



Exhibit 1 - Transmittal Letter

March 1, 2021

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

Dear Kelli Sizenbach,

BootUp PD Inc., is pleased to present the following proposal in response to the State of Iowa Computer Science Curriculum solicitation.

Organization:
BootUp PD, Inc.
1936 Park Ln W
Orem, UT 84058
Phone: (435) 565-6358
Fax: (435) 565-6358

Authorized Official:

Clark M. Merkley

Clark Merkley
Executive Director
BootUp PD, Inc.
1936 Park Ln W
Orem, UT 84058
Phone: (435) 565-6358
Fax: (435) 565-6358

Proposal Contact:

Abby Funabiki

Abby Funabiki
Associate Executive Director
BootUp PD, Inc.
14311 Sherbrook Pl.
Lake Oswego, OR 97035
Phone: 435-631-2056
Fax: 435-631-205



Exhibit 2 - Executive Summary

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

State of Iowa Bid Opportunity
Computer Science Curriculum
Bid Number RFP1421282045

Dear Computer Science Curriculum Review Team:

Please accept this RFP for the State of Iowa Computer Science Curriculum solicitation from BootUp PD, Inc. (BootUp), a national 501(c)(3) nonprofit organization. I have read and understand the terms and condition of this RFP, including the Contract provisions in Section 6.

BootUp's proposal will share what curriculum we currently have available, stand-alone and integrated with other subjects, and our previous experience supporting teachers through professional development to ensure a successful implementation. We will propose our support as a solution for districts who would like to implement computer science.

BootUp helps districts implement elementary computer science initiatives through long-term professional development, model teaching, curricula, coaching, and an Instructional Coach Course. BootUp works closely with each district to create a custom initiative, then provides the PD, curriculum, and support to create a complete and sustainable elementary coding program.

Since 2015, BootUp has worked with 477 elementary schools in seventeen states, directly impacting over 1,500 educators and over 150,000 students. BootUp has developed over 100 elementary lesson plans that are being used in classrooms across the country to teach computer science within core subject areas.

Sincerely,

A handwritten signature in black ink that reads "Abby Funabiki". The signature is written in a cursive, flowing style.

Abby Funabiki
Associate Executive Director, BootUp PD, Inc.

Exhibit 3 - Firm Proposal Terms

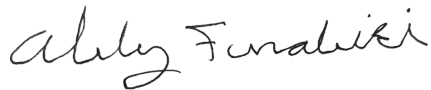
Kelli Sizenbach, Issuing Officer
Iowa Department of Administrative Services
Hoover State Office Building, Level 3
1305 East Walnut Street
Des Moines, IA 50319-0105

State of Iowa Bid Opportunity
Computer Science Curriculum
Bid Number RFP1421282045

Dear Computer Science Curriculum Review Team:

BootUp guarantees the goods and services offered in this Proposal are currently available and that all Proposal terms, including price, will remain firm for 120 days, the number of days indicated on the RFP cover sheet.

Sincerely,

A handwritten signature in black ink, reading "Abby Funabiki". The signature is written in a cursive, flowing style.

Abby Funabiki
Associate Executive Director
BootUp PD, Inc.

Exhibit 4 - Respondent Background Information

The Respondent shall provide the following general background information:

- Does your state have a preference for instate Contractors?

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.

BootUp PD Inc.
1936 Park Ln W
Orem, UT 84058
Phone: 435-631-2056
Fax: 435-631-2056
Email: abby@bootuppd.org

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

Utah nonprofit Corporation

- Copy of W-9.

Form W-9 - BootUp PD Inc. (Attachment)

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

Utah

- 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.

BootUp PD Inc.
1936 Park Ln W
Orem, UT 84058
Phone: 435-631-2056

- Number of employees.

9

- Type of business.

BootUp PD, Inc. is a Utah nonprofit corporation and an IRS Section 501(c)(3) organization.

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

Abby Funabiki
Associate Executive Director
BootUp PD, Inc.
14311 Sherbrook Pl.
Lake Oswego, OR 97035
Phone: 435-631-2056
Email: abby@bootuppd.org

- 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.

n/a

- Respondent's accounting firm.

Heidi Rolla, D'Huyvetter & Swichkow, P.C.,
519 Johnson Ferry Road, Suite 100
Marietta, GA 30068

Exhibit 5 - Experience

The Respondent must provide the following information regarding its experience:

- Number of years in business.

Five Years in business as the nonprofit BootUp PD, Inc.

