Utah State Board of Education
Utah K-12 Computer Science Initiative

THIS IS AN ENTIRELY NEW APPLICATION

"To give every student access to robust computer science education …" - Utah Governor Gary Herbert

Full 4-year Grant Application FY 2021

Link to Frequently Asked Questions (FAQ) Document, Legislation, and Code:
http://bit.ly/K12UtahCSFAQs

Application Final Due Date: Wednesday, June 30, 2021 at 5:00 PM

Completed application document links must be submitted using the following link:

Submit K-12 Computer Science Full 4-Year Plan

NOTE: *To be considered, the Utah State Board of Education (USBE) must receive your electronic copy by the date specified above. All digital submissions will be confirmed with a receipt email from USBE within 24 hours. It is the responsibility of the LEA to follow up with USBE to confirm the receipt of the application by the articulated due date. The narrative sections of the proposal must be no smaller than 11-point and maintain the section titles as presented.*

Please direct all questions to:

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Copies of this application and rubric and support materials are on the Utah State Board of Education website at:
https://www.schools.utah.gov/cte?mid=3363&tid=4

Introduction & Background

PURPOSE: To give every student access to robust computer science education by the conclusion of the four year CS plan.

H.B. 227 (Knotwell) established the Computer Science for Utah Grant Program in 2019 for purposes of implementing the Utah Computer Science Master Plan. The grants are for the express purpose of "improving computer science outcomes and course offerings, demonstrated by the creation and implementation of a local agency computer science plan and the effective implementation of approved courses and the provision of effective training opportunities for licensed teachers." H.B. 227 (63N-12-506)

Details of the CS Utah Grant Program state eligible local education agencies can apply for the grant, submit it to the State Board of Education for review and recommendation to the Talent Ready Board for approval based upon the following criteria:

Local Education Agencies (LEA) shall submit a written 4-year "computer science plan that addresses the recommendations in the Utah CS Master Plan that identifies targets for improved computer science offerings, student learning, and licensed teacher training; describes a professional development program and other opportunities for high-quality professional learning for licensed teachers or individuals training to become teachers. Includes a detailed budget, communication, and reporting structure for implementing the computer science plan."

ACTION STEPS: Create a 4-year LEA computer science plan following the template outlined below, including:

- Effective implementation of approved computer science courses (as outlined in the Data and Reporting section of the plan template) for students
- Providing effective computer science professional learning opportunities creating effective CS teachers
- Produce a clear picture of the evolving and growing implementation of computer science from integrated fundamentals to articulated high school course work
- Develop a communication plan for advancing computer science in your community, including parents and students
- Set specific data targets associated with measuring success of your plan

LEAs with full Computer Science 4-years plans will:

- ❏ Establish a Computer Science Program Leader within the LEA and create working groups in partnership with teacher leaders across departments to help implement the computer science plan
- ❏ Commit to providing one computer course offering approved by the Talent Ready Board in every middle and high school within the local education agency (as outlined in the Data and Reporting section of the plan template)
- ❏ Commit to integrate computer science education into the curriculum of every elementary school within the LEA
- ❏ Promote all new CS courses to the LEA administration for K-12, coherent with the LEA plan. *(Free marketing materials are available at: https://code.org/promote)*
- ❏ Hold a district-wide Hour of Code™ event each year. Computer Science Education week is the second full week of December, but LEAs can calendar in accordance with their schedules for each school year
- ❏ Establish course codes for middle school and high school computer science classes in alignment with your projected CS offerings at your LEA by Fall 2021
- ❏ Include computer science course offerings that count for science graduation credit *(AP Computer Science, Computer Science Principles, and/or Computer Programming II)* on materials related to school counseling and planning for all students
- ❏ Allow Computer Science PD to satisfy district hourly requirements for annual professional development
- ❏ Provide on-going follow up on key implementation details and dates, such as professional development workshops and marketing/orientation events for teachers and principals
- ❏ Support use of LEA facilities for professional development of teachers (if needed) at no cost to partner organizations identified in the plan
- ❏ Allow the Utah State Board of Education, Talent Ready Utah, and its evaluators to assess the program, including aspects of teacher professional development and student outcomes
- ❏ Include computer science plan, communication tools, training, and data outcomes as required in this plan on your LEA website for easy stakeholder access
- ❏ Sustain the computer science program after the term of the award
- ❏ Establish or connect with a community of practice within the geographic area, and share best practices with other Utah LEA leaders
- ❏ Meet any other requirements established by the state board in consultation with the Talent Ready Board and submit a written report annually to the state board and the Talent Ready Board

K-12 Computer Science 4-Year Grant Program Pre-Approval Requirements

Before submitting an application to the advisory committee for approval by the Board, an LEA shall:

1. Visit Utah Computer Science Education Master Plan, and read the full document.

In cooperation with your LEA leadership team and a representative group of all LEA stakeholders including school administrators, teacher leaders, educators, paraeducators, school board members, and parents:

2. Complete the full 4-year grant application by June 30, 2021 and submit to USBE **Submit K-12 Computer Science Full 4-Year Plan**

K-12 Computer Science Grant Program Post-Approval Requirements

An approved and participating LEA, shall engage in all of the following program required events to maintain funding for future fiscal years:

- **Utah K-12 Computer Science Summit** (Annually, Summer)
  This event happens once a year starting in the summer of 2022. The event focuses on sharing best practices, workshops around current research, and review of evaluation requirements. This event also requires each K-12 Computer Science Awardee to create a poster using the template from USBE.

- **Computer Science Site Visits** (Annually, Fall/Winter)
  USBE CS Team staff will complete site visits in the fall to provide technical assistance toward LEA implementation of their plan. Site visit locations and dates will be coordinated with the LEA CS team leader. The visit needs to involve a combination of administrators and CS teacher leaders. This team may also consist of school board members, community partners, and others.

- **Annual Reporting Requirements**
  Please note the following future reporting requirements that will be included in the Utah K-12 Computer Science Grant Annual Accountability and Data Report will be due by June 1st of each year of the award starting in 2022. These are not items that require response for the plan submission, but are important for LEA data collection over the implementation of the award.

Information: Future Reporting Requirements
1. Current fiscal year CS engagement tables as presented in the Data and Analysis section of the plan.
2. Progress toward achieving goals and measures in the approved LEA K-12 computer science plan.
3. Documentation of use of funds to expand computer science.
4. Other information requested by the Superintendent. LEAs will be notified of those requests in advance of the report.

- **K-12 Computer Science Budget Resubmission**
  Each year, after the conclusion of the award cycle, each LEA will resubmit a budget sheet for the new fiscal year to USBE for the available award value requested based on redistributed excess funding. USBE is committed to distributing all available full-plan funding to the field each year.

THIS IS AN ENTIRELY NEW APPLICATION

Utah State Board of Education
Utah K-12 Computer Science Initiative

Full 4-year Grant Application FY 2021

TEAM: ***Walden*** Computer Science Leadership

LEA Name			
Title	**Name**	**Email**	**Phone**
Computer Science Lead	Emily Carter	emily.carter@waldenschool.us	801-374-1545
Superintendent/Director	Lois Bobo	lois@waldenschool.us	801-374-1545
CTE Director	Sharon Beecroft	sharon@waldenschool.us	801-374-1545
Curriculum Director	Lara Candlund	lara.candlund@waldenschool.us	801-655-5889
Technology Director	Troy Rashak	troy@h-wire.com	801-471-5894
Business Administrator	Diana West	diana@waldenschool.us	801-655.5889
Special Education Director (K-8)	Tiffany Strong	tiffany.strong@waldenschool.us	801-374=1545
High School Teacher Leader	Joshua Faulkner	joshua.faulkner@waldenschool.us	801-655-5889
Middle School Teacher Leader	Bryan Sours	bryan.sours@waldenschool.us	801-374-1545
Middle School Teacher Leader	Will Strong	william.strong@waldenschool.us	801-374-1545
Elementary School Teacher Leader	Orlinda Vazquez	orlinda.vazquez@waldenschool.us	801-374-1545
Elementary School Teacher Leader	Ashley George	ashley.george@waldenschool.us	801-374-1545
Kindergarten School Teacher Leader	Kristina Perry	kristina.perry@waldenschool.us	801-374-1545
School Board Member	Matt Turner	dad@turnernest.com	801-374-1545

VISION:
Abstract for K-12 Computer Science Plan

Each LEA must provide an overview of the LEA's K-12 Computer Science Plan (up to 500 words), including:

- An alignment to the vision and guiding principles for computer science for all students in the Utah Computer Science Education Master Plan.
- Articulation of the long-term goal that will be achieved through implementation of the plan.
- An overview of the implementation steps that will be taken to achieve the long-term goal.

