CodeHS

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Exhibit 1 - Transmittal Letter

March 1, 2021

Iowa Department of Administrative Services
Hoover State Office Building, 3rd Floor
Des Moines, Iowa 50319

CodeHS is pleased to respond to RFP1421282045 Computer Science Curriculum for the Iowa Department of Administrative Services. CodeHS fills the Agency's request because we provide a comprehensive solution for computer science education including a full software platform, computer science professional development, teacher tools and resources, and computer science curriculum for hundreds of thousands of students.

CodeHS understands and acknowledges the information provided by the Agency and is willing and able to accommodate the requirements relevant to this RFP, which will be demonstrated throughout this submission.

CodeHS is the most scalable way to offer high-quality computer science programs. We provide a complete platform including an online coding environment, student introductory level and AP curriculum that map to Iowa CS standards, lesson plans, progress tracking, grading, and PD.

There are currently over 27,000 monthly active classrooms on CodeHS and over 2 million students have learned to code using our platform. Classrooms all over the world are using CodeHS because of our professional development, clean and simple to use cloud interface, proven methodology to teach programming, and the ability to track and report on all aspects of the computer science program. CodeHS is already used throughout Iowa, with over 50 schools in the state currently using CodeHS to teach computer science. We believe that CodeHS is the best option for the Agency's computer science initiatives.

If you have any questions, please contact me. As Director of Sales, I attest to the accuracy of the information included in this submission and will serve as the principal contact for this proposal.

Sincerely,

Meg Davis

Meg Davis, Director of Sales
CodeHS
747 N. La Salle Dr. Ste 500
Chicago, IL 60654
E: hello@codehs.com | Ph: 415-889-3376 | Fax: N/A

Exhibit 2 - Executive Summary

CodeHS is a web-based platform that provides everything a school or district needs to implement computer science. This proposal details our experience and qualifications, as well as an overview of our platform. CodeHS is currently used by schools in Iowa to teach computer science.

CodeHS offers multiple plans depending on how the platform is being used. Our curriculum and some basic platform features are available for free, and we also have many paid features available for individual school or district purchases. Additionally, we offer student certifications and teacher professional development training.

Overview of Services

Below is a list of the services CodeHS offers, which will be addressed throughout this submission.

Curriculum and Basic CodeHS Platform
This is our Free Plan, which provides access to all of the courses in our course catalog. On the free plan, teachers can enroll students, view and grade student code, and share feedback with students. Teachers can also create their own content and assign it to students on the Free Plan.

CodeHS Pro Plan
This refers to the paid platform features on CodeHS. There are many different license types available for the Pro plan depending on usage, all of which are detailed in our Cost Proposal. The Pro Plan features are described in the "Goods and Services" section of this proposal, and an overview is also available on our website at https://codehs.com/pro.

Free Plan vs. Pro Plan
You can find a detailed breakdown of platform features available on the Free and Pro plans on our website at https://codehs.com/info/plans_detail.

Professional Development
CodeHS offers multiple types of professional development, including asynchronous online courses as well as synchronous PD workshops led by our PD team. Due to the Covid-19 pandemic, PD workshops are currently being conducted virtually. When CodeHS and the Agency mutually agree it is safe to do so, CodeHS will also offer in-person PD workshops. Depending on the purchase, professional development opportunities may be free or paid.

Certifications
CodeHS also offers student certifications. These certifications are given by CodeHS when students pass a Certification Exam. Currently, there are five Certifications available: JavaScript, Python, Java, Web Design, and Cybersecurity. To take a certification exam, students must

redeem a certification exam voucher, which must be purchased by the school or district. Pricing details are included in our Cost Proposal.

Compliance

Respondent has read and understands the terms and conditions of this RFP, including the Contract provisions in Section 6.

All services proposed in this submission are services that the CodeHS team has experience delivering to schools and districts across the country.

If awarded a contract with the Agency, CodeHS will comply with the specifications of this RFP and with the terms and conditions of the contract. Our team has experience executing contracts with schools, districts, and state organizations and is able to ensure compliance to contract terms after a contract has been fully executed by both parties. Our sales, customer success, engineering, and operations departments will work together as needed to ensure compliance to all parts of any contract with the Agency.

Exhibit 3 - Firm Proposal Terms

As stated above, all services proposed in this submission are services that the CodeHS team has experience delivering to schools and districts across the country. The curriculum, platform features, training options, and any other services described in this proposal are currently available for purchase. Specific offerings are currently available for free, as detailed in this proposal. Any licenses or items that must be purchased will continue to be available at the price points listed in the attached Cost Proposal. All terms of this proposal, including price, will remain firm for at least 120 days following the submission deadline of this RFP.

Exhibit 4 - Respondent Background Information

Does your state have a preference for instate Contractors? Yes or No. If yes, please include the details of the preference.

No

Name, address, telephone number, fax number and e-mail address of the Respondent including all d/b/a's or assumed names or other operating names of the Respondent and any local addresses and phone numbers.

Name:
CodeHS

Address:
Jeremy Keeshin ℅ CodeHS
747 N La Salle Dr. Ste 500
Chicago, IL 60654

Phone:
415-889-3376

Fax:
N/A

Email:
hello@codehs.com

Business name & Legal name:
CodeHS
CodeHS, Inc.

Form of business entity, e.g., corporation, partnership, proprietorship, or LLC.

C-corporation

Copy of W-9

Form W-9
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

**Request for Taxpayer
Identification Number and Certification**

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

CodeHS, Inc.

2 Business name/disregarded entity name, if different from above

CodeHS

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☑ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

42A Dore St

6 City, state, and ZIP code

San Francisco, CA 94103

Requester's name and address (optional)

7 List account number(s) here (optional)

Print or type.
See Specific Instructions on page 3.

Part I — Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

☐☐☐ – ☐☐ – ☐☐☐☐

or

Employer identification number

4 5 – 5 3 4 1 3 6 2

Part II — Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and

2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and

3. I am a U.S. citizen or other U.S. person (defined below); and

4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here

Signature of U.S. person ▶

Date ▶ 2/11/2021

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

• Form 1099-INT (interest earned or paid)

• Form 1099-DIV (dividends, including those from stocks or mutual funds)

• Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)

• Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)

• Form 1099-S (proceeds from real estate transactions)

• Form 1099-K (merchant card and third party network transactions)

• Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)

• Form 1099-C (canceled debt)

• Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

Cat. No. 10231X

Form **W-9** (Rev. 10-2018)

State of incorporation, state of formation, or state of organization.

CodeHS was incorporated in Delaware on May 10, 2012.

The location(s) including address and telephone numbers of the offices and other facilities that relate to the Respondent's performance under the terms of this RFP.

CodeHS
747 N La Salle Dr. Ste 500
Chicago, IL 60654

Number of employees.

45

Type of business.

CodeHS is a software company. We sell a web-based platform to help schools and districts teach computer science. We offer curriculum, a suite of teacher tools and resources, and professional development.

Name, address and telephone number of the Respondent's representative to contact regarding all contractual and technical matters concerning the Proposal.

Meg Davis
747 N La Salle Dr. Ste 500
Chicago, IL 60654
415-570-9434
hello@codehscom

Please note that contact by email or telephone is preferred for any contract matters.

Name, contact information and qualifications of any subcontractors who will be involved with this project the Respondent proposes to use and the nature of the goods and/or services the subcontractor would perform.

CodeHS will not be using subcontractors in connection with this project.

Respondent's accounting firm.

SFBay Financial

Awarded Respondent will be required to register to do business in Iowa before payments can be made.

CodeHS has registered with VSS. Our Vendor Number is VS000007099.

Exhibit 5 - Experience

The Respondent must provide the following information regarding its experience:
- *Number of years in business.*
- *Number of years of experience with providing the types of services sought by the RFP.*
- *The level of technical experience in providing the types of services sought by the RFP.*

Company Overview

CodeHS was founded in May of 2012 to make teaching computer science in K12 schools easier and more accessible. We believe that in the 21st century, coding is a foundational skill, just like reading and writing. That's why we say: Read, Write, Code. We do this by providing great curriculum, tools, and resources to teachers, students, and schools to implement high quality computer science programs. We believe that everyone should get the chance to learn to code, and that it's a skill that provides limitless creative opportunity to students. We want to help make computer science education fun and accessible, and believe you need both great tools as well as a great community to make this happen.

Since being founded almost 9 years ago, CodeHS has been successfully implemented in many different settings, from after-school clubs to district-wide multi-year pathways for thousands of students. To date, millions of students have learned to code using CodeHS. CodeHS is also used by teachers of all experience levels because we provide standards-aligned curriculum with lesson plans, while enabling teachers to customize their courses and adapt lessons based on their preferences or teaching style.

Our team has previous experience creating state-specific curriculum and PD workshops. Additionally, through our Certified Educator and Teacher Trainer programs, our team has experience partnering with current CS teachers to better understand their unique needs based on their state and local community.

Throughout the summer of 2020, CodeHS trained over 1,500 computer science teachers across the country. There are currently over 27,000 monthly active classrooms on our platform and millions of students who have learned to code through CodeHS. Our team has the capacity and experience necessary to support Iowa teachers in partnership with the Agency.

CodeHS Team - Departments

CodeHS has a team dedicated to providing the most comprehensive computer science resources for schools to offer computer science education. Our team consists of several departments that work together to ensure CodeHS users are having the best experience imaginable. The team that will deliver computer science curriculum and professional development to teachers and students in Iowa will consist of our curriculum, customer success,

customer support, professional development, and engineering teams.

Curriculum Team: Our curriculum engineers are responsible for student curriculums. They work to make sure our curriculum is up to date with current technologies and languages, as well as mapping to current standards offered. The curriculum engineers also work with the College Board, for AP level courses, to ensure our courses are aligned to College Board standards and provide the rigor set by them.

Director of Sales: Our Director of Sales is responsible for all items relating to Iowa's RFP, and any requirements during the award period. The Director of Sales will act as the main contact at CodeHS and provide any information and answers needed.

Customer Success Team: Our customer success managers are responsible for ensuring a successful implementation and rollout of computer science curriculum after award. The customer success management team consists of former teachers who can work one-on-one with teachers and administrators to help answer questions and strategize. They will work with schools in Iowa and provide relevant reports and data to help track and determine the success of the initiative. They can be reached via phone, email, chat to help with the needs of teachers.

Customer Support: CodeHS has a full support team that is available through the chat system on CodeHS. If teachers are struggling, they send a link to a program to our support team and we can help them debug a program on which they are stuck. Because the chat icon is available within the platform, teachers are able to send these types of questions during class and get a quick response from our team. This kind of support is something that is unique to CodeHS.

Engineering: Our engineers are responsible for the stability of the platform. They work to correct any potential bugs in the codebase and ensure that servers are running and balanced to provide access to the Iowa's teachers and students.

Professional Development: Our professional development team is responsible for leading sessions built to empower teachers, new or experienced, with the skills, pedagogical knowledge, and confidence to start teaching computer science. They also provide feedback for our self paced professional development courses.

These departments will work together to support school customers. Each department has experience working cohesively to support implementations across multiple schools within a district and ensure the planning and clear communication needed to coordinate computer science program rollouts across several different campuses at the same time.

The following CodeHS organization chart shows all of the team members who will be working with Iowa schools:

CEO & Co-founder

Jeremy Keeshin

6

CTO & Co-Founder

Zach Calant

1

Vice President of Customer Success

Erin Grady

1

Customer Experience Specialist

Claudia Cravens

Director of Professional Development

Lea Sloan

Director of Sales

Meg Davis

1

Director of Curriculum

Evelyn Hunter

Software Engineer

Emily Kuo

Customer Success Manager

Michael Vizzi

Account Executive

Brandon Watson

Goods and Services

A list of all goods and/or services similar to those sought by this RFP that the Respondent has provided to other businesses or governmental entities.

Free Features

Curriculum

CodeHS offers a pathway of courses for grades 6-12 in Iowa, which can be found in the table below. Here is a link which provides more information: https://codehs.com/info/states/iowa

CodeHS Iowa 6-12 Computer Science Curriculum Pathway

Here are the CodeHS courses that align with Iowa middle school and high school computer science state standards for grades 6-12.