- Number of years of experience with providing the types of services sought by the RFP.

Seven Years of experience providing elementary computer science curriculum and professional development to school districts.

- The level of technical experience in providing the types of services sought by the RFP.

BootUp Professional Development, a national 501(c)(3) nonprofit organization, has been helping districts implement elementary computer science initiatives since 2015. BootUp has worked with 477 elementary schools in seventeen states, directly impacting over 1,500 educators and over 150,000 students. BootUp has developed over 100 elementary lesson plans that are being used in classrooms across the country to teach computer science within core subject areas. BootUp has the technical experience to provide a high-quality computer science curriculum and lesson plans for teachers, as well as the professional development support and coaching for district implementation.

- 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.

BootUp has provided professional development through in-person and virtual workshops, model teaching, coaching, lesson planning, practice sessions, observations, consulting, SCRIPT (Strategic CSforALL Planning Tool for School Districts) workshops, and Professional Learning Community (PLC) support. BootUp has also provided an online Instructional Coach Course to help districts develop instructional coaches to train district teachers.

In 2019 for example, BootUp was selected to develop a curriculum for the WY Department of Education. Through this NSF award, Integrating CS into the Elementary Curriculum in Culturally Relevant Ways: A RPP in Native-American Serving Districts in Wyoming, we are in the process of developing and refining a CS curriculum that integrates into Wyoming ELA and Social Studies standards.

BootUp has provided similar services by working closely with school districts to create custom initiatives, then providing the PD, curriculum, and unique support required to create a complete and sustainable elementary computer science initiative.

- 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.

Here are two recent Reference Letters from November 2020 in reference to another project:

Juab School District - Reference Letter - Krystle Bassett (Attachment)

Krystle Bassett
Director of Innovation & Instructional Support
(435) 610-1388

UT Austin Expanding Pathways in Computing (EPIC) - Reference Letter - Sheryl Roehl (Attachment)

Sheryl Roehl, Ed.D.
EPIC Partnership Coordinator
The University of Texas at Austin | TACC | Expanding Pathways in Computing (EPIC) |
sroehl@tacc.utexas.edu | 361-571-4153 | WeTeachCS.org | @weteachcs

Here are several testimonials from districts that were not captured in letter form:

"The BootUp team has made an immeasurable impact on computer science learning in Yelm Community Schools. Now, in every elementary school, students are learning to code beginning in kindergarten! BootUp's passion and expertise in delivering high-quality professional development have significantly increased our teachers' skills and will have far-reaching effects on our students' lives."

Lisa Cadero-Smith
Assistant Superintendent
Yelm Community Schools
(360) 458-6120
lisa_cadero-smith@ycs.wednet.edu

"When I began understanding the vision for teaching a new language to children, I was skeptical, but I knew the demand by industry for students to have more competencies in computer science. As I saw the coding program in action, I was blown away! A first grader explaining an algorithm and sequence to her classmates. I knew this was an educational revolution and wanted to make sure my students had the exposure and opportunity to learn the language of code."

Dr. Ember Conley
Superintendent (former)
Park City School District
(480) 472-0200
emberconley7@gmail.com

"Bootup gave me the confidence I needed to teach coding on the first day. This is my first year as a coding teacher so the videos and lesson plans are great resources to answer any questions. Students love the projects and enjoy having a chance to be creative while learning."

James Leighton
Teacher at Desert Thunder Elementary School
Avondale, AZ

BootUp District References - Contact Information (Attachment)

Additional References for BootUp from active partner districts and previous partner districts

Exhibit 6 - Termination, Litigation, and Debarment

The Respondent must provide the following information for the past five (5) years:

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

No

- 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.

No

- 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.

No

- 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.

No

- 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.

No

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 and Conditions

By submitting a Proposal, Respondent acknowledges its acceptance of the terms and conditions of the RFP and the General Terms and Conditions without change except as otherwise expressly stated in its Proposal. If the Respondent takes exception to a provision, it must identify it by page and section number, state the reason for the exception, and set forth in its Proposal the specific RFP or General Terms and Conditions language it proposes to include in place of the provision. If Respondent's exceptions or responses materially alter the RFP, or if the Respondent submits its own terms and conditions or otherwise fails to follow the process described herein, the Agency may reject the Proposal, in its sole discretion.