***REQUIRED**: The abstract will be used in the Utah State Board of Education Computer Science community to introduce your project to the public and to other grantees. If you are targeting different levels with your funding (elementary, middle, and high) be sure to describe each. Include the purpose, what will be different as a result of the grant, why the grant is important to your district, information about the target population, the vision for computer science, etc.*

Walden is founded on a particular vision of what we believe a school can be—a place where students are participants in their own education, are planning their own learning experiences and are actively collaborating, solving problems, and sharing ideas. It is a school where students are busy creating, researching, writing, and experimenting—not watching someone else do these things. Our primary goal is to ensure that our students enjoy learning, strive for excellence, and advance to their next educational venture full of hope and excitement for future learning. Our mission is to develop competent, self-motivated learners dedicated to making positive contributions to society.

It is with great enthusiasm that we are submitting this grant proposal. We are eager to partner with USBE in assuring that each Walden student has access to a range of robust and engaging computer science courses. As a K-12 public charter, we are in a unique position to design and implement a cohesive and visionary computer science pathway for students from kindergarten through graduation.

Elementary Program

Elementary students will build a strong CS foundation and develop competencies while participating in an innovative CS integrated studies class we are calling "Code Walden." They will engage with entry level coding and design while they learn responsible, ethical and transformative uses of technology. Students will also have the opportunity to participate in "Friday Academies" where they will develop strong foundational skills as they engage in workshops such as Lego Robotics or Code Monkey.

Middle School Program

Middle School students will continue to develop their digital competency and engage in an exploration of computer science through introductory CS courses such as Digital Literacy and Creative Coding. Those interested in pursuing a CTE Pathway in high school can prepare by completing Introductory and advanced Python coding classes. Students will be invited to engage with a wide array of extracurricular clubs and activities, such as Robotics Team, Web Development, and Coding.

High School Program

High School students will have the opportunity to pursue USBE's *Programming & Software Development* CTE Pathway, taking explorer, concentrator, and completer CS classes and earning college credit in IBDP Computer Science or Design Technology. Students can also participate in a wide array of CS field experiences, internships, and extra-curricular clubs and workshops. Visiting CS professionals will be invited to Walden to talk with students, share their experiences, and inspire students to prepare themselves for careers in computer science. Walden's after school program, CASA, will offer CS-related clubs built around student interest. We offer membership in the national Technology Student Association (TSA).

We are excited that our school's mission and vision are so well aligned with the CS visions, values, and impact areas of the State's CS Education Master Plan. This alignment will be essential for us to be able to create a sustainable CS learning culture at Walden. We recognize that the core computer science skills of critical thinking, problem solving, computational thinking, mathematical reasoning, and computing for generational transformation and social action will provide meaningful gateways for Walden's students to actualize this vision in today's world.

However, we do not see computer science as a siloed subject. In addition to strong CS pathways, our vision is to seamlessly integrate CS applications into all Walden classes. Many of our teachers have been doing this well for years. Some of our students are well ahead of the curve in pushing for CS technology in all they do, but we are starting from scratch in some key areas and with some key personnel. This grant will support a school-wide vision for this seamless integration to become a reality. This proposal outlines key components of our plan to create this K-12 learning environment. When every educator integrates computer science and technology seamlessly into the learning process, technology is leveraged (often invisibly) as a transformational resource to expand opportunities for ALL students. Many of our Walden graduates have, and will continue to enter fields closely aligned with the CS industry. However, the skills, attitudes and habits of mind developed through a strong, ongoing CS experience will be invaluable to all our students regardless of their field of post secondary study and career choices. A robust, cohesive, vertically aligned CS program is key to achieving this vision, providing all Walden's students important knowledge, skills, and patterns of learning that will be essential to their future success. This grant will help us put into action our defined strategy for K-12 alignment and implementation with a clear focus on what computer science looks like at every grade level and for every student, regardless of demographics and other diverse factors.

During the planning grant period, our school partnered effectively with Skill Struck in the initial implementation phase of our vision. We were grateful for the direction, jumpstart and insight this provided our teachers. However, moving forward, we hope to expand our community and industry partnerships in order to more fully realize a vision that dovetails with our charter; our CTE pathways and personalized competency based education; and our ongoing desire to give all students the tools they need to be successful across their lifespan. We also have a vision of developing our own internal curriculum, Code Walden, which weaves together 1) the industry curricula we will implement, 2) Utah State CS Standards, and 3) the Walden and Montessori philosophy of encouraging independent, hands-on, and project based learning. Over the next two years, we will implement an engaging and robust CS programming & software development pathway. By year three, we will begin to implement a second CS pathway, such as Web Development, paving the way for multiple options leading to college and career readiness. Our students will earn college credit (through our International Baccalaureate Diploma Programme).

This grant will provide us the resources to create and sustain visionary, cohesive, aligned and robust CS pathways to a full K-12 school wide initiative. An essential element of this school wide initiative is to include **every** student, with a particular emphasis on including and involving students who may initially shy away for computer science; those from underrepresented groups, including gender diverse students, students with IEPs and 504s, English language learners, students with free or reduced meals, and other at risk factors. Many students and families see coding as something difficult to be avoided but, as a result of this grant, we will begin to help students break down barriers and have greater opportunities. We look forward to our students gaining confidence in their technical skills, and more importantly, in themselves.

Overarching Goals & Desired Outcomes

Although Walden has had multiple programming, robotics and other CS course offerings for years at the secondary level, our articulated K-12 CS pathway is in its early stages. We have designed our CS pathways vision as part of our school mission and strategic plan. It is closely intertwined with a commitment to our Personalized Competency-Based Learning (PCBL) model. We recognize that this vision will require a significant commitment of time, energy and resources to be both engaging and sustainable. The following outlines our overarching goals and desired outcomes for our emerging CS program.

This outline is a high level overview of our overarching goals and desired outcomes. Most items are explained in detail in following sections of this grant proposal.

I. ***Expand Faculty Capacity to Teach and Support Computer Science (see section***, PROFESSIONAL LEARNING: Creating Effective CS Teachers **for details**)
   - ***A.*** Dedicated CS Faculty (both elementary and secondary):
     1. Lead at each program level
     2. Schoolwide PLC
     3. Diversity in Faculty
     4. Long term retention
     5. Support endorsements and certifications
   - ***B.*** Professional Development for all faculty:
     1. In house PD
     2. Micro Credentials
     3. Create time in the schedule for CS

II. ***Ensure an aligned vertically integrated K-12 Implementation (see section immediately following)***,

III. CURRICULUM AND STANDARDS: (**See** Computer Science High-Quality Curriculum **for details**)
   - A. Robust Pathways
   - B. Aligned Across Program Levels
   - C. Increase Offerings
   - D. Aligned to State CS Standards
   - E. Integration into Core Content

IV. ***Establish a fully equitable and inclusive CS culture. Promote CS as transformative in nature, grounding all Computer Science programming, PD, and communication in ways that assure all students the opportunity to achieve similar and equitable levels of success. (see section*** DIVERSITY: Creating Computer Science for ALL **for details**)

V. ***Establish Key Partnerships to sustain our CS program and assure ongoing adherence to USBE and industry standards while promoting innovation***

A. Community and Industry Partnerships: (Note: We have families with parents who work at all levels of the thriving CS community in Utah. They have willingly partnered with Walden on numerous fronts in the past and will assumedly continue to do so.)
B. Local Universities (Note: Because of our small size, we have relied heavily on the faculty and advanced students of both BYU and UVU's CS departments. We will continue to do so although we hope that through the CS grant, we will be able to create our own long-term faculty and use BYU and UVU more in support functions.)
C. USBE; (Note: USBE and the state legislature have committed a great deal of resources toward the establishment of CS throughout the state. We look forward to partnering in this regard and taking advantage of all the wonderful resources made available through the state.)
D. Collaboration with other schools (Note: We have noted that schools already engaged in the CS grant have established partnerships or consortia with other schools. We hope to join or initiate such partnerships in our area.)

