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**Science Lesson Plan
6th Grade Curriculum
Total Activities: 73**

Chapter - "Scientific Process"-The learner will demonstrate understanding of the nature of science and scientific processes.		
Lesson Code	Lesson Title and Description	LA Number
1	Scientific Discoveries-Demonstrate understanding that scientific knowledge is subject to modification as new information, technology, and discoveries are made. Identify specific scientific discoveries of the past 10 years based on recent data or new technology.	6815 6829
2	Conduct an Experiment-Design and conduct an experiment using scientific processes; identify the independent, dependent, and constant variables; various instruments used to collect and analyze data; and record-keeping methods.	6817
3	Variables in an Experiment-Describe how a change in one or more variables can alter the outcome of an experiment.	6857
4	Elements in an Investigation-Explain the importance of accurate record keeping, control, and disclosure in the	6821

	replication of an investigation.	
5	Collecting & Displaying Data-Use a computer to collect, organize, analyze, and report scientific findings through graphical representation.	6823
6	Safety Procedures-Identify appropriate safety procedures in the home, classroom, and community.	6825
7	Ethics in Science-Explain the demands of science ethics involving research on human subjects. Explain the ethical treatment of animals involved in scientific research.	6827
9	Proving Scientific Experiments-Demonstrate understanding that conclusions are based on scientific evidence obtained from a variety of investigations and sources. Cite several examples of these practices.	6831
10	Important Scientists-Identify the accomplishments of the following scientists: Marie Curie, Albert Einstein, Lewis Howard Latimer, and Isaac Newton.	6833
8	Technology-Describe scientific contributions that have resulted in technological products. Explain the benefits and limitations of electronic information sources.	66955 66956 66957 66958 66959 66960 66961 66962 66971 66972
Chapter -"Properties of Matter"-The learner will demonstrate understanding of the nature of matter and the changes of properties in elements, compounds, mixtures, and solutions.		
Lesson Code	Lesson Title and Description	LA Number

1	Characteristics of Objects-Identify ways in which substances differ (for example, mass, volume, shape, density, texture, light, and reaction to heat). Cite examples of objects that represent these characteristics.	6836
2	Different States of Matter-Identify ways in which matter may exist as a solid, liquid, or gas, and cite examples of each. Explain the molecular motion involved when matter changes from solid to liquid to gas.	6837
4	Elements & Compounds-Identify the differences in properties between elements and compounds as substances. Give an example of each and state which can be separated by physical or chemical means.	6841
6	Periodic Table-Use the periodic table to identify the symbols for these elements: oxygen, sodium, copper, carbon, hydrogen, chlorine, aluminum, helium, gold, silver, iron, nitrogen, and silicon.	6845
8	Mixture & Solution Examples-Identify some substances as mixtures and solutions; for example, paint, cereal, milk, lemonade, soda, and ocean water.	6849
Chapter -"Characteristics of Plants"-The learner will demonstrate understanding of the characteristics, structures, and functions of plants.		
Lesson Code	Lesson Title and Description	LA Number
1	Scientific Vocabulary-Define the following terms: <i>autotroph</i> , <i>eukaryote</i> , <i>photosynthesis</i> , <i>cellulose</i> , <i>vacuole</i> , <i>chloroplast</i> , and <i>chlorophyll</i> .	6893 6894
2	Necessities for Plant Survival-Name all the things that plants need to	6895

	survive successfully on land.	
3	Construct & Label a Plant Cell-Construct a diagram of a plant cell and label the cell wall, cell membrane, chloroplasts, vacuoles, nucleus, and cytoplasm.	6897
4	Adaptation to Environments-Compare and contrast how plants adapt to their environments: deserts, lakes, jungles, and polar regions. Include such plants as the pasque flower, staghorn fern, bristlecone pine, water lily, barrel cactus, and Venus flytrap.	6899
6	Vascular System-Investigate how a plant's vascular system works. Predict what will happen when a stalk of celery is placed in a vase with colored water.	6903
7	Photosynthesis-Describe the overall process of photosynthesis. Include the products of photosynthesis.	6905
8	Scientific Contributions-Describe the contributions of the following scientists: Joseph Priestley, Jan Baptista van Helmont, Jan Ingenhousz, T. W. Englemann, Julius Sachs, and Melvin Calvin.	6907
12	Structure of a Fern Plant-Describe the structure of a fern plant. Draw a diagram of the plant, and label the structures.	6913
14	Effects of Environments-Compare and contrast the sizes and environments in which nonvascular and vascular plants live.	6915
15	Seed Plants-Identify the characteristics that seed plants share. Name the main parts of a seed, identify the function of each part, and describe how seeds disperse and	6917