Exhibit 9 - Certification Letter

Attachment #1 (Certification Letter) (Attachment)

Exhibit 10 - Authorization to Release Information

Attachment #2 (Authorization to Release Information Letter) (Attachment)

Exhibit 11 - Mandatory Specifications

Mandatory Requirements - Curriculum

4.1.1 Curricula must be aligned to the Iowa/CSTA Standards.

Yes. All PD and curriculum are aligned to the national CSTA Standards and K12 CS Framework, which were adopted for Iowa by the Iowa's CS Standards Review Team.

BootUp Crosswalk - CSTA K-12 CS Standards - Level 1A & 1B (Attachment)

This BootUp PD CSTA Crosswalk document lists grade band alignment of each concept and practice covered in BootUp curriculum and PD to CSTA Level 1A (Ages 5-7) and CSTA Level 1B (Ages 8-11)

4.1.2 Must prepare teachers to teach the provided computer science curriculum by the start of the 2021-22 school year.

Yes. BootUp already has multiple-years of curriculum available we can provide before the start of the 2021-22 school year.

4.1.3 Curriculum grade level(s) must be identified.

Yes. The curriculum grade level(s) and grade bands are identified in this proposal and on the following attachments:

BootUp Support Overview (Attachment)

BootUp Curriculum Guide - ScratchJr, Scratch, Unplugged (Attachment)

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. BootUp has the following length of curriculum currently available:

52 ScratchJr projects for K-2nd grade that will provide enough content for at least 52 classes.

40 Scratch projects for 3rd-6th grade that will provide enough content for at least 120 classes.

All curriculum is intended for the traditional classroom environment, however because of the pandemic teachers have more recently been teaching our curriculum to students virtually. We do not yet have outcome data on these virtual classes.

4.1.5 Curriculum must be designed to be offered by classroom teacher.

Yes. BootUp provides beginner to advanced lesson plans for teachers. All lesson plans include process and product objectives, standards, practices, concepts, vocabulary, a project sequence with facilitation tips, and assessment suggestions. Each lesson plan includes links to suggested third-party unplugged lessons to reinforce concepts and practices within that lesson or to help integrate the lesson into other content areas.

4.2 Mandatory Requirements – Professional Development

Yes. We have more than 80 hours of professional development curriculum and content for K-6th grade educators.

4.2.1 Must include professional development that is delivered by the Respondent around implementation of the curriculum.

Yes. The professional development is aligned to the BootUp curriculum as outlined in the following attachments:

PD Discussion Topics (TPACK) - order of presentation (Attachment)

BootUp Crosswalk - CSTA K-12 CS Standards - Level 1A & 1B (Attachment)
BootUp Curriculum Guide - ScratchJr, Scratch, Unplugged (Attachment)

4.2.2 Professional development must be available before the beginning of the 2021-22 school Year.

Yes. While we prefer to spread professional development out over time, we can complete all PD if needed during the summer, before the beginning of the 2021-22 school year. Another option, if acceptable, is to start some PD during the summer so teachers are ready to implement in their classrooms before school starts, and then continue with the rest of the PD throughout the school year.

4.2.3 Information about whether aligned professional development is required in order to use the provided curriculum.

No. Professional development is not required to use BootUp's curriculum. In fact, it is available at no-cost to anyone on our website. However, we strongly encourage extensive professional development to ensure a sustainable and equitable district implementation.

4.3 Implementation

Upon award of a Contract for services the Agency shall negotiate an implementation schedule with the successful Respondent.

Yes. BootUp is flexible to an implementation schedule determined by the agency or school district.

Exhibit 12 - Program Overview

- Describe the origin of the program.

BootUp originated from a give-back grant initiative at Emerald Data Solutions in 2015 which provided elementary computer science implementation training and follow-up support to districts. Emerald Data Solutions is an eGovernance solution and maker of BoardDocs, used by over 1,700 school districts across the United States. When Emerald Data Solutions founder Ari Ioannides sold BoardDocs, he set-up a separate nonprofit organization, BootUp, to carry out his commitment to bring computer science and coding to elementary schools.

- Provide the length of time the program has been offered.

The BootUp program, then under Emerald Data Solutions, first began in 2015 with a pilot at Park City School District in Utah. Since then BootUp has worked with 477 elementary schools in seventeen states, directly impacting over 1,500 educators and over 150,000 students.

- Provide the content covered and a description of the curriculum.