Note: While we are grateful for our initial experience with our industry partner, Skill Struck, during the planning grant phase, we are ready to move away from their proprietary platform. Going forward, all teachers will receive an introductory training through Tynker, Code.org and other PD providers under the supervision of school administrators and our CS leadership team. We have chosen Tynker as an integral part of our K-8 program, in part, due to their more universal partnerships including Mattel (Hot Wheels and Monster High), Apple, Sylvan Learning, BBC Learning (Doctor Who HiFive Inventor, a next-generation education technology minicomputer designed to teach kids how to control robots or interface with IoT systems), Infosys Foundation USA, Microsoft, Mattel, PBS, and Lego.

Curriculum Pathway

Creating a robust, engaging, and high-quality K-12 continuum of computer science pathways and curricula has been integrated into Walden's long term strategic plan. Prior to our planning grant phase, CS courses were open primarily to high school students. During the CS planning grant period, we began to see how faculty school-wide are already making efforts to incorporate CS principles and applications across all programs. They are eager and ready to gain the skills needed to take their pedagogical CS skills to the next level. Our initial experiences have highlighted the understanding that ***a strong CS foundation*** followed by ***robust content courses*** across grade levels is not only possible but also essential for students to be prepared for successful careers and life pursuits in our highly technological world.

Our school-wide vision is ambitious. However, we have spent many months envisioning and planning for a K-12 continuum of curricula, activities and events, aligned with Utah Computer Science Education Master Plan and supported by the state standards for each grade level. We believe that the timing is right and we are prepared to invest the time, energy and resources to move our CS endeavors to the next phase.

At the ***elementary level***, our CS program will be multifaceted in order to establish the foundations that will serve students well throughout their education, career, and lifetime.

1. Each student in every class will have 2 weekly CS lessons including basic principles of coding, robotics, etc. co-taught by our elementary CS lead and classroom teachers. One

lesson will be from an industry provider (Tynker) and the other lesson will be from our in-house, standards-aligned curriculum under development (Code Walden). We understand that classroom teachers are at various levels of confidence and competence in teaching these lessons. Our CS lead will support these lessons to the level needed as our teachers build capacity for CS integration and instruction.

2. Each classroom STEAM center will contain CS materials and activities (including unplugged activities) that can be selected by students during their daily choice work time. We will be encouraging individually selected projects that incorporate a wide range of STEM activities including CS projects.
3. Our CS lead will oversee the scheduling and implementation of professional development for all teachers in the design and implementation of CS lessons at each grade level specifically in the integration of cross-curricular CS activities.
4. Each teacher will develop the knowledge and skills for implementing CS lessons and cross-curricular CS integration. This will include unplugged and drag-and-drop activities along with early coding activities through Tynker, Scratch, Code.org. By grades 4 and 5, students will also begin applying logic by learning HTML and basic syntax within simple text editors, activities, and games. Supplemental keyboarding classes and games will aide in this transition.
5. Friday project-based academies will have CS and technology support to encourage independence and curiosity in CS and STEAM areas.
6. Our in-house, Utah State standards-based, Code Walden curriculum (in development) will provide differentiation for students to progress at their own rate allowing greater flexibility for each student's needs and allowing them to prepare for their progression into secondary level CS content when they are ready. Code Walden will also help students develop the critically important skills and dispositions of digital ethics, awareness and etiquette.

At the ***middle school and high school levels***, we will continue our Code Walden curriculum as we introduce the CTE coursework that forms the basis of an exciting Walden CS pathway, including IBDP programming, providing a combination of core and elective technology courses. Students will be required to take certain beginning classes followed by the progression of more advanced offerings.

1. In Middle School (6–8) Students will engage in a combination of required and elective technology courses, as part of our CTE CS pathways . These courses include **(Creative Coding, Exploring CS 1**, **Intro to Python 1, Intro to Python 2 and Digital Literacy)**.
2. As students' social and emotional development creates greater personal awareness, digital ethics lessons will take on new importance. These supporting concepts and lessons will be integrated through our Code Walden curriculum.
3. **High School Students** will be introduced to coding skills, and will engage in activities that promote collaboration, problem solving, and critical thinking in two introductory CS classes—**Computer Science Principles, and Computer Programming 1**. They will then be given the opportunity to expand on their skills by taking advanced CS courses in **Game Development, Website Development, Robotics**, and advanced **Computer Programming**. Our culminating CS classes will offer college credit through either the International Baccalaureate or Advanced Placement Program. We will also offer an early college **Design Technology** class, should funding allow.
4. Students can ultimately enroll in IBDP classes as juniors and seniors to earn college credit.
5. Qualified CS faculty will support all courses within the CS pathway.

6. With school-wide access to CS content, teachers of all subjects will be trained and encouraged to incorporate multiple CS platforms for cross-curricular activities (e.g., developing a blog, developing an interactive web application that serves as a student portfolio for college applications). Our CTE lead will facilitate the PD for faculty so that CS concepts and applications are skillfully integrated across all courses and learning opportunities.
    a. Student led learning modules incorporating Python into Math and Science standards will be implemented in those content areas.
7. Students with interest beyond what the school day curriculum and course offerings can support will be able to pursue their interests in after school clubs and school-sanctioned internships. Juniors and seniors, in particular, may also select a CS programming emphasis for their CTE Internship.
8. In grades 9–12, students will have the opportunity to continue on the CS CTE Pathway of their choice or enter into a new path (if desired) with expanded course offerings.
9. As our program grows and develops AND as technology changes, additional CS pathways will be created in collaboration with USBE CTE and CS personnel.

Initial Programming and Software Development Pathway (first two years)

(This table contains a condensed and easily accessible overview of the more detailed table later in this document):

Elementary Curriculum Development and Implementation	Year long scope and sequence for each grade level to include Tynker, Code Walden, Unplugged, and Independent choice activities
Weekly Elementary STEAM Academies	Creative Coding, Robotics, Game Building
MS Preliminary Courses	Digital Literacy College & Career Awareness Creative Coding Beginning Python 1 & 2
Supporting Courses	Physics, Secondary Math 2, Secondary Math 3, Physics
Explorer Courses	Computer Science Principles Computer Programming 1 Game Development Fundamentals 1 Robotics 1 Web Design
Concentrator Courses	Game Development Fundamentals 2 Computer Programming 2
Completer Courses (These courses offer college credit)	AP or IBDP Computer Science

By Fall 2023 Our LEA scope and sequence for computer science will include:

