

Applicant: Perry Community School District – SC Region

Email address:

ned.menke@g.perry.k12.ia.us

Name of Individual Submitting Application:

Ned Menke

Executive Summary

In 500 words or less, summarize the school district's, non-public school system's or accredited, stand-alone non-public school's vision for your Computer Science is Elementary initiative.

Perry Elementary School is excited about technology and the opportunities that are in our students' future. Our school provides students with devices and curriculum with a strong online component. This grant opportunity provides a way to jumpstart what we see as the next phase in our growth in ensuring our students are ready for careers in a global environment.

We want all of our students to engage in critical thinking, communication, and collaboration as they creatively solve a variety of problems across all curricular areas and grade levels. In addition, our students and teachers will be excited and confident while engaging in computer science activities and activities in our schoolwide makerspace. Engaging in computer science activities provides students and staff different ways to show their understanding of concepts using technology. Our students come from very diverse backgrounds, many of whom are at or below the poverty level, so developing their computer science skills and confidence will be one way to assist them in moving toward high paying careers.

Perry Elementary School is ready to make this happen. We have teachers with a strong interest in providing new learning opportunities for their students. We have teachers at each grade level using technology in a variety of ways. We have many students who are eager to learn computer science and simply need consistent opportunities to engage in creative and critical problem solving. This grant will provide an opportunity for us to create a cohesive integrated approach for integrating computer science across all grade levels and subjects.

Demographics

Points Awarded: / 10

10 points

What is the name of the district, system or stand-alone non-public school making the application?

Perry Community School District

What is the name of elementary school(s) that will participate in Computer Science is Elementary?

Perry Elementary

What grades does the participant building(s) serve?

PK-5

Provide the name, email address and phone number of the primary lead for the application.

Ned Menke, ned.menke@g.perry.k12.ia.us; (515) 465-8349

Provide the name, email address and phone number of the fiscal agent or business manager who will handle reimbursement if awarded.

Kent Bultman, kent.bultman@g.perry.k12.ia.us; (515) 465-4656, x8560

In what STEM region is the district/system/stand-alone non-public school located? (<https://iowastem.gov/regions>)

South Central STEM Region

Based on Student Reporting in Iowa (SRI) Oct. 1, 2018, reporting, what percentage of students in the participating elementary school(s) are eligible for free and reduced-price lunch?

71%

Based on SRI Oct. 1, 2018, reporting, what percentage of students in participating elementary school(s) are underrepresented populations in the field of computer science (African-American, Hispanic, American Indian/Alaskan, Native Hawaiian/Pacific Islander)?

54%

Goals and Measurements

Points Awarded: / 20

20 points

What are the measurable goals for the Computer Science is Elementary initiative in the district/system/stand-alone non-public school?

Goal 1: Create a scope and sequence of computer programming skills, based on the CSTA computer science standards adopted by the state of Iowa, that will be taught K-5.

Goal 2: Integrate computer programming instruction within all grade levels K-5 and multiple content areas.

Goal 3: Support students in practicing critical thinking, communication, collaboration, and creativity.

Goal 4: Develop interests and talents of students using technology tools and software.

Goal 5: Increase the confidence, skills, and abilities of all elementary teachers for teaching and developing lessons that embed computer programming fundamentals into lessons.

How do these goals tie to the larger district/system/stand-alone non-public school goals, mission, and vision?

Our building mission is to ensure learning for all students. We recognize that to accomplish this mission we strive to engage our students in a variety of learning experiences in order to capitalize on their diverse interests. We identified computer literacy as an area of growth for our district. We also recognize that our students need to develop skills that allow them to be productive workers capable of

synthesizing and creating a variety of digital tools and products to solve problems. In addition, we recognize that our students are growing as global citizens.

How will the district/system/stand-alone non-public school measure the success of the plan using student data, with an emphasis on achievement and engagement?

Goal 1: produce a computer programming scope & sequence for grades K-5.

Goal 2: collect & review teacher lesson plans and observations by administration.

Goal 3: collect examples of student work, review student test scores on measures such as the ISASP, ELPA, & FAST; engage teachers in observing each other, and use the Conditions for Learning survey results.