BootUp provides beginner to advanced, interest-driven, project-based curriculum. All teacher lesson plans include process and product objectives, standards, practices, concepts, vocabulary, a project sequence with facilitation tips, and assessment suggestions. Each lesson plan includes links to suggested third-party unplugged lessons to reinforce concepts and practices within that lesson or to help integrate the lesson into other content areas. BootUp lessons also provide additional optional resources, including project extensions, debugging practices, differentiation, video resources, presentation guides, reflection, and sharing. The BootUp curriculum features the Scratch block-based programming language and ScratchJr for non-readers.

Through the curriculum, students create and share interactive stories, animations, games, art, music, and more through problem solving and other fundamental computer science concepts and practices (based on the K12 CS Framework and CSTA Standards). BootUp's support includes a free, interest-driven curriculum with nearly 100 class projects (and more to come) for grades K-6

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

To support the implementation of the curriculum and self-efficacy to teach CS, the proposal recommends intensive professional development to implement computer science. During professional development sessions, BootUp will discuss CS concepts, practices, standards, and pedagogies.

To drive deeper learning, BootUp prepares teachers to adapt and remix the curriculum with interest-driven coding projects that are selected by the students themselves. These projects enable students to explore their interests with code through design, music, art, animation, games, or stories. Educators learn how to support their students as facilitators, not lecturers, and learn where to locate additional resources to help their students.

BootUp provides time to focus on integrating the CS curriculum into currently taught content area instruction. In addition, educators will spend time during PD customizing lessons, evaluating existing curricula, and exploring classroom integration exemplary projects and ideas. In the short term, CS educators will develop increased pedagogical and content knowledge to teach CS education and integrate CS with other subjects, using exemplary examples. Over time, CS educators begin to develop their own integrated lessons using previous Integrated Projects and continue to increase their self-efficacy related to teaching computer science.

Physical Computing Devices can further students' exposure to hands-on computer science learning opportunities. If a district already has physical computing devices or chooses to purchase them, BootUp can provide physical computing professional development to ensure they are set up for success.

And lastly, collaborating with other teachers in the same subject area is a significant predictor of success. BootUp provides Professional Learning Communities for teachers to discuss, share, and reflect on similar challenges and successes and share ideas. This support also fights isolation which is a common barrier for many new CS teachers. BootUp encourages a network of computer science teachers in a variety of ways. In-person or virtual PLC meetings are initially started by BootUp but are expected to be

taken over and led by Instructional Coaches. In a similar way, teachers from across the country collaborate in BootUp's virtual forum and are encouraged to join their local CSTA chapter to continue to collaborate across districts in-person.

- Ensure the program can be offered during the school day rather than after-school.

BootUp works with districts to provide computer science instruction during the school day. This ensures all students will participate. This advances the fulfillment of our commitment to reach every student and ensures that our program participation demographics mirror the demographics at each of our partner school districts

- Describe how the curriculum and professional development can fit into a K-12 CS plan, as required in HF 2629.

BootUp support also includes consulting and district implementation support. This can include aligning with or supporting a district's K-12 CS plan. We have experience working with representatives from all grade levels to support vertical alignment or the creation of a K-12 scope and sequence. The Strategic CSforALL Resource & Implementation Planning Tool (SCRIPT) is an external district planning tool developed by the CSforAll Consortium that helps with district visioning and goal setting. This tool could also help the BootUp curriculum and professional development fit into a district's K-12 CS plan. BootUp PD has partnered with the Consortium to do a SCRIPT workshop with any of our partner school districts.

- Describe how the curriculum engages diverse learners.

The mission of BootUp PD is to train teachers to implement elementary coding initiatives that empower all students and create equitable access to 21st-century skills. Providing computer science instruction equitably in elementary school before it becomes an elective and before students have the option to self-select out, gives students increased opportunities throughout their K-12 career, in college, and eventually in their chosen profession.

BootUp's facilitators address how to engage diverse learners by spending time discussing bias, equity, and fostering an inclusive culture during professional development and in the Instructional Coach Course. Further, we encourage pedagogy and strategies teachers can incorporate to engage all students to be successful. Facilitators model differentiation throughout each PD (e.g., project extensions, reverse engineering, remixing, etc.) and explicitly discuss the modeled practices. Educators are taught how to use multiple entry points in the curriculum which allows students who transfer in during the year to work on the same project as their peers.

Providing the required ongoing support and coaching necessary to prepare teachers to teach computer science can be especially difficult in rural areas. BootUp has extensive experience working with rural districts, including implementing a district-wide computer science program for MOC-Floyd Valley in Orange City, Iowa. By committing to deliver this continuing and on-site support, regardless of their location, BootUp PD delivers a refreshing model of support for rural districts.

