. Metal paper clip 4. Brass Key     1c. Which object is less dense than water?   1. Clay ball 2. Wooden spoon 3. Iron nail 4. Steel spoon   1d. Which of the following physical states has a fixed volume, but not a fixed shape?   1. Solid 2. Liquid 3. Gas 4. All of the above   1e. Which groups of items will dissolve in water?   1. Marbles, sugar cubes, and gravel 2. Salt, lemon juice, and sugar 3. Beans, rice, and salt 4. Sand, toothpick, and cotton ball   1f. Which of these objects is a good conductor of electricity?   1. Rubber 2. Glass 3. Metal 4. Paper   -or-  1f. Copper wire is often wrapped in plastic. Plastic material is a good:   1. Electromagnet 2. Insulator 3. Circuit 4. Current   1g. What material does not allow heat to pass through easily?   1. Cotton batting 2. Aluminum foil 3. Glass 4. Steel   -or-  1g. Which of the following is a good conductor of thermal energy?   1. Metal pot 2. Styrofoam cooler 3. Plastic container 4. Wooden stick   **Option 3**  The table lists some properties of four different samples of matter.   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Sample** | **State of Matter at Room Temperature** | **Mass of 1 mL of Sample** | **Color** | **Attracted to Magnet?** | **Conducts Electricity?** | **Conducts Heat?** | **Dissolves in water?** | **Sinks in water?** | | 1 | Solid | 2.53g | Clear | No | No | No | No | Yes | | 2 | Solid | 7.87g | Gray | Yes | Yes | Yes | No | Yes | | 3 | Liquid | 0.94g | Yellow | No | No | Yes | No | No | | 4 | Solid | 1.59g | White | No | No | No | Yes | Yes |   Which two samples could be glass marble and a sugar cube?   1. Samples 1 and 2 2. Samples 1 and 4 3. Samples 2 and 4 4. Samples 2 and 3   Answer B  Sample 1 is consistent with the properties of glass. Sample 4 is consistent with the properties of a sugar cube. Sample 2 may be an object such as an iron cube, and Sample 3 may be a substance such as vegetable oil. |
| **2.0 Items** |
| **Option**    Science STAAR Test 2016 image    Which block has the greatest mass?   1. Block L 2. Block M 3. Block P 4. Block L and Block M   **Option**    What physical property of matter is being tested above?   1. Physical state of matter 2. Mass 3. Temperature 4. Solubility   **Option**    \_\_\_\_\_\_\_\_ can be shown by the sinking and floating of objects in water.   1. Mass 2. Volume 3. Density 4. Matter   **Option**    Which liquid is the least dense?   1. L1 2. Water 3. L2 4. S2   **Option**    A student adds solid particles to water. What happened to the particles?   1. The particles evaporated. 2. The particles are soluble and dissolved in the water. 3. The particles sank because they are more dense than water. 4. None of the above.   **Option**  When black sand and iron filing are mixed together they look like a black powder. Which of the following would be the easiest way to separate the sand and the filings?   * 1. Use a magnifying glass   2. Add water to the mixture   3. Use a magnet   4. Use a hot plate to heat the mixture   **Option**    **Option**    Which property of matter is being demonstrated in the diagram above?   1. Mass 2. Magnetism 3. Density 4. Matter   **Option 1**   |  |  |  | | --- | --- | --- | |  |  |  | | paper cup | metal cup | ceramic glass cup | | cool to touch | hot to touch | warm to touch |   Sally pours hot chocolate into 3 different cups. Which cup is the best insulator of thermal energy?   1. The paper cup 2. The ceramic glass cup 3. The metal cup 4. The cups are all insulate the same   **Option 2**   |  |  |  | | --- | --- | --- | |  |  |  | | paper cup | metal cup | ceramic glass cup | | cool to touch | hot to touch | warm to touch |   Explain why the manufacturer of the metal and glass cup might have included a handle in the design of their cups.  **Option**    Three spoons were placed in a jar of warm water for five minutes. Which spoon best conducts thermal energy?   1. Metal spoon 2. Wooden spoon 3. Plastic spoon 4. All of the above   **Option**  What is a conductor?   1. Amount of space on object takes up 2. How hot or cold an object is 3. Something that easily allows the flow of energy through it 4. A physical state of matter   **Option**  What is an insulator?   1. A physical state of matter 2. Something that does not allow the easy flow of energy through it 3. How hot or cold an object is 4. Ability to sink or float in water   **Option**  James found his birthday present wrapped and hidden in his grandmother’s closet. He wanted to find out what was in the box without opening it. Using his scientific skills he found out his present had these properties:   * It rolls * It bounces * Not attracted to a magnet * Is a solid * Is larger than 20 cm   What might his present be?   1. Basketball 2. Baseball 3. Toy car 4. A glass marble |
| **Standard** | **3.0 Items** |
| S (B) identify the boiling and freezing/melting points of water on the Celsius scale;energy; | 1a. Which of the following thermometers shows water in a solid state of matter?    1b.    Which letter represents the boiling point of water?   1. A 2. B 3. C 4. D |
| **2.0 Items** |
| Record the temperature for each thermometer. |
| **Standard** | **3.0 Items** |
| S(C) demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand; and | **Option 1**  Gary dropped steel fishing hooks in the sand. What are some ways that Gary could get the steel hooks out of the sand?  **Option 2**  Gary dropped steel fishing hooks in the sand. What is the best tool to use to separate the hooks from the sand?   1. magnet 2. tweezers 3. spoon 4. coffee filter   **Option 1**  Melissa mixes salt and pepper together for a project and wants to be able to separate the mixture after completing the project. Jesse suggests adding water, how could adding water help separate the salt and pepper? Explain what would happen.  **Option 2**  Melissa mixes salt and pepper together for a project and wants to be able to separate the mixture after completing the project. What is the best tool to use to separate the pepper from the salt?   1. Tweezers 2. Spoon 3. Water 4. Coffee filter |
| **2.0 Items** |
| **Option**  Which of the following is an example of a mixture whose ingredients keep their physical properties?  a. Vanilla ice cream  b. Fruit salad  c. Blueberry muffins  d. Chocolate chip cookies  **Option**  What is a mixture?  **Option**  What is the best way to separate a mixture of sand and iron filings.   1. Use a filter paper to catch the sand 2. Use a magnet to catch the iron filings 3. Use tweezers to pick out the iron filings 4. Use a sieve to trap the iron filings |
| **Standard** | **3.0 Items** |
| S (D) identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water. | **Option**  Mario poured a packet of cocoa powder into a cup of hot water. He finished half of the cup. A week later, he found the cup and observed the changes that occurred. What happened to the cocoa mixture in the cup?   1. The cocoa evaporated, leaving only clear water in the container. 2. The water evaporated, leaving only a dry brown solid in the container. 3. The container was empty after the mixture evaporated into the air. 4. The cocoa in the cup was lighter in color after some of the water evaporated.   **Option**    What happened to the sugar crystals?   1. The sugar crystals evaporated 2. The sugar crystals dissolved     Which mixture is a solution and which on is not?  Explain your reasoning. |
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| **2.0 Items** |
| **Option**  A solution is a type of   1. Problem 2. Liquid 3. Mixture 4. Force   **Option**  When one substance is dissolved into another substance, it is known as   1. Force 2. Solutions 3. Problems 4. Insulator |
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