Goal 4: survey students about their interests in topics such as coding, computer programming, etc. Our hypothesis is that when students are given a choice they will choose a product that involves coding over other options.

Goal 5: survey teachers about their interest and confidence in coding and developing lessons that embed coding.

Plan

Points Awarded: / 40

40 points

Describe how the plan will be launched or built upon an existing computer science education in the proposed participating elementary school(s).

Currently teachers are using Learning.com with students; however, levels of implementation vary considerably from teacher to teacher and grade level to grade level. Every student will have his/her own Chromebooks in grades 2-5; students in K-1 have about 6 mini-ipads in each classroom.

Summer 2019 after receiving funding - develop a cohort of interested teachers. Our goal is to have one teacher per grade level plus one teacher from the specials area (i.e., art, music, physical education) to learn about coding and begin developing ideas and lessons, exploring programs/curricula, etc. This group will...

1. begin developing a scope and sequence, based on the CSTA standards, for K-5.
2. identify the computer programs (e.g., Tynker, Kodable, Code.org, etc.) they will use during the school year.
3. begin developing lessons to try during the 2019-20 school year.

2019-20 School year -- this cohort continues to meet and develop ideas and lesson, try out lessons and coding programs with students. This group will...

1. survey teachers and students to create a baseline.
2. teach the lessons developed during the summer, meet to share how those lessons went, and continue their learning.
3. visit Loess Hills Elementary in Sioux City once in the fall and once in the spring to learn from this team.

Summer 2020 -- cohort develops professional learning for all teachers about coding and deliver this professional learning during the school year. In addition, this group will...

1. revisit the scope and sequence to see if it needs revision.
2. continue learning and investigating new coding programs.
3. develop new lessons.
4. develop professional learning for the rest of the staff that will be implemented during the 2020-21 school year.

2020-21 -- All teachers are introduced to coding and begin developing lessons through the professional learning developed by the teachers from the cohort. In addition, the cohort will...

1. survey teachers and students to determine growth.
2. meet to share experiences with teaching coding, revise/create lessons.
3. visit Loess Hills Elementary in Sioux City along with other interested teachers.

Summer 2021 -- all teachers will participate in a computer programming summer camp to continue developing lessons, write new curriculum, etc. In addition, the cohort will...

1. revisit the scope and sequence to see if it needs revision.
2. continue learning and investigating new coding programs.
3. develop new lessons.
4. develop new professional learning for the rest of the staff. This professional 5. learning will build on the previous year's experience and be implemented during the 2021-22 school year.

2021-22 School year -- all teachers are implementing lessons developed from the summer camp. In addition, the cohort will...

1. survey teachers and students to determine growth.
2. visit Loess Hills Elementary in Sioux City along with other interested teachers.

Impact

Sub-Section Points Awarded: / 10

What is the plan for computer science instruction by July 1, 2020?

Summer 2019 after receiving funding - develop a cohort of interested teachers. Our goal is to have one teacher per grade level plus one teacher from the specials area (i.e., art, music, physical education) to learn about coding and begin developing ideas and lessons, exploring programs/curricula, etc. This group will...

1. begin developing a scope and sequence, based on the CSTA standards, for K-5.
2. identify the computer programs (e.g., Tynker, Kodable, Code.org, etc.) they will use during the school year.
3. begin developing lessons to try during the 2019-20 school year.

2019-20 School year -- this cohort continues to meet and develop ideas and lesson, try out lessons and coding programs with students. This group will...

1. survey teachers and students to create a baseline.
2. teach the lessons developed during the summer, meet to share how those lessons went, and continue their learning.
3. visit Loess Hills Elementary in Sioux City once in the fall and once in the spring to learn from this team.

By July 1, 2020 -- cohort develops professional learning for all teachers about coding and deliver this professional learning during the school year. In addition, this group will...

1. revisit the scope and sequence to see if it needs revision.

2. continue learning and investigating new coding programs.
3. develop new lessons.
4. develop professional learning for the rest of the staff that will be implemented during the 2020-21 school year.

Does the plan build on existing computer science instruction or launch a first-time initiative?