- Describe how the curriculum connects to the world of work and proof of success.

BootUp's curriculum connects each project to various real-world contexts and vocations by including integration and vocation connections and links to a website dedicated to exploring potential careers through coding. During each PD session, BootUp PD provides time to focus on integrating CS and computational thinking (CT) content into currently taught content area instruction and could also discuss how to connect with key local industries.

Exhibit 13 – Curriculum

- Describe the format of curriculum delivery.

The BootUp curriculum uses block-based programming languages and the free open-source coding platforms ScratchJr and Scratch. All of the curriculum and Coder Resources for students are available at no-cost online. Teacher Lesson Plans are available online and also in GoogleDocs. Scratch is web based and an offline editor can be downloaded for Windows 10+, MacOS 10.13+, ChromeOS and Android 6.0+. ScratchJr is available for Chromebooks without touchscreen until June 2021 through Chrome Store, Chromebook with touchscreen using Android app through Google Play Store, IOS, android tablet and desktop Beta version for Mac and Windows.

All of BootUp's project-based curriculum is available at no-cost online, so there are no significant costs to support teachers as they implement these projects in their classrooms. BootUp's curriculum, which includes nearly 100 projects and teacher lesson plans, is available to anyone, at no cost, and there are plans to continue to update and release hundreds of additional projects over time.

- Describe the ability to provide stand-alone and integrated curriculum content.

The long-term goal of BootUp's PD is to help teachers customize and develop projects that are stand-alone or can integrate with any subject area. We like this approach because we want teachers to feel confident they can continue to modify or develop projects relevant to any subject area after this project concludes.

Once teachers have spent a significant amount of time learning and focusing entirely on CS concepts and practices in a stand-alone way, we work with them to explore ways these concepts and practices connect with other disciplines. BootUp's facilitators engage teachers in guided discussions that encourage teachers to make their own curriculum and standards connections. In addition, educators spend time during PD customizing lessons, evaluating existing curricula, and exploring BootUp PD's online forum with a dedicated section on classroom integration.

The curriculum does not favor one academic discipline over others, as it is used across several content areas. Although each of the project lessons include discussion or suggestions for modifying a project to fit various subject areas, our focus is on helping teachers to customize and develop projects that integrate with any subject area. For example, after modeling projects and pedagogies in a PD session, we conclude that session by providing time to modify the lesson plans to better align them with content areas specific to each teacher, as well as to make the projects even more culturally relevant. We then

encourage teachers to share on our online discussion forum how they modified a lesson to integrate with a particular academic discipline.

Examples of Scratch studios with exemplary projects that integrate with math and science can be found at (Math Integration: scratch.mit.edu/studios/25372471) and (Science Integration: scratch.mit.edu/studios/25372454). BootUp uses exemplary projects like these as a springboard for teachers to learn how to integrate and develop their own integrated projects. Each of the project lessons includes suggestions for modifying that project to fit various subject areas. We encourage all teachers to use BootUp's curriculum across several content areas and share examples with other educators in our online forum.

- Provide a list of curriculum content currently available.

BootUp's curriculum includes nearly 100 projects and teacher lesson plans currently available. We've also curated a collection of over 100 unplugged lessons that teach core computational concepts and practices without using devices. There are plans to continue to update and release hundreds of additional projects over time.

BootUp Curriculum Guide - ScratchJr, Scratch, Unplugged (Attachment)

Guide to the BootUp curriculum content currently available.

- Describe how the Respondent's content aligns with Iowa/CSTA Standards.

All PD and curriculum are aligned to the national CSTA Standards and K12 CS Framework, which were adopted for Iowa by the Iowa's CS Standards Review Team. The two districts BootUp currently works within Iowa, MOC-Floyd Valley CSD and Storm Lake CSD, both integrate computer science with Iowa Academic Standards, including ELA, Math and Science.

- Describe the Respondent's targeted grade levels.

BootUp's curriculum and PD focus is K-6th grade. The curriculum is scaffolded in a way that provides enough content for all K-6th grade teachers for several years.

- Provide the prerequisites for necessary for students to successfully progress through the curriculum.

The BootUp curriculum is scaffolded with increasing complexity; however, there are no prerequisites to do the curriculum. The lessons are designed to account for zero experience with coding for either a teacher or a student.

- Provide sample artifacts from the curriculum.

Sample Lesson Plan - 16 - Character Builder (Attachment)

Sample Coder Resources - 16 - Character Builder (Attachment)

- Describe how the curriculum can fit into a K-12 plan, as required in HF 2629.

