

FSSD Syllabus for Science

6th Grade

Instructional pacing guides for English Language Arts, Mathematics, Science, and Social Studies are available online at the FSSD website, which conveys detailed information by quarter. Please access these instructional resources at *{put link here once it is ready}*.

| 1ST Quarter Standards/Objectives | | |
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| | Science and Engineering Practices | <ol style="list-style-type: none"> 1. Asking Questions 2. Developing and using models 3. Planning and carrying out controlled investigations 4. Analyzing and Interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating and communicating information. |
| 6.PS3.1 | Energy | Analyze the properties and compare sources of kinetic, elastic potential, gravitational potential, electric potential, chemical, and thermal energy. |
| 6.PS3.2 | Energy | Analyze the properties and compare sources of kinetic, elastic potential, gravitational potential, electric potential, chemical, and thermal energy. |
| 6.PS3.3 | Energy | Analyze and interpret data to show the relationship between kinetic energy and the mass of an object in motion and its speed. |
| 6.PS3.4 | Energy | Conduct an investigation to demonstrate the way that heat (thermal energy) moves among objects through radiation, conduction, or convection. |
| 6.LS2.1 | Ecosystems Interactions, Energy, and Dynamics | Evaluate and communicate the impact of environmental variables on population size. |
| 6.LS2.2 | Ecosystems Interactions, Energy, and Dynamics | Determine the impact of competitive, symbiotic, and predatory interactions in an ecosystem. |
| 6.LS2.3 | Ecosystems Interactions, Energy, and Dynamics | Draw conclusions about the transfer of energy through a food web and energy pyramid in an ecosystem. |
| 6.LS2.7 | Ecosystems Interactions, Energy, and Dynamics | Compare and contrast auditory and visual methods of communication among organisms in relation to survival strategies of a population. |

Franklin Special School District

Grade 6 Science

| 1 ST Quarter Standards/Objectives | | |
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| 6.ETS.1.2 | Engineering Design | Design and test different solutions that impact energy transfer. |
| Topics covered: {bullet topics here} <ul style="list-style-type: none">• Forms of Energy• Energy Transformations• Law of Conservation of Energy• Kinetic Energy and Potential Energy• Conduction, Convection, and Radiation• Environmental Variables• Ecosystems• Organisms Communication• Food Chains, Food Webs, Energy Pyramid | | Major assignments: <ol style="list-style-type: none">1) Unit Common Assessments2) Extended Activity or Projects3) Additional reading and/ or projects may be assigned for honors classes. |
| 1st Quarter Notes: | | |

2nd Quarter Standards and Objectives

Franklin Special School District

Grade 6 Science

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| 6.LS2.4 | Ecosystems: Interactions, Energy, and Dynamics | 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. |
| 6.LS2.5 | Ecosystems: Interactions, Energy, and Dynamics | 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.LS2.6 | Ecosystems: Interactions, Energy, and Dynamics | 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.LS4.1 | Biological Change: Unity and Diversity | Explain how changes in biodiversity would impact ecosystem stability and natural resources. |
| 6.LS4.2 | Biological Change: Unity and Diversity | Explain how changes in biodiversity would impact ecosystem stability and natural resources. |
| 6.ETS1.1 | Engineering Design | Evaluate design constraints on solutions for maintaining ecosystems and biodiversity. |
| Topics covered: <i>{bullet topics here}</i> <ul style="list-style-type: none"> • Abiotic and Biotic Factors • Ecosystems and Biomes • Invasive Species • Changes in ecosystems through physical conditions • Biodiversity • Environmental Equilibrium | | Major assignments: <ol style="list-style-type: none"> 1) Unit Common Assessments 2) Extended Activity or Projects 3) Additional reading and/ or projects may be assigned for honors classes |
| 3rd Quarter Standards and Objectives | | |

Franklin Special School District

Grade 6 Science

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| 6.ESS2.1 | Earth's Systems | 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. |
| 6.ESS2.2 | Earth's Systems | Diagram convection patterns that flow due to uneven heating of the earth. |
| 6.ESS2.3 | Earth's Systems | Construct an explanation for how atmospheric flow, geographic features, and ocean currents affect the climate of a region through heat transfer. |
| 6.ESS2.4 | Earth's Systems | Apply scientific principles to design a method to analyze and interpret the impact of humans and other organisms on the hydrologic cycle. |
| 6.ESS2.5 | Earth's Systems | Analyze and interpret data from weather conditions, weather maps, satellites, and radar to predict probable local weather patterns and conditions. |
| 6.ESS2.6 | Earth's Systems | 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. |
| Topics covered: <i>{bullet topics here}</i> <ul style="list-style-type: none"> • Oceanic Convection Currents • Salinity • Convection Patterns • Global Water Movements • Atmospheric Flow • Geographic Features • Hydrologic Cycle • Weather conditions and patterns • High and Low Pressure Systems • Frontal Boundaries • Weather Instruments | | Major assignments: <ol style="list-style-type: none"> 1) Unit Common Assessments 2) Extended Activity or Projects 3) Additional reading and/ or projects may be assigned for honors classes |
| 3rd Quarter Notes: | | |

Franklin Special School District

Grade 6 Science

| 4 th Quarter Standards and Objectives | | |
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| 6.ESS3.1 | Earth and Human Activity | Differentiate between renewable and nonrenewable resources by asking questions about their availability and sustainability. |
| 6.ESS3.2 | Earth and Human Activity | Investigate and compare existing and developing technologies that utilize renewable and alternative energy resources. |
| 6.ESS3.3 | Earth and Human Activity | Assess the impacts of human activities on the biosphere including conservation, habitat management, species endangerment, and extinction. |
| Topics covered: <i>{bullet topics here}</i> <ul style="list-style-type: none"> • Renewable and Nonrenewable Resources • Alternative Energy • Biosphere • Conservation • Management • Endangerment • Extinction | | Major assignments: <ol style="list-style-type: none"> 1) Unit Common Assessments 2) Extended Activity or Projects 3) Additional reading and/ or projects may be assigned for honors classes. |
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Franklin Special School District

Grade 6 Science

Procedures for Parental Access for Instructional Materials:

- 1)** Many instructional materials can be accessed digitally via the FSSD website (fssd.org) using your student’s unique username and password
 - a. **Student Resources** : FSSD website > Parents & Students > Parent Information > Online Resources > Student
 - b. **Parent Resources**: FSSD website > Parents & Students > Parent Information > Online Resources > Parent
- 2)** If additional information is needed regarding instructional materials, a written request may be submitted to your child’s teacher. Instructional material review is included in Board Policy 4.400.