**COURSE DESCRIPTION**

**Course Title:** STEM Kindergarten

**Course Number:** 08053

**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**: Kindergarten

**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:** [x] 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**

* Mechanics and Structures: Exploring Gears: Gears in Motion
* Mechanics and Structures: Exploring Gears: Build It Better
* Mechanics and Structures: Choose Your Technology: Tessellations
* Mechanics and Structures: City Engineer and Design: Build a Pulley
* Mechanics and Structures: City Engineer and Design: My City
* Mechanics and Structures: City Engineer and Design: Find A Solution
* Mechanics and Structures: Primary Physics: Wheels and Axles
* Mechanics and Structures: Primary Physics: Archimedes Screw
* Mechanics and Structures: Primary Physics: Lever Launch
* Mechanics and Structures: Primary Physics: Lifting Levers
* Mechanics and Structures: Primary Physics: Pendulum
* Mechanics and Structures: Primary Physics: Fixed Pulley
* Mechanics and Structures: Primary Physics: Friction
* Mechanics and Structures: Primary Physics: Conservation of Energy
* Communication and Media Arts: Pixie: Habitats for Computer
* Scientific Data and Analysis: Vernier Science: A Hot Hand and the Scientific Method for Computer
* Environmental Technology: Solar Oven: Make a Meal
* Earth and Space Science: Weather and Climate
* Communication and Media Arts: Animationish: Wiggledoodleish
* Communication and Media Arts: Pixie App

**Standards/Eligible Content and Skills**

| **Performance Indicator** | **PA Core Standard and/or Eligible Content** | **Marking Period Taught**  |
| --- | --- | --- |
| Identify and use everyday symbols. | 3.5.K-2.A | MP1,MP2, MP3, MP4 |
| Describe qualities of everyday products. | 3.5.K-2.B | MP1,MP2, MP3, MP4 |
| Explain ways that technology helps with everyday tasks. | 3.5.K-2.C | MP1,MP2, MP3, MP4 |
| Select ways to reduce, reuse, and recycle resources in daily life. | 3.5.K-2.D | MP1,MP2, MP3, MP4 |
| Illustrate helpful and harmful effects of technology. | 3.5.K-2.E | MP1,MP2, MP3, MP4 |
| Investigate the use of technologies in the home and community. | 3.5.K-2.F | MP1,MP2, MP3, MP4 |
| Explain the tools and techniques that people use to help them do things. | 3.5.K-2.G | MP1,MP2, MP3, MP4 |
| Explain the needs and wants of individuals and societies. | 3.5.K-2.H | MP1,MP2, MP3, MP4 |
| Compare simple technologies to evaluate their impacts. | 3.5.K-2.I | MP1,MP2, MP3, MP4 |
| Safely use tools to complete tasks. | 3.5.K-2.K | MP1,MP2, MP3, MP4 |
| Explore how technologies are developed to meet individual and societal needs and wants. | 3.5.K-2.L | MP1,MP2, MP3, MP4 |
| Demonstrate essential skills of the engineering design process. | 3.5.K-2.M | MP1,MP2, MP3, MP4 |
| Analyze how things work. | 3.5.K-2.N | MP1,MP2, MP3, MP4 |
| Illustrate that there are different solutions to a design and that none are perfect. | 3.5.K-2.O | MP1,MP2, MP3, MP4 |
| Discuss that all designs have different characteristics that can be described. | 3.5.K-2.P | MP1,MP2, MP3, MP4 |
| Apply skills necessary for making in design. | 3.5.K-2.Q | MP1,MP2, MP3, MP4 |
| Draw connections between technology and human experience. | 3.5.K-2.R | MP1,MP2, MP3, MP4 |
| Apply design concepts, principles, and processes through play and exploration. | 3.5.K-2.S | MP1,MP2, MP3, MP4 |
| Demonstrate that designs have requirements. | 3.5.K-2.T | MP1,MP2, MP3, MP4 |
| Explain that design is a response to wants and needs. | 3.5.K-2.U | MP1,MP2, MP3, MP4 |
| Explain that materials are selected for use because they possess desirable properties and characteristics. | 3.5.K-2.V | MP1,MP2, MP3, MP4 |
| Apply concepts and skills from technology and engineering activities that reinforce concepts and skills across multiple areas. | 3.5.K-2.W | MP1,MP2, MP3, MP4 |
| Develop a plan in order to complete a task. | 3.5.K-2.X | MP1,MP2, MP3, MP4 |
| Discuss how the way people live and work has changed throughout history because of technology. | 3.5.K-2.Y | MP1,MP2, MP3, MP4 |
| Illustrate how systems have parts or components that work together to accomplish a goal. | 3.5.K-2.Z | MP1,MP2, MP3, MP4 |
| Demonstrate that creating can be done by anyone. | 3.5.K-2.AA | MP1,MP2, MP3, MP4 |
| Compare the natural world and the human made world. | 3.5.K-2.BB | MP1,MP2, MP3, MP4 |
| Discuss the roles of scientists, engineers, technologists, and others who work with technology. | 3.5.K-2.CC | MP1,MP2, MP3, MP4 |
| Collaborate effectively as a member of a team. | 3.5.K-2.DD | 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.