Regional Occupational Program

Introduction to Construction 2025-2026 (NCCER-Safety)

COURSE DESCRIPTION

This course meets the requirements for the OSHA 10 certification card. It provides students with a general overview of the most common construction job-site hazards and their related safety guidelines. Students will learn to ensure their own safety and that of the people they work with by following safe work practices and procedures, inspecting equipment for use, and using safety equipment properly. This course is appropriate for entry-level construction, maintenance, and pipeline personnel. Upon successful completion of this course, students may earn an OSHA safety card.

Course Information

Course Length:	15 hours
Prerequisite:	None
Course Level:	Introductory
UC:	No
Articulated:	No
Industry Cert.:	No
Industry Sector:	Building and Construction Trades
Pathway:	Multiple Pathways
CALPADS:	7300

O*Net SOC Codes

47-2061	Construction Laborers
47-2152	Plumbers, Pipefitters, and Steamfitters
47-2141	Painters, Construction and Maintenance

Legend

CTE - PS	CTE Pathway Standards
CRP	Career Ready Practices
CTE - AS	CTE Anchor Standards
CCSS	Common Core State Standards
ISTE	International Society for Technology in Education

Includes updates from the 24/25 Construction Advisory

Advisory Minutes

Construction Trades

Course Orientation

a. Discuss objectives for this course, including competencies, teacher expectations, classroom policies, and procedures.
b. Identify and discuss the acquisition of transferable skills (communication, collaboration, creativity, and critical thinking) and their importance to being college and career ready and for future personal and professional success.
c. Review objectives, competencies, and course syllabus.
d. Discuss student and teacher expectations, including behavior, class rules, appropriate dress, pre-course knowledge, and grading policies, including enrollment and attendance requirements and procedures, and classroom/school safety and disaster procedures.
e. Discuss next steps in course sequence related to the career pathway, the need for reinforcement of basic skills, transferrable skills, and postsecondary and career options.
f. Discuss the Big Six: Career Ready Essentials and the Standards for Career Ready Practice as they relate to this course, all aspects of the industry sector, and being college and career ready.

Big Six: Career Ready Essentials

1. Effective Communication	CTE - PS	CRP	CTE - AS	CCSS	ISTE
a. Demonstrate effective verbal communication and conflict resolution skills. **b. Use the writing process to develop written communication with the appropriate tone, organization, and format for the identified audience.** c. Explain the effect of interpersonal skills on one's ability to communicate effectively and develop relationships. d. Describe the impact of ineffective communication on business relationships. e. Analyze the impact of vocabulary, body language, and tone on verbal communication. f. Demonstrate active listening skills. g. Accurately interpret industry-specific written communication. h. Model responsible and effective use of various communication technologies. i. Identify valid and reliable digital reference and resource materials. j. Gather information from multiple digital sources to compare and contrast, synthesize, and summarize. k. Identify and use appropriate communication and collaboration technologies. l. Utilize technology to problem solve, accomplish tasks, and to produce or publish products.		1 2 11	2 3 4 5 7 8 9 10 11	**LS** 9-10 11-12.6 **SLS** 11-12.2 9-10 11-12.1 11-12.1d **WS** 11-12.7 11-12.6	

2. Collaboration, Creativity, and Critical Thinking	CTE - PS	CRP	CTE - AS	CCSS	ISTE
a. Demonstrate critical thinking skills for a variety of purposes and in different settings. **b. Collaborate to reach consensus on an identical objective through the sharing of knowledge, tasks, and learning.**		2 4 5	2 3 4	**LS** 9-10 11- 12.6	1c 3c,d 4a-d