This is a first time initiative. Our school has the infrastructure to begin a stronger technology focus. For example, each kindergarten and first class has 6 iPADS with an opportunity to check out a classroom set of iPads. In grades 2 through 5, every student will have his or her own chromebook. These are kept at school and used throughout the day. We have one computer lab that classes can check out. We are also creating a makerspace that will be housed in the elementary library. There are individual teachers who excel at integrating technology within their daily instruction.

We would like to see programming taught in all grade levels, maximize our use of these technologies, and expand on the current usage to reach all students and classrooms.

Will computer science be integrated into other subjects or delivered as a stand-alone discipline?

Our goal is to have computer science integrated into other subjects across all grade levels.

What grade level(s) of students and teachers will be included initially?

Our goal is to create a cohort that includes at least one teacher from each grade level kindergarten through grade 5 and one teacher from our specials team. These teachers will be developing lessons that will be taught to their students and offer support to other staff during the school year.

Eventually our goal is to engage preschool and transitional kindergarten in coding lessons and activities.

What is the plan for expansion to all students in all grades in your school?

Our plan is to begin with a cohort of interested teachers during the 2019-2020 school year. This cohort will serve as the leadership team that will guide the building-wide expansion during the 2020-2021 school year with a goal of engaging all teachers in teaching lessons that involve computer science and programming. During subsequent school years, the cohort will continue to lead the building in expanding learning and teaching of computer science.

In addition to the work of the cohort, we are building a schoolwide makerspace. Coding activities will be incorporated into the makerspace. This will provide students an opportunity to explore and engage in computer science in a variety of ways.

Curriculum

Sub-Section Points Awarded: / 10

What is the plan to identify, revise or write high-quality computer science curriculum aligned to the Iowa Computer Science Standards, 21st Century Skills, Universal Constructs and career exploration?

Since this is a first time initiative, our cohort will develop a scope and sequence of computer science skills based on the CSTA standards adopted by the state of Iowa and the 21st Century Skills of the Iowa Core. The cohort will then identify one or two computer science curricula (e.g., Tynker, Kodable, Code.org, Scratch, etc.) to try with students during the 2019-20 school year. The cohort will revisit the scope and sequence at the end of each school year and revise it as needed based on their teaching experiences during the school year.

Professional Learning

Sub-Section Points Awarded: / 10

What is the plan for professional learning in years one (fiscal year 2020) and two (fiscal year 2021), including participants, providers, timeline, instructional pedagogy, curriculum connections, alignment to Iowa standards and school community/employer partner connections?

During the summer of 2019, the cohort will meet and review the grant, learn about coding, begin developing ideas and lessons, exploring programs/curricula, etc. Specifically the cohort will engage in professional learning about:

1. the CSTA standards and the 21st Century Skills from the Iowa Core for K-5 and then develop a initial scope and sequence to try during the 2019-20 school year.
2. Investigate different computer programs such as Tynker, Kodable, and Code.org, selecting one or two to try during the 2019-20 school year.
3. Begin developing lessons to try during the 2019-20 school year.

During the 2019-20 school year, the cohort will continue to meet and share experiences in teaching coding lessons, develop new ideas and lessons, and try them out with students. Specifically the cohort will engage in professional learning about:

1. Attend the ITEC conference to learn about computer science programs and ideas for lessons.
2. Try the lessons they developed during the summer and meet to share how those lessons went and continue learning
3. Visit Loess Hills Elementary in Sioux City once in the fall and once in the spring to learn from this team.
4. During the school year, the cohort will share their experiences with all staff.

During the summer of 2020, the cohort will meet and reflect on how the school year went in terms of teaching lessons about coding, review the survey data, and develop professional learning for all teachers about coding. Specifically the cohort will engage in professional learning about:

1. Revisit the scope and sequence to see if it needs revision
2. develop new lessons,
3. develop professional learning for the rest of the staff.

During the 2020-21 and during the 2021-22 school year, the cohort and other interested teachers will continue to expand teaching and learning about computer science. Specifically, the cohort and interested teachers will engage in professional learning activities including:

1. Curriculum and lessons used by teachers at Loess Hills Elementary.
2. Facilitating professional learning about computer science for all teachers during the school year.
3. Different kinds of computer science programs, coding programs, projects and lessons for students at the ITEC conference.
4. Members of the cohort team will attend a regional or national computer science education conference.

