WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Science 4
Course Number: 08433
Course Prerequisites: None

Course Description: Students will use models to describe patterns of waves in terms of amplitude and wavelength and will understand that waves can cause objects to move. Students will understand the effects of erosion by water, ice, wind, or vegetation. Students will describe patterns of Earth's features and analyze and interpret data from maps. Students will understand that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. Students will develop models to illustrate that an object can be seen when light reflected from its surface enters the eye. Students will use evidence to construct an explanation of the relationship between the speed of an object and the energy of that object. Students will understand that energy can be transferred from place to place by sound, light, heat, and electric currents or from object to object through collisions. Students will apply their understanding of energy to design, test, and refine a device that converts energy from one form to another.

Suggested Grade Level: Grade 4
Length of Course: Two Semesters
Units of Credit: None
PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:
CSPG 69 or Elementary K-6
To find the CSPG information, go to CSPG
Certification verified by the WCSD Human Resources Department: ☒Yes ☐No

WCSD STUDENT DATA SYSTEM INFORMATION

Course Level: Academic
Mark Types: Check all that apply.
☒F – Final Average ☒MP – Marking Period ☐EXM – Final Exam

GPA Type: ☒ GPAEL-GPA Elementary ☐ GPAML-GPA for Middle Level ☐NHS-National Honor Society
☐ UGPA-Non-Weighted Grade Point Average ☐ GPA-Weighted Grade Point Average

State Course Code: 03234
To find the State Course Code, go to State Course Code, download the Excel file for *SCED*, click on SCED 6.0 tab, and choose the correct code that corresponds with the course.

TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:

Title:	Inspire Science
Publisher:	McGraw Hill
ISBN #:	978-0-07-678004-4
Copyright Date:	2017
WCSD Board Approval Date:	12/03/2018

Supplemental Materials: STEM Lab activities and science kits

Curriculum Document

WCSD Board Approval:

Date Finalized:	7/19/2022
Date Approved:	Click or tap to enter a date.
Implementation Year:	2023-2024

SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

SCOPE AND SEQUENCE OF CONTENT AND CONCEPTS

Marking Period 1

- Life Science: From Molecules to Organisms
- Physical Science: Waves and Their Applications

Marking Period 2

- Physical Science: Energy

Marking Period 3

- Earth and Space Sciences: Earth's Place in the Universe
- Earth and Space Sciences: Earth's Systems

Marking Period 4

- Earth and Space Sciences: Earth and Human Activity

Standards/Eligible Content and Skills

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	3.1.4.A	MP1
Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.	3.1.4.B	MP1
Demonstrate essential skills of the engineering design process.	3.5.3-5.M	MP1, MP2
Identify why a product or system is not working properly.	3.5.3-5.N	MP1, MP2
Describe requirements of designing or making a product or system.	3.5.3-5.O	MP1, MP2, MP3
Evaluate the strengths and weaknesses of existing design solutions, including their own solutions.	3.5.3-5.P	MP1, MP2
Practice successful design skills.	3.5.3-5.Q	MP1, MP2, MP3
Apply tools, techniques, and materials in a safe manner as part of the design process.	3.5.3-5.R	MP1, MP2, MP3
Illustrate that there are multiple approaches to design.	3.5.3-5.S	MP1, MP2, MP3
Apply universal principles and elements of design.	3.5.3-5.T	MP1, MP2, MP3
Evaluate designs based on criteria, constraints, and standards.	3.5.3-5.U	MP1, MP2
Interpret how good design improves the human condition.	3.5.3-5.V	MP1, MP2
Describe the properties of different materials.	3.5.3-5.W	MP1
Illustrate how, when parts of a system are missing, it may not work as planned.	3.5.3-5.BB	MP1
Describe how a subsystem is a system that operates as a part of another larger system.	3.5.3-5.CC	MP1
Demonstrate how simple technologies are often combined to form more complex systems.	3.5.3-5.DD	MP1
Make and communicate observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.	3.2.4.B	MP1, MP2
Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.	3.2.4.D	MP1, MP2
Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.	3.2.4.E	MP1, MP2
Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.	3.2.4.F	MP1, MP2
Generate and compare multiple solutions that use patterns to transfer information.	3.2.4.G	MP1, MP2
Explain how solutions to problems are shaped by economic, political, and cultural forces.	3.5.3-5.EE	MP1

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Performance Indicator	**PA Core Standard and/or Eligible Content**	**Marking Period Taught**
Compare how things found in nature differ from things that are human-made, noting differences and similarities in how they are produced and used.	3.5.3-5.FF	MP1
Describe the unique relationship between science and technology, and how the natural world can contribute to the human-made world to foster innovation.	3.5.3-5.GG	MP1
Use evidence to construct an explanation relating the speed of an object to the energy of that object.	3.2.4.A	MP2
Ask questions and predict outcomes about the changes in energy that occur when objects collide.	3.2.4.C	MP2
Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.	3.3.4.A	MP3
Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.	3.3.4.B	MP3, MP4
Analyze and interpret data from maps to describe patterns of Earth's features.	3.3.4.C	MP3, MP4
Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.	3.3.4.D	MP3, MP4
Analyze how living organisms, including humans, affect the environment in which they live, and how their environment affects them.	3.4.3-5.A	MP3, MP4
Construct an argument to support whether action is needed on a selected environmental issue and propose possible solutions.	3.4.3-5.E	MP3, MP4
Critique ways that people depend on and change the environment.	3.4.3-5.F	MP3, MP4
Use appropriate symbols, numbers, and words to communicate key ideas about technological products and systems.	3.5.3-5.A	MP3
Follow directions to complete a technological task.	3.5.3-5.C	MP3
Explain why responsible use of technology requires sustainable management of resources.	3.5.3-5.E	MP3
Classify resources used to create technologies as either renewable or nonrenewable.	3.5.3-5.F	MP3
Describe the helpful and harmful effects of technology.	3.5.3-5.G	MP3
Judge technologies to determine the best one to use to complete a given task or meet a need.	3.5.3-5.K	MP3
Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.	3.3.4.E	MP4
Make a claim about the environmental and social impacts of design solutions and civic actions, including their own actions.	3.4.3-5.B	MP4

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Investigate how perspectives over the use of resources and the development of technology have changed over time and resulted in conflict over the development of societies and nations.	3.4.3-5.G	MP4

ASSESSMENTS

PDE Academic Standards, Assessment Anchors, and Eligible Content: The teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

Formative Assessments: The teacher will utilize a variety of assessment methods to conduct in-process evaluations of student learning.

Effective formative assessments for this course include: center activities, cooperative learning, activities, games, online activities, oral responses, teacher observations, writing, and worksheets.

Summative Assessments: The teacher will utilize a variety of assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

Effective summative assessments for this course include: performance assessments, projects, tests, writing, and quizzes.