6th	7th	8th	9th	10th	11th	12th
Iowa Tech Apps and Coding						
			Iowa Course 3A			
				AP Computer Science Principles		
					Iowa Course 3B	
					AP Computer Science A (Nitro)	

Pre-Built Assessments

All of the CodeHS courses are designed with assessments built directly into the course. Every single lesson within every course has pre-built assessments to evaluate student comprehension of the concepts covered. Each course has multiple types of assessments, including pre-tests and

post-tests, multiple-choice exams, and project-based assessments that can be open-ended or provide direct instruction. Our curriculum team creates these assessments and maps them to many state and national standards, including the CSTA 6-12 Computer Science Standards

Outside of the course, there are additional pre-built assessments available for teachers to select from and assign to their students. This includes offline assessments and supplemental curriculum modules developed by our curriculum team, as well as an online repository of quiz questions and projects contributed by our teacher community.
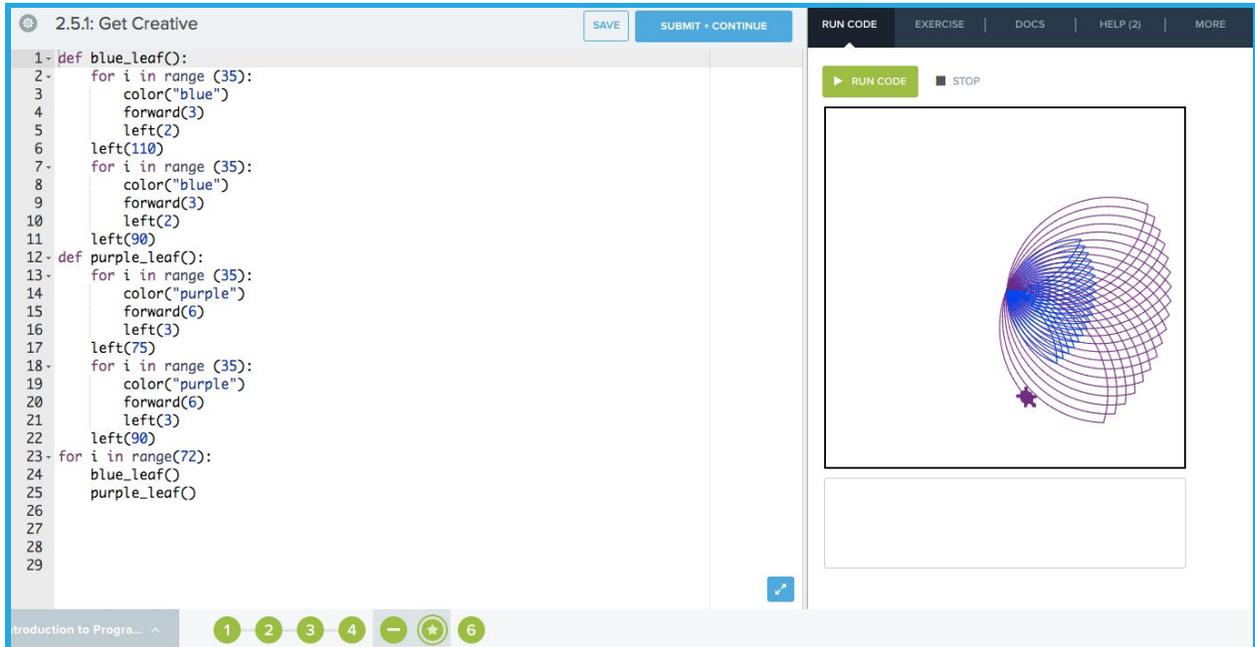
Block Coding AND Script Coding Options for Student Progression

The table above displaying our 6-12 Computer Science Pathway denotes which courses include block coding options. Middle school courses (grades 6-8) allow students to choose between block and text coding throughout the full course. Most high school courses (grades 9-12) with blocks allow students to use blocks initially and then progress into text coding only.

When blocks are available, students can easily toggle between block and text coding to ease the progression from using blocks to text.
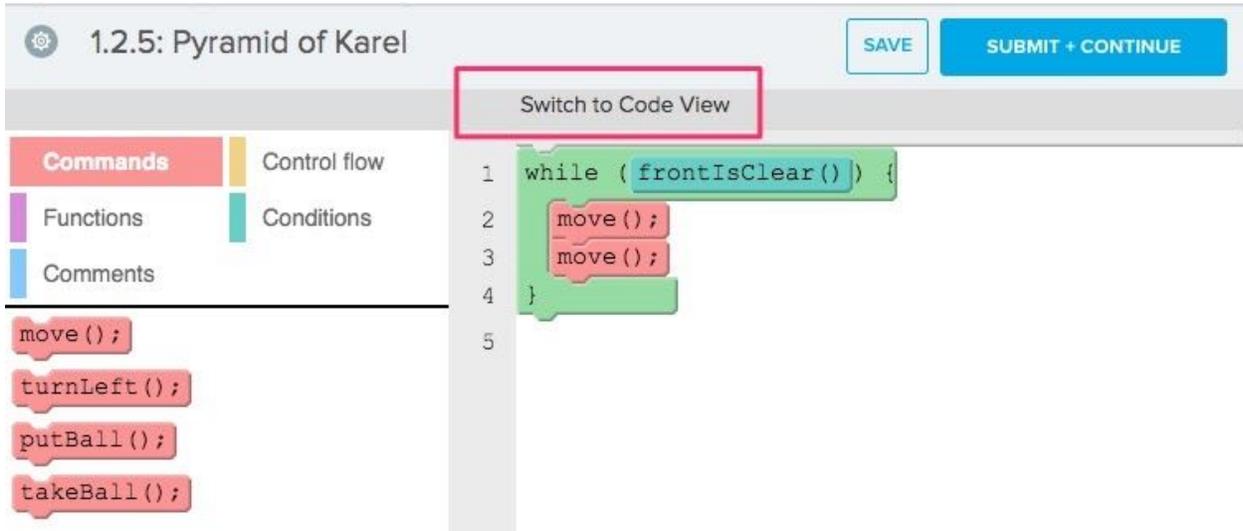
Customizable Instruction

Using the Create tool, teachers can create online learning modules made up of their own quizzes, sample and exercise problems, and open-ended projects in a variety of different programming languages. Once teachers create the content, it's easy to assign it to students and utilize all of the other teacher tools to track progress, view student work, and provide feedback.
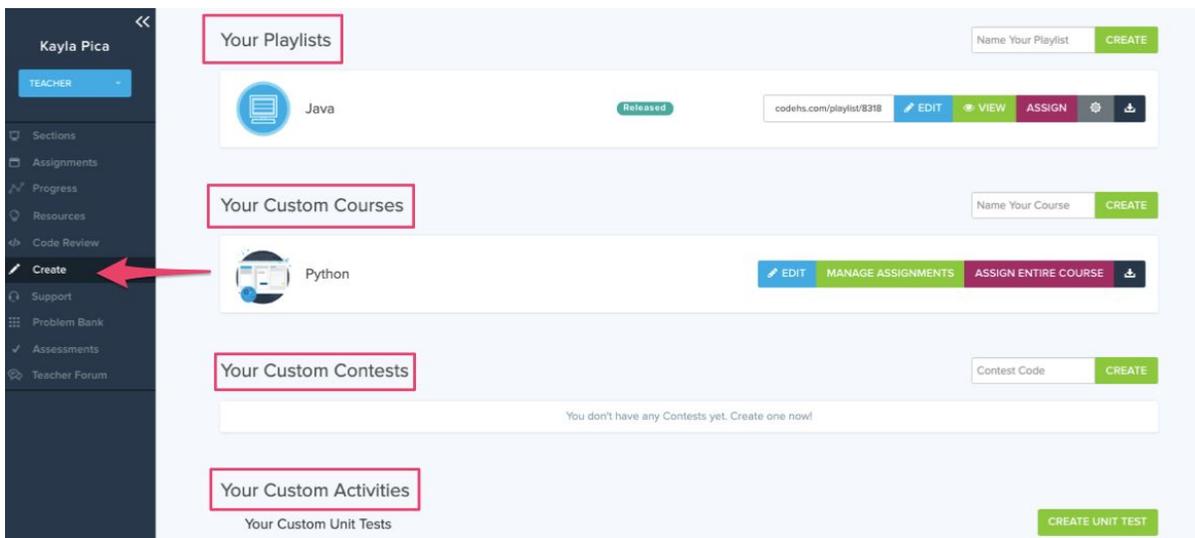
Teachers can remove or tweak course activities and assignments

Teachers also have full scope over modifying, removing, and moving content within their courses. Teachers can easily remove or reorder assignments as needed. Teachers can also add content that they have created, as mentioned above, or teachers can add content from a different CodeHS course or assignments that have been written by our teacher community and

contributed to our Problem Bank. More information on these capabilities is enclosed in this proposal within the Assessment Capabilities and Grading sections.
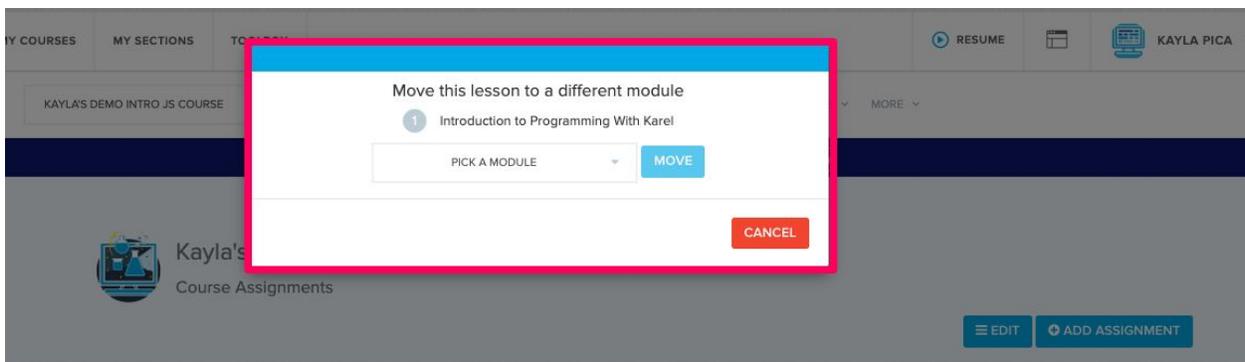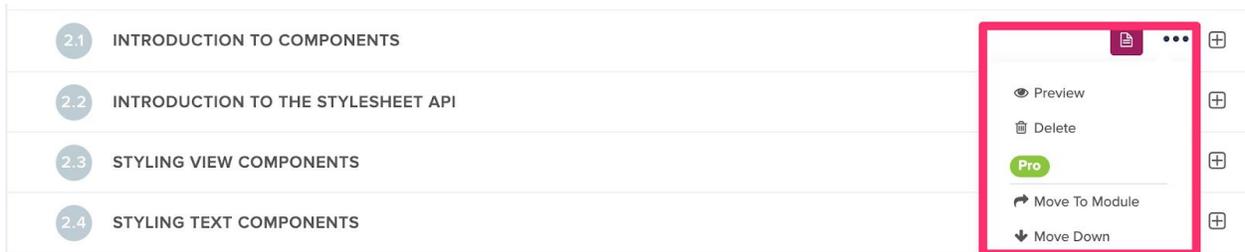
Student Help Portal--Students Can Request Help From Teacher After Classroom Hours and Can Post Code They Are Struggling With

Students can easily request help from their teacher outside of class through CodeHS. Directly within the code editor for every assignment, students can pull up the "Conversation" tab and ask for help. The conversation thread is located right next to the student's code, so both the student and teacher are able to view and run the code related to the student's question.

Auto Grading Availability

Within any coding exercise, students receive instant feedback from autograders, and have the opportunity to make adjustments to their programs until they have passed any autograder checks. CodeHS encourages teachers to implement mastery-based learning to ensure that students have an adequate understanding of prerequisite concepts before moving to advanced materials.

Paid Features

Aside from our free curriculum offerings, we also offer a Pro Plan, which gives teachers additional tools and resources to manage their class. A description of some of these features is below. You can also read about these features on our website at: https://codehs.com/pro.

Ability for Teacher to Lock and Unlock Units to Control Access

The Access Controls page lets you set Visibility at the module, lesson, or item (assignment) level. Everything in a course defaults to being Available. If you want to lock a module, you can simply click the dropdown for that module and choose "Locked." Using this setting, teachers are also able to Schedule access to be available at specific dates and times, and then schedule when access should be locked again. Whenever an assignment or module is locked, students will be directed to a page letting them know that the item is locked.

Ability to Track Students' Progress

Teachers are able to view dashboards and monitor student progress and performance. When viewing student progress, teachers are able to view the status of each assignment for every student (not started, submitted, graded, re-submitted). Teachers are able to click through to a specific assignment if they wish to view the student's submission.

Our customizable gradebook allows teachers to add and remove assignments from the gradebook, customize points awarded and total possible points for every assignment, and export all of this data to an Excel or CSV file.

Complete Lesson Plans

CodeHS provides complete lesson plans for every lesson, which include several resources such as solution references, glossaries, teacher-facing problem (assignment) guides, lesson modifications for differentiation, discussion questions, and more.

See examples below of each resource for reference:

Objectives

Every Lesson Plan includes the lessons objectives:

Online Textbook for Reference

The CodeHS Lesson Plan links to the corresponding lesson in our online textbook.

