



PLTW - Standards Alignment

Our programs are designed to empower students to thrive in an evolving world. As a part of this, we take standards alignment into account when developing and updating our curriculum. We define alignment as:

- Students complete a designated task(s) that demonstrates the outlined knowledge and/or skills of the specific standard or objective.
- Our multidisciplinary programs align to a variety of standards and provide districts and schools with the flexibility to tailor programs to meet their specific state or local requirements as needed.

Table of Content

Page	1	Computer Science Teachers Association K-12 Computer Science Standards (3A)
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Computer Science Teachers Association K-12 Computer Science Standards (3A)

Computing Systems

3A-CS-01 Explain how abstractions hide the underlying implementation details of computing systems embedded in everyday objects.

Unit 1:	Lesson 1.1 <input checked="" type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input type="checkbox"/>
Unit 2:	Lesson 2.1 <input checked="" type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input type="checkbox"/>
Unit 3:	Lesson 3.1 <input type="checkbox"/>	Lesson 3.2 <input checked="" type="checkbox"/>	Lesson 3.3 <input type="checkbox"/>
Unit 4:	Lesson 4.1 <input checked="" type="checkbox"/>		

3A-CS-02 Compare levels of abstraction and interactions between application software, system software, and hardware layers.

Unit 1:	Lesson 1.1 <input type="checkbox"/>	Lesson 1.2 <input type="checkbox"/>	Lesson 1.3 <input checked="" type="checkbox"/>
Unit 2:	Lesson 2.1 <input type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input type="checkbox"/>
Unit 3:	Lesson 3.1 <input checked="" type="checkbox"/>	Lesson 3.2 <input type="checkbox"/>	Lesson 3.3 <input type="checkbox"/>
Unit 4:	Lesson 4.1 <input type="checkbox"/>		

3A-CS-03 Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors.

Unit 1:	Lesson 1.1 <input checked="" type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input type="checkbox"/>
Unit 2:	Lesson 2.1 <input checked="" type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input type="checkbox"/>
Unit 3:	Lesson 3.1 <input checked="" type="checkbox"/>	Lesson 3.2 <input checked="" type="checkbox"/>	Lesson 3.3 <input type="checkbox"/>
Unit 4:	Lesson 4.1 <input type="checkbox"/>		

Networks and the Internet

3A-NI-05 Give examples to illustrate how sensitive data can be affected by malware and other attacks.

Unit 1:	Lesson 1.1 <input type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input type="checkbox"/>
Unit 2:	Lesson 2.1 <input type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input type="checkbox"/>
Unit 3:	Lesson 3.1 <input type="checkbox"/>	Lesson 3.2 <input type="checkbox"/>	Lesson 3.3 <input type="checkbox"/>
Unit 4:	Lesson 4.1 <input type="checkbox"/>		

Computer Science Teachers Association K-12 Computer Science Standards (3A)

3A-NI-06 Recommend security measures to address various scenarios based on factors such as efficiency, feasibility, and ethical impacts.

Unit 1:	Lesson 1.1 <input type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input type="checkbox"/>
Unit 2:	Lesson 2.1 <input type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input type="checkbox"/>
Unit 3:	Lesson 3.1 <input type="checkbox"/>	Lesson 3.2 <input type="checkbox"/>	Lesson 3.3 <input type="checkbox"/>
Unit 4:	Lesson 4.1 <input type="checkbox"/>		

Data and Analysis

3A-DA-10 Evaluate the tradeoffs in how data elements are organized and where data is stored.

Unit 1:	Lesson 1.1 <input type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input type="checkbox"/>
Unit 2:	Lesson 2.1 <input checked="" type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input type="checkbox"/>
Unit 3:	Lesson 3.1 <input checked="" type="checkbox"/>	Lesson 3.2 <input type="checkbox"/>	Lesson 3.3 <input type="checkbox"/>
Unit 4:	Lesson 4.1 <input type="checkbox"/>		

Algorithms and Programming

3A-AP-13 Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests.