Grade Level	Course	Frequency	Proposed Curriculum	Target Date

Kindergarten	*Tynker Jr.* *Unplugged lessons* *Code Walden*	*Weekly* *Weekly* *1-2Xmonth*	Computer Science Concepts: Computer Devices and Navigation, Digital Citizenship, Algorithms, Data, Computational Thinking	Initiated in the Fall 2021 Full implementation in place by Fall of 2023
1st Grade	*Tynker Jr.* *Unplugged lessons* *Code Walden*	*Weekly* *Weekly* *1-2Xmonth*	Computer Science Concepts: Digital Citizenship, Data, Algorithms, Computer Parts, Computer Organization, Scratch	Initiated in the Fall 2021 Full implementation in place by Fall of 2023
2nd Grade	*Tynker Jr.* *Unplugged lessons* *Code Walden*	*Weekly* *Weekly* *1-2Xmonth*	Computer Science Concepts: Technology in Our Lives, Computer Safety, Property Rights, File Organization, Troubleshooting, Data, Scratch, Algorithms	Initiated in the Fall 2021 Full implementation in place by Fall of 2023
3rd Grade	*3rd Grade Coding Basics Code Walden* *Tynker*	*Weekly* *Weekly*	Coding Concepts: Sequencing, Algorithms, Events, Computer Systems, Variables, Accessibility, Computer Safety, Troubleshooting, Conditionals, Loops, Property Rights, Data CS Integration in core subjects: Including math, science, and ELA exercises that align to the CCSS K-12 Framework and NGSS. Course Outcomes At the completion of this course students will be able to: 1. Write programs that make computers follow instructions. 2. Precisely time and control character movement and animation. 3. Describe how internal and external computer parts work together to form a system. 4. Recognize and consider user preference when designing a program. 5. Understand and respect property rights. 6. Determine solutions to computer issues using troubleshooting strategies.	Initiated in the Fall 2021 Full implementation in place by Fall of 2023
4th Grade	*4th Grade Coding Basics and Web Development (Code Walden)* *Tynker*	*Weekly* *Weekly*	Coding Concepts: Sequencing, Algorithms, Events, Computer Systems, Variables, Digital Citizenship, Conditionals, Computer Parts, Loops, Accessibility, HTML, Paragraph Tags, Text Color, Troubleshooting, Images, Property Rights, Data CS Integration in core subjects: Including math,	Initiated in the Fall 2021 Full implementation in place by Fall of 2023

			science, and ELA exercises that align to the CCSS K-12 Framework and NGSS. Course Outcomes At the completion of this course students will be able to: 1. Create programs that include sequences, events, loops, and conditionals. 2. Create and use variables in coding to modify and store data. 3. Practice cybersecurity and understand the importance of digital citizenship. 4. Describe how internal and external computer parts work together to form a system. 5. Determine solutions to computer issues using troubleshooting strategies. 6. Add text and images to a website using programming methods. 7. Change text color and format on a website.	
5th Grade	*5th Grade Coding Basics and Web Development (Code Walden)* *Tynker*	*Weekly* *Weekly*	*Coding Concepts:* *Sequencing, Algorithms, Events, Variables, Troubleshooting, Loops, Conditionals, Cybersecurity, Data, HTML, Headers, Text Colors, Fonts, Paragraphs, Text Alignment, Accessibility, Images, Videos, Property Rights* *CS Integration in core subjects: Including math, science, and ELA exercises that align to the CCSS K-12 Framework and NGSS.* *Course Outcomes* *At the completion of this course students will be able to:* *1. Create programs that include sequences, events, loops, and conditionals.* *2. Create and use variables in coding to modify and store data.* *3. Add images and videos to a website using programming methods.* *4. Format a website using paragraphs, header tags, and text alignment.* *5. Style the font and text color of elements on a webpage through code .* *6. Express technology's influence on the world.*	*Initiated Fall 2021* *Full implementation in place by Fall of 2023*
6th-8th Grade	*Python 1* *3502000004*	*Semester* *4x week/55 minutes each*	*Coding Concepts:* *Variables, Inputs/Outputs, Syntax & Comments, Variable Types, Numbers, Converting, Modulus, Strings, Concatenation, String Methods, Lists, If/Else Statements, For Loops, Debugging*	Fall 2022

			Course Outcomes: *At the completion of this course students will be able to:* *1. Write programs that make computers follow instructions.* *2. Write code that makes decisions, choosing between multiple options.* *3. Write code that loops, repeating instructions until certain outcomes are reached.* *4. Organize their code to be more efficient and useful.* *5. Use functions to write multiple sections of code that communicate with each other.*	
6th-8th Grade	*Python 2* *35020000006*	*Semester* *4 days per week/55 Minutes*	*Coding Concepts:* *Sequence Indexes, Sequence Manipulation, Sequence Iteration, Working with Files*	Winter 2022
6th-8th Grade	*Creative Coding* *35020000003*	*Semester* *4 days per week/55 Minutes*	*Coding Concepts:* *Computer Game Structure, Elements and Logic, Randomization in Games, Object Control in Games, Game Flow, Game Enhancement, Basic App Design and Creation*	Fall 2021
6-8th Grade	*Digital Literacy* *32020000170*	*Semester* *4 days per week/55 Minutes*	Coding Concepts: Text Input and Output, Statements, Expressions, Variables, Concatenation, Mathematical Operators, Conditionals, Comparisons, Booleans, Logical Operators, While Loops, Libraries, Randomness, Debugging	Fall 2021
High School	Computer Science Principles 35020000035	*Year*	Computer Science Principles is a new course that follows a project to develop a computer science course that seeks to broaden participation in computing and computer science. The course places emphasis on the principles of computer science rather than just programming. Big ideas and concepts include: (1) Computing is a creative activity. (2) Abstraction reduces information and detail to facilitate focus on relevant concepts. (3) Data and information facilitate the creation of knowledge. (4) Algorithms are used to develop and express solutions to computational problems. (5) Programming enables problem solving, human	Fall 2021

			expression, and creation of knowledge. (6) The Internet pervades modern computing. (7) Computing has global impacts.	
High School	Computer Programming 1 35020000030		An introductory course in program engineering and applications. The course introduces students to the fundamentals of computer programming. Students will learn to design, code, and test their own programs while applying mathematical concepts. Teachers introduce basic coding concepts and problem-solving skills.	Fall /Spring 2021
High School	Robotics 1 Web Design		This course is designed to provide students with knowledge and project based experience of fundamental gaming development concepts relating to STEM. These concepts include (1) game design (2) scripting (3) creation of digital assets (4) graphic resources (5) Animations (6) understanding hardware (7) problem solving (8) critical thinking (9) Collaboration (10) Project management	Spring 2021
High School	Game Development Fundamentals 1 35020000045		This course is designed to provide students with knowledge and project based experience of fundamental gaming development concepts relating to STEM. These concepts include game design, scripting, creation of digital assets, graphic resources, animations, understanding hardware, problem solving, critical thinking, collaboration, and project management.	Fall 2021 (FY22)
High School	Game Development Fundamentals 2 35020000046		This course is designed to provide students with knowledge and project based experience of fundamental gaming development concepts relating to STEM. These concepts include game design, scripting, creation of digital assets, graphic resources, animations, understanding hardware, problem solving, critical thinking, collaboration, and project management.	Spring 2022
High School	Computer Programming 2 35020000032	*Full Year*	This course reviews (Strands 1-6) and builds on the concepts introduced in Computer Programming 1. Beginning in Strand 4, and then Strands 7-10, this course introduces students to more complex data structures and their uses, including sequential files, arrays, and classes. Students will learn to create more powerful programs within a specific programming language. Java, Python, C++, C#, Swift	Fall/Spring (FY23)