Community Engagement

Sub-Section Points Awarded: / 10

How will the community be engaged?

We will host at least one or two family computer science nights during each school year in order to teach families about what we are doing at school as well as share ideas for projects they can do at home. We will feature demonstrations/examples of student work during parent/teacher conferences. Each grade level will feature computer science activities in their weekly information that goes home to

parents. We will also invite the community newspaper and local businesses to visit the elementary and share the kinds of computer science activities students are doing.

We have a strong partnership with Des Moines Area Community College (DMACC) and will collaborate on activities to generate excitement about computer science among our families.

How will parents and a broader stakeholder group be involved in planning and implementation of the Computer Science is Elementary initiative?

We will invite parents to be part of an advisory team that will meet periodically to learn about the computer programming that is happening within the school and then share their thoughts and ideas for next steps.

Who are or will be the community/employer partner(s) and what is the shared vision for engagement?

The cohort will meet with our community partners, Des Moines Area Community College (DMACC) and Hy-Vee and together identify ways that they might collaborate and support computer science across the elementary. Another community partner that continues to collaborate with us is the Perry Public Library. We plan to contact the Library Director and identify ways we can collaborate.

All applicants must have at least one community/business partner. Please include at least one signed letter of commitment (in PDF format) on employer letterhead from a community/business partner. Up to 10 employer letters may be added. This must be done in order for the application to be considered complete.

We have letters from Des Moines Area Community College and Perry Hy-Vee.

Budget

Points Awarded: / 20

20 points

Please include the amount and a brief explanation of the use of funds per cost category not to exceed \$50,000 over two years. Allowable expenditures may include the following categories:

Budget Category	Total Request	Year 1	Explanation of Funds	Year 2	Explanation of Funds
Professional Learning	\$ 12,000.00	\$ 6,000.00	Begin developing lessons to try during the 2019-20 school year. Attend the ITEC conference to learn about computer science programs and ideas for lessons. Develop professional learning for the rest of the staff that will be implemented during the 2020-21 school year.	\$ 6,000.00	Facilitating professional learning about computer science for all teachers during the school year. Different kinds of computer science programs, coding programs, projects and lessons for students at the ITEC conference. Members of the cohort team will attend a regional or national computer science education conference.
Curriculum Development	\$ 20,000.00	\$ 10,000.00	Learn about and use the CSTA standards and the 21st Century Skills from the Iowa Core for K-5 to develop an initial scope and sequence to try during the 2019-20 school year. begin developing a scope and sequence, based on the CSTA standards, for K-5. identify the computer programs (e.g., Tynker, Kodable, Code.org, etc.) they will use during the school year. begin developing lessons to try during the 2019-20 school year.	\$ 10,000.00	Revisit the scope and sequence to see if it needs revision, develop new lessons, and develop professional learning for the rest of the staff. Investigate new computer programs and determine which one(s) to try during the 2020-21 school year.
Site Visits	\$ 10,000.00	\$ 5,000.00	Visit Loess Hills Elementary in Sioux City once in the fall and once in the spring to learn from this team.	\$ 5,000.00	Visit Loess Hills Elementary in Sioux City once in the fall and once in the spring to learn from this team.
District Costs	\$ 8,000.00	\$ 4,000.00	Items such as Spheros, Ozobots, Beebots, apps, cubelets, Osmo Base, etc	\$ 4,000.00	Items such as Spheros, Ozobots, apps, Lego Boost Robotics, etc.
Staffing Support					
Other					
TOTAL:	\$ 50,000.00	\$ 25,000.00		\$ 25,000.00	
TOTAL VERIFICATION:	\$ 50,000.00				
(Formula Written to Sum totals from Year 1 and 2)					

Cost Sharing (may include in-kind or cash from partners or other education funding streams)

Anticipated cost share over the two-year funding period.

\$323,000

Year 1 anticipated cost share (in dollars). Please provide a brief explanation.