c. Discuss the importance of the critical thinking process to real-world applications. d. Evaluate the impact of creative thinking on problem solving and innovation in real-world applications. e. Compile work that demonstrates the process used to (elaborate, refine, analyze) evaluate original ideas and maximize creative efforts. f. Apply divergent and convergent thinking to the development of an original idea or solution. g. Examine real-world limits to adopting ideas. h. Demonstrate creative thinking (preparation, insight, evaluation, elaboration, and communication) to create a new idea or concept. i. Assume shared responsibility for collaborative work, and value the individual contributions made by each team member. j. Evaluate evidence, arguments, claims, and beliefs to identify connections. k. Identify bias, prejudice, propaganda, self-deception, distortion, and misinformation. l. Produce intellectual, informational, or material products that serve an authentic purpose. m. Work effectively and respectfully with those from diverse backgrounds or cultures. n. Demonstrate respect, trust, commitment, and the ability to compromise in collaborative projects.		7 9 10 11	5 7 8 9 11	**SLS** 9-10 11-12.1 11-12.1d 11-12.2 **WS** 11-12.7 11-12.6	5c,d 6c 7b,c,d
3. Leaders and Teams: Roles and Responsibilities	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Determine the individual and team members' roles and responsibilities. **b. Explain the importance of technical, social, and communication skills to team success.** c. Demonstrate leadership skills and qualities (i.e., reliability, negotiation skills, initiative, positive reinforcement, recognition of others' efforts, problem-solving skills, conflict resolution, and delegation). d. Compare and contrast leadership styles and their effectiveness in various situations. e. Organize and delegate responsibilities in a team setting to encourage ideas, perspectives, and contributions from all team members. f. Develop a strong sense of team identity by brainstorming solutions, volunteering, assisting others, practicing respect and courtesy, and taking initiative. g. Examine situations in which a follower becomes the leader. h. Describe twenty-first-century skills required across all occupations. i. Identify and discuss the characteristics of a successful team (i.e., leadership, cooperation, and effective decision-making). j. Leverage social and cultural differences to increase innovation and quality of work.		7 8 9	3 7 8 9 11	**SLS** 11-12.2 9-10 11-12.1 11-12.1d **WS** 11-12.6	7a,c
4. Legal, Ethical, and Environmental Considerations	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Demonstrate industry specific ethical and legal practices. **b. Identify eco-friendly industry specific practices and resources.** c. Identify local, state, and federal regulatory agencies, entities, laws, and regulations.		5 7 8	3 5 7	**WS** 11-12.6 11-12.7	2a,b 3a,b 5c

d. Identify discrimination based on race, nationality, religion, gender, age, disability, or sexual orientation. e. Summarize the ethical and legal implications of workplace discrimination and harassment. f. Explain the concept of corporate citizenship. g. Examine an employer's role in protecting the health and welfare of employees, the community, and the environment. h. Analyze current environmental laws and regulations and their impact on industry. i. Compare and contrast both society's and industry's impact on the environment.		12	8 9 11	**SLS** 9-10 11-12.1 11-12.1d 11-12.2	6c
5. Personal Growth and Career Planning	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Demonstrate continued personal development and growth. **b. Develop and manage a personal growth and career plan.** c. Explain the relationship between sound financial habits and financial security. d. Create and manage a personal financial plan. e. Demonstrate initiative in achieving personal and professional goals. f. Apply time management strategies to meet deadlines. g. Demonstrate a growth mindset through flexibility and a positive attitude. h. Select and demonstrate appropriate job-search and retention techniques. i. Demonstrate strategies to prepare for employment. j. Demonstrate interpersonal skills appropriate for the workplace. k. Elaborate on the importance of perseverance to personal and professional success. l. Discover personal career interests, aptitudes, and skills.		1 2 3 4 6	2 3 4 7 8 11	**LS** 9-10 11-12.6 **SLS** 9-10 11-12.1 11-12.1d 11-12.2 **WS** 11-12.6	1a 3a,c 4d 6a,d 7b
6. Workplace Safety and Personal Wellness	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Demonstrate proper industry specific safe work practices to prevent injury or illness. **b. Assess the potential impact of goal setting on personal and professional success.** c. Describe the role of security and emergency procedures in workplace safety. d. Describe the effect of preventative measures on emergencies in the workplace. e. Identify and describe the causes, prevention, and treatment of common accidents. f. Identify local, state, and federal agencies that regulate workplace safety. g. Explain the role of the California Occupational Safety and Health Administration (Cal-OSHA) and the Environmental Protection Agency (EPA). h. Discuss the basics of system operations. i. Demonstrate the proper use of personal protective equipment (PPE). j. Explain the purpose of and accurately interpret a Safety Data Sheet (SDS). k. Identify hazardous materials and chemicals. l. Demonstrate proper procedures to respond to work-related accidents and injuries. m. Describe how ergonomics, housekeeping, and maintenance are related to accidents and injuries.		2 5 6 8 12	2 5 6 7 8 10 11	**LS** 9-10 11-12.6 **WS** 11-12.7 11-12.6 **SLS** 9-10 11-12.1 11-12.1d	1a,d 2a,d 5b

