School Wide Benchmark Assessment Plan
7th Grade Science Standards

Test 1 September Test 3 January
Test 2 November Test 4 March

			7th GRADE
Test	**# of STAR Questions**	**Category**	**Essential Science Standards**
1	4	**Cell Biology**	**1. All living organisms are composed of cells, from just one to many trillions, whose details usually are visible only through a microscope. As a basis for understanding this concept:** c. Students know the nucleus is the repository for genetic information in plant and animal cells. d. Students know that mitochondria liberate energy for the work that cells do and that chloroplasts capture sunlight energy for photosynthesis. e. Students know cells divide to increase their numbers through a process of mitosis, which results in two daughter cells with identical sets of chromosomes.
2	4	**Genetics**	**2. A typical cell of any organism contains genetic instructions that specify its traits. Those traits may be modified by environmental influences. As a basis for understanding this concept:** a. Students know the differences between the life cycles and reproduction methods of sexual and asexual organisms. c. Students know an inherited trait can be determined by one or more genes. d. Students know plant and animal cells contain many thousands of different genes and typically have two copies of every gene. The two copies (or alleles) of the gene may or may not be identical, and one may be dominant in determining the phenotype while the other is recessive. e. Students know DNA (deoxyribonucleic acid) is the genetic material of living organisms and is located in the chromosomes of each cell.
3	3	**Evolution**	**3. Biological evolution accounts for the diversity of species developed through gradual processes over many generations. As a basis for understanding this concept:** a. Students know both genetic variation and environmental factors are causes of evolution and diversity of organisms. b. Students know the reasoning used by Charles Darwin in reaching his conclusion that natural selection is the mechanism of evolution. c. Students know how independent lines of evidence from geology, fossils, and comparative anatomy provide the bases for the theory of evolution.
3	3	**Physiology**	**5. The anatomy and physiology of plants and animals illustrate the complementary nature of structure and function. As a basis for understanding this concept:** a. Students know plants and animals have levels of organization for structure and function, including cells, tissues, organs, organ systems, and the whole organism. c. Students know how bones and muscles work together to provide a structural framework for movement.

			6. Physical principles underlie biological structures and functions. As a basis for understanding this concept: j. Students know that contractions of the heart generate blood pressure and that heart valves prevent backflow of blood in the circulatory system.
4		**Investigation and Experimentation**	**6. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:** c. Communicate the logical connection among hypotheses, science concepts, tests conducted, data collected, and conclusions drawn from the scientific evidence.