BootUp PD's support also includes consulting and district implementation support. This can include supporting vertical alignment development or supporting the creation of a district K-12 scope and sequence. As an example, here is the elementary portion of the MOC-Floyd Valley CSD's K-5 Scope & Sequence which integrates computer science within Iowa standards and their K-12 plan.

MOC-FV K-5 CS Scope & Sequence (Attachment)

- Describe how the curriculum addresses diverse learners, including the gender participation gap, traditionally underrepresented minority students, students with disabilities and English learners.

The curriculum consists of interest-driven coding projects to support a diverse range of students. Students choose from open-ended projects on a topic or theme that interests them. Students adapt and remix coding projects that are selected by the students themselves. These projects enable students to explore their interests with code through design, music, art, animation, games, or stories. This approach allows students' interests to guide their learning of coding concepts and practices within projects that are personally meaningful. Depending on the specific goals and population, culturally relevant resources are shared with teachers to encourage the engagement of all student groups. Specific culturally relevant open education resources from organizations like NCWIT, CSinSF, Girls Who Code, and CSforALL are curated for teachers.

Exhibit 14 – Professional Development

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

BootUp delivers professional learning support through a combination of PD Workshops, Model Teaching and Coaching, and our Instructional Coach Course.

PD Workshops

In each PD session, BootUp facilitators model and discuss projects in Scratch and ScratchJr and use the TPACK framework to introduce and model technological, pedagogical, and content knowledge within a group setting. Computational thinking and computer science concepts and practices (based on the K12 CS framework and CSTA standards) are gradually introduced and reinforced, situated within applied learning experiences and group discussions. At the end of each session, teachers collaborate to outline what lessons they will implement before the next PD workshops. This collaborative approach promotes implementation and creates a shared purpose within each cohort. Educators learn how to support their students as facilitators, not lecturers, and learn where to locate additional resources to help their students.

Model Teaching and Coaching

To help teachers in the context of their own schools, BootUp facilitators visit them individually on-site. Coaching allows teachers the opportunity to ask questions and receive immediate, formative feedback about how they are implementing concepts learned during PD. Districts can choose to use this time for Model Teaching, Coaching, Practice Sessions and/or Lesson Planning Sessions.

Instructional Coach Course

The Instructional Coach Course (ICC) for District Instructional Coaches is an asynchronous course with 1-2 hours of content completed between each PD session. Instructional coaches take on increased co-facilitation and co-coaching responsibilities as they work through the ICC. They co-facilitate larger portions of professional development, with continued support from BootUp PD. The goal is for the instructional coach to lead all PD and coaching efforts once the district's engagement with BootUp has concluded.

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

We suggest districts schedule workshops spread out over time and expect to complete 4-6 within the first 6-12 months. However, our scaffolded workshops and ongoing support allow teachers to begin teaching coding and computational thinking in the classroom after only their first workshop.

- Provide sample artifacts from the professional learning.

PD Discussion Topics (TPACK) - order of presentation (Attachment)

BootUp PD Teacher Objectives (Attachment)

PD #2 Video - Screenshot 1

PD #2 Video - Screenshot 2

- Provide an agenda for one day of the professional development.

BootUp Sample Agenda - 3rd - 6th grade (Scratch) PD #3-#4 (Attachment)

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

Professional development consists of a combination of workshops and on-site support delivered across the entire school year. We customize our PD so it works with each district's PD infrastructure. This means we can customize the location, length (1.5, 3, or 6 hours), number of cohorts, time of day, or format (online, blended, in-person) to fit your professional development model. PD and support are scheduled by each district. Our most common PD model is four 6-hour workshops a year for two years for a total of 8 6-hour workshops, plus on-site model teaching and coaching, and the Instructional Coach Course..

PD Workshops

BootUp typically provides 24 hours of content for K-2nd grade educators and/or 24 hours of content for 3rd-6th grade educators, but more if requested.

Model Teaching and Coaching

BootUp typically provides 25 hours of on-site coaching a year. Districts can choose to use this time for Practice Sessions and/or Lesson Planning Sessions.

Instructional Coach Course

16 hours for the minimum recommended amount (preparing for professional development facilitating, videos, discussion forum responses, and readings) and 50 hours for including time spent on lesson plans and projects.

BootUp Support Overview (Attachment)

This visual shows our typical support, including PD Workshops, Coaching, and Instructional Coach Course

Exhibit 15 – Standards

- Include a list of standards addressed in the curricular materials.
- Describe how standards are age and academically appropriate.
- Describe how content is aligned to standards.