High School	AP or IBDP Computer Science 35020000050 Or 35020000041	*Full Year*	This is an advanced course in computer programming/software engineering and applications. It reviews and builds on the concepts introduced in Computer Programming 1 and 2. It introduces students to dynamic data structures, advanced utilization of classes, and applications of recursion through the application of mathematical concepts. This course will also highlight the differences between the many different languages of computer programming.	Fall/Spring FY 24 This will be a culminating class taught in the pathway and will allow students to earn college credit
High School	IBDP Design Technology	*Full Year*	Should funding allow, we would also like to offer this hybrid Science/CS course early college class developed by the International Baccalaureate Program. Design Technology gives students the opportunity to plan, design, and create innovative products using the computer science and technology skills that they have developed in previous years. The course is not a part of USBE's CTE pathway, but will supplement CS instruction by encouraging students to use their CS skills to develop something unique and marketable. The course takes students through the following processes: 1) Conceptual design 2) Development of a detailed design 3) Testing and evaluation 4) Detailed development of a commercial product	Fall/Spring FY 24 This will be a culminating class taught in the pathway and will allow students to earn college credit

PROFESSIONAL LEARNING: Creating Effective CS Teachers

Each LEA must complete the tables below to provide an overview of the LEA's K-12 Computer Science Goal, including:

- Professional development for teachers of other subjects is required to leverage the existing pool of teachers and provide a short-term approach for increasing the number of CS opportunities in schools.
- Long term sustainability will include steps towards a certification or license endorsement to teach computer science, and adding a pipeline of new teachers graduating from pre-service programs with the ability and desire to teach CS.
- A commitment to how teachers and leaders in the LEA will have access to computer science learning as outlined in the Utah Computer Science standards during the school day for each grade at the conclusion of the 4-year plan.
- An alignment to the vision and guiding principles for computer science for all students in the Utah Computer Science Education Master Plan.
- Projected implementation dates for achieving training to all teachers and leaders in each division.

Recommended Length: **4 Pages**

We are painfully aware that our biggest need and greatest challenge will be in finding the qualified and passionate professionals who will become integrated Walden faculty members able to help us implement our Walden CS vision. We have invested substantial research and investigation into our strategic plan in this regard. There are several key layers to this plan:

1. Each program level (elementary, MS, & HS) will have a dedicated CS lead.
    a. At the elementary level, our CS lead will be a Computer Science Specialist. We have decided to "grow our own" CS lead. Emily Carter is finishing her CS degree and will immediately start a master's degree program for teacher licensure and then obtain the relevant and necessary endorsements. We will be supporting her educational process financially with the intent that she will be the long term Walden elementary CS specialist for years to come. She has been a math interventionist at the school and has been passionate and knowledgeable in her commitment to CS education for all students. Her role will be to provide twice weekly CS instruction for each of our eight K-5 classes and will mentor each head teacher in their development of the ability to integrate CS throughout their curriculum.
    b. At the middle school and high school level, qualified and endorsed CS teachers will serve as the leads that not only teach coursework but also oversee content area teachers' development of their abilities to integrate CS skills and activities in each Walden secondary classroom.
    c. Walden high school has been offering core and "one-off" computer science courses getting temporary endorsements for skilled graduate students from the local universities to serve as instructors. This grant will allow us to adopt a much more comprehensive and intentional plan for CS learning. We will hire a full-time computer science instructor/specialist who will teach our full complement of computer science courses on a rotating basis (only foundational courses will be offered every year), and will provide professional development to help instructors implement CS into their regular instruction. With the help of this CS professional, we will be able to offer a full complement of courses on the CTE Computer Programming and Software Development pathway. Students will graduate with robust skills in computer programming and software design.
2. To strengthen CS adoption and empower teachers across grade levels, a Walden CS Professional Learning Community (PLC) will be formed and overseen by the CS leads. This PLC will allow teachers to have increased support and access to other educators to share ideas, address teaching concerns, give teaching tips and grow their CS knowledge. Not only do we want to help teachers learn code and computer science to strengthen their knowledge of the content area, but to also help them to become true teachers of computer science and to teach it effectively to engage with all students.
3. As mentioned above, Walden will invest in faculty by financially supporting certifications and endorsements that directly qualify them to teach CS content and courses. We will specifically seek out or recruit qualified and invested educators from underrepresented populations with the fields of computer science.
4. Walden will further develop our system that includes all faculty in CS PD. One benefit of the COVID-19 pandemic is that it jump started and expedited our faculty technology PD. As we create and refine our Code Walden curriculum, all faculty will be included in the PD, implementation and feedback loop that will support this in-house curriculum.
    a. CS Leads will organize, schedule, and/or facilitate the in-house training.
    b. Designated teachers will obtain CS micro-credentials as they become available.

c. All faculty will receive PD and coaching supporting the industry platforms, programs, and courses that we contract for.

5. Walden has maintained successful collaborations with CS departments at the two major Utah Valley Institutions of Higher Learning, BYU and UVU. Through these partnerships we will continue to supplement our teaching faculty while we build a stable and diverse CS faculty.
6. Specific PD needs for any Walden program level, department, or individual educator will receive priority funding as supported by this grant. Our research has revealed that there are innumerable sources of CS and IT training for educators.
7. One of the essential elements of success will be contingent on our ability to carve out time in the school day and school year for teachers to become increasingly skilled in their CS pedagogical abilities and to design lessons that seamlessly and effectively integrate CS building skills and activities. Part of our funding request will cover the cost of substitutes or alternative scheduling to support teachers ongoing CS PD.

BASELINE FOR CURRENT STATE OF TEACHER CS ENDORSEMENTS:

Computer Science Endorsements	Current # of Teachers with Endorsement	
*Exploring Computer Science	In process	One teacher is working all three of these endorsements. We recently lost the teacher we had who was endorsed to teach CS and robotics.
Computer Science 1	In process	
Computer Science 2	In process	
Introduction to IT	0	
Web Development	0	

COMPUTER SCIENCE PROFESSIONAL LEARNING TIMELINE

Elementary Teachers

When	Grade level	# of Projected Participants	Content	Outcome/ Endorsement
Ex. Fall 2021	*Elementary teachers grade 3-5*	*3 sessions of 25 teachers*	*Data and Analysis Standards in Utah CS Standards 3-5*	*Teachers will be able to incorporate data visualizations and technology into their math and science instruction.*
Fall 2021 and each year thereafter	*All Faculty and support staff*	*30*	*Vertical Alignment and CS program visioning*	*All staff will have a strong sense of our CS program across all grade levels in order to support equitable*

				engagement for all.
Fall 2021	*Elementary Teachers*	*10*	*Research and analysis of Utah CS Standards K–5, CS teaching strategy and cross curricular approaches.*	*Teachers will incorporate CS strategies and activities into grade specific lesson plan Aligned with state CS standards.*
Summer 2021-2022 Virtual PD	*Elementary Teachers and Assistant Teachers*	*10*	*incorporating Tynker into curriculum including coding, text-based languages, pedagogical best practices, physical computing, game design, and much more.*	*Teachers will increase their knowledge and confidence in teaching CS concepts and standards to become better teachers of computer science*
School Year 2021-22	*Elementary Teachers*	*10*	*Analysis of CS and Math Standards. CS Lessons and Strategies for teaching Math Content*	*Teachers will have a foundational understanding of strategies and skills needed to integrate CS in Math Instruction in alignments with Utah State CS and Math Standards.*
School Year 2022 -23	*Elementary Teachers*	*10*	*Analysis of CS and Science Standards. CS Lessons and Strategies for teaching Science Content*	*Teachers will have a foundational understanding of strategies and skills needed to integrate CS in Science Instruction in alignments with Utah State CS and Science Standards.*
Yearly	*Elementary Teachers*	*10*	• *Monthly Sessions by Grade Level teams* • *PD for new teachers (after first year)*	• *Analysis and integration of CS standards in all subjects* • *Teacher lead collaborations on CS standards integration*
Yearly	*All k-12 Faculty School-Wide*	*35*	*Quarterly PLCs on a variety of CS topics*	*Ongoing sense of collaboration and accomplishment in CS Instruction and*

