

St. Clement's School
Course Outline
Fifth Grade Science
Fall Semester

- I. Course content
 - A. Simple machines
 - 1. Spring scale
 - 2. Newtons
 - 3. Force
 - 4. Inclined plane
 - 5. Wheel and axle
 - 6. Wedge
 - 7. Screw
 - 8. Lever
 - a. First class lever
 - b. Second class lever
 - c. Third class lever
 - 9. Gears
 - 10. Pulley
 - B. Scientists and inventors
 - 1. Sir Isaac Newton
 - 2. Thomas Edison
 - 3. Marie S. Curie
 - 4. Leonardo da Vinci
 - 5. Alexander Fleming
 - 6. Sally Ride
 - 7. J. Robert Oppenheimer
 - 8. Louis Pasteur
 - 9. Johann Guttenberg
 - 10. Jane Goodall
 - C. Gardening
 - 1. Basic botany
 - 2. Gardening skills
 - 3. Earthworm studies
 - D. Metric measurement
 - 1. Length
 - a. Millimeter
 - b. Centimeter
 - c. Decimeter
 - d. Meter
 - e. Kilometer
 - 2. Mass
 - a. Gram
 - b. Kilogram

E. Cells

1. Living and nonliving things
2. Animal and plant cell
3. Cell structure
4. Cell respiration
5. Mitosis and cell division
6. Cell waste
7. Microscope work
8. Cell report and project

II. Learning objectives

A. In simple machines, students will be able to:

1. Identify seven types of simple machines
2. Use spring scales
3. Understand newtons as a measurement of force
4. Work in cooperative groups to conduct labs
5. Manipulate various types of simple machines
6. Compare and contrast types and functions of simple machines

B. In scientists and inventors, students will be able to:

1. Pace themselves to complete week-long assignments.
2. Research a topic
3. Transfer information into their own words and in complete and detailed sentences
4. Understand the impact others have had on science and our society

C. In gardening, students will be able to:

1. Compare and contrast vascular and non vascular plants
2. Identify the four basic plant groups:
 - a. Moss/nonvascular
 - b. Ferns
 - c. Conifers
 - d. Flowering plants
3. Maintain the school garden
4. Create and maintain an earthworm compost
5. Name the basic anatomic parts of an earthworm
6. Understand the basic characteristics of an earthworm

D. In metric measurement, students will be able to:

1. Identify the metric terms of length (mm, cm, dm, m, km)
2. Identify the metric terms of mass (g, kg)
3. Estimate the length and mass of various objects
4. Calculate metric equivalences within the metric system
5. Use metric measurements

E. In cell studies, students will be able to:

1. Distinguish between living and nonliving things
2. Compare and contrast plant and animal cells
3. Identify cell structures
4. Become familiar with basic cell respiration
5. Recognize mitosis and cell division

6. Understand the concept of cell waste and waste excretion
7. Prepare a short report
8. Construct a cell model
9. Assemble a bibliography in MLA style

III. Assessment

Students are expected to work at the best of their ability and to take an interest in and responsibility for their learning.

F. Homework

1. Scientists and inventors: A scientist or an inventor will be given every Thursday (occasionally every other Thursday), to be handed in by the following Thursday (occasionally within two weeks). The assignment will be written on the white board in the front of the classroom and the assignment will be handed out during class. It is the student's responsibility to record the assignment and complete it at home during the week.
2. Overnight assignments: Will be given frequently throughout the semester, sometimes but not necessarily daily. The assignment will be written on the white board in the front of the classroom. It is the student's responsibility to write the assignment and complete it.
3. Reports: A report will be assigned in the latter half of the semester to be completed within a three-week time-frame. Preparatory work will have been done in class to understand the MLA style of listing resources; clear worksheets will be handed out to aide in this area of report writing as well. The assignment will be given out in a clear format, stating expectations and evaluation criteria. The assignment will also be posted on the white board in the front of the classroom. It will be the student's responsibility to record the information and seek assistance if needed.
4. Exams: Exams will be given periodically throughout the semester. A study sheet will go out one week prior to the exam and the exam will be posted on the white board in the front of the room. It is the student's responsibility to record the exam and to study daily throughout the week for the exam.

G. Weighting and re-dos

1. Daily class and homework assignments, notebook checks, as well as most labs and quizzes, will be weighted once in the averaging of each student's grade.
2. Homework with a grade below 60 may be redone with a parent's signature to receive a passing grade 70. Re-dos are not available for late work or tests.
3. Biographies of scientists and inventors, large station labs (requiring several days and several stations for evaluation of understanding of the material), report, and exams will be weighted twice in the averaging of the student's grade.

H. Extra credit

1. Students may earn extra credit by bringing in examples or information from any source regarding any topic studied (for five points) or on any