	germinate.	
17	Plant Vocabulary-Define the following terms: <i>phloem</i> , <i>xylem</i> , <i>seed</i> , <i>embryo</i> , <i>cotyledon</i> , <i>germination</i> , <i>stomata</i> , <i>transpiration</i> , <i>cambium</i> , and <i>root cap</i> .	6919
18	Leaves, Stems, & Roots-Describe the functions of leaves, stems, and roots.	6921
19	Examples of Gymnosperms-Give examples of gymnosperms, and list the characteristics they share. Identify the different environments in which gymnosperms live. Identify four products that are produced from gymnosperms.	6923
23	Plant Hormones-Identify the following terms: <i>tropism</i> , <i>hormone</i> , and <i>auxin</i> . Identify the functions that plant hormones control.	6929
24	Stimulus & Response in Plants-Identify three stimuli that produce plant responses.	6931
Chapter - "Energy, Force, & Motion"-The learner will demonstrate understanding of changes in the forms of energy, force, and motion.		
Lesson Code	Lesson Title and Description	LA Number
1	Six Forms of Energy-Identify six different forms of energy: mechanical, electrical, chemical, heat, and nuclear. Identify the units that quantify the energy.	6853
2	Sources of Energy-Identify different sources of energy, for example, heat sources and mechanical motion.	6855
3	Kinetic & Potential Energy-Explain kinetic and potential energy as states of energy and cite examples of each.	6819

4	Fossil Fuels-Cite examples of fossil fuels (coal, carbon, oil, and natural gas) as natural resources and the environmental impact of these fuels.	6859
5	Phases of Matter-Identify the properties of different phases of matter and the physical changes involved. Explain how matter can be made to change phases by adding or removing energy.	6861
6	Water Expansion & Contraction-Explain and illustrate the effects of expansion and contraction on water.	6863
7	Changing States of Water-Describe the different processes involved in changing the states of water: condensation, freezing, melting, and boiling. Identify the freezing point and boiling point of water in degrees Celsius and Fahrenheit.	6865
8	Force, Motion, & Friction-Describe the relationship between force and motion. Explain the possible effects of two combined forces. Define and explain friction.	6867
9	Measuring Motion-Define how motion is measured in terms of speed, distance, and time. Demonstrate that changes in motion can be graphically represented.	6869
10	Laws of Motion-Explain Isaac Newton's three laws of motion and his law of universal gravitation. Give examples of each law. Investigate these laws by observing, measuring, recording, and reporting results on a graph or chart.	6871
Chapter -"Electricity & Magnetism"-The learner will examine the relationship between electricity and magnetism.		
Lesson	Lesson Title and Description	LA

Code		Number
1	Natural Magnetic Mineral-Name a naturally magnetic mineral (magnetite or lodestone), and describe its discovery by the ancient Greeks.	6873
2	Law of Magnetism-Define magnetism and explain the law of magnetism. Observe, record, and name some objects that are attracted to and that are not attracted to magnets, such as paper, toothpick, paper clip, and wire.	6875
4	Electromagnetism-Describe how electricity and magnetism are closely related (both involve the motion of electrons). Define electromagnetism and explain how magnetism can be produced from electricity.	6879
5	Electromagnets-Explain the structure and operation of electromagnets. Identify some common household objects in which electromagnets are used. Explain the advantages of electromagnets over natural or permanent magnets.	6881
6	Construct an Electromagnet-Construct a simple electromagnet. Test the strength of the electromagnet. Describe the materials and procedures; record observations and results of the test.	6883
7	Electrical & Mechanical Energy-Relate electromagnetism to an electric motor. Describe the conversion of electric energy into mechanical energy.	6885
8	Electricity from Magnetism-Describe the process of producing electricity from magnetism.	6887
9	Electric Generators-Describe the operation of an electric generator.	6889

	Identify some ways communities use large generators.	
10	Scientific Contributions-Describe the scientific contributions of Hans Christian Oersted, Michael Faraday, and Joseph Henry.	6891
Chapter -"Earth, Moon, & Sun"-The learner will investigate and understand the relative positions and movements of the Earth, the Moon, and the Sun and the relationships among them.		
Lesson Code	Lesson Title and Description	LA Number
1	Gravity-Identify and describe the role of gravity as it relates to the Earth, Moon, and Sun.	6935
2	Revolution & Rotation-Distinguish between revolution and rotation.	6937
3	Phases of the Moon-Identify and describe the phases of the Moon.	6939
4	Causes of Day & Night-Identify and describe the causes of day and night.	6941
7	Solar and Lunar Eclipses-Identify and describe the positions of the Earth, Moon, and Sun during a solar eclipse and a lunar eclipse.	6947
Chapter -"Human Body"-Describe ways to say no to health risks. Describe the dangers and lifelong effects of using illegal drugs, and investigate ways to stay away from illegal drugs. Examine the dangers of drinking alcohol, and identify ways peers can help one another avoid alcohol abuse. Investigate the dangers of using tobacco, and describe ways to resist peer pressure.		
Lesson Code	Lesson Title and Description	LA Number
1	Body and Mind-Describe ways to say no to health risks. Describe the dangers and lifelong effects of using	66963 66964 66965

	illegal drugs, and investigate ways to stay away from illegal drugs. Examine the dangers of drinking alcohol, and identify ways peers can help one another avoid alcohol abuse. Investigate the dangers of using tobacco, and describe ways to resist peer pressure.	66966 66967 66968 66969 66970
Chapter -"Custom Curriculum"-Custom Curriculum		
Lesson Code	Lesson Title and Description	LA Number
9	Custom Standard-Custom Standard	

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