				Pedagogy

Middle School Teachers

When	Grade level	# of Projected Participants	Content	Outcome/ Endorsement
Ex. Fall 2020	*Elementary teachers grade 6*	*2 sessions of 30 teachers*	*Data and Analysis Standards in Utah 6th grade CS Standards*	*Teachers will be able to incorporate data visualizations and technology into their science instruction.*
Fall 2021 and each year thereafter	*All Faculty and support staff*	*15*	*Vertical Alignment and CS program visioning*	*All staff will have a strong sense of our CS program across all grade levels in order to support equitable engagement for all.*
Fall 2021	*Middle School CS and CTE Teachers*	*Initiate work on licensure and endorsement programs for all unqualified Secondary 6-8 grade teachers*	*Teach Utah CS Standards 6-8, for all existing CS courses in plan.*	*Teachers will teach the beginning course content for our pathways, with standard aligned lesson plans..*
Summer 2021-2022	*Middle School CS teachers*	*All middle school CS teachers*	*In-House and Online Professional Development modules.*	*Teachers will increase their knowledge and confidence in teaching CS concepts and standards to become better CS teachers*
Fall 2021	*6-8 Core Content and Elective teachers*	*12*	*Research and analysis of Utah CS Standards 6-8, CS teaching strategies and cross curricular approaches.*	*Teachers will have a foundational understanding of strategies and skills needed to integrate CS in each content area with Utah State CS and content-specific standards.*
Fall 2022 and forward	*Middle School CS and CTE Teachers*	*Initiate work on licensure and endorsement programs for all*	*Teach Utah CS Standards 6-8, for all existing and proposed CS courses (Including*	*Teachers will teach the course content for our pathways, with standard aligned*

		unqualified Secondary 6-8 grade teachers	*Python 1 and 2)*	*lesson plans and required licenses and endorsements.*
Yearly	*All Faculty*	*35*	*Quarterly PLCs on a variety of CS topics*	*Ongoing sense of collaboration and accomplishment in CS Instruction and Pedagogy*

High School Teachers

WHEN	**Grade level**	**# of Projected Participants**	**Content**	**Outcome/ Endorsement**
Ex. Fall 2021	*High School Teachers for Computer Science Principles (CSP) Endorsement*	*1 session of 15 teachers*	*Weeklong Training sponsored by the STEM Action Center with Code.org*	*Teachers will have completed the methods requirement for their Intro to CS endorsement.*
Fall 2021 and each year thereafter	*All Faculty and support staff*	*25*	*Vertical Alignment and CS program visioning*	*All staff will have a strong sense of our CS program across all grade levels in order to support equitable engagement for all.*
Fall 2021	*CS and Technology Teachers*	*Initiate work on licensure and endorsement programs for all unqualified Secondary 9-12 grade teachers*	*Teach Utah CS Standards 9-12, for all existing CS courses.*	*Teachers will teach the beginning course content for our pathways, with standard aligned lesson plans..*
Summer 2021-2022	*High School CS teachers*	*All high school CS teachers*	*In-House and Online Professional Development modules*	*Teachers will increase their knowledge and confidence in teaching CS concepts and standards to become better CS teachers*
Fall 2021	*9-12 Core Content and Elective teachers*	*13*	*Research and analysis of Utah CS Standards 9-12, CS teaching strategies and cross curricular approaches.*	*Teachers will have a foundational understanding of strategies and skills needed to integrate CS in each content area with Utah*

				State CS and content-specific standards.
Fall 2022 and forward	*High School CS and CTE Teachers*	*Initiate work on licensure and endorsement programs for all unqualified Secondary 8-12 grade teachers*	*Teach Utah CS Standards 9-12, for all existing and proposed CS courses.*	*Teachers will teach the course content for our pathways, with standard aligned lesson plans and required licenses and endorsements.*
Yearly	*All Faculty*	*35*	*Quarterly PLCs on a variety of CS topics*	*Ongoing sense of collaboration and accomplishment in CS Instruction and Pedagogy*

DIVERSITY: Creating Computer Science for ALL

Each LEA must complete the responses below including:

- Computer science for every student requires that equity and diversity be at the forefront of any transformative effort. When equity prevails, there is appropriate support based on individual students' needs so that all have the opportunity to achieve similar levels of success.
- A successful plan will ensure that every student in Utah has equitable access to high-quality computer science curriculum and instruction aligned to the UT K–12 CS Framework.
- An alignment to the vision and guiding principles for computer science for all students in the Utah Computer Science Education Master Plan.

Recommended Length: **2-3 Pages**

***REQUIRED**: How will your LEA increase numbers of female students, as well as traditionally underserved students in computer science?*

Inclusion is a strongly embedded value in Walden's culture, structure, and pedagogy, as evidenced in every policy, program and classroom at Walden. Our CS initiative is designed to serve ***all*** students. Students who struggle to access programs will be provided with additional resources and mentoring. Every student will be not just encouraged to fully engage but also required to complete certain courses and activities in the CS continuum of curricula available at their program level. As we embark on this next phase of our CS journey, we will continue to identify and remove barriers that may exist for students in identified groups to ensure maximum equity & access. Our CS and Academic Counselors will participate in USBE's equity lab and provide school staff with knowledge on best practices for full access to all programs and curricula. We will work with TNTP and other organizations to learn how to enrich learning for every student. Additional steps will include action items such as:

1. Ensure that our CS faculty represent the diversity we seek to achieve with our student population including female and gender diverse CS faculty.
2. Establish a cohesive k-12 CS program and system of pathways that create CS learning and development for ALL students from the beginning.
3. Provide training for teachers to recognize signs that indicate lack of access to technology in homes of at-risk students so that resources can be provided to support in-home access to digital endeavors (including homework and personal CS projects).
4. Provide a range of CS content, coding content, languages,as well as mentoring, clubs, events, and opportunities so that students can recognize the diversity of opportunities and find their own specific niche of interest.
5. Monitor data of female, at-risk, and underrepresented student populations including enrollment and progress for targeted groups in order to provide support, intervention, and any other necessitated help.
6. Ensure that community partners, guest presenters, and intern sites mirror diverse participants.
7. Create family events that are accessible to families of diverse backgrounds.
8. Use Parent Teacher Conferences as a tool to recognize student achievements and progress in CS, and encourage support at home.

***REQUIRED**: How will you ensure that all curriculum and course content is accessible to all students, including students with disabilities?*

Walden serves a large number of students with IEPS. . .over 20% of our students. . .in a full inclusion learning environment. Ensuring that all curriculum and course content is accessible to all students, including students with disabilities, is at the heart of our mission. Each and every student will receive every support and accommodation to which they are entitled through IEPs or 504 plans while engaging with CS content in any form. However, our commitment goes much further. Our school model includes many safeguards to assure all students have the opportunity to equitably learn and grow. One of the most impactful safeguards is our small class size and low pupil/teacher ratio. Elementary classes serve 24 students with a head teacher and an assistant teacher. Middle and high school classes average less than 20 students per class. Many secondary classes have a special education paraprofessional or co-teacher to assure that all support and accommodations are provided to students with special needs. All this is purposefully designed to give our kids with any type of learning disadvantage a leg up so that they can have full access to every aspect of the curriculum and learning experience. This commitment will continue to be evident throughout every aspect of the school including our CS program and pathways.

Nonetheless, we recognize that we will have challenges to overcome as we implement a robust CS program for all students. For example, we know that we will need to intentionally and effectively ensure accessibility of all online tools that we may integrate into our CS program. This is one of the reasons our special education director is on the CS leadership team. Director Tiffany Strong is tasked with working with CS leads to make certain any student with learning or physical challenges has the tools or accessibility services needed to engage in equitable and motivational ways.

As we build our Code Walden program, we are creating individualized, differentiated access points and a variety of activity types to help engage all types of learners. Because the development of the curriculum is so close to the implementation process, we can be nimble and flexible in our adaptation of the curriculum.

