

TEKS

2A Know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section

2B Know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories

2C Know scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed

2D Distinguish between scientific hypotheses and scientific theories

2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypothesis, and selecting equipment and technology

2F Collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, electronic balances, gel electrophoresis apparatuses, micropipettors, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, cameras, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures

2G Analyze, evaluate, make inferences, and predict trends from data

2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports

3A In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student

3B Communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials

3C Draw inferences based on data related to promotional materials for products and services

3D Evaluate the impact of scientific research on society and the environment

3E Evaluate models according to their limitations in representing biological objects or events

3F Research and describe the history of biology and contributions of scientists

learning outcomes students will:

- Plan and conduct various types of laboratory investigations
- Develop investigative questions
- Develop testable statements
- Explain the difference between a hypothesis and a scientific theory
- Make detailed observations
- Differentiate between qualitative and quantitative data
- Measure accurately
- Demonstrate the ability to use appropriate graphs to plot data
- Make accurate drawings and label appropriately
- Select appropriate tools to conduct investigations
- Develop conclusions based on empirical evidence
- Communicate results of investigations via laboratory reports
- Identify the characteristics that all living things share



Incorporate scientific process skills during the instruction of all Biology concepts.
Look for this icon at wardsci.com/TEKS for more information on scientific process skills.

Recommended Ward's Science products with item numbers for easy online searching:

science tools:

Compound Microscopes

Digital Microscopes

Letter "e" (wm) 949111

Cross Colored Threads (wm) 949112

Introductory Science Slide Set 950052

Things of Wonder Slide Set 950005

Depth-of-Field Practice Slide Set 959112

Lab-Pack Plastic Slide Set 6656700

Disposable Dropper Pipettes 6573100

Ward's DataHub: Biology/Chemistry 9200503

instructional resources:

Ward's Using Nasonia to Teach the Scientific Method Lab Activity 367500

Ward's Sci"Ant"ific Method Lab Activity 366222

Pasteur's Experiment 4748400

The Scientific Method Chart 4644101

Ward's Introduction to Experimental Design and Data Presentation Lab Activity 366014

Investigating Biology Through Inquiry Lab Book 145218