n. Demonstrate cyber ethics, cyber safety, and cybersecurity. o. Assess the potential impact of preventative physical and mental health measures on workplace safety.					
Introduction to Construction Units of Instruction					
7. Introduction to Safety	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Explain the role of OSHA in job-site safety. **b. Describe how companies and employees benefit in a culture of safety.** c. Define incidents and the significant costs associated with them. d. Explain OSHA's General Duty Clause and 1926 Subpart C. e. Identify the four high hazard areas on the construction job site. f. List the ten basic rules of safety. g. Know the rules and responsibilities of the various governmental safety agencies and their impact on engineering and heavy construction.	B9.1	1 2 5 7 8 11 12	1 2 5 7 8 10 11	**LS** 9-10 11-12.6 **WS** 11-12.7 **RSTS** 9-10 11-12.4 **SLS** 9-10 11-12.1 11-12.1b 11-12.1d	
8. Hazardous Material Communication, Recognition, Evaluation and Control	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Describe the processes related to hazard recognition, control, and assessment techniques. **b. Explain the responsibilities for employers and employees under the Hazard Communication (HAZCOM) and the provisions of a Safety Data Sheet (SDS).** c. Identify and describe the different types and causes of accidents and their related consequences. d. List the questions that should be asked to assess if a situation or equipment is potentially hazardous. e. Compare and contrast and describe the purposes of JSA and TSA. f. Explain the general safety procedures associated with falling, electrical, fire, trenching, material handling, and heavy equipment hazards.		1 2 5 7 8 11 12	1 2 5 7 8 10 11	**LS** 9-10 11-12.6 **WS** 11-12.7 **RSTS** 9-10 11-12.4 **SLS** 9-10 11-12.1 11-12.1b 11-12.1d	

9. Construction Health/Industrial Hygiene and Ergonomics	CTE - PS	CRP	CTE - AS	CCSS	ISTE
a. Identify health and industrial hygiene issues that may affect construction workers and the procedures to avoid them. **b. Describe the ergonomic guidelines employees should follow when performing repetitive motions.** **c. Demonstrate an understanding of the precaution's employees must take to protect their health from exposure to lead, asbestos, and silica.** d. Identify the universal precautions to prevent exposure to bloodborne pathogens. e. Explain the measures employees must take in case of a possible chemical splash. f. Explain the precautions to take to avoid heat and cold stress. g. Describe the ergonomic guidelines employees should follow when lifting objects.		1 2 5 6 7 8 9 10 12	1 2 5 6 7 8 9 11	**LS** 9-10 11-12.6 **WS** 11-12.7 **RSTS** 9-10 11-12.4 **SLS** 9-10 11-12.1 11-12.1b 11-12.1d	
10. Personal Protective Equipment (PPE)	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Understand the importance of safety and safe work practices (e.g., fire safety, protective clothing) in the welding phases of engineering and heavy construction and the safe operation of heavy equipment (e.g., earth movers, graders, bulldozers). **b. Identify the four procedures that should be followed for the care of personal protective equipment.** **c. Explain and demonstrate the use of appropriate personal protective equipment (PPE).** d. Describe the characteristics of clothing and jewelry that comply with good work and safety practices. e. Identify the four general types of respirators and their purpose. f. Demonstrate how to use hearing protection PPEs. g. Describe the purpose of hard hats, eye and face protection, gloves, and safety shoes.	B9.2	1 2 5 6 7 8 9 10 12	1 2 5 6 7 8 9 11	**LS** 9-10 11-12.6 **WS** 11-12.7 **RSTS** 9-10 11-12.4 **SLS** 9-10 11-12.1 11-12.1b 11-12.1d	
11. Signs, Signals, Barricades, Confined Spaces and Housekeeping	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Identify the five types of signs found on construction work sites. **b. Demonstrate American National Standards Institute hand signals used on job sites to communicate.** **c. Explain the advantages of following proper material handling, safety, and storage.** d. Describe the appearance of informational, safety, caution, danger, and temporary warnings and the locations they might be found on the job site.	B5.3	1 2 5 6 7 8	1 2 5 6 7 8	**LS** 9-10 11-12.6 **WS** 11-12.7	