***REQUIRED**: What strategies will you develop and implement for increasing diversity in K-12 Computer Science (i.e. expand programs to include parents and counselors in the learning process)?*

Our CS program is being built from the foundational levels of kindergarten and the early elementary grades through our high school and IB programs. By assuring that every child has access to an engaging CS program beginning in kindergarten, we have the opportunity to peel away layers of inaccessibility that have been systematically part of the educational journey of many students. For example, through a separate grant, we have been able to place 100 hotspots in the homes of Walden families who were identified as needing support. This step has allowed us to better engage families in many of our school programs. As we build upon steps such as these, we are able to create a learning environment that supports so many families in need.

It will be essential for us to create a K–12 vertical alignment in our CS pathways so that counselors, administrators and teachers at every level can speak to families about the program in its entirety, painting a vision that will support students seamlessly throughout their full K-12 experience. For this reason, time will be spent in our faculty orientation at the beginning of the school year to create dialogue and understanding of the full breadth of our K-12 CS program among all staff. By including support services like SPED and ELL personnel and non CS faculty, we can bolster the impact of our efforts to incorporate CS skills and content throughout every class and every support service so that every student at Walden is receiving equal opportunities and access to computer science education at each grade level.

School academic counselors will carry a large part of the responsibility to help students and parents understand the new opportunities available to students and aid them in working to complete a pathway that fits for each student. Our capable and talented school counselors will initiate targeted outreach to underserved students (e.g. girls, students of color, students with disabilities, etc.) as they enter middle and high school to encourage them to take the different CS offerings within CTE, and the career opportunities available to them.

We are excited to create and host an annual Community Code Night, as described in Utah Computer Science Education Master Plan where families and local professionals come together for a fun, interactive introduction to CS. Such events will educate and garner support from the entire community. This will go a long way toward helping students see professionals like them working in tech fields and roles. We will invite industry professionals to do a Q&A with students ensuring that the professionals also represent a range of demographics to model for our students that CS is a field for everyone.

OUTREACH AND COMMUNICATION

REQUIRED: How will you communicate your computer science offerings and advances toward access for all students as you implement your 4-year plan?

Walden's Computer Science communication plan will include:

- A school CS website to be fully functional by August 31. 2021. As we build our CS program, this website will include detailed information regarding CS pathways, current projects, relevant data and reporting, as well as opportunities for stakeholder feedback and input.
- Posting the school CS plan on the CS website with a request for feedback.
- Sharing elementary activities and CS after-school program activities in the school newsletter
- Sharing middle school CS projects and activities in our weekly newsletter and communicating CS standards progress to parents at Parent Teacher Conferences.
- Updating elementary progress reports to include CS achievement and progress
    - Students will build a cumulative portfolio to contain their body of work
    - Sharing CS progress in parent-teacher conferences
- Publishing our CTE CS pathways and classes in handouts, brochures, flyers, and posters, and on the CTE website
- Providing CS support for 3rd, 5th, 8th, 10th and 12th grade projects and highlighting CS accomplishments in project showcases

REQUIRED: Where will you communicate your plan, updates on implementation, and required data and reporting on your website?

- The school CS website will be fully functional by August 31. 2021 and will contain communications regarding our plan, updates on implementation along with required data and reporting information.

DATA AND REPORTING

Elementary and Middle Current Computer Science Course Offerings FY 2020

Grade Level	Number of Students Engaged in Computer Science FY 2020	Total Number of Students
Kindergarten	0	38
First Grade	0	33
Second Grade	0	35
Third Grade	8	28
Fourth Grade	0	32
Fifth Grade	0	34
Sixth Grade	15	31

Seventh Grade	0	31
Eighth Grade	0	38

Elementary and Middle Computer Science Student Demographics:

Grade Level	Female %	Underserved CSPopulation %	SPED %	ELL %	FRL %
Kindergarten	0	0	0	0	0
First Grade	0	0	0	0	0
Second Grade	0	0	0	0	0
Third Grade	67%	83%	16%	16%	50%
Fourth Grade	0	0	0	0	0
Fifth Grade	0	0	0	0	0
Sixth Grade	35%	72%	29%	6%	40%
Seventh Grade	0	0	0	0	0
Eighth Grade	0	0	0	0	0
TOTAL in all CS courses	**15**	**27**	**10**	**3**	**12**

High School Current Computer Science Course Offerings FY 2020

Course Code and Title	Number of Sections (FY2020)	Total Students Enrolled FY2020
'35020000037', -- Algorithms and Data Structures	0	0
'35020013037', -- Algorithms and Data Structures CE	0	0
'35020000041', -- AP Computer Science	0	0
'35020000034', -- AP Computer Science Principles	0	0
'35020000030', -- Computer Programming 1	0	0
'35020013030', -- Computer Programming 1 CE	0	0
'35020000040', -- Computer Programming 2	0	0
'35020013040', -- Computer Programming 2 CE	0	0
'35020000035', -- Computer Science Principles	1	15
'35020013035', -- Computer Science Principles CE	0	0

'35020000003', -- Creative Coding	0	0
'35020000007', -- Exploring Computer Science 1	0	0
'35020000008', -- Exploring Computer Science 2	0	0
'35020000045', -- Gaming Development Fundamentals	1	12
'35020000046', -- Gaming Development Fundamentals 2	0	0
'35020000055', -- HTML5 App Development Fundamentals	0	0
'35020000050', -- IB Computer Science SL 1	0	0
'35020000051', -- IB Computer Science SL 2	0	0
'35020000048', -- Mobile Development Fundamentals	2	12
'350200000060',-- Web Development 1	0	0
'350200000065',-- Web Development 2	0	0

Secondary Computer Science Student Demographics:

Course Code	Female %	Underserved CS %	SPED %	ELL %	FRL %
'35020000037', -- Algorithms and Data Structures	0	0	0	0	0
'35020013037', -- Algorithms and Data Structures CE	0	0	0	0	0
'35020000041', -- AP Computer Science	0	0	0	0	0
'35020000034', -- AP Computer Science Principles	0	0	0	0	0
'35020000030', -- Computer Programming 1	0	0	0	0	0
'35020013030', -- Computer Programming 1 CE	0	0	0	0	0
'35020000040', -- Computer Programming 2	0	0	0	0	0
'35020013040', -- Computer Programming 2 CE	0	0	0	0	0
'35020000035', -- Computer Science Principles	27%	86%	40%	13%	33%
'35020013035', -- Computer Science Principles CE	0	0	0	0	0
'35020000003', -- Creative Coding	0	0	0	0	0
'35020000007', -- Exploring Computer Science 1	0	0	0	0	0
'35020000008', -- Exploring Computer Science 2	0	0	0	0	0
'35020000045', -- Gaming Development Fundamentals	25%	67%	42%	0%	42%
'35020000046', -- Gaming Development Fundamentals 2	0	0	0	0	0

'35020000055', -- HTML5 App Dev Fundamentals	0	0	0	0	0
'35020000050', -- IB Computer Science SL 1	0	0	0	0	0
'35020000051', -- IB Computer Science SL 2	0	0	0	0	0
'35020000048', -- Mobile Development Fundamentals	8%	42%	33%	8%	25%
'350200000060',-- Web Development 1	0	0	0	0	0
'350200000065',-- Web Development 2	0	0	0	0	0
TOTAL representation in all CS courses	**8**	**25**	**15**	**4**	**13**

PROPOSED BUDGET

An effective budget development and review process is guided by a deep understanding of school finance at the District, State and Federal levels. Funding is required to achieve many of the goals in this Utah Computer Science plan, including:

- In the short term, dedicated funding for computer science should be allocated and the funding should emphasize the professional development of existing teachers for the purpose of expanding computer science education efforts.
- In the long term, funding streams from state and federal sources, as well as from public/private partnerships, should support a system of high-quality computer science education.
- All budgets at the district and school level are aligned in order to prioritize student learning and cost-efficiency, with consistent funding streams for both recurring and non-recurring costs.

