

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Science Today

Course Number: 00321

Course Prerequisites: None

Course Description: Students in grades 6-8 will engage in lively discussions and debates, focusing on the STEELS science and engineering practice of arguing from evidence. The course's uniqueness lies in its dedication to connecting the dots between Physical, Life, and Earth Sciences, fostering a holistic approach to scientific understanding while staying updated with the latest scientific breakthroughs.

Suggested Grade Level: Grades 6-8

Length of Course: One Semester

Units of Credit: .5

PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:

CSPG 32 Biology, CSPG 34 Chemistry, CSPG 40 Earth and Space Science, CSPG 41 Elementary Education K – 6, CSPG 45 Environmental Science, CSPG 46 General Science, CSPG 54 Middle Level Science, CSPG 56 Physics, CSPG 70 Grades 4 – 8 (3100-05)

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: 03239

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.

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TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:

Title: Click or tap here to enter text.

Publisher: Click or tap here to enter text.

ISBN #: NA

Copyright Date: NA

WCSD Board Approval Date: NA

Supplemental Materials: Arguing from Evidence in Middle School Science: 24 Activities for Productive Talk and Deeper Learning. Content specific videos/video clips from Swank, YouTube, PBS or other WCSD approved source.

Curriculum Document

WCSD Board Approval:

Date Finalized: 3/13/2024

Date Approved: 6/10/2024

Implementation Year: 2024-2025

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

- Introduction of Scientific Argumentation
 - o Understanding the STEELS practice of arguing from evidence
 - o Initial class discussion on the importance of evidence in science
- Building Argumentation Skills
 - o Utilize activities from Arguing from Evidence in Middle School Science
 - o Group discussions and peer reviews of argumentative writing (CER)
 - o Introduction to basic argument structure and supporting evidence
- Current Events in Physical Science
 - o Research and presentation on a current event related to Physical Science
 - o Class debate on selected Physical Science topics
 - o Reflection of the role of evidence in forming scientific opinions.

Marking Period 2

- Current Events in Life Science
 - o Research and presentation on a current event related to Life Science
 - o Class debate on selected Life Science topics
 - o Analyzing and critiquing arguments presented by peers
- Current Events in Earth Science
 - o Research and presentation on a current event related to Earth Science
 - o Class debate on selected Earth Science Topics
 - o Synthesizing information from different scientific disciplines
- Culminating Project
 - o Collaborative project where students apply argumentation skills to address a real-world problem
 - o Presentation of projects to the class
 - o Reflection on the evolution of argumentation skills throughout the course

Marking Period 3

- Introduction of Scientific Argumentation
 - o Understanding the STEELS practice of arguing from evidence
 - o Initial class discussion on the importance of evidence in science
- Building Argumentation Skills
 - o Utilize activities from Arguing from Evidence in Middle School Science
 - o Group discussions and peer reviews of argumentative writing (CER)
 - o Introduction to basic argument structure and supporting evidence
- Current Events in Physical Science

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- Research and presentation on a current event related to Physical Science
- Class debate on selected Physical Science topics
- Reflection of the role of evidence in forming scientific opinions.

Marking Period 4

- Current Events in Life Science
 - Research and presentation on a current event related to Life Science
 - Class debate on selected Life Science topics
 - Analyzing and critiquing arguments presented by peers
- Current Events in Earth Science
 - Research and presentation on a current event related to Earth Science
 - Class debate on selected Earth Science Topics
 - Synthesizing information from different scientific disciplines
- Culminating Project
 - Collaborative project where students apply argumentation skills to address a real-world problem
 - Presentation of projects to the class
 - Reflection on the evolution of argumentation skills throughout the course

Standards/Eligible Content and Skills

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Develop and use a model of the Earth sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.	3.3.6-8.A	MP 1 MP 3
Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.	3.2.6-8.J	MP 1 MP 3
Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.	3.2.6-8.O	MP 1 MP 3
Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.	3.1.6-8.L	MP 2 MP 4
Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.	3.3.6-8.O	MP 2 MP 4
Construct an argument supported by evidence for how increases in human population and per capita consumption of natural resources impact Earth's systems.	3.3.6-8.N	MP 2 MP 4

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Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Cite specific textual evidence to support analysis of science and technical texts.	CC.3.5.6-8.A	MP1 MP2 MP3 MP4
Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.	CC.3.5.6-8.B	MP1 MP2 MP3 MP4
Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.	CC.3.5.6-8.D	MP1 MP2 MP3 MP4
Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.	CC.3.5.6-8.E	MP1 MP2 MP3 MP4
Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.	CC.3.5.6-8.F	MP1 MP2 MP3 MP4
Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	CC.3.5.6-8.G	MP1 MP2 MP3 MP4
Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.	CC.3.5.6-8.H	MP1 MP2 MP3 MP4
Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.	CC.3.5.6-8.I	MP1 MP2 MP3 MP4
By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.	CC.3.5.6-8.J	MP1 MP2 MP3 MP4

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Write arguments focused on discipline-specific content. • Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. • Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources. • Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. • Establish and maintain a formal style. • Provide a concluding statement or section that follows from and supports the argument presented.	CC.3.6.6-8.A	MP1 MP2 MP3 MP4
Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	CC.3.6.6-8.C	MP1 MP2 MP3 MP4
With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.	CC.3.6.6-8.D	MP1 MP2 MP3 MP4
Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.	CC.3.6.6-8.E	MP1 MP2 MP3 MP4
Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.	CC.3.6.6-8.F	MP1 MP2 MP3 MP4
Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	CC.3.6.6-8.G	MP1 MP2 MP3 MP4
Draw evidence from informational texts to support analysis, reflection, and research.	CC.3.6.6-8.H	MP1 MP2 MP3 MP4
Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	CC.3.6.6-8.I	MP1 MP2 MP3 MP4

ASSESSMENTS

PDE Academic Standards: The teacher must be knowledgeable of the PDE STEELS Standards as well as the Reading and Writing in Science and Technology Standards 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: Bell ringers, exit tickets, notice and wonderings, writing prompts, teacher questioning, class discussions, peer reviews.

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: CER responses, debates, presentations, research projects, culminating project.