Professional development and curriculum are aligned to the national K12 Computer Science Framework and CSTA Standards. BootUp PD covers most standards and practices within our typical professional development and any other CSTA standards can be included in the PD based on the time, needs, and interests of each partner school district.

BootUp Crosswalk - CSTA K-12 CS Standards - Level 1A & 1B (Attachment)

This BootUp PD CSTA Crosswalk document lists grade band alignment of each concept and practice covered in BootUp curriculum and PD to CSTA Level 1A (Ages 5-7) and CSTA Level 1B (Ages 8-11)

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

Lesson plans include Main standard(s) and Reinforced standard(s) in the Objectives and Standards section. Here are two lesson plan examples that describe how the project meets the specified standards.

Sample Lesson Plan - 16 - Character Builder (Attachment)

Character Builder - Overview and Purpose:

Coders learn how to design custom costumes to create a customized character builder for a selected theme. The purpose of this project is to reinforce understandings of messages while introducing new features in Scratch.

Character Builder - Standards:

1B-AP-10 Create programs that include sequences, events, loops, and conditionals

- Control structures specify the order (sequence) in which instructions are executed within a program and can be combined to support the creation of more complex programs. Events allow

portions of a program to run based on a specific action. For example, students could write a program to explain the water cycle and when a specific component is clicked (event), the program would show information about that part of the water cycle. Conditionals allow for the execution of a portion of code in a program when a certain condition is true. For example, students could write a math game that asks multiplication fact questions and then uses a conditional to check whether or not the answer that was entered is correct. Loops allow for the repetition of a sequence of code multiple times. For example, in a program that produces an animation about a famous historical character, students could use a loop to have the character walk across the screen as they introduce themselves.

1B-AP-12 Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.

- Programs can be broken down into smaller parts, which can be incorporated into new or existing programs. For example, students could modify prewritten code from a single-player game to create a two-player game with slightly different rules, remix and add another scene to an animated story, use code to make a ball bounce from another program in a new basketball game, or modify an image created by another student.

Sample Lesson Plan - An Amazing Maze Game (Attachment)

An Amazing Maze Game - Overview and Purpose

Coders create a player controlled maze game with multiple, custom levels. The purpose of this project is to introduce conditional statements (if blocks) to create player controls, while reinforcing how to use the image editor to design mazes.

An Amazing Maze Game - Standards

1B-AP-08 Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

- Different algorithms can achieve the same result, though sometimes one algorithm might be most appropriate for a specific situation. Students should be able to look at different ways to solve the same task and decide which would be the best solution. For example, students could use a map and plan multiple algorithms to get from one point to another. They could look at routes suggested by mapping software and change the route to something that would be better, based on which route is shortest or fastest or would avoid a problem. Students might compare algorithms that describe how to get ready for school. Another example might be to write different algorithms to draw a regular polygon and determine which algorithm would be the easiest to modify or repurpose to draw a different polygon. (source)

1B-AP-09 Create programs that use variables to store and modify data.

- Variables are used to store and modify data. At this level, understanding how to use variables is sufficient. For example, students may use mathematical operations to add to the score of a game or subtract from the number of lives available in a game. The use of a variable as a countdown timer is another example. (source)

1B-AP-11 Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.

- Decomposition is the act of breaking down tasks into simpler tasks. For example, students could create an animation by separating a story into different scenes. For each scene, they would select a background, place characters, and program actions. (source)

1B-AP-13 Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.

- Planning is an important part of the iterative process of program development. Students outline key features, time and resource constraints, and user expectations. Students should document the plan as, for example, a storyboard, flowchart, pseudocode, or story map. (source)

1B-AP-15 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.

- As students develop programs they should continuously test those programs to see that they do what was expected and fix (debug), any errors. Students should also be able to successfully debug simple errors in programs created by others. (source)

1B-AP-16 Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.

- Collaborative computing is the process of performing a computational task by working in pairs or on teams. Because it involves asking for the contributions and feedback of others, effective collaboration can lead to better outcomes than working independently. Students should take turns in different roles during program development, such as note taker, facilitator, program tester, or “driver” of the computer. (source)

1B-AP-17 Describe choices made during program development using code comments, presentations, and demonstrations.

