**Learning Standards and Indicators**

**The Department of Science Level of Students: M. 1**

**Subject Code: SC20201 Subject: Universal Science 1**

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| **Indicators** | **Key Word**  **(คำสำคัญ)**  **จากตัวชี้วัด** | **Learners’ Key Competencies - Activities** | **21st-Century Skill/**  **Local Wisdom/Thai Wisdom/**  **Sufficiency Economy Philosophy /School Focus** | **Desirables** |
| 1. explain the difference between science and technology | Explain | - communication capability  - thinking capability  - problem solving capability  - capability in applying life skills and  - capability in technological application  - 5E Model  - CIPPA  - Mind Maps  - Group work | - Critical Thinking and Problem Solving  - Communications, Information, and Media Literacy,  - Computing and ICT Literacy,  - Creativity and Innovation, | 1. Honesty and integrity  2. Self-discipline  3. Avidity for learning  4.Dedication and commitment to work  5. Cherishing Thai-ness  6. Public-mindedness  7. Gentlemen of Assumption College |
| 1. explain what the scientific method is | Explain |
| 1. list the apparatus used in the laboratory | List |
| 1. list the safety rules that have to be followed in a laboratory | List |
| 1. describe what a cell is | Describe |
| 1. differentiate between unicellular and multicellular organisms | Differentiate |
| 1. distinguish between plant cells and animal cells | Distinguish |
| 1. name the components of a cell and explain their functions | Name |
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| 1. differentiate between prokaryotes and eukaryotes | Differentiate | - communication capability  - thinking capability  - problem solving capability  - capability in applying life skills and  - capability in technological application  - 5E Model  - CIPPA  - Mind Maps  - Group work | - Critical Thinking and Problem Solving  - Communications, Information, and Media Literacy,  - Computing and ICT Literacy,  - Creativity and Innovation, | 1. Honesty and integrity  2. Self-discipline  3. Avidity for learning  4.Dedication and commitment to work  5. Cherishing Thai-ness  6. Public-mindedness  7. Gentlemen of Assumption College |
| 1. explain why plants are important | Explain |
| 1. describe the process of photosynthesis | Describe |
| 1. explain the importance of photosynthesis towards living organisms and environment. | Explain |
| 1. describe the process of respiration in plants | Describe |
| 1. list the nutrients that plants need for healthy growth | List |
| 1. explain and differentiate between osmosis and diffusion | Explain |
| 1. explain transport of substances in cells using diffusion and osmosis. | Explain |
| 1. explain cells involved in water transport in plants | Explain |
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| 1. explain the structure of food and water transport system in plants | Explain | - communication capability  - thinking capability  - problem solving capability  - capability in applying life skills and  - capability in technological application  - 5E Model  - CIPPA  - Mind Maps  - Group work | - Critical Thinking and Problem Solving  - Communications, Information, and Media Literacy,  - Computing and ICT Literacy,  - Creativity and Innovation, | 1. Honesty and integrity  2. Self-discipline  3. Avidity for learning  4.Dedication and commitment to work  5. Cherishing Thai-ness  6. Public-mindedness  7. Gentlemen of Assumption College |
| 1. describe the role of xylem and phloem | Describe |
| 1. explain the process of sexual reproduction in flowering plants and asexual reproduction using various parts of plants for reproduction | Explain |
| 1. describe the various types of plant propagation | Describe |