

**Science  
Review Notes  
for  
Parents and Students**

Grade 2  
4<sup>th</sup> Nine Weeks  
2017-2018



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**Science Review Notes  
for Parents and Students  
Grade 2 Science: Fourth Nine Weeks  
2017-2018**

**This resource is intended to be a guide for parents and students to improve content knowledge and understanding. The information below is detailed information about the Standards of Learning taught during the 4<sup>th</sup> grading period and comes from the Science Standards of Learning Curriculum Framework, Grade 2 issued by the Virginia Department of Education. The Curriculum Framework may be found in its entirety at the following website.**

[http://www.doe.virginia.gov/testing/sol/standards\\_docs/science/2010/curriculum\\_framework/science2.pdf](http://www.doe.virginia.gov/testing/sol/standards_docs/science/2010/curriculum_framework/science2.pdf)

**Standard 2.1**

The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which

- a) observations and predictions are made and questions are formed;
- b) observations are differentiated from personal interpretation;
- c) observations are repeated to ensure accuracy;
- d) two or more characteristics or properties are used to classify items;
- e) length, volume, mass, and temperature are measured in metric units and standard English units using the proper tools;
- f) time is measured using the proper tools;
- g) conditions that influence a change are identified and inferences are made;
- h) data are collected and recorded, and bar graphs are constructed using numbered axes;
- i) data are analyzed, and unexpected or unusual quantitative data are recognized;
- j) conclusions are drawn;
- k) observations and data are communicated;
- l) simple physical models are designed and constructed to clarify explanations and show relationships; and
- m) current applications are used to reinforce science concepts.

**Overview**

Standard 2.1 is intended to develop investigative and inquiry skills and the understanding of the nature of science for all of the other second-grade standards. Standard 2.1 requires students to continue developing a range of inquiry skills and achieve proficiency with those skills, and develop and reinforce their understanding of the nature of science in the context of the concepts developed in second grade.

- The nature of science refers to the foundational concepts that govern the way scientists formulate explanations about the natural world. The nature of science includes the following concepts:
  - a) the natural world is understandable;
  - b) science is based on evidence, both observational and experimental;
  - c) science is a blend of logic and innovation;
  - d) scientific ideas are durable yet subject to change as new data are collected;
  - e) science is a complex social endeavor; and
  - f) scientists try to remain objective and engage in peer review to help avoid bias.
- Science assumes that the natural world is understandable. Scientific inquiry can provide explanations about nature. This expands students' thinking from just a knowledge of facts to understanding how facts are relevant to everyday life.
- Science demands evidence. Scientists develop their ideas based on evidence and they change their ideas when new evidence becomes available or the old evidence is viewed in a different way.
- Science is a complex social endeavor. It is a complex social process for producing knowledge about the natural world. Scientific knowledge represents the current consensus as to what is the best explanation for phenomena in the natural world. This consensus does not arise automatically, since scientists with different backgrounds from all over the world may interpret the same data differently. To build a consensus, scientists communicate their findings to other scientists and attempt to replicate one another's findings. In order to model the work of professional scientists, it is essential for second-grade students to engage in frequent discussions with peers about their understanding of their investigations.
- In order to communicate accurately, it is necessary to provide a clear description of exactly what is observed. There is a difference between what one can observe and what can be interpreted from an observation.
- An observation is what you actually see, feel, taste, hear, or smell.
- The more times an observation is repeated, the greater the chance of ensuring the accuracy of the observation.
- It is easier to see how things are related if objects are classified according to their common characteristics.
- By constructing and studying simple models, it is sometimes easier to understand how real things work.
- Scientific investigations require standard measures, proper tools (e.g., balance, thermometer, ruler, magnifying glasses), and organized collection and reporting of data. The way the data are displayed can make it easier to interpret important information.
- When using any standard measurement scale, measure to the marked increment and estimate one more decimal place. Scientists do not round their measurements as this would be inaccurate.
- Students should communicate observations and data publicly.

## **Standard 2.8**

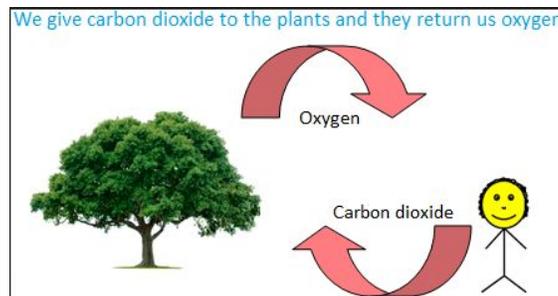
The student will investigate and understand that plants produce oxygen and food, are a source of useful products, and provide benefits in nature. Key concepts include

- a) important plant products are identified and classified;
- b) the availability of plant products affects the development of a geographic area;
- c) plants provide oxygen, homes, and food for many animals; and
- d) plants can help reduce erosion.

### **Overview**

In 2.8 students investigate and understand that plants produce oxygen and food, are a source of useful products, and provide benefits in nature.

- Plants provide many useful products and materials, which benefit human beings as well as other living organisms.
- Plant products include such essentials as oxygen and food, as well as materials useful for clothing and shelter.



- Plants may grow well in certain geographic areas, thus enabling the production of plant products that allow humans to live in and thrive in those areas.

- Some examples of plants that grow in Virginia's geographic regions include:  
Coastal Plains (Tidewater): peanuts, cotton, soybeans;



Piedmont: apples, tobacco, cabbage;



Blue Ridge Mountains: evergreens, apples, corn;  
Valleys and Ridges: evergreens, apples, corn; and



Appalachian Plateau: tobacco.



- Plants provide homes and food sources for many animals.



- Plants are important in the prevention of soil erosion.



- Products from plants include, but are not limited to, cinnamon from the bark of trees; fiber from reeds, grasses and trees; cotton from a cotton plant; spices from various plant parts; lumber from wood; rubber from rubber trees; and medicines (e.g., aloe vera from the aloe plant, quinine from the bark of Cinchona trees found in South America to treat malaria).