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| M. Angileri  10-16-17 | **6th grade science** | | **Lesson Plans: Structures of Matter #4** | | | | |
| NGSS Standard | **MS-PS 1-1**  **PS1.A**  **S &E**  **CCC**  **MS-PS3-1.**  [**PS3.A:**](http://www.nap.edu/openbook.php?record_id=13165&page=120)  S & E  CCC | | |  |  | | --- | --- | |  | Develop models to describe the atomic composition of simple molecules and extended structures. |   **Structure and Properties of Matter**  Substances are made from different types of atoms, which combine with one another in various ways. Atoms form molecules that range in size from two to thousands of atoms.  Solids may be formed from molecules, or they may be extended structures with repeating subunits (e.g., crystals**)**  ***Developing and Using Models:*** Develop a model to predict and/or describe phenomena  ***Scale, Proportion, and Quantity:***  Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small.  **Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.**  Definitions of Energy: [Motion energy is properly called kinetic energy; it is proportional to the mass of the moving object and grows with the square of its speed.](http://www.nap.edu/openbook.php?record_id=13165&page=120)  [Construct and interpret graphical displays of data to identify linear and nonlinear relationships.](http://www.nap.edu/openbook.php?record_id=13165&page=61) [Scale, Proportion, and Quantity](http://www.nap.edu/openbook.php?record_id=13165&page=89) [Proportional relationships (e.g. speed as the ratio of distance traveled to time taken) among different types of quantities provide information about the magnitude of properties and processes.](http://www.nap.edu/openbook.php?record_id=13165&page=89) | | | | |
| Vocabulary: | | **Matter:** Anything that has mass and occupies space.  **Chemistry:** The study of the properties of matter.  **Substance:** A single kind of matter that is pure and has a specific set of properties.  **Physical property:** A characteristic of a pure substance that can be observed without changing it into another substance.  **Chemical property:** A characteristic of a pure substance that describes its ability to change into a different substance.  **Element:** A pure substance that cannot be broken down into other substances by chemical or physical means.  **Atom:** The basic particle from which all elements are made.  **Chemical bond:** The force that holds two atoms together.  **Molecule:** A particle made of two or mare atoms bonded together.  **Compound;** A pure substance made of two or more elements chemically bonded.  **Mixture:** Two or more substances that are mixed together but are not chemically combined.  **Solution:** An example of a homogeneous mixture; forms when substances dissolve. | | | | | |
|  | | **MONDAY** | | **TUESDAY** | **WEDNESDAY** | **THURSDAY** | **FRIDAY** |
| Content Objective: | | SW demonstrate comprehension of Chemical Bonds by explaining their understanding of the video. | | SW demonstrate application of atomic structure of compounds by constructing a poster about the atomic structure of common substances. | SW demonstrate evaluation of Structures of Matter by testing. | SW demonstrate knowledge of Kinetic energy by recounting past experiences to build connections. | SW demonstrate application of kinetic energy by carrying out an investigation. |
| Language objective | | SW defend their answers about the Chemical Bonding video using content specific vocabulary. | | SW write to describe the attributes of common substance using the project guidelines. | SW orally defend their answers to the Structures of Matter study guide using complete sentences. | SW write and orally share to give examples of kinetic energy and demonstrate it in an activity. | SW write to collect and interpret data about the influences in kinetic energy using the lab journal. |
| **Essential Question:** | | **Why are atomic models necessary?** | | **Why are atomic models necessary?** | **Why are atomic models necessary?** | **Why are atomic models necessary?** | **Why are atomic models necessary?** |
| In class today | | Knowledge Statements (in Notebook)  Video: Chemical Bonding (Questions)  Combining Atoms Practice worksheet  Extra Credit opportunity: Due Thursday  Linking Literacy HMWK | | Finish tasks from Monday  Molecular Poster  Study Guide for test | Review Study Guide  Structure of Matter test  Last class period to work on Poster | Journal Quick Write 5-10 Minutes “ What do you know about Kinetic Energy?”  APK: Assessing Prior Knowledge Activity and discussion  Hook Activity: Dominoes and Kinetic Energy | Poster Due!  Do Activity 1: Speed and Motion |
| Learning Target | | I can answer questions about atomic bonding after watching the video. | | I can create a poster with the required items to show my understanding of Matter. | I can show my knowledge of Matter by taking the Common Assessment. | I can share what I know about kinetic energy with members of my group. | I can collect and analyze data to look at factors that influence kinetic energy |