e. Explain how and why barricades are used to promote a safe work site. f. Describe how good housekeeping promotes safety. g. Explain a lockout/tagout system and how it safeguards employees. h. Define "permit required confined spaces" and identify possible hazards and precautions employees must take. i. List the guidelines for correctly stacking and storing materials.		9 12	9 11	**RSTS** 9-10 11-12.4 **SLS** 9-10 11-12.1 11-12.1b 11-12.1d	
12. Electrical Hazards, Safety Procedures, and Related Programs	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Explain the principles and properties of electricity. **b. Explain the purpose of a company/site assured equipment grounding conductor program.** **c. List the steps to take when someone gets an electrical shock.** d. Identify the different types of electrical accidents that occur annually. e. List basic job-site electrical safety guidelines. f. Explain the tests that must be performed as part of an equipment grounding conductor program. g. Describe the purpose of a Ground Fault Circuit Interrupter (GFCI).	C7.1	1 2 4 5 7 8 11 12	1 2 4 5 7 8 11	**LS** 9-10 11-12.6 **WS** 11-12.7 **RSTS** 9-10 11-12.4 **SLS** 9-10 11-12.1 11-12.1b 11-12.1d	
13. Fire Protection and Prevention	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Explain the basic safety guidelines for fire prevention. **b. Demonstrate how to properly use a fire extinguisher.** **c. Explain the fire triangle and tetrahedron.** d. Identify the three categories of combustibles and classification of fires. e. Demonstrate knowledge of safety practices for smoking, flammables, storage of oily rags, and combustible materials. f. Explain the importance of having knowledge of the work site's emergency action plan and exit routes.		1 2 5 7 8 9 11 12	1 2 5 7 8 9 11	**LS** 9-10 11-12.6 **WS** 11-12.7 **RSTS** 9-10 11-12.4 **SLS**	

				9-10 11-12.1 11-12.1b 11-12.1d	
14. Hand, Power, Tools and Machine Guards	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Explain the safe use of hand and power tools. **b. Explain how to minimize the risks associated with hand and power tools.** **c. Describe the guidelines for using and caring for tool and machine guards.** d. Identify common hand tools in the construction trades. e. Describe electric, pneumatic, and hydraulic power tool power sources and safe operation. f. Explain how to inspect and maintain hand and power tools. g. Identify the tools and machines that must have guards.		1 2 5 7 8 11 12	1 2 5 7 8 11	**LS** 9-10 11-12.6 **WS** 11-12.7 **RSTS** 9-10 11-12.4 **SLS** 9-10 11-12.1 11-12.1b 11-12.1d	
15. Elevated Work and Fall Protection	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Describe the safe work requirements for elevated work, including fall protection guidelines. **b. Identify and describe equipment and methods used in fall prevention and fall arrest.** c. Identify the most common causes of walking and work surface accidents. d. Identify and demonstrate the components of “Personal Fall Arrest Systems.” e. Describe the proper use of straight ladders, extension ladders, stepladders, and stairs. f. Explain hazards that should be identified when inspecting straight ladders, extension ladders, and stepladders. g. Name the two types of scaffolds and describe their uses. h. Explain the meaning of the green, yellow, and red tags found on scaffolds.	B9.3	1 2 5 7 8 9 11 12	1 2 5 7 8 9 11	**LS** 9-10 11-12.6 **WS** 11-12.7 **RSTS** 9-10 11-12.4 **SLS** 9-10 11-12.1 11-12.1b 11-12.1d	

16. Manual Materials Handling and Storage	CTE - PS	CRP	CTE - AS	CCSS	ISTE
a. Describe the basic concepts of material handling and safety precautions. **b. Identify various types of material handling equipment and describe how it is used.** c. Describe the basic concepts of material handling and manual lifting. d. Identify the proper procedures for lifting and lowering materials. e. Describe safety guidelines that apply to stacking and storing materials and working from heights. f. Identify and describe how to tie knots commonly used in material handling. g. Demonstrate the importance of work site safety as it pertains to hazardous waste disposal and procedures for containment of toxic and hazardous materials.	B9.4	1 2 5 6 7 8 9 11 12	1 2 5 6 7 8 9 11	**LS** 9-10 11-12.6 **WS** 11-12.7 **RSTS** 9-10 11-12.4 **SLS** 9-10 11-12.1 11-12.1b 11-12.1d	

Standards Alignment

The curricula have been aligned with the CTE Model Curriculum Standards released in 2013. Each industry sector was updated to meet the increased rigor and relevancy requirements of the Common Core State Standards. The curriculum also includes the new Standards for Career Ready Practices.

Standards for Career Ready Practice

1. *Apply appropriate technical skills and academic knowledge.*
2. *Communicate clearly, effectively, and with reason.*
3. *Develop an education and career plan aligned with personal goals.*
4. *Apply technology to enhance productivity.*
5. *Utilize critical thinking to make sense of problems and persevere in solving them.*
6. *Practice personal health and understand financial literacy.*
7. *Act as a responsible citizen in the workplace and the community.*
8. *Model integrity, ethical leadership, and effective management.*
9. *Work productively in teams while integrating cultural and global competence.*
10. *Demonstrate creativity and innovation.*
11. *Employ valid and reliable research strategies.*
12. *Understand the environmental, social, and economic impacts of decisions.*

CTE Anchor Standards—Common Core English Language Arts Alignment

Anchor Standard 1: Academics

Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the industry sector alignment matrix for identification of standards. Note: alignment listed within each sector.

