

The Dragon Academy ~ Course Syllabus 2007-2008

FORM 2 ~ Science Instructor: Ms. Ashkenazy

Course Description

This course enables students to understand basic concepts in biology, chemistry, earth and space science, and physics; to develop skills in the processes of scientific inquiry; and to relate science to technology, society, and the environment. Students will learn scientific theories and conduct investigations related to cell division and reproduction; atomic and molecular structures and the properties of elements and compounds; the universe and space exploration; and the principles of electricity.

Text

The primary teaching resource for this course is the text *Nelson Science & Technology 9 2000*. Scarborough, ON: ITP Nelson. ISBN 0-17-612032-7, other resources may be used as needed.

Unit	Unit Title	Length
Unit 1	Meiosis and Reproduction	25 hours
Unit 2	Basic Particle Theory	25 hours
Unit 3	Electricity	25 hours
Unit 4	Space	35 hours
	Total	110 hours

Unit Descriptions

Unit 1: Meiosis and Reproduction

Time: 25 hours

Description:

This unit will follow the processes of reproduction from the behavioral to anatomical and down to the biochemical. There will be a special emphasis on cell and molecular biology, as well as genetics (specifically Mendelian heredity and DNA structure and function). DNA replication and protein synthesis will also be reviewed and expanded upon.

Unit 2: Basic Particle Theory

Time: 25 hours

Description:

This unit will follow the historical progress of the model of the atom and focus on the basic concepts and doctrines of particle theory. The properties of matter will be explored through an understanding of basic particles: the relationship between atoms and elements contrasted with the relationship of compounds and molecules. Several phenomena will be explained in this manner, including diffusion, heat and the various states of matter.

Unit 3: Electricity

Time: 25 hours

Description:

In this unit, students will gain an understanding of concepts of static and current electricity. Using a variety of instruments and tools, they will develop skill in gathering qualitative and quantitative data. They will use the relationships among current/electrical resistance/potential difference, and energy/power/time to do simple problems. Students will apply their knowledge to the design and construction of an electrical circuit which performs a specific function. Safety concerns related to static and current electricity in daily life, and the safe use of tools and electrical equipment, are addressed. Students will evaluate social, economic and environmental costs and benefits associated with electrical energy production and distribution in Canada.

Unit 4: Space

Time: 35 hours

Description:

This unit builds on students' curiosity about space and their place in the universe and develops their observational skills in situations other than the laboratory. Students will study the methods scientists use to study space and explore theories on the origin of the universe and the development of technologies used in space studies. Skills of inquiry, problem solving, critical thinking, collaboration and communication are developed.

Policies and Procedures:

Code Of Conduct

Students are expected to conduct themselves in a manner that promotes a safe, orderly learning environment within the school, shows respect for the rights of others, and helps preserve the property and equipment provided for the use of students. Student efforts in meeting this expectation will minimize the need for school-directed discipline, and self-discipline should be each student's foremost objective. Students who fail to meet the expectations set forth above may be subject to disciplinary action.

Preparation

Being properly prepared to work every day is an essential component of success in this course. Students should bring their textbook, notebook and writing instruments to each class.

Notebook A three-ring binder (for use solely in this course), or ringed notebook is recommended.

Tutoring

Student having difficulties with the curriculum are invited to first approach their teacher for additional assistance. Extra help is available upon request. The teacher may also offer to the class after-school tutorial sessions. Student tutors are also available and can be arranged through the school principle.

Care Of School Equipment And Property

Materials loaned to students remain the property of The Dragon Academy. Each student is responsible for materials given to them. When students are finished using the loaned materials, they are to be returned to the teacher promptly. Damage or loss of materials obligates the student to replace the lost or damaged equipment.