Unit 1:	Lesson 1.1 <input checked="" type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input checked="" type="checkbox"/>
Unit 2:	Lesson 2.1 <input type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input checked="" type="checkbox"/>
Unit 3:	Lesson 3.1 <input checked="" type="checkbox"/>	Lesson 3.2 <input checked="" type="checkbox"/>	Lesson 3.3 <input checked="" type="checkbox"/>
Unit 4:	Lesson 4.1 <input checked="" type="checkbox"/>		

3A-AP-14 Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.

Unit 1:	Lesson 1.1 <input type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input type="checkbox"/>
Unit 2:	Lesson 2.1 <input type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input type="checkbox"/>
Unit 3:	Lesson 3.1 <input checked="" type="checkbox"/>	Lesson 3.2 <input type="checkbox"/>	Lesson 3.3 <input type="checkbox"/>
Unit 4:	Lesson 4.1 <input type="checkbox"/>		

Computer Science Teachers Association K-12 Computer Science Standards (3A)

3A-AP-15 Justify the selection of specific control structures when tradeoffs involve implementation, readability, and program performance, and explain the benefits and drawbacks of choices made.

Unit 1:	Lesson 1.1 <input checked="" type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input checked="" type="checkbox"/>
Unit 2:	Lesson 2.1 <input type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input type="checkbox"/>
Unit 3:	Lesson 3.1 <input type="checkbox"/>	Lesson 3.2 <input checked="" type="checkbox"/>	Lesson 3.3 <input checked="" type="checkbox"/>
Unit 4:	Lesson 4.1 <input checked="" type="checkbox"/>		

3A-AP-16 Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions.

Unit 1:	Lesson 1.1 <input checked="" type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input checked="" type="checkbox"/>
Unit 2:	Lesson 2.1 <input checked="" type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input checked="" type="checkbox"/>
Unit 3:	Lesson 3.1 <input checked="" type="checkbox"/>	Lesson 3.2 <input checked="" type="checkbox"/>	Lesson 3.3 <input checked="" type="checkbox"/>
Unit 4:	Lesson 4.1 <input checked="" type="checkbox"/>		

3A-AP-17 Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects.

Unit 1:	Lesson 1.1 <input checked="" type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input checked="" type="checkbox"/>
Unit 2:	Lesson 2.1 <input checked="" type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input checked="" type="checkbox"/>
Unit 3:	Lesson 3.1 <input checked="" type="checkbox"/>	Lesson 3.2 <input checked="" type="checkbox"/>	Lesson 3.3 <input checked="" type="checkbox"/>
Unit 4:	Lesson 4.1 <input checked="" type="checkbox"/>		

3A-AP-18 Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.

Unit 1:	Lesson 1.1 <input checked="" type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input checked="" type="checkbox"/>
Unit 2:	Lesson 2.1 <input checked="" type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input checked="" type="checkbox"/>
Unit 3:	Lesson 3.1 <input checked="" type="checkbox"/>	Lesson 3.2 <input checked="" type="checkbox"/>	Lesson 3.3 <input checked="" type="checkbox"/>
Unit 4:	Lesson 4.1 <input checked="" type="checkbox"/>		

Computer Science Teachers Association K-12 Computer Science Standards (3A)

3A-AP-19 Systematically design and develop programs for broad audiences by incorporating feedback from users.

Unit 1:	Lesson 1.1 <input type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input checked="" type="checkbox"/>
Unit 2:	Lesson 2.1 <input type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input type="checkbox"/>
Unit 3:	Lesson 3.1 <input type="checkbox"/>	Lesson 3.2 <input type="checkbox"/>	Lesson 3.3 <input checked="" type="checkbox"/>
Unit 4:	Lesson 4.1 <input checked="" type="checkbox"/>		

3A-AP-21 Evaluate and refine computational artifacts to make them more usable and accessible.