Introduction to Computer Science

Introduction

1. Programming with Karel

  1.1. Introduction to Programming wi...

  1.2. More Basic Karel

  1.3. Karel Can't Turn Right

  1.4. Functions in Karel

  1.5. The Start Function

  1.6. Top Down Design and Decomp...

  1.7. Commenting Your Code

  1.8. SuperKarel

  1.9. For Loops

  1.10. If Statements

  1.11. If/Else Statements

  1.12. While Loops in Karel

Variables

Now that we've written our first program, let's look how we can further expand our programs by using variables.

What Are Variables?

Variables in JavaScript are like little boxes where you can store values that you need later. Every variable has a name and a value.

For example, suppose you are going to the hardware store to buy nails because you are building a bookshelf. However, since you are going to the store at the end of the day, you decide to write down how many nails you need from the store. Your piece of paper might look like

```
Number of Nails I Need
53
```

Discussion (Focus) Questions

Ever Lesson Plan includes discussion questions to use during class:

Discussion Questions

Beginning of Class:

- What are some mathematical formulas that you know that use variables in them?
  - $y = mx + b$
- What is a variable in mathematical terms, and what is its purpose?
  - *Variables are used to represent a numerical value or formula. We use them as placeholders so that when the actual values that are being input are known, we can easily place them in the correct location in a particular formula. They are also useful to help organize information and store data.*

End of Class:

- What are the different variable types that can be used in Javascript?
  - *Booleans, ints, doubles, Strings*
- How would you create a variable named `myDog` and give it the value "Karel"?
  - `var myDog = "Karel";`
- How would you print out the value stored inside of a variable named `numApples`?
  - `println(numApples);`
- Why might variables be useful in our programs?
  - *Variables are useful because they allow us to store data, and change the results of a program depending on the input that is provided. This way we can create formulas that are executed rather than have to write new programs every time we want to change the numbers that are involved.*

Video-Based Instruction When Needed (for absent students or students who need to listen to a lecture more than once)

Video-based instruction is available for every lesson. Videos are available through multiple sites, including directly through the CodeHS site.
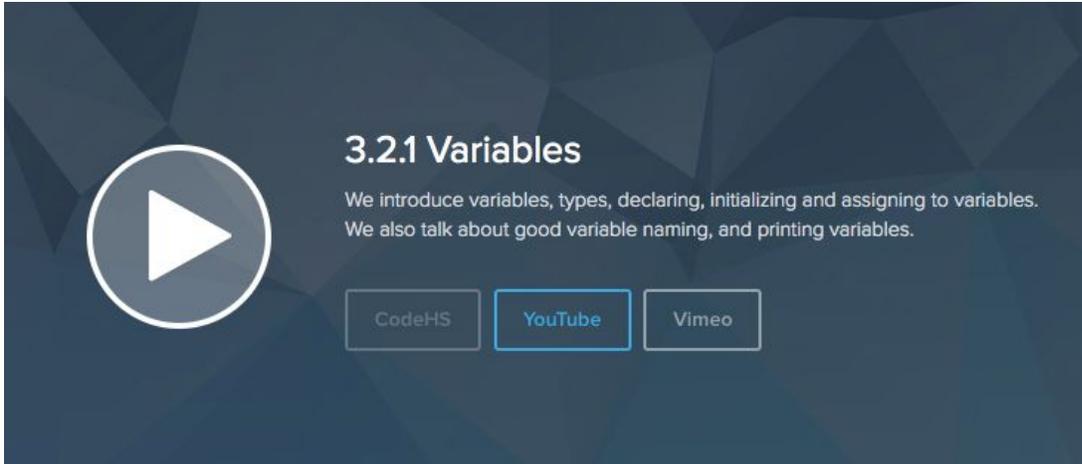
Instructional Slides for Presentations/Lectures

The slide deck for every lesson is accessible on the Lesson Plan:
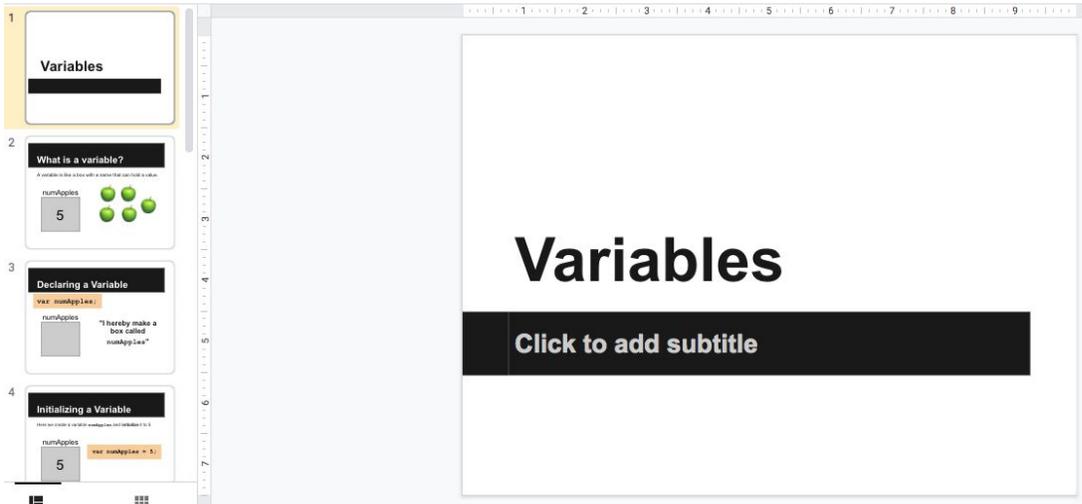
Learning Activities

Every Lesson Plan suggestions learning activities:

Teaching and Learning Strategies

Lesson Opener:

- Write a simple mathematical equation on the board that uses variables. Ask students what information they need to know in order to solve a mathematical equation, then ask them why mathematics includes variable values. [5 mins]
    - Consider using the beginning of class discussion questions to aid in this conversation.

Activities:

- Watch Variables video as a class and complete the corresponding quiz. [5 - 6 mins]
    - After the video, ask students to share with a partner how variables might be used in computer programs. Push students to think about how Facebook or mobile apps use variables.
- Have students explore *Basic Variables*. [3 mins]
    - Point out to students that the variable `numApples` changes value during the example. This shows how variables can be manipulated and changed after they are given an initial value.
- Complete *Daily Activities*. [5-7 mins]
    - Students may struggle with concatenating the String values that they will create in this exercise. Have students write out the full sentence that they want to write on paper, then remove the words that are represented by variables. The rest of the words should be written in String values in the `println` statement.

Lesson Closer:

- Have students complete the end of class discussion questions. [5- 7 mins]

Coding Solutions

Assignment code solutions are available in every Lesson Plan. Along with the solution, teachers can find common questions students have about each exercise and how to answer them.

Solution

```
function start(){
    var partOfDay = 'morning';
    var time = 8;
    println("In the " + partOfDay + " I wake up at " + time);

    partOfDay = 'afternoon';
    time = 12;
    println("In the " + partOfDay + " I eat lunch at " + time);

    partOfDay = 'evening';
    time = 10;
    println("In the " + partOfDay + " I go to sleep at " + time);
}
```

Common Questions

Question	Answer
Be sure to use a plus sign '+' when printing different items in a single println line (also called "concatenation").	To print some text and then a variable, the student should write something like: println("Here is the text " + variableName). The plus sign can be used to combine different items into one printed line.
The variables holding the part of day and the time values should change throughout the program.	This helps demonstrate that the value of variables do not affect one another when changed.

Handouts

Lesson Plans include both student and teacher (with answer key) facing handouts.

Modification: Advanced

- Create a Karel program using an if/else statement in the Sandbox.

Modification: Special Education

- Allow students to use the Function Flowchart to track how the functions are called in the example exercises
- For Right Side Up, exercise, provide a partial solution by showing students the condition that will be used and allow students to write the commands that will follow.

Modification: English Language Learners

- Print out video slides and have students use dictionary to translate unknown vocabulary
- Pair programming with another student

CodeHS

To If, or Not to If

Corresponding Material
Programming with Karel, Lesson 11: If/Else Statements

Discussion
Understanding the difference between if and if/else can be a little difficult at first. Using 'if' only causes a change in program if a certain condition is true -- if it's not true, the program flow continues uninterrupted. If/else, however, forces your program to choose between paths.
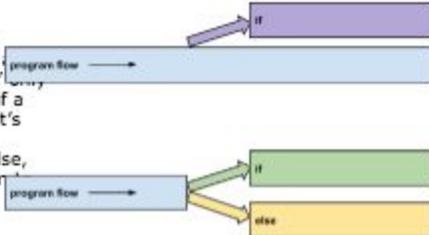
Class Exercise
It may seem that there is not a significant difference between if and if/else, but there some significant (and unintended) consequences if you use the wrong conditional. Fo say you're trying to decide whether to eat or sleep:

```
if I am hungry           if I am hungry
    eat food                 eat food
if I am sleepy           else
    take a nap               take a nap
```

The code on the left may seem reasonable... but what if you're both hungry and slee end up taking a nap and eating! The code on the right does what we need it to do.

Circle the correct conditional for Karel in each situation below:

1	If there is a ball present, Karel should it. If there is no ball present, Karel sh turn around.	if if, if if/else
2	If there is a ball present, Karel should it. If the front is clear, Karel should m forward.	if if, if if/else
3	If there is a ball, Karel should take it. Karel should move forward.	if if, if if/else
4	If the front is clear, Karel should mov Otherwise, Karel should turn around.	if if, if if/else

Teaching Strategies

(also pictured above with Learning Activities)
Every Lesson Plan suggests teaching strategies for the lesson.

Teaching and Learning Strategies

Lesson Opener:

- Write a simple mathematical equation on the board that uses variables. Ask students what information they need to know in order to solve a mathematical equation, then ask them why mathematics includes variable values. [5 mins]
  - Consider using the beginning of class discussion questions to aid in this conversation.

Activities:

- Watch Variables video as a class and complete the corresponding quiz. [5 - 6 mins]
  - After the video, ask students to share with a partner how variables might be used in computer programs. Push students to think about how Facebook or mobile apps use variables.
- Have students explore *Basic Variables*. [3 mins]
  - Point out to students that the variable `numApples` changes value during the example. This shows how variables can be manipulated and changed after they are given an initial value.
- Complete *Daily Activities*. [5-7 mins]
  - Students may struggle with concatenating the String values that they will create in this exercise. Have students write out the full sentence that they want to write on paper, then remove the words that are represented by variables. The rest of the words should be written in String values in the `println` statement.

Lesson Closer:

- Have students complete the end of class discussion questions. [5- 7 mins]

Modification Ideas

Every Lesson Plan suggests modification strategies for remediation, accelerated learning, or ELL students.

Open-Ended Projects to Inspire Students to Create and Apply Progressive Knowledge

Lesson Plans include guidance on the open-ended projects within the CodeHS curriculum:

Exercise 11.1.3: Breakout `10 points`

Program Result

▶ RUN DEMO   ■ STOP
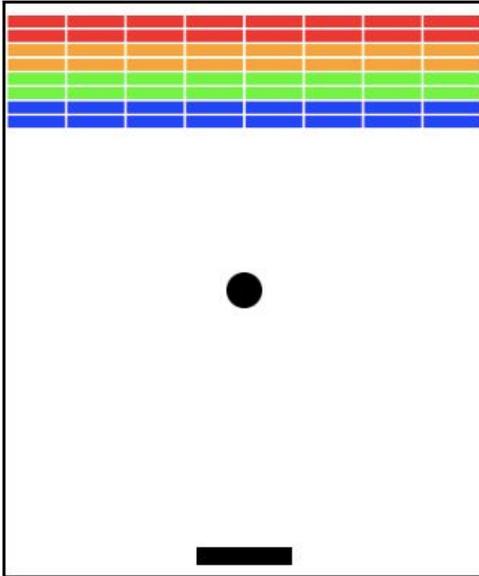
Overview

(You can find your previous code here!)

The last part of the game is to get collisions working. You should remove bricks when the balls collide with them. This is VERY similar to bouncing the ball.

You just need to use the `getElementAt(x, y)` function to see if there is an element where the ball is. If the element is not null, then you can remove it with the remove function.

You also need the ball to bounce up if it collides with the paddle.

You want to check the four corners around the ball to see if there is an element there.

Last, there are just some miscellaneous things you can do:

- Pause the ball when it gets reset until you click. Kind of like the *Pause Ball* exercise.
- Stop the game after the ball falls to the bottom 3 times.
- Stop the game when all the bricks are removed.
- Display messages on the screen when you win or lose.

Then, you can just go crazy with extensions like these, if you're feeling up to it.

- Display a score
- Add powerups

Assessment Reports

Students are assessed within the CodeHS courses based on video quizzes, coding exercises, free-response questions, and end-of-unit quizzes. Teachers can give formative feedback directly in the code editor for students to see, and teachers can help students debug code and give final grades on coding exercises.