Proposed K-12 Computer Science Plan Budget Narrative

Describe your proposed budget, including:

- ***An outline and justification of all identified resources (with realistic costs) to ensure the plan's success***
- ***A justification for each budget category***
- ***Indicate the increase in FTEs (for K-12 Grant Program funds proposed for salaries)***

We are grateful to the state legislature and board of education who obviously understand that to accomplish the ambitious objectives of this grant will take significant funding. We realize that we are asking for a huge contribution to Walden's CS program initiative. After lengthy planning and preparation, we believe that the following budget offers a solid foundation for success in this endeavor.

(100) Salaries: We are asking for $122,600 in salaries in the first year of the grant. Because we are a K-12 school, we have a very large span of CS curriculum to cover. We believe that this amount will fund one full time educator at $62,260 for the high school and two part time CS educators (one for elementary and the other for middle school at $30,000.00 each). We have added a 5% increase each subsequent year to cover the cost of modest salary increases.

(200) Benefits: The amounts listed each year in the category of benefits follow an estimated amount according to our benefits and payroll formulas equal to approximately 30% of the annual salary.

(300) Purchased Professional & Technical Services: The $15,500.00 annual amount listed includes $3,500.00 professional development and support from Tynker and other platform PD providers to help assure that we are implementing with fidelity the program at the heart of our initiative. An additional $3000.00 is added for IB training each year. We would like to add $3,000.00 to cover additional professional development including support for obtaining a CS endorsement for appropriate faculty members. We have also included $6000.00 annually to support the development of Code Walden. As Code Walden becomes more fully established, we will shift this funding to increase the level of tech support that will be needed to assure that our technology is running seamlessly for our CS classes and initiatives.

(500) Other Purchased Services: We will allocate $5,000 for a site license to Tynker's full site access for all faculty and students. These services include a robust curriculum for all grade levels and engaging learning experiences.

(600) Supplies/Materials: We are asking for $28,000.00 annually to purchase 80 Chromebooks in a 4 year rotation ($28,000). This will assure that all students from grade 3 on up will have access to the technology needed for our comprehensive schoolwide CS initiative. Another $5,000.00 has been added for CS textbooks, software, and various support materials. The first year also includes a major purchase of Cubetto classroom packages and other unplugged manipulatives and support for 6 K-2 classes ($9000.00).

Property (includes equipment): In year one, we propose the purchase of 20 substantial computers (for a total of $24,000.00) capable of running advanced programs and supporting the robust activities delineated in this grant proposal. Subsequent years include $20,000.00 annually for significant purchase updates to keep the CS program at a cutting edge level to allow students to graduate with the latest skills in place.

REQUIRED: Use of non-grant funds and existing LEA resources.

Our CS plan is part of a larger strategic improvement plan to improve the learning outcomes for Walden students while holding fast to the initial vision and purpose of the school that has drawn together a community of families, students and staff who sought out Walden for its particular vision of what we believe a school can be—a place where students are participants in their own education, are planning their own learning experiences and are actively collaborating, solving problems, and sharing ideas.This strategic plan intertwines

our CS plan with our CTE pathways, our personalized competency based education plan and more. By pulling together these plans into one cohesive vision, we will be able to create a stronger CS and CTE program than if we need to rely on any one of them alone. Through our PCBL grant (approved this year) we are able to implement a stronger system of professional development that will support faculty in integrating CS skills and content across the curriculum. With our CTE funding, we will be able to strengthen the CS pathways faculty in ways that will allow for the CS pathways to be implemented sooner and more robustly at the secondary level than we could otherwise have done. This will allow us to invest more of our CS funding at the elementary level in order to establish a strong CS footing for all students and increase the potential for an equitable cornerstone of CS as an essential part of our strategic plan.

REQUIRED: How will your LEA sustain the computer science program after the term of the award?

Our team recognizes the necessity and critical nature of CS education for our students now and in the future. We will work with administration and board members to secure budgeted funds to be allocated towards these efforts going forward. We hope to establish a flagship program (as far as small charter schools go) that will contribute to statistics and narratives to validate the efficacy of the funding provided and help to justify additional legislative support moving forward. We will also capitalize on grants from education, industry and private sources that have a vested interest in helping to maximize the CS literacy of our graduating classes. However, we fully intend to maintain a fully integrated strategic improvement plan that supports the essential CS initiatives required in the 21st century. We have established goals and action steps to move this initiative forward in important ways regardless of the funding maneuvers required.

REQUIRED: If an increase in funding is available through unclaimed grant redistribution, how will your LEA utilize additional funding toward your plan?

Up to a 50% increase: If allowed, we will use funding to add an additional part time teacher and CS/Robotic materials and curricula to our makerspaces. We have also envisioned adding a part time CS curriculum and implementation coach. We would love to help fund student CS projects, after school clubs, and field trips that further the understanding and development of CS principles.

Above a 50% increase: If allowed, we will use funding to add additional part time teachers specifically qualified in highly specialized CS fields or one additional full time teacher. We would add additional CS/Robotic materials to our makerspaces. We could add a part time CS curriculum and implementation coach. We would facilitate the ability of advanced students to mentor younger students or to teach after school clubs. Once our program is well established, we would include afterschool and summer CS programming including the professional development of extended day and extended year staff. We would continue to help fund student projects and field trips that further the understanding and development of CS

principles. We would seek out additional industry partnerships to support student internships and mentorships.

Proposed Budget

Description	Year 1 (FY2021)	Year 2 (FY2022)	Year 3 (FY2023)	Year 4 (FY2024)
A.(100) Salaries	$122,600	$128,730	$133,879	$139,234
B (200) Employee Benefits	$36,780	$38,619	$40173	$41,770
C. (300) Purchased Professional & Technical Services	$15,500	$15,500	$15,500	$15,500
D. (400) Purchased Property				
E. (500) Other Purchased Services	$10,000	$10,000	$10,000	$10,000
F. (580) Travel				
G.(600) Supplies/Materials	$42,000	$33,000	$33,000	$33,000
H. (800) Other (Exclude Audit Costs)	$1,000	$1,000	$1,000	$1,000
I. TOTAL DIRECT COSTS (Lines A through H)	**$227,880**	**$226,849**	**$233,552**	**$240,504**
J. (800) Other (Audit Costs)				
~~K. Indirect Cost~~				
L. Property (includes equipment)	$24,000	$20,000	$20,000	$20,000
M. TOTAL (Lines I through L)	**$236,500**	**$229,500**	**$235,500**	**$241,700**

STATEMENT OF ASSURANCES

Should an award of funds from the K-12 Computer Science Grant Program be made to the applicant in support of the activities proposed in this application, the authorized signature on this page of the application certifies to the USBE that the authorized official will:

1. Upon request, provide the Utah State Board of Education with access to records and other sources of information that may be necessary to determine compliance with appropriate federal and state laws and regulations.

2. Conduct educational activities funded by this project in compliance with the following federal laws:

   a. Title VI of the Civil Rights Act of 1964

   b. Title IX of the Education Amendments of 1972

   c. Section 504 of the Rehabilitation Act of 1973

   d. Age Discrimination Act of 1975

   e. Americans with Disabilities Act of 1990

   f. Improving America's Schools Act of 1994

3. Use grant funds to supplement and not supplant existing funds from all sources.

4. Take into account, during the development of programming, the need for greater access to and participation in the targeted disciplines by students from historically underrepresented and underserved groups.

5. Submit, in accordance with stated guidelines and deadlines, all K-12 Computer Science Grant Program and evaluation reports required by the Utah State Board of Education.

6. The applicant will retain records of the K-12 Computer Science Grant Program for five years and will allow access to those records for purposes of review and audit.

7. Execute all actions defined under the LEA Statement of Assurances outlined below.

	Lois Bobo	Executive Director, CS grant lead writer	06/30/21

(Digital Signatures encouraged, as final submission of plan needs to be a Google Document.)