



Alignment Document

State of Michigan And Aventa Learning Physical Science

Physical Science 2005-2007 Benchmark Blueprint

| State Standard Number | State Standard Area / Description | Unit Name | Course Topic Description |
|-----------------------|---|-----------|--------------------------|
| IV | Using Scientific Knowledge in Physical Science | | |
| IV.1 | Matter and Energy | | |
| IV.1.A | All students will measure and describe the things around us: | | |
| IV.1.A.1 | Describe and compare objects in terms of mass, volume, and density. | | |
| IV.1.A.2 | Explain when length, mass, weight, density, area, volume or temperature are appropriate to describe the properties of an object or substance. | | |
| IV.1.B | All students will explain what the world around us is made of: | Matter | Elements and Compounds |
| IV.1.B.3 | Classify substances as elements, compounds, or mixtures and justify classifications in terms of atoms and molecules. | Matter | Elements and Compounds |
| IV.1.B.4 | Describe the arrangement and motion of molecules in solids, liquids, and gases. | Matter | Matter |
| IV.1.C | All students will explain how electricity (and magnetism; see PMO) interact with matter: | | |
| IV.1.C.5 | Construct simple circuits and explain how they work in terms of the flow of current. | | |
| IV.1.C.6 | Investigate electrical devices and explain how they work, using instructions and appropriate safety precautions. | | |

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| IV.2 | Changes in Matter | | |
| IV.2.A | All students will investigate, describe and analyze ways in which matter changes: | Matter | Matter |
| IV.2.A.1 | Describe common physical changes in matter: evaporation, condensation, sublimation, thermal expansion and contraction. | | |
| IV.2.A.2 | Describe common chemical changes in terms of properties of reactants and products. | Chemical Reactions | Chemical Reactions |
| IV.2.B | All students will explain how visible changes in matter are related to atoms and molecules: | Matter | States of Matter |
| IV.2.B.3 | Explain physical changes in terms of the arrangement and motion of atoms and molecules. | | |
| IV.2.C | All students will explain how changes in matter are related to changes in energy and how living things and human technology change matter and transform energy. | | |
| IV.2.C.4 | Describe common energy transformations in everyday situations. | | |
| IV.3 | Motion of Objects | | |
| IV.3.A | All students will describe how things around us move, explain why things move as they do, and demonstrate and explain how we control the motions of objects: | | |
| IV.3.A.1 | Qualitatively describe and compare motion in two dimensions. | | |
| IV.3.A.2 | Relate motion of objects to unbalanced forces in two dimensions. | | |
| IV.3.A.3 | Describe the non-contact forces exerted by magnets, electrically charged objects, and gravity. | | |
| IV.3.A.4 | Use electric currents to create magnetic fields, and explain applications of this principle. | | |
| IV.3.A.5 | Design strategies for moving objects by application of forces, including the use of simple machines. | Simple Machines | Using Machines |
| IV.4 | Waves and Vibrations | | |
| IV.4.A | All students will describe sounds and sound waves: | Waves | Waves |
| IV.4.A.1 | Explain how sound travels through different media. | Waves | Waves |



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| IV.4.A.2 | Explain how echoes occur and how they are used. | | |
| IV.4.B | All students will explain shadows, color, and other light phenomena: | | |
| IV.4.B.3 | Explain how light is required to see objects. | | |
| IV.4.B.4 | Describe ways in which light interacts with matter. | | |
| IV.4.C | All students will measure and describe vibrations and waves: | Waves | Waves |
| IV.4.C.5 | Describe the motion of vibrating objects. | | |
| IV.4.D | All students will explain how waves and vibrations transfer energy: | | |
| IV.4.D.6 | Explain how mechanical waves transfer energy. | | |