Teachers can use the many progress tracking tools available on Pro to track exactly where students are in a given course and can run a self-paced or more traditional class to assess their students. The CodeHS assessment tools and reports give teachers access to exactly the data teachers need to determine what curricular areas students need more support with. The CodeHS customizable Gradebook makes it easy to turn student progress and performance on CodeHS into a grade and to export that data to any external system.

Screenshots detailing report functionality have been included throughout this proposal. CodeHS dashboards are exportable to an Excel or CSV file. Upon request, CodeHS can create CSV reports in alternate formats specified by the school or district.

Grading

Built-in Gradebook Included

The CodeHS platform includes a powerful customizable gradebook. Our customizable gradebook allows teachers to add and remove assignments from the gradebook, customize points awarded and total possible points for every assignment, and export all of this data to an Excel or CSV file.

There are several settings teachers can customize within their gradebook so that their gradebook displays the exact assignments in the exact way that each individual teacher desires. Specific assignments can be removed individually, or in bulk based on the assignment type--for example, a teacher can choose whether or not to include all video assignments in the gradebook. Additionally, teachers can choose what is actually displayed in the gradebook and whether or not students have access to their grade report.

Includes Teacher Ability to Add Their Own Assignments

Teachers can easily add their own assignments to CodeHS and incorporate them into the CodeHS course they are teaching. Teachers can create assignments of any type--such as uploading supplemental videos to watch, creating quizzes, creating exercises and open-ended projects, or providing resources for students to review.
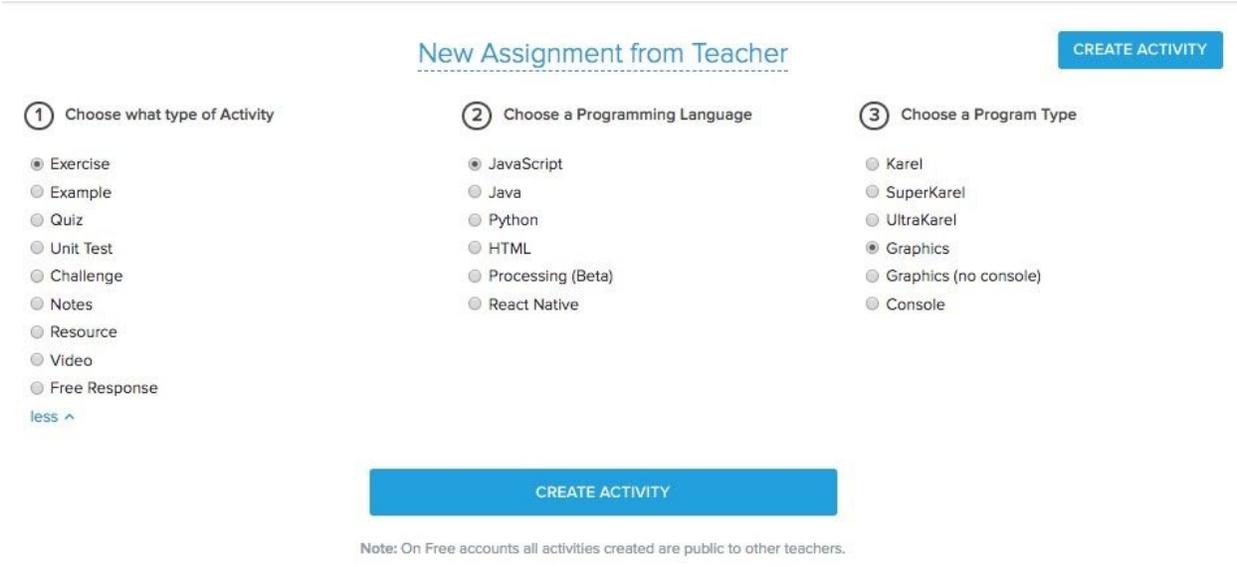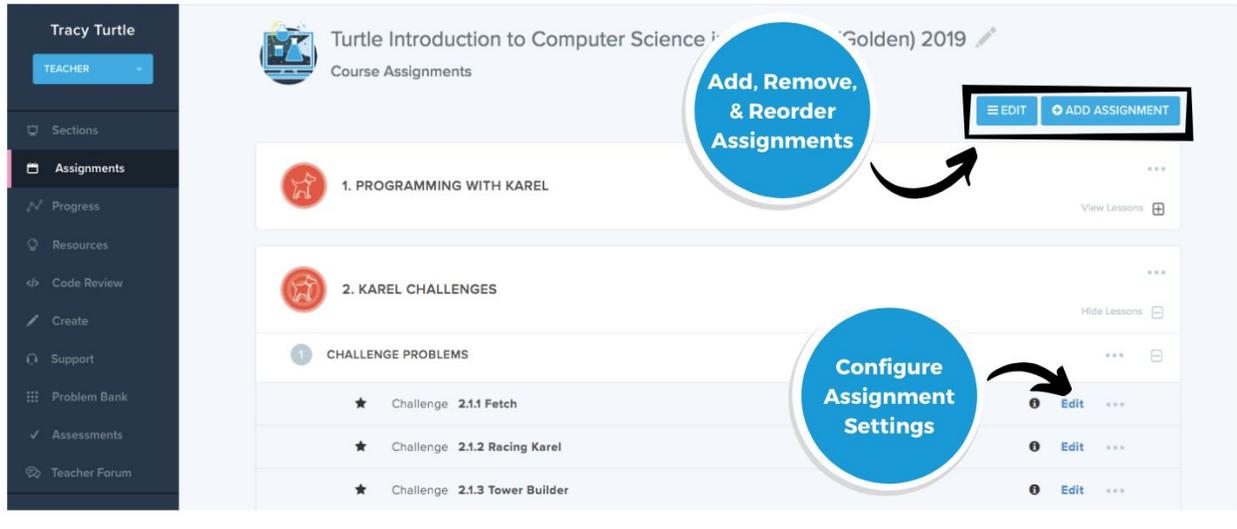
Allows Editing Point Values For Assignments

Teachers can easily edit the assigned point values for assignments. This can be done from the assignment's settings page, or directly in the customizable gradebook.

Can Set Custom Due Dates

Teachers are able to set due dates for any assignment. Due dates can be customized by assignment, class, and even student. Teachers can set the same due date for the entire class or can update a due date for specific students if needed to allow for extensions due to absences or any other circumstances.

Additionally, teachers can decide which exercises they wish to grade manually in addition to the autograders that will always be in place. This allows teachers to customize settings so that some exercises are *only* auto-graded and will not appear in the teacher's grading queue at all. Assignments teachers set to be auto-graded will automatically give credit to students that pass the auto graders.

CodeHS also has many Professional Development opportunities. These include free virtual workshops which are held throughout the year, self paced professional development courses, which you can find here: https://codehs.com/info/pd/online. Schools and districts also have the opportunity to purchase private professional development workshops for their staff, cost of which

will vary depending on number of attendees and length of session.

Letters of Reference

Letters of reference from three (3) previous or current customers or clients knowledgeable of the Respondent's performance in providing goods and/or services similar to the goods and/or services described in this RFP and a contact person and telephone number for each reference.

Reference letters can be found on the following pages.

Blue Valley Schools

To the Iowa Department of Education:

I would like to lend Blue Valley's support to the response and proposal you are receiving from CodeHS for "Computer Science Curriculum."

The Blue Valley School district serves more than twenty thousand students and is home to five high schools. For the past 3 years, we have partnered with CodeHS to address growing community and industry demands for computer science education.

CodeHS takes a comprehensive approach to computer science by providing great curriculum, tools, and resources to teachers, students, and schools to implement high quality computer science programs. Blue Valley has aimed to make computer science education fun and accessible across a wide course offering, including AP classes, Intro to Programming, Web Design and Game Design, and I believe CodeHS has been an integral part of making this happen.

CodeHS has continuously evolved their product to help our teachers deliver in the classroom. We've recently taken another step to integrate CodeHS with our LMS provider, which is expected to further enhance our comprehensive approach to computer science.

Blue Valley recommends you give consideration to the CodeHS proposal.

Sincerely,

Eric Owen
Blue Valley Schools
District Coordinator, CTE
ejowen@bluevalleyk12.org
913-239-4134

Education Services

15020 Metcalf Ave., P.O. Box 23901	Overland Park, Kansas	66283-0901
(913) 239-4000	www.bluevalleyk12.org	Fax (913) 239-4588

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South-Western City School District

South-Western City School District

3805 Marlane Drive
Grove City, Ohio 43123
Phone: (614) 801-300
Fax: (614) 871-2781
Web site: www.swcsd.us

Travis K. Wood
Career Education Technology Specialist
South-Western Career Academy
4750 Big Run Road South
Grove City, Ohio 43123

February 24, 2021

To the Iowa Department of Education:

I am writing on behalf of CodeHS and the tremendous curriculum and professional development
they have provided our district over the past few years. The South-Western City School District
services over twenty thousand students and is home to four high schools. With computer science
and coding becoming ever prevalent in industry, we saw a need to provide computer
programming as elective courses within our high schools. These in turn would hopefully lead
into our Mobile App Development, Cyber Security, or Software Development programs.

The CodeHS platform provided exactly what we needed in building these courses aligned with
our state standards. The professional development team provided our teachers with the tools
needed to successfully implement the curriculum and are always on call to help. Their platform
is easy to navigate for both teachers and students, and provides teachers and administrators with
detailed analytics of usage and progress. CodeHS has been especially helpful during the
pandemic by providing access for our students to quality instruction during our remote and
blended learning environments.

I believe CodeHS will continuously improve their platform to meet the needs of students in this
ever changing educational climate. I have no doubt that CodeHS will work to provide the
services needed to any institution they work with. I have no reservations in making this
recommendation.

Sincerely,

Travis K. Wood
CTE Technology Specialist

Web site: www.swcsd.us I Facebook: www.facebook.com/SWCSD I Twitter: @SWCSD

Odebolt Arthur Battle Creek Ida Grove Community School District

Matt Alexander,
Superintendent
OABCIG Community
School District
900 John Montgomery Dr.
Ida Grove IA 51445
712-364-3687
FAX: 712-364-3609
malexander@oabcig.org

Pat Miller, Principal
OABCIG High School
900 John Montgomery Dr.
Ida Grove IA 51445
712-364-3371
FAX: 712-364-4463
pmiller@oabcig.org

Alan Henderson, Principal
OABCIG Elementary-Ida
Grove
403 Barnes St.
Ida Grove IA 51445
712-364-2360
FAX: 712-364-3103
ahenderson@oabcig.org

Doug Mogensen, Principal
OABCIG Elementary-
Odebolt &
OABCIG Middle School
600 South Maple
Odebolt IA 51458
712-668-2289
FAX: 712-668-2631
dmogensen@oabcig.org

Kathy A. Leonard
Business Manager
OABCIG Community
School District
900 John Montgomery Dr.
Ida Grove IA 51445
712-364-2255
FAX: 712-364-3609
kleonard@oabcig.org

Julie Weeda
Director of Technology &
Innovation
OABCIG Community
School District
900 John Montgomery Dr.
Ida Grove IA 51445
712-364-3371
jweeda@oabcig.org

Mistaya Hoefling
K-12 Curriculum Director
OABCIG Community
School District
600 South Maple
Odebolt IA 51458
712-668-2289
mhoefling@oabcig.org

OABCIG

Odebolt Arthur Battle Creek Ida Grove Community School District

February 24, 2021

To the Iowa Department of Education,

I am writing to you to support the **CodeHS** response and proposal you are receiving for a computer science curriculum. I have been using **CodeHS** for 2 years to teach my students about programming using the programming language Python.

Using the course content in **CodeHS** has allowed me to focus on individual student needs and less on developing the course content needed to deliver the instruction. In addition, students are individually engaged in the lessons and the lessons are well developed. I have used other online courses before and the structure and sequencing of the lessons/courses don't always make sense.

I know there are even more possibilities with our **CodeHS** partnership, and having the ability to increase our offerings without requiring a new provider, is comforting. The combination of responsiveness, reliability and flexibility on the part of **CodeHS** has created a valued partnership that would be beneficial to any organization looking to build a comprehensive computer science program.

As a teacher at OABCIG Community Schools, I would recommend you strongly consider the **CodeHS** proposal.

Sincerely,

Kari Hadden

Kari Hadden
Business\Computer Teacher
OABCIG High School
900 John Montgomery Drive
Ida Grove, IA 51445
khadden@oabcig.org

Exhibit 6 - Termination, Litigation, Debarment

Has the Respondent had a contract for goods and/or services terminated for any reason? If so, provide full details regarding the termination.

A small number of schools have stopped their computer science programs which may impact their contract.