- People communicate about their code to help others understand and use their programs. Another purpose of communicating one's design choices is to show an understanding of one's work. These explanations could manifest themselves as in-line code comments for collaborators and assessors, or as part of a summative presentation, such as a code walk-through or coding journal. (source)

Exhibit 16 – Evidence of Effectiveness

- Provide how evaluation data was collected and an example of how an assessment informed program practice.
- Provide source(s) of evaluation evidence, including any third party, independent evaluation.
- Describe the benefits to students and educators in terms of content and skills growth, attitudes and intentions.

BootUp partners with BYU McKay School of Education professor Peter Rich (Instructional Psychology and Technology) to evaluate our programs' impact on educators and students.

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

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

Educator Evaluation:

In order to understand how well BootUp's methods prepare teachers to teach elementary computing, surveys are administered at the beginning and end of each academic year. The survey focuses on three areas shown to influence teacher behavior: beliefs about computing, teacher-efficacy for computing, and self-efficacy for computing. Items reflect the breadth of computational thinking as generally constituted, including problem solving, the ability to decompose problems, logical thinking, and debugging. By measuring teachers' beliefs, teaching efficacy, and self-efficacy over time, we see how much and in what ways teachers grow in their own confidence and beliefs about computing. Pre/post scores across years are analyzed using latent growth curve analysis, to identify and model teachers' growth in their confidence in and beliefs about coding as they become more experienced in teaching it.

Student Evaluation:

In 2018, BootUp and Dr. Rich began collecting student data to understand how participating in coding might affect students' computational thinking and attitudes toward coding, using the Computational Thinking test (CTt) and Elementary Student Coding Attitudes Survey (ESCAS). The CTt is used to assess young students' computational thinking (Román-González, Pérez-González, & Jiménez-Fernández, 2017). On average, students exhibited modest gains between the initial and year-end administrations, with 6th graders performing at the expected level for 7th graders by the end of the year.

Survey results are shared with BootUp's professional development team as well as each Districts' curriculum directors within a month of training so that changes can be made formatively and in a timely manner. This prompt and informative feedback is an instance of how BootUp continually adjusts its program practices based on feedback and assessment. Practices are adjusted at an individual district or when needed, broadly across all professional development.

BootUp Professional Development Annual Evaluation 2018-2019 (Attachment)

The most recent third-party evaluation completed by Dr. Peter J. Rich. It includes teacher outcomes from eight school districts across the country and student outcomes from BootUp's largest district.

Excerpts from the BootUp Professional Development Annual Evaluation 2018-2019 Executive Summary:

- By all measures, BootUp-trained teachers deemed their professional development training a success. Nearly all teachers indicated they increased their confidence to teach coding due to their participation in BootUp professional development.
- Teachers increased most in their confidence to teach coding, followed closely by their confidence in their own coding ability. They also increased in their computational thinking ability (albeit to a lesser degree) and in their valuation of the importance of coding (which started at a relatively high point).
- Elementary students demonstrated computational thinking abilities slightly above their international counterparts at the same grade levels. They increased their abilities about 1 grade level on the Computational Thinking test.
- Students demonstrated positive attitudes toward coding.

A Look at Students in Our Districts:

Female Students: 49%

Students Eligible for Free/Reduced Meals: 62%

Minority Students: 80%

BootUp Professional Development is committed to reaching every student, so our initiatives almost always provide district-wide support. Computer Science instruction occurs during the school day at our districts, not as an elective or afterschool club. We are proud to report that student participant demographics mirror each district's demographics.

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

BootUp Certifications and Awards:

- Awarded NSF Research Practitioner Partnership grant, Integrating Computer Science into the Elementary Curriculum in Culturally Relevant Ways: A Researcher-Practitioner-Partnership in Native-American Serving Districts in Wyoming, in collaboration with the Wyoming Department of Education and American Institutes for Research (AIR).
- Received STEMworks at WestEd “Accomplished” designation and recognition - www.stemworks.wested.org/bootup-pd
- Recognition as a Recommended Third-Party Education Resource by Computer Science Teachers Association (CSTA) and Code.org - www.code.org/educate/curriculum/3rd-party
- iGiant Design Advisory Council (igiant.org) Seal of Approval for Inclusive IT

Exhibit 18 - Addendums

Addendum 1 (Attachment)

Addendum 2 (Attachment)

Signed copies of posted RFP addendums 1 and 2.

Exhibit 19 - Request for Confidentiality

The Respondent must sign and submit with the Proposal the document included as

Attachment #3 Form 22 – Request for Confidentiality (Attachment)

Signed copy of Request for Confidentiality