Anchor Standard 2: Communications

Language Standard: Acquire and accurately use general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the (career and college) readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression. LS 9-10, 11-12.6

Anchor Standard 3: Career Planning and Management

Speaking and Listening Standard: Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data. SLS 11-12.2

Anchor Standard 4: Technology

Writing Standard: Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments and information.

Anchor Standard 5: Problem Solving and Critical Thinking

Writing Standard: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem, narrow, or broaden the inquiry when appropriate, and synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. WS 11-12.7

Anchor Standard 6: Health and Safety

Reading Standards for Science and Technical Subjects: Determine the meaning of symbols, keywords, and other domain-specific words and phrases as they are used in a specific scientific or technical context. RSTS 9-10, 11-12.4

Anchor Standard 7: Responsibility and Flexibility

Speaking and Listening Standard: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners, building on others' ideas and expressing their own clearly and persuasively. SLS 9-10, 11-12.1

Anchor Standard 8: Ethics and Legal Responsibilities

Speaking and Listening Standard: Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the work. SLS 11-2.1d

Anchor Standard 9: Leadership and Teamwork

Speaking and Listening Standard: Work with peers to promote civil, democratic discussions and decision making; set clear goals and deadlines; and establish individual roles as needed. SLS 11-12.1b

Anchor Standard 10: Technical Knowledge and Skills

Writing Standard: Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. WS 11-12.6

Anchor Standard 11: Demonstration and Application

Demonstrate and apply the knowledge and skills contained in the industry-sector anchor standards, pathway standards, and performance indicators in the classroom, laboratory, and workplace settings, and the career technical student organization. Note: no alignment evident for this standard. WS 11-12.6

CTE Model Curriculum Standards—Industry Sectors and Pathways

Building and Construction Trades

B. Engineering and Heavy Construction Pathway

B5.3 Demonstrate proper use of American National Standards Institute (ANSI) hand signals.

B9.1 Know the rules and responsibilities of the various governmental safety agencies and their impact on engineering and heavy construction.

B9.2 Understand the importance of safety and safe work practices (e.g., fire safety, protective clothing) in the welding phases of engineering and heavy construction and the safe operation of heavy equipment (e.g., earth movers, graders, bulldozers).

B9.3 Demonstrate the safe use of scaffolding and ladders.

B9.4 Demonstrate the importance of work site safety as it pertains to hazardous waste disposal and procedures for containment of toxic and hazardous materials.

C. Mechanical Systems Installation and Repair Pathway

C7.1 Explain the principles and properties of electricity.

ISTE Standards for Students

1. Empowered Learner- Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

a) Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them, and reflect on the learning process itself to improve learning outcomes.

b) Students build networks and customize their learning environments in ways that support the learning process.

c) Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways

d) Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

2. Digital Citizen- Students recognize the rights, responsibilities, and opportunities of living, learning, and working in an interconnected digital world, and they act and model in ways that are safe, legal, and ethical.

a) Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

b) Students engage in positive, safe, legal, and ethical behavior when using technology, including social interactions online or when using networked devices.

c) Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

d) Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

3. Knowledge Constructor- Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts, and make meaningful learning experiences for themselves and others.

a) Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

b) Students evaluate the accuracy, perspective, credibility, and relevance of information, media, data, or other resources.

c) Students curate *information from digital resources using a* variety of tools *and methods to create* collections of artifacts *that demonstrate* meaningful connections or conclusions.

d) Students build knowledge *by actively* exploring *real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.*

4. Innovative Designer- Students use a variety of technologies within a design process to identify and solve problems creating new, useful, or imaginative solutions.

a) Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.

b) Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

c) Students develop, test, and refine prototypes as part of a cyclical design process.

d) Students exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.

5. Computational Thinker- Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

a) Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models, and algorithmic thinking in exploring and finding solutions.

b) Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.

c) Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

d) Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

6. Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using platforms, tools, styles, formats, and digital media appropriate for their goals.

a) Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

b) Students create original works or responsibly repurpose or remix digital resources into new creations.

c) Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models, or simulations.

d) Students publish or present content that customizes the message and medium for their intended audiences.

7. Global Collaborator- Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

a) Students use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.

b) Students use collaborative technologies to work with others, including peers, experts, or community members, to examine issues and problems from multiple viewpoints.

c) Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

d) Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.