Describe any damages or penalties assessed against or dispute resolution settlements entered into by Respondent under any existing or past contracts for goods and/or services. Provide full details regarding the circumstances, including dollar amount of damages, penalties and settlement payments.

N/A - CodeHS has not had any legal disputes, and therefore no damages, penalties, or dispute resolution settlements.

Describe any order, judgment or decree of any Federal or State authority barring, suspending or otherwise limiting the right of the Respondent to engage in any business, practice or activity.

N/A - Neither CodeHS nor its officers or representatives have been debarred or suspended.

A list and summary of all litigation or threatened litigation, administrative or regulatory proceedings, or similar matters to which the Respondent or its officers have been a party.

N/A - Neither CodeHS nor its officers have been party to any litigation, threatened litigation, or administrative or regulatory proceedings.

Any irregularities discovered in any of the accounts maintained by the Respondent on behalf of others. Describe the circumstances and disposition of the irregularities. Failure to disclose these matters may result in rejection of the Proposal or termination of any subsequent Contract. The above disclosures are a continuing requirement of the Respondent. Respondent shall provide written notification to the Agency of any such matter commencing or occurring after submission of a Proposal, and with respect to the successful Respondent, following execution of the Contract.

N/A - there are no such irregularities.

Exhibit 7 - Criminal History and Background Investigation

The Respondent hereby explicitly authorizes the Agency to conduct criminal history and/or other background investigation(s) of the Respondent, its officers, directors, shareholders, partners and managerial and supervisory personnel who will be involved in the performance of the Contract.

Exhibit 8 - Acceptance of Terms & Conditions

By submitting a Proposal, Respondent acknowledges its acceptance of the terms and conditions of the RFP. CodeHS does not take exception to any provisions within the General Terms of Conditions or this RFP.

Exhibit 9 - Certification Letter

Attachment #1
Certification Letter

(Date) _3/1/21_

Kelli Sizenbach, Issuing Officer
Iowa Department of Administrative Services
Hoover State Office Building, Level 3
1305 East Walnut Street
Des Moines, IA 50319-0105

Re: RFP1421282045- PROPOSAL CERTIFICATIONS

Dear Kelli Sizenbach:

I certify that the contents of the Proposal submitted on behalf of   CodeHS   in response to **Iowa Department of Administrative Services** for RFP1421282045 for a Computer Science Curriculum are true and accurate. I also certify that Respondent has not knowingly made any false statements in its Proposal.

Certification of Independence
I certify that I am a representative of Respondent expressly authorized to make the following certifications on behalf of Respondent. By submitting a Proposal in response to the RFP, I certify on behalf of the Respondent the following:

1. The Proposal has been developed independently, without consultation, communication or agreement with any employee or consultant to the Agency or with any person serving as a member of the evaluation committee.

2. The Proposal has been developed independently, without consultation, communication or agreement with any other Respondent or parties for the purpose of restricting competition.

3. Unless otherwise required by law, the information found in the Proposal has not been and will not be knowingly disclosed, directly or indirectly prior to Agency's issuance of the Notice of Intent to Award the contract.

4. No attempt has been made or will be made by Respondent to induce any other Respondent to submit or not to submit a Proposal for the purpose of restricting competition.

5. No relationship exists or will exist during the contract period between Respondent and the Agency or any other State agency that interferes with fair competition or constitutes a conflict of interest.

Certification Regarding Debarment
I certify that, to the best of my knowledge, neither Respondent nor any of its principals: (a) are presently or have been debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by a Federal Agency or State Agency; (b) have within a five year period preceding this Proposal been convicted of, or had a civil judgment rendered against them for commission of fraud, a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction, violation of antitrust statutes; commission of embezzlement, theft, forgery, falsification or destruction of records, making false statements, or receiving stolen property; (c) are presently indicted for or criminally or civilly charged by a government entity (federal, state, or local) with the commission of any of the offenses enumerated in (b) of this certification; and (d) have not within a three year period preceding this Proposal had one or more public transactions (federal, state, or local) terminated for cause.

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This certification is a material representation of fact upon which the Agency has relied upon when this transaction was entered into. If it is later determined that Respondent knowingly rendered an erroneous certification, in addition to other remedies available, the Agency may pursue available remedies including suspension, debarment, or termination of the contract.

Certification Regarding Registration, Collection, and Remission of Sales and Use Tax
Pursuant to *Iowa Code sections 423.2(10) and 423.5(8) (2016)* a retailer in Iowa or a retailer maintaining a business in Iowa that enters into a contract with a state agency must register, collect, and remit Iowa sales tax and Iowa use tax levied under *Iowa Code chapter 423* on all sales of tangible personal property and enumerated services. The Act also requires Respondents to certify their compliance with sales tax registration, collection, and remission requirements and provides potential consequences if the certification is false or fraudulent.

By submitting a Proposal in response to the (RFP), the Respondent certifies the following: (check the applicable box)

☐ Respondent is registered with the Iowa Department of Revenue, collects, and remits Iowa sales and use taxes as required by *Iowa Code chapter 423*; or

☒ Respondent is not a "retailer" or a "retailer maintaining a place of business in this state" as those terms are defined in *Iowa Code subsections 423.1(47) and (48)(2016)*.

Respondent also acknowledges that the Agency may declare the Respondent's Proposal or resulting contract void if the above certification is false. The Respondent also understands that fraudulent certification may result in the Agency or its representative filing for damages for breach of contract in additional to other remedies available to Agency.

Sincerely,
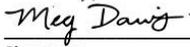
Meg Davis
_____
Signature

Meg Davis, Director of Sales
_____   ___3/1/21___
Name and Title of Authorized Representative   **Date**

Exhibit 10 - Authorization to Release Information

Attachment #2
Authorization to Release Information Letter

(Date) ___3/1/21___

Kelli Sizenbach, Issuing Officer
Iowa Department of Administrative Services
Hoover State Office Building, Level 3
1305 East Walnut Street
Des Moines, IA 50319-0105

Re: RFP1421282045 - AUTHORIZATION TO RELEASE INFORMATION

Dear Kelli:

CodeHS   hereby authorizes the **Iowa Department of Administrative Services** ("Agency") or a member of the Evaluation Committee to obtain information regarding its performance on other contracts, agreements or other business arrangements, its business reputation, and any other matter pertinent to evaluation and the selection of a successful Respondent in response to RFP1421282045.

The Respondent acknowledges that it may not agree with the information and opinions given by such person or entity in response to a reference request. The Respondent acknowledges that the information and opinions given by such person or entity may hurt its chances to receive contract awards from the State or may otherwise hurt its reputation or operations. The Respondent is willing to take that risk.

The Respondent hereby releases, acquits and forever discharges the State of Iowa, the Agency, their officers, directors, employees and agents from any and all liability whatsoever, including all claims, demands and causes of action of every nature and kind affecting the undersigned that it may have or ever claim to have relating to information, data, opinions, and references obtained by the Agency or the Evaluation Committee in the evaluation and selection of a successful Respondent in response to the RFP.

The Respondent authorizes representatives of the Agency or the Evaluation Committee to contact any and all of the persons, entities, and references which are, directly or indirectly, listed, submitted, or referenced in the Respondent's Proposal submitted in response to RFP.

The Respondent further authorizes any and all persons, and entities to provide information, data, and opinions with regard to its performance under any contract, agreement, or other business arrangement, its ability to perform, business reputation, and any other matter pertinent to the evaluation of the Respondent's Proposal. The Respondent hereby releases, acquits and forever discharges any such person or entity and their officers, directors, employees and agents from any and all liability whatsoever, including all claims, demands and causes of action of every nature and kind affecting the Respondent that it may have or ever claim to have relating to information, data, opinions, and references supplied to the Agency or the Evaluation Committee in the evaluation and selection of a successful Respondent in response to RFP.

A photocopy or facsimile of this signed Authorization is as valid as an original.

Sincerely,

Meg Davis
Signature

Meg Davis, Director of Sales   3/1/21
Name and Title of Authorized Representative   **Date**

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Exhibit 11 - Mandatory Specifications

Curriculum - Mandatory Requirements

4.1.1 Curricula must be aligned to the Iowa/CSTA Standards.
Yes.
CodeHS provides alignments that map courses to the CSTA standards adopted by the state of Iowa. The Iowa Tech Apps and Coding course is fully aligned to the CSTA 2 standards framework. To view all curricular alignment to Iowa middle school standards, view the following links:
Tech Apps and Coding Alignment: codehs.com/standards/framework/IA_2/course/10422

You can use our standards explorer tool to view curricular alignments for any course in our pathway:
codehs.com/standards/framework/IA_2.

4.1.2 Must prepare teachers to teach the provided computer science curriculum by the start of the 2021-22 school year.
Yes.
CodeHS curriculum includes everything a teacher needs to run a successful computer science course. All of our student curriculum is free and includes assessments, instructional videos, and coding examples. Teachers under the pro plan also have access to full lesson plans with offline activities, discussion questions, and recommended student interventions. Teachers don't have to worry about developing their own instructional materials with CodeHS, and can focus on the delivery and support student learning.

CodeHS also has experience training thousands of teachers to teach computer science, and the CodeHS PD program has been reviewed and approved by CSTA's quality PD opportunities board.

4.1.3 Curriculum grade level(s) must be identified.
Yes.
CodeHS identifies the appropriate grade level for all of our courses. A recommended course pathway for Iowa can be found at codehs.com/info/states/iowa.

CodeHS Iowa 6-12 Computer Science Curriculum Pathway

Here are the CodeHS courses that align with Iowa middle school and high school computer science state standards for grades 6-12.

6th	7th	8th	9th	10th	11th	12th
Iowa Tech Apps and Coding						
			Iowa Foundations of Computer Science			
				AP Computer Science Principles		
					Iowa Course 3B	
					AP Computer Science A (Nitro)	

4.1.4 Length of curriculum (unit, semester, full year) and model of delivery (traditional classroom, virtual, or blended) must be provided. After school curriculums are not considered in this round.

Yes.

CodeHS indicates the length of each course by identifying it as a unit, semester, or full year course and offering the average number of contact hours needed for completion. CodeHS does offer flexibility in our course delivery model. All courses can be taught virtually, but CodeHS also provides lesson plan materials for unplugged activities that can be delivered in a traditional classroom. Our team provides best practices for implementation of each model in our professional development program.

Iowa Tech Apps and Coding

The Tech Apps and Coding course is a first year computer science course that is fully aligned to the CSTA 2 standards that Iowa has adopted for students in grades 6-8. This course introduces the basics of programming, web design, internet safety, and how information is represented digitally and sent over the Internet. Students learn to code with Tracy the Turtle, use the design process to create a website that addresses a community issue, and explore the impacts of internet-based innovations.

View Syllabus   **Explore Course**

Overview & Highlights

Level	Contact Hours	Timeframe
Middle School	180	Year

While Tech Apps and Coding is designed as a full year course, it can be structured to fit the timeframe of any middle school. It can easily be taught as two semester-long courses or as four quarter-long courses. The syllabus provides recommendations for how to break down the course.

4.1.5 Curriculum must be designed to be offered by classroom teacher.
Yes.
CodeHS curriculum is designed to be taught by a teacher. All teacher materials are provided, including online resources, unplugged activities, and full lesson plans.

Professional Development - Mandatory Requirements

4.2.1 Must include professional development that is delivered by the Respondent around implementation of the curriculum.
Yes.
Each workshop and online PD course has sessions or content around course and content pathways, foundational content knowledge, blended instructional strategies, and planning and pacing a CS course with students.

In a kick-off workshop, teachers are enrolled in a demonstration course so they can experience the CodeHS platform from a student perspective. The structure of the kick-off workshop includes the following curricula focus:
- Experiencing CodeHS lessons and code editor from a student perspective
- Exploring major CodeHS courses and pathways with targeted grade levels and customized feedback on implementing any chosen curriculum/pathway

The CodeHS online PD courses include the following curricula focus:
- Content Bootcamp: Teachers work through a few modules of the actual student course that they will be teaching. The time spent working through modules of the student course gives them a preview of the material and familiarity with what students will see on the site.
- Teaching {Specific Course Title}: Teachers focus on instructional strategies that address student course-specific content. Strategies addressed include grade-and-respond questions, common misunderstandings, and best practices for teaching specific concepts.
- Debugging: Teachers practice specific debugging methods, including using breakpoints, printing to debug, pseudocode, etc.

4.2.2 Professional development must be available before the beginning of the 2021-22 school year.
Yes.
One or two-day workshops can be delivered any time when teachers are available (generally June - August) and corresponding online PD courses are available any time. In-person PD

workshops are TBD, but if that is not possible we can deliver virtual events. Teachers can select a workshop, online PD course, or both.

