**COURSE DESCRIPTION**

**Course Title:** STEM Grade 3

**Course Number:** 08353

**Course Prerequisites:** None

**Course Description:** Technological Literacy courses expose students to the communication, transportation, energy, production, biotechnology, and integrated technology systems and processes that affect their lives. The study of these processes enables students to better understand technological systems and their applications and uses.

**Suggested Grade Level**: Grade 3

**Length of Course:** Two Semesters

**Units of Credit:** None

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

CSPG 50 Mathematics; CSPG 53 Middle Level Math; CSPG 54 Middle Level Science; CSPG 65 Technology Education PK-12; CSPG 69 Grades PK-4; CSPG 70 Grades 4-8; CSPG 71 Computer Science 7-12

To find the CSPG information, go to [CSPG](https://www.education.pa.gov/Educators/Certification/Staffing%20Guidelines/Pages/default.aspx)

**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**: 21051

To find the State Course Code, go to [State Course Code](https://nces.ed.gov/forum/sced.asp), 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:**  SmartLab Learning Hub

**Publisher:** n/a

**ISBN #:**  n/a

**Copyright Date:** n/a

**WCSD Board Approval Date:** n/a

**Supplemental Materials:** Creative Learning Systems (CLS) SmartLab and included materials

**Curriculum Document**

**WCSD Board Approval:**

**Date Finalized:** 7/3/2023

**Date Approved:**  8/14/2023

**Revision Date:**  6/3/2024

**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 Units**

* Code.org: Hour of Code (Course D)
* K’NEX STEM Simple Machines: Inclined Planes
* K’NEX STEM Simple Machines: Wheels and Axles
* K’NEX STEM Simple Machines: Gears
* K’NEX STEM Simple Machines: Levers
* K’NEX STEM Simple Machines: Spinning Tops
* Lux Blox: Marble Race
* Lux Blox: Fairy and Folk Tale Engineering
* Snap Circuit Electricity: Getting Into the Flow
* Snap Circuit Electricity: Series and Parallel Circuits
* Snap Circuit Electricity: Sensors and Chips
* Squishy Circuits: Design and Build a Light Fixture
* Squishy Circuits: Series and Parallel Circuits
* Squishy Circuits: Explore Switches and 2D Shapes
* Tinkercad Circuits: Create a Stoplight
* Weather: Climate and Weather Station Data Collection

**Standards/Eligible Content and Skills**

| **Performance Indicator** | **PA Core Standard and/or Eligible Content** | **Marking Period Taught** |
| --- | --- | --- |
| Use appropriate symbols, numbers, and words to communicate key ideas about technological products and systems. | 3.5.3-5.A | MP1,MP2  MP3,MP4 |
| Examine information to assess the trade-offs to using a product or system. | 3.5.3-5.B | MP1,MP2  MP3,MP4 |
| Follow directions to complete a technological task. | 3.5.3-5.C | MP1,MP2  MP3,MP4 |
| Predict how certain aspects of their daily lives would be different without given technologies. | 3.5.3-5.D | MP1,MP2  MP3,MP4 |
| Explain why responsible use of technology requires sustainable management of resources. | 3.5.3-5.E | MP1,MP2  MP3,MP4 |
| Classify resources used to create technologies as either renewable or nonrenewable. | 3.5.3-5.F | MP1,MP2  MP3,MP4 |
| Describe the helpful and harmful effects of technology. | 3.5.3-5.G | MP1,MP2  MP3,MP4 |
| Determine factors that influence changes in a society’s technological systems or infrastructure. | 3.5.3-5.H | MP1,MP2  MP3,MP4 |
| Design solutions by safely using tools, materials, and skills. | 3.5.3-5.I | MP1,MP2  MP3,MP4 |
| Explain how technologies are developed or adapted when individual or societal needs and wants change. | 3.5.3-5.J | MP1,MP2  MP3,MP4 |
| Judge technologies to determine the best one to use to complete a given task or meet a need. | 3.5.3-5.K | MP1,MP2  MP3,MP4 |
| Demonstrate how tools and machines extend human capabilities, such as holding, lifting, carrying, fastening, separating, and computing. | 3.5.3-5.L | MP1,MP2  MP3,MP4 |
| Demonstrate essential skills of the engineering design process. | 3.5.3-5.M | MP1,MP2  MP3,MP4 |
| Identify why a product or system is not working properly. | 3.5.3-5.N | MP1,MP2  MP3,MP4 |
| Describe requirements of designing or making a product or system. | 3.5.3-5.O | MP1,MP2  MP3,MP4 |
| Evaluate the strengths and weaknesses of existing design solutions, including their own solutions. | 3.5.3-5.P | MP1,MP2  MP3,MP4 |
| Practice successful design skills. | 3.5.3-5.Q | MP1,MP2  MP3,MP4 |
| Apply tools, techniques, and materials in a safe manner as part of the design process. | 3.5.3-5.R | MP1,MP2  MP3,MP4 |
| Illustrate that there are multiple approaches to design. | 3.5.3-5.S | MP1,MP2  MP3,MP4 |
| Apply universal principles and elements of design. | 3.5.3-5.T | MP1,MP2  MP3,MP4 |
| Evaluate designs based on criteria, constraints, and standards. | 3.5.3-5.U | MP1,MP2  MP3,MP4 |
| Interpret how good design improves the human condition. | 3.5.3-5.V | MP1,MP2  MP3,MP4 |
| Describe the properties of different materials. | 3.5.3-5.W | MP1,MP2  MP3,MP4 |
| Explain how various relationships can exist between technology and engineering and other content areas. | 3.5.3-5.X | MP1,MP2  MP3,MP4 |
| Identify the resources needed to get a technical job done, such as people, materials, capital, tools, machines, knowledge, energy, and time. | 3.5.3-5.Y | MP1,MP2  MP3,MP4 |
| Create representations of the tools people made, how they cultivated to provide food, made clothing, and built shelters to protect themselves. | 3.5.3-5.AA | MP1,MP2  MP3,MP4 |
| Illustrate how, when parts of a system are missing, it may not work as planned. | 3.5.3-5.BB | MP1,MP2  MP3,MP4 |
| Describe how a subsystem is a system that operates as a part of another larger system. | 3.5.3-5.CC | MP1,MP2  MP3,MP4 |
| Demonstrate how simple technologies are often combined to form more complex systems. | 3.5.3-5.DD | MP1,MP2  MP3,MP4 |
| Explain how solutions to problems are shaped by economic, political, and cultural forces. | 3.5.3-5.EE | MP1,MP2  MP3,MP4 |
| 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,MP2  MP3,MP4 |
| 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,MP2  MP3,MP4 |
| Differentiate between the role of scientists, engineers, technologists, and others in creating and maintaining technological systems. | 3.5.3-5.HH | MP1,MP2  MP3,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, local assessments, 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,

writing, and narrative presentations.