Unit 1:	Lesson 1.1 <input checked="" type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input checked="" type="checkbox"/>
Unit 2:	Lesson 2.1 <input checked="" type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input checked="" type="checkbox"/>
Unit 3:	Lesson 3.1 <input checked="" type="checkbox"/>	Lesson 3.2 <input checked="" type="checkbox"/>	Lesson 3.3 <input checked="" type="checkbox"/>
Unit 4:	Lesson 4.1 <input checked="" type="checkbox"/>		

3A-AP-22 Design and develop computational artifacts working in team roles using collaborative tools.

Unit 1:	Lesson 1.1 <input checked="" type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input checked="" type="checkbox"/>
Unit 2:	Lesson 2.1 <input checked="" type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input checked="" type="checkbox"/>
Unit 3:	Lesson 3.1 <input checked="" type="checkbox"/>	Lesson 3.2 <input checked="" type="checkbox"/>	Lesson 3.3 <input checked="" type="checkbox"/>
Unit 4:	Lesson 4.1 <input checked="" type="checkbox"/>		

3A-AP-23 Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.

Unit 1:	Lesson 1.1 <input checked="" type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input checked="" type="checkbox"/>
Unit 2:	Lesson 2.1 <input checked="" type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input checked="" type="checkbox"/>
Unit 3:	Lesson 3.1 <input checked="" type="checkbox"/>	Lesson 3.2 <input checked="" type="checkbox"/>	Lesson 3.3 <input checked="" type="checkbox"/>
Unit 4:	Lesson 4.1 <input checked="" type="checkbox"/>		

Impacts of Computing

3A-IC-24 Evaluate the ways computing impacts personal, ethical, social, economic, and cultural practices.

Unit 1:	Lesson 1.1	Lesson 1.2	Lesson 1.3
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unit 2:	Lesson 2.1	Lesson 2.2	Lesson 2.3
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unit 3:	Lesson 3.1	Lesson 3.2	Lesson 3.3
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unit 4:	Lesson 4.1		
	<input type="checkbox"/>		

3A-IC-25 Test and refine computational artifacts to reduce bias and equity deficits.

Unit 1:	Lesson 1.1	Lesson 1.2	Lesson 1.3
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unit 2:	Lesson 2.1	Lesson 2.2	Lesson 2.3
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unit 3:	Lesson 3.1	Lesson 3.2	Lesson 3.3
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unit 4:	Lesson 4.1		
	<input checked="" type="checkbox"/>		

3A-IC-26 Demonstrate ways a given algorithm applies to problems across disciplines.

Unit 1:	Lesson 1.1	Lesson 1.2	Lesson 1.3
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unit 2:	Lesson 2.1	Lesson 2.2	Lesson 2.3
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unit 3:	Lesson 3.1	Lesson 3.2	Lesson 3.3
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unit 4:	Lesson 4.1		
	<input type="checkbox"/>		

3A-IC-27 Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields.

Unit 1:	Lesson 1.1	Lesson 1.2	Lesson 1.3
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unit 2:	Lesson 2.1	Lesson 2.2	Lesson 2.3
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unit 3:	Lesson 3.1	Lesson 3.2	Lesson 3.3
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unit 4:	Lesson 4.1		
	<input checked="" type="checkbox"/>		

Computer Science Teachers Association K-12 Computer Science Standards (3A)

3A-IC-30 Evaluate the social and economic implications of privacy in the context of safety, law, or ethics.

Unit 1:	Lesson 1.1 <input type="checkbox"/>	Lesson 1.2 <input checked="" type="checkbox"/>	Lesson 1.3 <input type="checkbox"/>
Unit 2:	Lesson 2.1 <input type="checkbox"/>	Lesson 2.2 <input type="checkbox"/>	Lesson 2.3 <input type="checkbox"/>
Unit 3:	Lesson 3.1 <input type="checkbox"/>	Lesson 3.2 <input type="checkbox"/>	Lesson 3.3 <input type="checkbox"/>
Unit 4:	Lesson 4.1 <input type="checkbox"/>		