4.2.3 Information about whether aligned professional development is required in order to use the provided curriculum.
No, the aligned professional development is not required in order to use the provided curriculum. Although the aligned PD is recommended, the CodeHS curriculum includes everything a teacher needs to run a successful computer science course and therefore we do not require teachers participate in professional development to use CodeHS.
If the Agency determines it is essential for Professional Development to be required for Iowa teachers, CodeHS will work directly with the Agency to determine the best way to fulfill this requirement.

Implementation

Yes
If awarded a contract with the Agency, CodeHS will work collaboratively with the Agency to determine an implementation schedule appropriate for Iowa schools and districts.

Exhibit 12 - Program Overview

•**Describe the origin of the program.**

Jeremy and Zach, the co-founders of CodeHS, studied computer science at Stanford and were Teaching Assistants together. Teaching and building tools for the TA program, they began thinking about how computer science was typically not engaging or accessible at the high school level. This inspired them to start CodeHS, so they could give students around the world the same opportunities as Stanford computer science students.

At CodeHS, we believe that in the 21st century, coding is a foundational skill, just like reading and writing. That's why we say: Read, Write, Code. We do this by providing great curriculum, tools, and resources to teachers, students, and schools to implement high quality computer science programs. We believe that everyone should get the chance to learn to code, and that it's a skill that provides limitless creative opportunity to students. We want to help make computer science education fun and accessible, and believe you need both great tools as well as a great community to make this happen.

• **Provide the length of time the program has been offered.**

CodeHS was founded on May 10, 2012.

• **Provide the content covered and a description of the curriculum.**

CodeHS offers a full 6-12 pathway for computer science. CodeHS courses teach students applicable computer science skills. With a focus on helping students develop problem-solving and computational thinking skills, students come away both with a knowledge of professional programming languages and the conceptual understanding needed to learn new languages.

The Iowa Tech Apps and Coding course is the recommended middle school course for Iowa. This course is a first year computer science course that is fully aligned to the CSTA 2 standards that Iowa has adopted for students in grades 6-8. This course introduces the basics of programming, web design, internet safety, and how information is represented digitally and sent over the Internet. Students learn to code with Tracy the Turtle, use the design process to create a website that addresses a community issue, and explore the impacts of internet-based innovations.

With a unique focus on creativity, problem solving and project based learning, Tech Apps and Coding gives students the opportunity to explore several important topics of computing using their own ideas and creativity to develop an interest in computer science that will foster further endeavors in the field.

The course is composed of nine modules or units, each of which introduces students to a foundational topic in computer science.

Module	Description
Programming with Turtle Graphics	Students learn Python commands, functions, and control structures by drawing shapes on the screen and solving puzzles with Turtle Graphics.
What is Computing?	Students review a history of computing and learn about the various parts that make up modern computers. Students also explore the impact computing ha
Intro to micro:bit	Students go through the basics of the micro:bit, such as how to light up and change the brightness of LEDs, and learn how variables can be used to write more versatile programs. Students will build circuits to control external LEDs with the micro:bit and explore how pseudocode can be used to structure programs from the start.
Digital Citizenship and Cyber Hygiene	Students learn about Internet etiquette and how to stay safe on the world wide web. Students explore the potential effects of our digital footprints, how to protect information from online risks, and the implications of cyberbullying.
The ABCs of Cryptography	Students dive into the history of cryptography systems, the motivation behind using encryption systems, and basic cryptography systems. Additionally, students explore topics on how to use cryptography, cryptology, and cryptanalysis to decode a message without the use of a key.
Web Design	Students learn the basics of HTML, CSS, and the processes involved in viewing web pages on the internet. Students create several simple web pages using the CodeHS online editor to gain practice using the various features of HTML and CSS.
Project: Designing for Impact	Students go through the design process to develop a website that solves a problem in their community. Students learn what makes an engaging and accessible user interface and employ an iterative design process that includes rapid prototyping and user testing to design and develop their website.
Digital Information	Students learn about the various ways we represent information digitally. Topics covered include number systems, encoding data, programmatically creating pixel images, comparing data encodings, compressing and encrypting data.
The Internet	Students explore the structure and design of the internet, and how this design affects the reliability of network communication, the security of data, and personal privacy.

Project: The Effects of the Internet	In this project, students choose an innovation that was enabled by the Internet and explore the effects of this innovation.

While Tech Apps and Coding is designed as a full year course, it can be structured to fit the timeframe of any middle school. It can easily be taught as two semester-long courses or as four quarter-long courses. The syllabus provides recommendations for how to break down the course.

Our full course catalog of 60+ courses can be found at https://codehs.com/course/catalog.

• Describe the professional development delivered by the Respondent around implementation of the curriculum.
CodeHS offers Online Professional Development courses to prepare teachers to lead a computer science class. Each PD course is geared to prepare teachers for the specific CodeHS curriculum that they will be using with their students. The CodeHS Online PD courses teach both the basics of programming and the pedagogy behind teaching programming in a blended classroom. Teachers receive personalized help, feedback, and support from the CodeHS PD team as they work through the Professional Development course online. Online PD courses take about 30-50 hours to complete. Because of the online format, teachers are able to complete the PD at their pace and can revisit the course throughout the year.

Our online PD courses have been recognized by several outside organizations as effective training for new computer science teachers. CodeHS is recognized by the College Board as an endorsed provider of curriculum and professional development for AP® Computer Science Principles (AP CSP). The process to obtain the endorsement included a complete review of our curriculum by Learning List, who evaluated us as having 100% alignment to the learning objectives and computational thinking practices outlined in the AP Computer Science Principles Course Exam and Description. CodeHS is also recognized by the College Board as an endorsed provider of curriculum and professional development for AP CSA. These endorsements allow our professional development course to be used for approval codes in several states, including Arkansas.

In addition, we have a partnership with St. Catherine University in Minnesota for a few of our online professional development courses. St. Catherine University evaluated our curriculum and determined the content and rigor to be at the level of a graduate education course, so teachers who can complete our courses can optionally apply to receive graduate education credits from the university.

• Ensure the program can be offered during the school day rather than after-school.
CodeHS lessons are created with the intention of being used during the school day. Each lesson is designed to fit within a standard class period but can be adapted to fit any school schedule.

• **Describe how the curriculum and professional development can fit into a K-12 CS plan, as required in HF 2629.**
Although this proposal is focused on the 6-8 grade band, the CodeHS Iowa Computer Science Pathway extends from 6th to 12th grade. The pathway starts with the middle school course Iowa Tech Apps and Coding, which is fully aligned to the CSTA 2 standards for students in grades 6-8. This course is an introductory course and is accessible to all students, regardless of their exposure in elementary school.

The high school pathway builds on Tech Apps and Coding. Students begin with Iowa Foundations of Computer Science, which is fully aligned to the CSTA 3A standards. From there, students can take college-level AP courses.

6th	7th	8th	9th	10th	11th	12th
Iowa Tech Apps and Coding *Fully aligned to CSTA 2*						
			Iowa Foundations of Computer Science *Fully aligned to CSTA 3A*			
					AP Computer Science Principles in JavaScript or Python	
						AP Computer Science A (Nitro)

In addition to the Iowa pathway above, CodeHS offers Cybersecurity and Web Design pathways that enable students to pursue a focus in these areas of computer science.

• **Describe how the curriculum engages diverse learners.**
There are multiple structures in place to ensure that the curriculum is accessible to all learners. Each lesson plan includes modifications for Special Education and English Language Learner students. These modifications provide teachers with lesson-specific guidelines for adapting the material based on student need, such as modifying an article, creating a vocabulary handout, or leveraging pair programming.

Additionally, the CodeHS platform is designed to empower teachers to customize lessons based on the needs and interests of their students. Lesson plans provide teachers with multiple suggestions for implementation depending on the level of student understanding, access to resources, and interests. There is also a wide variety of curriculum that can be added as supplemental material. With this option, teachers can add activities that align with the interests

and needs of their students. Teachers also have the ability to create their own content within the platform if they want to include a lesson that addresses a specific student interest.

There are also many opportunities for students to explore their own interests within the context of computer science. Many projects enable students to choose their own topic. This creates a high level of student engagement as students are able to use specific computer science skills to develop a deeper understanding of their own passions.

• **Describe how the curriculum connects to the world of work and proof of success**
Information technology is an essential industry in Iowa that is growing twice as fast as other occupations - 12.5 percent growth compared to 6.5 percent growth. Between 2014 and 2024, the Bureau of Labor Statistics projected 490,000 new jobs in IT and 1.1 million job openings due to growth and replacement. Introducing students to the opportunities within IT early is essential to building the workforce needed to fulfill these job openings. (Source: Cracking the Code, Iowa Department of Education)

Iowa Tech Apps and Coding introduces students to the many fields within computer science. Students learn the basics of programming in Python, how computers work, how digital information is stored and transmitted over the internet, web design, cryptography, and online safety and security. This survey approach enables students to get a feel for the different aspects of computer science and discover which specific field interests them, setting the foundation for future endeavors in the field.

This introductory course is the first course in multiple larger pathways. Students can choose to expand their computer science knowledge to include a wider set of industry-relevant skills by pursuing courses in advanced programming, web design, or cybersecurity. Additionally, students can find career role models on the CodeHS Coding in the Wild website, where people working across many fields and industries explain how coding is related to the work that they do.

Exhibit 13 - Curriculum

• **Describe the format of curriculum delivery.**
CodeHS content is fully web-based, with students writing and running code and completing activities in the browser. Teachers utilize tools and resources provided by CodeHS to leverage time in the classroom and give focused attention to students. Each module, or unit, of the course is broken down into lessons, and each unit ends with a comprehensive unit test that assesses students' mastery of the material from that unit.

There are two main types of units: programming and non-programming. Programming modules focus on a specific programming language and skills within that language. Non-programming modules focus on additional computer science content beyond programming, such as digital citizenship, computer hardware, and cybersecurity.

The lessons in each programming module are structured in a similar way: students watch a video that explains and models a new command or concept, students explore a few examples to develop a deeper understanding of the topic, and students practice using the new command or concept by completing exercises.

Each programming module is followed by a series of challenges that require students to apply all of the skills they have learned so far to complete a complex problem. These challenges enable students to develop problem solving skills and perseverance as they break down complex problems into smaller problems and debug errors in their code. They also provide students with the ability to practice pair programming and build collaboration skills within the context of computer science.

The lessons in a non-programming module follow a similar structure as well. Students watch an introductory video and then explore the topic further through a variety of activities. These activities typically involve reading articles and watching videos related to current events and engaging in written activities that enable students to synthesize their understandings.

In addition to the online material, teachers are provided with full lesson plans that offer discussion questions, unplugged activities, and suggested interventions for students.

• **Describe the ability to provide stand-alone and integrated curriculum content.**
CodeHS makes it easy for teachers to choose the specific content they want to teach. Teachers can choose a full course to teach as a standalone computer science class, or they can choose individual modules to incorporate into an existing course for a more integrated approach.

Additionally, CodeHS has modules that are specifically designed as interdisciplinary. These modules enable teachers to find specific lessons that can be incorporated into core classes.

• Provide a list of curriculum content currently available.
CodeHS has over 60 computer science courses ranging from interdisciplinary coding units to year-long, college-level curriculum. The Iowa Tech Apps and Coding course is the middle school curriculum for the Iowa 6-12 Computer Science Pathway.

Additional year-long middle school courses:
- Computing Ideas (Lovelace)
- Web Design (Matisse)

Our full course catalog of 60+ courses can be found at https://codehs.com/course/catalog.

• Describe how the Respondent's content aligns with Iowa/CSTA Standards.
All CodeHS courses are aligned to the CSTA standards, which Iowa has adopted. Iowa Tech Apps and Coding covers 100% of the CSTA 2 standards. You can find more information on our standards alignments in the "Standards" section of this proposal.

• Describe the Respondent's targeted grade levels.
Iowa Tech Apps and Coding is designed for students in grades 6-8. CodeHS also offers 9-12 courses which are described in our separate proposal for the high school grade band.

• Provide the prerequisites for necessary for students to successfully progress through the curriculum.
CodeHS has courses that range from beginner to advanced. Iowa Tech Apps and Coding is designed for complete beginners and does not require any prior experience in computer science.

• Provide sample artifacts from the curriculum.
Screenshots are provided, however if you would like to view the sample artifacts on our website, you can log in with the following credentials:
Email: iowadoe@codehs.com
Password: iowaDEMO

Sample Lesson Plan: User Input with Tracy
Click on the link to view a sample lesson plan for For Loops with Karel:
www.codehs.com/iowa_mslessonplan

You can also see the sample lesson plan below:

In this lesson, students will learn how to incorporate user input into their programs. Students will learn how to request user input as both strings and integers, where the input is stored, and how to convert strings and integers.

Objective

Students will be able to:

- Incorporate user input into their code in order to customize their programs

Activities

These are all the activities included in the lesson.

