**Course Description**

**The Department of Science Level of Students: M. 3**

**Subject Code: SC20206 Subject: Universal Science 6**

**Number of Credit: 1.0 Time: 40 Periods**

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**Learning Outcomes**

Students will be able to:

1. Explain how we see things by reflection, refraction and dispersion of light
2. Distinguish between the magnifying glass, binoculars , camera, microscope and telescope
3. Explain what is meant by brightness of light and describe its relationship to eye damage
4. Explain why the planets orbit the Sun
5. Explain relationships between the sun, Earth, the moon and other planets
6. Explain what causes seasons on Earth
7. Describe the different phases of the Moon
8. Explain how moonrise, moonset and tides occur
9. Explain the importance of space technology
10. Explain what a chemical reaction is
11. Explain changes of substance properties when reacted with chemicals.
12. Explain and write chemical equations of various chemical reactions and apply knowledge learned.
13. Explain the conservation of mass
14. Distinguish between endothermic and exothermic processes
15. Explain the acid-base properties of solution
16. Distinguish between acids and bases
17. Explain some important chemical reactions such as combustion, photosynthesis, corrosion , rusting and acid rain
18. Describe how chemical reactions can help solve problems in everyday life
19. Distinguish between ceramics, polymers and composite materials
20. Pose questions that specify the important point or variable for investigation, or study topics of interest inclusively and reliably.
21. Set hypothesis that can be tested and plan different methods for examination.
22. Choose both quantitative and qualitative techniques for examinations providing

reliable results and security using proper materials and equipment.

1. Collect data and create both quantitative and qualitative information.
2. Analyze and evaluate the correspondence of evidences and conclusion both

supporting and contrasting hypothesis and errors of data from the examination.

1. Create the models or patterns explaining or showing the results of the examination.
2. Create questions leading to the examination of related issues and apply the

knowledge to the new situations or explain the understandable concept, process, and result of the projects to other people.

1. Record and explain the results from observation, exploration, and investigation. Examine and search for more information from various sources for reliable information and accept the change from ideas discovered if there is new data or arguments against the existing ideas.
2. Exhibit works, write reports, and/or explain the understandable concept, process,

and results of the projects to other people.

**Learning Content**

Study foundation science on the topics of light ; reflection, refraction of light and application of knowledge. Effects of brightness on human beings and other living things, astronomy ; relationships between the sun, Earth, the moon and other planets, chemical substances ; chemical reaction, chemical equations , conservation of mass, endothermic and exothermic processes, the acid-base properties, some important chemical reactions, ceramics, polymers and composite materials

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Use the process of establishing knowledge and understanding, scientific process, and skills which are observation, data investigation, and discussion to create knowledge, ideas, understanding, ability to communicate the knowledge, decision-making ability, and problem-solving ability, and get students involved in learning process by participating in various activities suitable for their learning levels, and apply the knowledge to real-life situations with responsibility, honesty, disciplines, creativity, efforts, and scientific mind.