Dyersburg Middle School
Course Expectations

A. Course - 6th Grade Science

B. Course Overview -

The areas of science addressed this year will be topics from physical and life science (1st 9 weeks), life and earth science (2nd 9 weeks), earth science (3rd 9 weeks), and earth and life science (4th 9 weeks). Students will attend science for 4.5 weeks during each nine-week period. Students will conclude the 4.5 weeks science class with an exam.

C. Successful Learning Habits** -

A successful science student will keep a folder and composition book with *all work* from class. Bring folder, composition book, textbook, and pencil/supplies each day. Work should be completed and reviewed daily. The parent/guardian may view these resources to be informed of what their student is doing in class. It is essential that your child follow class procedures and safety rules during all science labs. As always, being well rested and prepared for class will increase student learning. We will learn at a fast pace this year. Study daily!

D. Expected Outcomes –

Development of science and engineering practices will continue throughout the school year as students learn to be successful in cooperative science lab groups. Student progress toward mastery of the objectives from each nine weeks will be demonstrated by an exam. By the completion of the course, students will demonstrate an understanding of the sixth grade state mandated curriculum and exhibit growth toward these objectives as measured by the TCAP and benchmark test.

E. Topics/Content

First Nine Weeks - energy, thermal energy and heat, populations and communities

Second Nine Weeks - ecosystems and biomes, balance within ecosystems, energy resources

Third Nine Weeks – water, weather, climate

Fourth Nine Weeks - land, air, and water resources

Assessing Progress –

Daily Grades - 80% consisting of class work, homework, labs, quizzes/test, projects

Exam Grades - 20%

F. Classroom expectations -

Be responsible, respectful, and reliable. Follow class procedures and school handbook. When absent, student should contact teacher for make-up work.

G. Grading Scale

Range	Letter Grade
90-100	A
80-89	B
70-79	C
60-69	D
Below 69	F

6th Grade Science Course Syllabus

1st 9 Weeks

6.PS3: Energy

1) Analyze the properties and compare sources of kinetic, elastic potential, gravitational potential, electric potential, chemical, and thermal energy.

2) Construct a scientific explanation of the transformations between potential and kinetic energy,

3) Analyze and interpret data to show the relationship between kinetic energy and the mass of an object in motion and its speed.

4) Conduct an investigation to demonstrate the way that heat (thermal energy) moves among objects through radiation, conduction, or convection.

6.ETS1: Engineering Design

2) Design and test different solutions that impact energy transfer.

6.LS2: Ecosystems: Interactions, Energy, and Dynamics

1) Evaluate and communicate the impact of environmental variables on population size.

2)Determine the impact of competitive, symbiotic, and predatory interactions in an ecosystem.

6) Research the ways in which an ecosystem has changed over time in response to changes in physical conditions, population balances, human interactions, and natural catastrophes.

7) Compare and contrast auditory and visual methods of communication among organisms in relation to survival strategies of a population.

2nd 9 Weeks

6,LS2: Ecosystems: Interactions, Energy, and Dynamics

3) Draw conclusions about the transfer of energy through a food web and energy pyramid in an ecosystem.

4) Using evidence from climate data, draw conclusions about the patterns of abiotic and biotic factors in different biomes, specifically the tundra, taiga, deciduous forest, desert, grasslands, rainforest, marine, and freshwater ecosystems.

5) Analyze existing evidence about the effect of a specific invasive species on native populations in Tennessee and design a solution to mitigate its impact.

6) Research the ways in which an ecosystem has changed over time in response to changes in physical conditions, population balances, human interactions, and natural catastrophes.

6.LS4: Biological Change: Unity and Diversity

1) Explain how changes in biodiversity would impact ecosystem stability and natural resources.

2) Design a possible solution for maintaining biodiversity of ecosystems while still providing necessary human resources without disrupting environmental equilibrium.

6.ESS3: Earth and Human Activity

1) Differentiate between renewable and nonrenewable resources by asking questions about their availability and sustainability.

2) Investigate and compare existing and developing technologies that utilize renewable and alternative energy resources.

3) Assess the impacts of human activities on the biosphere including conservation, habitat management, species endangerment, and extinction.

6.ETS1: Engineering Design

1) Evaluate design constraints on solutions for maintaining ecosystems and biodiversity.

3rd 9 Weeks

6.ESS2: Earth's Systems

1) Gather evidence to justify that oceanic convection currents are caused by the sun's transfer of heat energy and differences in salt concentration leading to global water movement.

2) Diagram convection patterns that flow due to uneven heating of the earth.

3) Construct an explanation for how atmospheric flow, geographic features, and ocean currents affect the climate of a region through heat transfer.

4) Apply scientific principles to design a method to analyze and interpret the impact of humans and other organisms on the hydrologic cycle.

5) Analyze and interpret data from weather conditions, weather maps, satellites, and radar to predict probable local weather patterns and conditions.

6) Explain how relationships between the movement and interactions of air masses, high and low pressure systems, and frontal boundaries result in weather conditions and severe storms.

6.LS2: Ecosystems: Interactions, Energy, and Dynamics

4) Using evidence from climate data, draw conclusions about the patterns of abiotic and biotic factors in different biomes, specifically the tundra, taiga, deciduous forest, desert, grasslands, rainforest, marine, and freshwater ecosystems.

4th 9 Weeks

6.LS4; Biological Change: Unity and Diversity

2) Design a possible solution for maintaining biodiversity of ecosystems while still providing necessary human resources without disrupting environmental equilibrium.

6.ESS3: Earth and Human Activity

1) Differentiate between renewable and nonrenewable resources by asking questions about their availability and sustainability

2) Investigate and compare existing and developing technologies that utilize renewable and

alternative energy resources,

3) Assess the impacts of human activities on the biosphere including conservation, habitat management, species endangerment, and extinction.

With the implementation of new science standards this course syllabus is subject to **change.**

Revised 7/24/22