Activity	
📹 1.12.1 User Input	Print Slides `Pro` / View Slides `Pro`
☑ 1.12.2 User Input	Print Quiz `Pro`
📄 1.12.3 Color Coded Increasing Length	
✏ 1.12.4 Colored Dartboard	
✏ 1.12.5 Four Corners	
💡 1.12.6 User Input Badge	

Solution References

Refer to the solution reference for a more detailed look at exercise solutions.

Solution Reference
1.12.2 User Input
1.12.4 Colored Dartboard
1.12.5 Four Corners

Problem Guides

Refer to the problem guides for a more in-depth look at this lesson's problems.

Problem Guide
1.12.4 Colored Dartboard
1.12.5 Four Corners

Vocabulary

These are the key terms for this lesson.

Term	Definition
input()	A function that prints a prompt and retrieves text from the user.

Planning Notes

- Students will need to understand the difference between an integer and string for this lesson. Review if necessary.
- There is a handout that accompanies this lesson. It can be used as an in class activity or a homework assignment. Determine if and how this handout will be used and make the appropriate number of printouts prior to the class period.

Teaching and Learning Strategies

Lesson Opener:

- Have students brainstorm and write down answers to the discussion questions listed below. Students can work individually or in groups/pairs. Have them share their responses. [5 mins]

Activities:

- Watch video as a class and have students complete the quiz. [5-7 mins]
  - Pause video intermittently to point out the differences between using user input as a string and integer.
- Review the example [5-7 mins]
  - Point out to students how the variables are initialized when user input is desired. Ask students what the difference is between the previous lesson on initializing variables and this lesson. Some differences to note are:
    - the previous lesson had students assigning variables while this lesson has the variable assigned based on what the user entered
    - this lesson has students using the function `input` in the initialization of the variables
- Students complete the *Colored Dartboard* exercise individually or in pairs. [5-10 mins]
  - If students will be working in pairs, make use of the *Pair Programming Guide* handout that accompanies this lesson.
- Students complete the *Four Corners* exercise individually. [7-15 mins]
- Students can complete the *User Input* handout activity in pairs or individually if time permits, or for homework. [7-10 mins]

Lesson Closer:

- Have students reflect and discuss their responses to the end of class discussion questions. [5 mins]

Prior Knowledge

- String vs. Integer- a string is a word or phrase while an integer is a number.
- Tracy commands- Students should be comfortable moving Tracy around the canvas and changing color
- Functions- Students should understand how and why we define and use functions in our programs
- For Loops- Students should be comfortable using for loops to repeat code

Discussion Questions

Beginning of Class:

- What are some examples of a computer asking you for information?
  - *Signing up for a login (enter name, email, password, etc.), Online calculator having the user enter equation to be solved, Calendar asking for dates, times, and event names, etc. (Answers may vary)*
- Thinking about interactive programs or applications like Snapchat or Facebook, what sort of data can the user enter? What do these applications do with what the user enters?
  - *(Answers may vary)*

End of Class:

- Why is it important to differentiate between str and int when requesting input?
  - *If you try to use a string input as an integer, you will get an error.*
- What type of information would you like to request from a user?
  - *Colors for Tracy, Values for size of Tracy drawings, etc. (Answers may vary)*

Modification: Special Education

- Strategically partner students for pair programming.
- Have students complete the handout stead of the last two computer exercises.
- Print out video slides for students to reference

Modification: English Language Learners

- Print out video slides and have students use a dictionary to translate unknown vocabulary
- Strategically partner students for pair programming
- Have students complete the handout stead of the last two computer exercises.

<u>Sample Tracy Programming Exercise: User Input</u>
This is an activity from the For Loops lesson detailed above. In the lesson plan, click on each activity in the Activities to explore and run the exercises.

Sample Non-Programming Exercises: Encoding Text with Binary
You can explore and run this activity online by following these steps:
1. Go to the lesson plan: https://codehs.com/course/10422/lesson/8.3
2. Find the Activities section
3. Click on the 6.3.5: Hello World in Bits exercise.

Sample Non-Programming Exercises: Basic Crypto Systems: Caesar Cipher
You can explore and run this activity online by following these steps:

4. Go to the lesson plan:https://codehs.com/course/10422/lesson/5.3
5. Find the Activities section
6. Click on the 5.3.4: Decrypt Caesar's Cipher! exercise.

Sample Student Handout

CodeHS Pro teachers also have access to student handouts. These handouts are designed to supplement specific lessons and provide students with additional, offline practice.

📺 CodeHS

User Input

Corresponding Material
Intro to Programming with Tracy, Lesson 12: User Input

Discussion
Getting input from the user of our programs can help individualize and personalize our code for the specific needs of an individual. We are able to give the user control over different parts of our code by asking them to input a certain phrase or value that can be used in our commands.

Class Exercise
Programs are written below that use static values to control different aspects of the program. Your job is to alter the code so that user input can be used to control the commands followed.

1) The code below draws a square with sides of length 50. Alter the program so that user input controls the side length of the square.

Original Program	New Program
| ```
1  length = 50
2
3  for i in range(4):
4      forward(length)
5      left(90)
``` | |

2) The code below draws a red circle of radius 50. Alter the program so that user input controls the color of the circle.

Original Program	New Program
| ```
1  color("red")
2  begin_fill()
3  circle(50)
4  end_fill()
``` | |

• Describe how the curriculum can fit into a K-12 plan, as required in HF 2629.
Although this proposal is focused on the 6-8 grade band, the CodeHS Iowa Computer Science Pathway extends from 6th to 12th grade. The pathway starts with the middle school course Iowa Tech Apps and Coding, which is fully aligned to the CSTA 2 standards for students in grades 6-8. This course is an introductory course and is accessible to all students, regardless of their exposure in elementary school.

The high school pathway builds on the middle school course. Students begin with Iowa Foundations of Computer Science, which is fully aligned to the CSTA 3A standards. From there, students can begin taking college-level AP courses.

6th	7th	8th	9th	10th	11th	12th
Iowa Tech Apps and Coding *Fully aligned to CSTA 2*						
			Iowa Foundations of Computer Science *Fully aligned to CSTA 3A*		
				AP Computer Science Principles in JavaScript or Python		
					AP Computer Science A (Nitro)	

In addition to the Iowa pathway above, CodeHS offers Cybersecurity and Web Design pathways that enable students to pursue a focus in these areas of computer science.

• **Describe how the curriculum addresses diverse learners, including the gender participation gap, traditionally underrepresented minority students, students with disabilities and English learners.**
There are multiple structures in place to ensure that the curriculum is accessible to all learners. Each lesson plan includes modifications for Special Education and English Language Learner students. These modifications provide teachers with lesson-specific guidelines for adapting the material based on student need, such as modifying an article, creating a vocabulary handout, or leveraging pair programming.

Additionally, the CodeHS platform is designed to empower teachers to customize lessons based on the needs and interests of their students. Lesson plans provide teachers with multiple suggestions for implementation depending on the level of student understanding, access to resources, and interests. There is also a wide variety of curriculum that can be added as supplemental material. With this option, teachers can add activities that align with the interests and needs of their students. Teachers also have the ability to create their own content within the platform if they want to include a lesson that addresses a specific student interest.

There are also many opportunities for students to explore their own interests within the context of computer science. Many projects enable students to choose their own topic. This creates a high level of student engagement as students are able to use specific computer science skills to develop a deeper understanding of their own passions.

By exposing students to the collaborative nature of computer science as well as the wide variety of topics within the field, CodeHS empowers students to see themselves as members of the computer science community. As students develop concrete skills within the subject, they learn that regardless of where they come from or what they look like, they are equipped with knowledge they need to be successful.

Exhibit 14 - Professional Development

CodeHS Professional Development for High School

Describe the professional development delivered by the Respondent around implementation of the curriculum.

Each workshop and online PD course has sessions or content around course and content pathways, foundational content knowledge, blended instructional strategies, and planning and pacing a CS course with students.

In a kick-off workshop, teachers are enrolled in a demonstration course so they can experience the CodeHS platform from a student perspective. The structure of the kick-off workshop includes the following curricula focus:
- Experiencing CodeHS lessons and code editor from a student perspective
- Exploring major CodeHS courses and pathways with targeted grade levels and customized feedback on implementing any chosen curriculum/pathway

The CodeHS online PD courses include the following curricula focus:
- Content Bootcamp: Teachers work through a few modules of the actual student course that they will be teaching. The time spent working through modules of the student course gives them a preview of the material and familiarity with what students will see on the site.
- Teaching {Specific Course Title}: Teachers focus on instructional strategies that address student course-specific content. Strategies addressed include grade-and-respond questions, common misunderstandings, and best practices for teaching specific concepts.
- Debugging: Teachers practice specific debugging methods, including using breakpoints, printing to debug, pseudocode, etc.

• Describe the ability to prepare teachers to teach the curriculum within 6-12 months.

The CodeHS professional development program will provide Iowa teachers with the content knowledge, pedagogy, and instructional strategies to give teachers the confidence and skills needed to teach any computer science course. Teachers do not need to have any programming experience to participate.

The program delivery is flexible and can be delivered in any statewide, regional, or local capacity in a virtual, blended, or in-person delivery and is customizable. Teachers can select one OR both of the following:

- A 1-2 day, immersive, hands-on kick-off workshop, which can be 5-6 hours per day and condensed/expanded based on local needs and requirements.
- An asynchronous online course with full support that focuses on the student course of choice.

In a kick-off workshop, teachers are enrolled in a demonstration course so they can experience the CodeHS platform from a student perspective. They will also learn all of the tools that they can leverage to maximize student learning. The overall structure of the kick-off workshop includes the following general areas of focus:

- Experiencing CodeHS lessons and code editor from a student perspective
- Exploring major CodeHS courses and pathways with targeted grade levels and customized feedback on implementing any chosen curriculum/pathway
- CodeHS teacher tools for managing sections
- Leveraging progress monitoring, grading tools, and code review to differentiate, scaffold, provide student feedback, and help students debug coding exercises
- Strategies for utilizing lesson plans and additional classroom resources
- Computer science blended and virtual teaching strategies.
- Pacing and planning
- Creating original content to customize courses
- Increasing access and equity in computer science by addressing diverse learners (including the gender participation gap, traditionally underrepresented minority students, students with disabilities, and English learners)

In addition, Iowa teachers are further supported with a session on the CSTA standards and the CodeHS courses that fully encompass the CSTA 2 and CSTA 3A standards.

In a self-paced, fully instructor-supported professional development course, teachers are enrolled in a related PD course(s) based on the student course they plan to teach or are currently teaching. The online professional development courses consist of a series of learning modules that cover both the basics of programming and the pedagogy of teaching programming in a blended classroom for further depth and development (total time is approximately 40 hours). Teachers can complete each PD course on their own time to receive the training and PD support they need in a way that meets their specific needs. They also have lifetime access to their PD course.

General online PD course format:
- Welcome: Teachers learn about the format of the course, why it is important to teach CS, reflect on issues of access and equity, and set goals for the course.
- Content Bootcamp: Teachers work through a few modules of the actual student course that they will be teaching. The time spent working through modules of the student course gives them a preview of the material and familiarity with what students will see on the site.

- Using CodeHS Effectively: Teachers receive an overview of some of the teacher tools on CodeHS and best practices for using them in class.
- Teaching {Specific Course Title}: Teachers focus on instructional strategies that address student course-specific content. Strategies addressed include grade-and-respond questions, common misunderstandings, and best practices for teaching specific concepts.
- Debugging: Teachers practice specific debugging methods, including using breakpoints, printing to debug, pseudocode, etc.
- Teaching in a Blended Classroom: For many teachers, this is their first time running a classroom that is not lecture/practice-based, so questions like what is the role of a teacher in a blended classroom and how should they encourage student collaboration are considered.

• **Provide sample artifacts from the professional learning.**

Links to sample artifacts can be found in the sample agenda below.

• **Provide an agenda for one day of the professional development.**

Sample Day 1 Agenda
- ● Introductions and account setup
- ● The CodeHS code editor tools
- ● Sample lesson from a student perspective [LINK TO SAMPLE]
  - ○ Strategies are modeled, and teachers actively participate as students
- ● Overview of the major CodeHS courses and pathways with discussion time for specific courses [LINK TO SAMPLE]
- ● Teacher tools for managing sections [LINK TO SAMPLE]
- ● How to leverage the CodeHS gradebook and code review to
  - ○ Differentiate and scaffolding [LINK TO SAMPLE]
  - ○ Provide student feedback [LINK TO SAMPLE]
  - ○ Help students debug code
  - ○ Grade student code
- ● Strategies for utilizing lesson plans and additional classroom resources
  - ○ Computer science blended and virtual teaching strategies [LINK TO SAMPLE]
  - ○ Planning and pacing courses and content [LINK TO SAMPLE]
  - ○ Creating original content to customize courses [LINK TO SAMPLE]
  - ○ Increasing access and equity in computer science [LINK TO SAMPLE]
  - ○ The CSTA standards and the CodeHS Iowa courses: Iowa Tech Apps and Coding (CSTA 2) and Iowa Course 3A

• **Describe time needed for professional development: length, frequency, availability, and format of training (i.e. online, blended, etc.)**

One- or two-day customizable, kick-off workshops would be 1-2 days and delivered any time when teachers are available, most likely June - August before the beginning of the 2021-22 school year. The timeframe for each day would be 5-6 hours and can be condensed/expanded based on local needs/requirements. The workshops can be delivered in a blended/virtual/face-to-face (in-person) delivery depending on any local COVID restrictions. These workshops can be delivered at a statewide, regional, district, or school level if the participant count is at least 5. Teachers would be enrolled in an online PD course, and could start the course immediately with full CodeHS PD team support and the flexibility to work through at their own pace.

