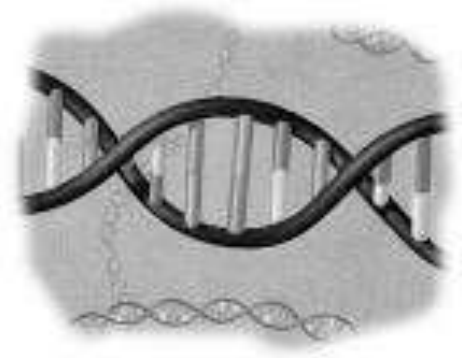


Biology

2011-2012



Skills to Be Mastered and Demonstrated

1. Inquiry: The Spirit and Process of Science
2. Laboratory and Field Techniques for Data Collection
3. Technical Literacy (Reading and Writing)
4. Scientific Numeracy (Measurement, Uncertainty, and Computation)
5. Graphing (Visual Representation of Information)

Big Ideas to Be Understood

1. Organisms and Ecology
2. Molecular and Cellular Biology
3. Evolution and Genetics
4. Diversity of Life

Attitudes to Be Demonstrated

1. Demonstrates respect of self, others and environment
2. Makes connections to prior knowledge, is unafraid to ask questions, corrects mistakes
3. Cooperates with other students and does a fair share of work in groups
4. Contributes to the learning of other people inside and outside the class
5. Takes personal responsibility for learning independently and in groups (arrives prepared; hands in work on time, persistent in difficult tasks; submits finest effort)

Science Content Standards Covered

- Standard 1: Students understand the processes of scientific investigation and design, conduct, communicate about and evaluate such investigations
- Standard 3: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment
- Standard 4.1: Students know and understand the composition of Earth, its history and the natural processes that shape it
- Standard 5: Students know and understand interrelationships among science, technology and human activity and how they can affect the world
- Standard 6: Students understand that science involves a particular way of knowing and understanding common connections among scientific disciplines

Linkages to Other Disciplines

Language Arts: reading, writing and speaking

Geography: a sense of place, scale, mapping, influence of water

Mathematics: patterns, measurement, computation, graphing, data analysis

Art: visual aesthetics, balance, composition, presentation

Technology: word processing, data representation, GIS mapping, Internet research, scientific instruments (probe ware, genomic instruments, microscopes)

Careers: application of science skills and knowledge to areas of personal interest

Achievement Levels

- 4 **Advanced:** student shows sophisticated understanding and is able to explain, apply, interpret, and have perspective, empathy and self-knowledge
- 3 **Proficient:** student has a basic understanding and is able to apply information/skills/attitudes to known situations
- 2 **Basic:** student is able to articulate and apply some information and skills
- 1 **Novice:** student competence is not yet known or is inadequate

Evaluation

- 25% **Exams and Assessments:** based on answers to essay /exam questions that have been given to students in advance
- 20% **Homework and Check for Understanding:** based on short-answer, selected response, computation problems and concept definition tasks that students can re-take at intervals during the course
- 20% **Biology Journal:** based on journal entries and naturalist observations
- 15% **Lab:** based on laboratory journal and reports
- 20 % **Attitude and Effort:** based on participation in class discussions, laboratory performance demonstrating understanding of principles, procedures and safety