\$166,500: \$10,000 to create a schoolwide makerspace \$6,500 for ethernet usage \$150,000 for new laptops for students in grades 2 - 12

Year 2 anticipated cost share (in dollars). Please provide a brief explanation.

\$156,500: \$6,500 for ethernet usage \$150,000 for new laptops for students in grades 2 - 12

The expectation for the Computer Science is Elementary award is that the plan uses primarily existing school revenue sources to execute a plan. After year two of the award, what is the plan for sustainability using existing or any additional funding sources?

Perry CSD will be able to sustain this work through several means. Our district has a track record of financially supporting technology initiatives. An example of this is our 1-to-1 computer initiative. We allocate sufficient dollars yearly to support this, including replacing outdated computers and keeping programming current. Our district also continues to update our network to support programming, streaming, etc. The district also provides support for professional learning to ensure teachers have opportunities to expand their skills and knowledge-base. In addition, the district provides support for teachers to meet in collaborative teams to develop curriculum during the summer. Last, we will continue to pursue grants and other opportunities for purchasing new equipment, robots, and other computer science resources.

Computer Science is Elementary Model Network

Points Awarded: / 10

10 points

To be eligible for the award, participation in the Computer Science is Elementary Model Network is necessary. By checking this box, the district/system/stand-alone non-public school is willing to participate in a Computer Science is Elementary Model Network including, but not limited to, hosting visits and sharing best practices, challenges, opportunities and successes with colleagues across the state.

I agree



1215 141st Perry, Iowa 50220 | 515-465-5321 |

Ned Menke
Perry Elementary School
Perry, Iowa 50220

Dear Ned

The Perry Hy-Vee would be proud to support the "Computer Science is Elementary" program in our local school. Hy-vee is a long-standing supporter of education in Perry. We have several annual programs and events to support local teachers and students.

This program is a great fit for the young students in our community. Technology is such a huge part of our world today and this will help prepare our youth for their future both in their school life and give much needed skills and knowledge needed in the years to come.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Rohe".

Matt Rohe

Store Director, Perry Hy-Vee



To whom it may concern,

It's my pleasure to provide this letter of support for Perry Community School's application for the Computer Science is Elementary grant. As the director of the DMACC VanKirk Career Academy in Perry, I have become well versed in the workforce challenges that the state of Iowa faces. DMACC has partnered with several of Governor Kim Reynold's workforce and education initiatives aimed at reducing the shortage of highly skilled Iowans to fill the employment gap. From the Future Ready Iowa Act to the Iowa Governor's STEM Advisory Council these programs are helping prepare our students for emerging employment opportunities.

DMACC has partnerships with industry to help provide educational opportunities to students in K-12. In collaboration with Pillar Technology, DMACC is developing a computer science program that offers classes to high school students to develop coding skills and then connect them to software development firms in need of programmers. Computer Science is Elementary is a natural extension of this movement towards early exposure of basic computer science skills that are in high demand and will surely become more valuable throughout the 21st century. This foundational of skills will be enhanced at the college level and may help accelerate the growth of the tech industry in Iowa.

As an organization DMACC has taken a strong step towards STEM programming over the last decade. From the Celebrate Innovation week (<https://dmacc.edu/ciweek>) at DMACC's West Campus to its First Lego League partnership. At the local level, the DMACC VanKirk Academy will be holding a STEM Festival for 3rd-6th grade students this spring and will be starting a robotics club for elementary students as well. I look forward to the partnership opportunities that will become available if Perry elementary receives the computer science is elementary.

As a former K-12 educator I have long been interested in the STEM movement and have worked with Dr. Sarah Derry to bring programming to small rural schools. I value the work that Dr. Derry and all those involved with the Governor's STEM council do to help schools like Perry elementary receive the resources needed to provide innovative programming. The Perry School district has a strong leadership team in Superintendent Wicks, Curriculum Director Kevin Vidergar and Elementary Principal Ned Menke and I stand at the ready should they need any additional support. Please let me know if you have any questions, comments or concerns.

Sincerely,


Eddie Diaz

Director, Career Advantage
DMACC- ediaz@dmacc.edu

(C) 515-850-7735

(O) 515-428-8120

Reviewer Name:

Reviewer Signature:

Total Points Awarded: /100