Teachers can select one OR both of the following:
- A 1-2 day, immersive, hands-on kick-off workshop, which can be 5-6 hours per day and condensed/expanded based on local requirements.
- An asynchronous online course with full support that focuses on the student course of choice.

Exhibit 15 - Standards

- **Include a list of standards addressed in the curricular materials.**

All of the main courses offered in the CodeHS 6-12 pathway are aligned to or support the Computer Science Teachers Association (CSTA) K-12 Computer Science Standards, which were adopted by the Iowa State Board of Education. You can view the alignment of the lessons in Iowa Tech Apps and Coding to the CSTA 2 standards in the link below:

- [Iowa Tech Apps and Coding](#) - 100% aligned to CSTA 2

CodeHS courses are also aligned to Iowa Core Standards for Math and Science. You can see explore how each course aligns to specific standards in the links below:

- Alignment to Next Generation Science Standards for Middle School
- Alignment to Common Core Math Grade 6
- Alignment to Common Core Math Grade 7
- Alignment to Common Core Math Grade 8

- **Describe how standards are age and academically appropriate.**

The CSTA standards were created by a team of experts and outline age appropriate expectations by grade band. When developing curriculum aligned to each standard, CodeHS considers the age group and appropriately levels the delivery of instruction so it is academically appropriate.

- **Describe how content is aligned to standards.**

CodeHS curriculum developers use the standards as a guide when developing content. We break standards down into objectives, and from there we design lessons that enable students to learn, explore, and apply the target skill in a meaningful and engaging way. Teachers and administrators can easily see which lessons offer standards coverage from our standards explorer and lesson plan pages.

- **Provide a detailed description of how three standards are met.**

2-AP-11: Create clearly named variables that represent different data types and perform operations on their values.
This standard is addressed across multiple lessons in the Programming with Turtle Graphics unit. In lesson 1.11: Variables, students are introduced to the concept of variables and how to create and assign new values to variables in their programs. Students explore examples and complete a few exercises that enable them to practice the new skill.

Throughout the rest of the module, students regularly use variables in their programs as they learn additional programming concepts, such as control structures. Incorporating user input adds an additional layer of understanding as students learn how to store text and numerical values from the user in variables.

Throughout these lessons, students go from learning the basics of variables to incorporating them in a cohesive way into larger programs.

2-NI-06: Apply multiple methods of encryption to model the secure transmission of information.
The ABCs of Cryptography module gives students the opportunity to explore the basics of encryption. In lesson 5.3: Basic Crypto Systems, Caesar Cipher, students learn how the Caesar Cipher works and practice using the cipher to encode messages. In the next lesson, students learn about the inherent weaknesses of the Caesar Cipher that make it vulnerable to brute force and letter frequency analysis. Finally, students learn about the Vigenere Cipher. They practice using the Vigenere Cipher to encrypt information and reflect on its strengths in comparison to the Caesar Cipher.

2-DA-07: Represent data using multiple encoding schemes.
Students learn about multiple ways to represent data in the Digital Information module. Students start off by learning about bits and the binary number system, and they practice converting between binary and decimal representations. Students then learn about the ASCII encoding system and how to encode text in binary. In this lesson, students use bits to encode "Hello world!" The second half of the module focuses on pixel images and introduces the hexadecimal number system as well as the RGB encoding scheme. Students practice with these concepts by encoding a pixel rainbow and encoding their own pixel image in their choice of hexadecimal or binary.

Exhibit 16 - Evidence of Effectiveness

Provide how evaluation data was collected and an example of how an assessment informed program practice.

CodeHS courses include pretests to establish a baseline of student knowledge before taking each course. As students progress through each course, learning is measured by formative "check for understanding" quizzes and summative end of unit exams. These assessments are used to track student growth and identify areas for curriculum improvement. Insights from these assessments have informed our development of additional materials to support student mastery of topics such as problem decomposition.

Provide source(s) of evaluation evidence, including any third party, independent evaluation.

Currently, our middle school curriculum has not been evaluated by an independent third party.

As an endorsed provider of AP Computer Science Principles and AP Computer Science A curriculum, CodeHS is provided with AP results from schools that use the CodeHS curriculum to prepare for the exam.
View 2018 Results:
https://readwritecode.blog/2018-ap-exam-results-are-in-shoutout-to-all-our-ap-students-fc63329bdbc4.

Describe the benefits to students and educators in terms of content and skills growth, attitudes and intentions.

The pretest measures both student knowledge and mindsets toward computer science. We have measured that after just one computer science workshop with CodeHS, students are more likely to express self-confidence in computer science and demonstrate interest in pursuing computer science in college and beyond. Additionally, students and teachers learn the skills to complete full coding projects that can be used to build their portfolio of work. To see examples of programs students will complete, visit codehs.com/demos/.

Provide evidence of testing to show what measures were used to measure student learning, as a result of engaging with the curriculum.

CodeHS includes several assessment models, including exams and project-based assessments. CodeHS also provides teachers with a detailed view of student performance that can be used to inform interventions. To view all assessment tools, visit codehs.com/assessments/. Enter the following credentials to log in:
Email: iowadoe@codehs.com
Password: iowaDEMO

Provide evidence of engaging learners who traditionally have been underrepresented in computer science, including but not limited to English Learners, persons of low income (FRL) and students with disabilities, as well as engaging learners to address race-ethnicity and gender gaps.

Each CodeHS lesson plan provides teachers with suggested modification for English Learners and Special Education students. The professional development program includes strategies to recruit and engage students typically underrepresented in computer science, and the CodeHS curriculum intentionally leaves room for student choice and voice in various assignments and projects.

Provide evidence that participation in the curriculum resulted in positive learning outcomes for students.

Students complete several full-length projects in every course. These projects help students begin their portfolio of work, which can be used as they apply to higher education or career opportunities. To see a few demos of what students complete throughout their coursework, visit codehs.com/demos/.

Exhibit 17 - Optional Features

• Provide detailed information for any optional items that may be available.

• Provide any additional technology that may be needed to run the solution.

• Include costs for these items in the Cost Proposal

As described throughout this Technical Proposal, aside from our free curriculum offerings, we also offer a Pro Plan, which gives teachers additional tools and resources to manage their class. Those additional features can be found here: https://codehs.com/info/plans_detail.   No additional technology is required. Schools and districts are not required to purchase the Pro Plan to use CodeHS to teach computer science.

CodeHS also offers professional development opportunities, which are described in the "Professional Development" section of this RFP. As stated in the "Mandatory Specifications" section of this proposal, CodeHS does not currently require schools or districts to purchase professional development in order to use CodeHS and we consider this to be an optional feature. If the Agency determines it to be essential that PD is a requirement for teachers in Iowa, CodeHS will work with the Agency to determine the best way to establish this requirement in a way that is beneficial to Iowa schools and districts.

The Pro Plan features and Professional Development options have been discussed in other areas of the RFP in greater depth. In addition to these options, we also offer an industry relevant certification exam and certificate for students. The certifications for students are offered in the following areas: Java, Javascript, Python, Web Design, and Cybersecurity. No additional technology is required. Here is more information about our certification exams: https://help.codehs.com/en/articles/3926926-codehs-certifications-overview. In order to offer students a certification exam, the Agency, school, or district must purchase Certification Exam Vouchers.

Pricing for the Pro Plan, Professional Development, and Certification Exam Vouchers are all detailed in the attached Cost Proposal.

Exhibit 18 - Addendums

February 15, 2021

To: All Potential Respondents
From: Kelli Sizenbach, Purchasing Agent
Subject: RFP1421282045

Addendum One

Please amend the subject RFP to include answers to the following timely received questions:

Q1.   Will there be a need to crosswalk ISTE or other subject area standards to the Iowa
CSTA standards?

A1.   No. This is not required.

Q2.   Are there metadata requirements for the curriculum and professional learning materials?

A2.   No. There is no requirement.

Q3.   Do you anticipate extending the bid due date?

A3.   No.

Q4.   What additional details are you willing to provide, if any, beyond what is stated in bid
documents concerning how you will identify the winning bid?

A4.   All information will be provided via the RFP document or an amendment.

Q5.   Are Iowa school districts required to use certain LMSs, or do they choose their own? If
there are preferred LMSs, could you provide a list?

A5.   The decision about whether to use an LMS, and which LMS if any, is a local decision.

Q6.   Section 1.12 of the "General Terms and Conditions for Service Contracts/Solicitations"
specifies that all deliverables become the intellectual property of the State and Agency.
Our company intends to offer a turn-key computer science curriculum solution that aligns
precisely to Iowa standards, but we need to retain rights to our existing IP. Can you offer
clarification about what type of deliverable the State would expect rights to?

A6.   If you have proposed changes to the terms and conditions, please provide those as part
of your response.

Q7.   Are you looking for standalone programs that teach the Iowa/CSTA standards for each grade band? Meaning, curricula that can be used to teach "specials/exploratory" classes?

A7.   We will consider both stand-alone curriculum and integrated curriculum.

Q8.   If we have nothing available for the K-5 and 6-8 bands, but have items for the 9-12/AP band, are we allowed to submit them?

A8.   Yes. Please note, separate proposals are required for each grade band.

Q9.   Do programs need to be platform specific? PC/Apple?

A9.   No.

Q10.   Should we include samples. If so, who/where should we send it to?

A10.   You are encouraged to provide sample artifacts from the curriculum and professional development. Samples should be included with your submission.

Q11.   Will the State provide an invoice when districts choose our product?

A11.   No. Individual districts will work directly with their selected vendor.

Please acknowledge receipt of this addendum by signing in the space provided below, and return this letter with your offer (do not send back separately).

I hereby acknowledge receipt of this addendum.

Meg Davis   3/1/21
Signature   Date

Meg Davis, Director of Sales
Typed or Printed Name

**Department of
Administrative Services**

*Empowering People
Collaboration
Customer Service*

Governor Kim Reynolds
Lt. Governor Adam Gregg

Adam Steen, Director

February 23, 2021

To: All Potential Respondents
From: Kelli Sizenbach, Purchasing Agent
Subject: RFP1421282045

Addendum Two

Please amend the subject RFP to include answers to the following timely received questions:

Q1.   I see that in Exhibit 5 of this RFP, Letters of Reference are requested. Is the department looking specifically for letters that are written by our references, or only contact information? If actual letters are required, is there any kind of prompt that the references can follow? Would our references then send those directly to us to include in the RFP?

A1.   Please provide letters of reference. There is not a specific template for these letters.

Q2.   Would the resources on this list be the ONLY resources that districts could use the Computer Science Professional Development Incentive Funds on, or would the list be a starting point to help districts who don't know what their options are?

A2.   The Computer Science Professional Development Incentive Fund cannot be used for curriculum. Recipients of Computer Science Professional Development Incentive fund grants choose their professional development approach. A different source of funding is available for districts and accredited nonpublic schools who are interested in the resources on our list.

Please acknowledge receipt of this addendum by signing in the space provided below, and <u>return this letter with your offer (do not send back separately).</u>

I hereby acknowledge receipt of this addendum.

Meg Davis   3/1/21

Signature   Date

Meg Davis, Director of Sales

Typed or Printed Name

Exhibit 19 - Request for Confidentiality

Part 1 – No Confidential Information Provided

Confidential Treatment Is Not Requested

Respondent acknowledges that proposal response contains no confidential, secret, privileged, or proprietary information. There is no request for confidential treatment of information contained in this proposal response.

This Form must be signed by the individual who signed the Respondent's Proposal. The Respondent shall place this Form completed and signed in its Proposal.

- *Fill in and sign the following if you have provided no confidential information. If signing this Part 1, do not complete Part 2.*

CodeHS	RFP1421282045	Computer Science Curriculum
Company	RFP Number	RFP Title
Meg Davis Meg Davis	Director of Sales	3/1/21
Signature (required)	Title	Date

(Proceed to the next page only if Confidential Treatment is requested.)

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Cost Proposal

Please find the Cost Proposal, which has been uploaded to VSS alongside this proposal.