

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Computer Science Discoveries

Course Number: 00500

Course Prerequisites: None

Course Description: Computer Science Discoveries is an introductory computer science course that empowers students to create authentic artifacts and to engage with computer science as a medium for creativity, communication, problem-solving, and enjoyment. The two coding languages that are explored include JavaScript and HTML. AI (Artificial Intelligence) will be introduced and how it currently is impacting our world.

Suggested Grade Level: Grade 6

Length of Course: One Semester

Units of Credit: .5

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

CSPG-33 K-12 Business, Computer, and Information Technology; CSPG-71 Computer Science 7-12

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: 10001 Introduction to Computer Technology

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.

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:

Title: N/A
Publisher: N/A
ISBN #: N/A
Copyright Date: N/A
WCSD Board Approval Date: 02/08/2021

Supplemental Materials: www.code.org, Sphero's, iPad Pros, Hummingbird Kits

Curriculum Document

WCSD Board Approval:

Date Finalized: 1/31/2024
Date Approved: 5/6/2024
Implementation Year: 2020-2021

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

- Problem Solving and Introduction to AI (Artificial Intelligence)
 - Students will learn different strategies of how-to problem solve and come up with various solutions.
 - Students will start a foundation of knowledge about AI (Artificial Intelligence) and how it is impacting the world currently.
- Web Development (9 Weeks)
 - Students will learn how to create and share content on their own web pages. After deciding what content, they want to share with the world, they learn how to structure and style your pages using HTML and CSS. Additional practice will be conducted with valuable programming skills such as debugging, using resources, and teamwork.

Marking Period 2

- Interactive Animations and Games (9 Weeks)
 - Students will build on their coding experience as they program animations, interactive art, and games in Game Lab. The unit starts off with simple shapes and builds up to more sophisticated sprite-based games, using the same programming concepts and the design process computer scientists use daily. In the final project, they will develop a personalized, interactive program.

Marking Period 3

- Problem Solving and Introduction to AI (Artificial Intelligence)
 - Students will learn different strategies of how-to problem solve and come up with various solutions.
 - Students will start a foundation of knowledge about AI (Artificial Intelligence) and how it is impacting the world currently.
- Web Development (9 Weeks)
 - Students will learn how to create and share content on their own web pages. After deciding what content, they want to share with the world, they learn how to structure and style your pages using HTML and CSS. Additional practice will be conducted with valuable programming skills such as debugging, using resources, and teamwork.

Marking Period 4

- Interactive Animations and Games (9 Weeks)
 - Students will build on their coding experience as they program animations, interactive art, and games in Game Lab. The unit starts off with simple shapes

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

and builds up to more sophisticated sprite-based games, using the same programming concepts and the design process computer scientists use daily. In the final project, they will develop a personalized, interactive program.

WARREN COUNTY SCHOOL DISTRICT**PLANNED INSTRUCTION****Standards/Eligible Content and Skills**

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Research information from various sources to use and maintain technological products or systems.	SCI.3.5.6-8.A	M1, M3
Hypothesize what alternative outcomes (individual, cultural, and/or environmental) might have resulted had a different technological solution been selected.	SCI.3.5.6-8.C	M1, M3
Analyze examples of technologies that have changed the way people think, interact, live, and communicate.	SCI.3.5.6-8.F	M1, M2, M3, M4
Analyze how an invention or innovation was influenced by the context and circumstances in which it is developed.	SCI.3.5.6-8.G	M1, M2, M3, M4
Evaluate trade-offs based on various perspectives as part of a decision process that recognizes the need for careful compromises among competing factors.	SCI.3.5.6-8.H	M1, M2, M3, M4
Examine the ways that technology can have both positive and negative effects at the same time.	SCI.3.5.6-8.I	M1, M2, M3, M4
Use tools, materials, and machines to safely diagnose, adjust, and repair systems.	SCI.3.5.6-8.J	M1, M2, M3, M4
Use devices to control technological systems.	SCI.3.5.6-8.K	M1, M3
Interpret the accuracy of information collected.	SCI.3.5.6-8.O	M1, M3
Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	SCI.3.5.6-8.P	M1, M3
Apply a technology and engineering design thinking process.	SCI.3.5.6-8.Q	M1, M2, M3, M4
Develop innovative products and systems that solve problems and extend capabilities based on individual or collective needs and wants.	SCI.3.5.6-8.R	M1, M2, M3, M4
Illustrate the benefits and opportunities associated with different approaches to design.	SCI.3.5.6-8.S	M1, M2, M3, M4
Create solutions to problems by identifying and applying human factors in design.	SCI.3.5.6-8.T	M1, M2, M3, M4
Evaluate and assess the strengths and weaknesses of various design solutions given established principles and elements of design.	SCI.3.5.6-8.U	M1, M2, M3, M4
Refine design solutions to address criteria and constraints.	SCI.3.5.6-8.V	M1, M2, M3, M4
Defend decisions related to a design problem.	SCI.3.5.6-8.X	M1, M3
Adapt and apply an existing product, system, or process to solve a problem in a different setting.	SCI.3.5.6-8.AA	M1, M2, M3, M4
Engage in a research and development process to simulate how inventions and innovations have evolved through systematic tests and refinements.	SCI.3.5.6-8.DD	M1, M2, M3, M4

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Differentiate between inputs, processes, outputs, and feedback in technological systems.	SCI.3.5.6-8.EE	M1, M2, M3, M4
Create an open-loop system that has no feedback path and requires human intervention.	SCI.3.5.6-8.GG	M1, M2, M3, M4
Create a closed-loop system that has a feedback path and requires no human intervention.	SCI.3.5.6-8.HH	M1, M2, M3, M4
Predict outcomes of a future product or system at the beginning of the design process.	SCI.3.5.6-8.II	M1, M2, M3, M4
Apply informed problem-solving strategies to the improvement of existing devices or processes or the development of new approaches.	SCI.3.5.6-8.JJ	M1, M2, M3, M4
Explain how technology and engineering are closely linked to creativity, which can result in both intended and unintended innovations.	SCI.3.5.6-8.KK	M1, M2, M3, M4
Compare how different technologies involve different sets of processes.	SCI.3.5.6-8.LL	M1, M2, M3, M4
Analyze the influence of emerging technologies on daily life.	TEC.15.4.8.A	M1, M2, M3, M4
Interpret and apply appropriate social, legal, ethical, and safe behaviors of digital citizenship.	TEC.15.4.8.B	M1, M2, M3, M4
Compare and contrast peripheral devices of computing systems for specific needs.	TEC.15.4.8.C	M1, M2, M3, M4
Create projects using emerging input technologies.	TEC.15.4.8.D	M1, M2, M3, M4
Create an advanced digital project using appropriate software/application for an authentic task.	TEC.15.4.8.G	M1, M2, M3, M4
Create a multimedia project using student created digital media.	TEC.15.4.8.K	M1, M2, M3, M4
Evaluate the accuracy and bias of online sources of information; appropriately cite online resources.	TEC.15.6.8.L	M1, M2, M3, M4
Explore and describe how emerging technologies are used across different career paths.	TEC.15.6.8.M	M1, M2, M3, M4

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

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: : Journal Question Responses, Sharing Projects using online platform, Progress Checks of Projects

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: Creation of an App Project (Unit 1), HTML with CSS Styling Website (Unit 2), Interactive Game Design (Unit 3), quizzes, and tests.