MEGA MOLECULES

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Standards

Middle School (6-8)

MS-PS1-1. Develop models to describe the atomic composition of simple molecules and extended structures.

MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.

MS-PS1-3. Gather and interrupt information to describe that synthetic materials come from natural resources and impact society.

MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

MS-PS1-5. Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.

High School (9-12)

HS-PS1-1 Matter and its Interactions
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2 Matter and its Interactions
Construct an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-7 Matter and its Interactions
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

HS-PS2-6 Motion and Stability: Forces and Interactions
Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

HS-LS2-7 Ecosystems: Interactions, Energy, and Dynamics
Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

Safety

Emphasize to students the importance of following all instructions and warnings, and the importance of carrying out only those experiments that are described in this manual.

1. The activities in this manual are not suitable for children under 10 years. Keep younger children and animals away from the activity area. Store the kit out of reach of young children.
2. Read the instructions before use, follow them and keep them for reference.
3. The area surrounding the activity should be kept clear of any obstructions and away from the storage of food. The work area should be cleaned immediately after carrying out the activity.
4. Wash hands after carrying out the activities.