PHOENIXIDA

Organization Name: CodePHX

GRANT REVIEWER RUBRIC

The following grant reviewer rubric is provided as a tool to help in understanding the areas in which reviewers will rate each concept paper. As grantees prepare a concept paper, they are asked to consider:

- Have I provided sufficient information for a reviewer to be able to understand the concept paper in accordance with this reviewer rubric?
- Can a reviewer analyze the concept paper and apply the below rating factor for overall consideration?

CRITERIA	SCORING Scale of 1-10	MEASURE
Purpose/Community Need	**1 Weak, 5 Average 10 Strong**	
	8	Concept paper is in line with the grantee mission/vision and has a distinct focus, format, objective.
	9	Defined need is a priority or urgent issue in the community.
	9	Concept paper activities clearly address the articulated need.
	9	Concept paper targets underserved population, size/range of population directly served is meaningful and appropriate.
Results/Evaluation		
	8	Evidence is provided indicating the program will achieve the desired results.
	7	Results are significant and can be demonstrated.
	8	Activities, time table, and goals are clear and well thought out. Strong evidence of collaboration and sufficient resources allocated to accomplish stated goals.
	7	Program or project is sustainable beyond grant timeline.
Community Support		
	7	Diversity of funding sources (financial backing, in-kind support, and/or volunteer support from the community) indicates concept paper is sustainable.
Financial indicators		
	9	Budget is easy to understand and logical. Clarity and feasibility of proposed project expenses and income.
Total	81	

At the completion of the concept paper review, the executive director may make award recommendations to the Phoenix IDA Board of Directors, Community Impact Fund Committee or any committee of the board. If the funding request is denied, notification will be made to the grantee.

Throughout the term of the award, the potential grantee and the Community Relations Administrator will communicate regularly about the status of the award. Interim reports and other types of ongoing communication may be required.

CodePHX: Bringing STEM Opportunities to Under-Served Youth

Mission/Vision: provide a general description of the organization's mission and vision statement. (100-word limit)

The vision of CodePHX is that youth who are traditionally under-represented in technology fields (including girls, minorities and students from low-income families) will pursue post-secondary education and careers in Science, Technology, Engineering and Math (STEM) fields in greater numbers. The mission is to expose youth to computer coding and STEM skills in out-of-school settings. Coding is the writing and/or developing of software commands to achieve the outcome for a task, program or game. The goal is to allow youth to gain knowledge and hands-on experience in an informal setting that will help them achieve success in school, life and career.

Project Description: Provide a general description of the conceptualized project/program. Include the expected duration and whether this is a new or existing effort. (250-word limit)

CodePHX is an expansion of a successful pilot in two City of Phoenix libraries to teach computer coding to children ages five and up. With additional funding, including a $50,000 commitment from the City of Phoenix, the program will be expanded over three years to 29 sites, including all 17 libraries and 12 community centers. In the first year, the grant will fund coding at four recreation centers and four libraries; an additional four libraries will be offered with existing City funds. In addition, a mobile coding lab will be included in the Parks and Recreation mobile recreation program.

The importance of learning computer coding cannot be overstated in the digital age. Coding has been described as a new kind of literacy. And while not every child will become a computer programmer, learning to code teaches more profound computational thinking that prepares students to be creative problem solvers.

By combining forces in this initiative, the Parks and Recreation and Library departments are leveraging a proven curriculum developed by Library staff and dramatically increasing the program's reach by scaling up in recreation centers and libraries. Grant funds will be used to purchase equipment and software and to hire part-time staff to lead the programs.

Existing curriculum developed and tested by Library staff over the last two years includes Coding, Robotics and 3D Modeling. Multiple classes will run year around at community centers and libraries on both a registration and drop-in basis. The program will impact approximately 500 unique youth ages 5-16 in the first year and 1,500 by the third year.

Need for the Project: Identify the community indicators that demonstrator the need for the project. Share how the need was determined. (500-word limit)

The CodePHX target audience is girls and under-represented minorities. Students from historically disadvantaged groups such as African-Americans, Native Americans and Hispanics, female and male, are less likely to take advanced math and science classes in high school, which negatively affects their ability to enter and successfully complete STEM majors in college or enter into STEM related careers.

The lack of diversity in computer science also affects women, as self-reported statistics from some of the largest tech companies demonstrate -- men vastly outnumber women in programming jobs. In 2015, USA Today reported that women make up 17 percent of technical employees at Google (notably, only two percent of Google tech jobs were held by Hispanics and one percent by African-Americans). Similar numbers have been reported in TechCrunch for Facebook. In Arizona, of the 484 computer science graduates in 2014, only 15 percent were female.

Currently, 90 percent of parents want their elementary school children to learn computer science but only 25 percent of elementary schools in Arizona teach computer science in the regular curriculum (Code.org). While Arizona offers teachers some funding for computer science professional development, computer science is not required to be taught in high school and there is no K-12 curriculum standard. Per the Arizona STEM Network, only 16 out of 325 schools in the Phoenix area are classified as STEM schools.

In the City of Phoenix, 34.2 percent of children are growing up in poverty and 27 percent are living in households where no adult holds a high school diploma. Children in these households are currently experiencing a cycle of these negative effects (sources Kids Count and Census.gov). Children from low-income families are disproportionately affected by the statewide lack of educational resources for computer science. The diversity problem in computer science jobs starts in Kindergarten and the gap widens as low-income children lack opportunities to catch up on these skills at expensive summer camps or in paid after-school clubs that more advantaged children can afford.

Between now and 2024, Arizona STEM jobs will grow by 24 percent (source: Arizona STEM Network). Arizona currently has 9,657 open computing jobs (2.8 times the average demand rate in Arizona). Nationally, the Bureau of Labor Statistics projects a 37.5 percent growth by 2022 in the "computer systems design and related services" industry – from 1.6 million jobs in 2012 to more than 2.2 million in 2022. The average salary for a computing occupation in Arizona is $85,165, which is significantly higher than the average salary in the state ($45,310).

There is clearly a demand in the computer science industry for skilled workers. Parents are advocating for these skills to be taught in grade school, but Phoenix schools are not able to meet that need. Thus, the children from low-income families (largely minority children) are at a huge disadvantage because their parents cannot afford to supplement their education with paid programs. By providing free year-round out-of-school coding classes, CodePHX will help close the diversity gap in youth pursuing STEM education and careers.

Population to be served: The population to be served includes those who will be directly involved in the conceptualized activities. Describe the characteristics of the population or community including age or age range, gender, race, disability, and any unique characteristics such as needs, risk factors, barriers, etc. Include projections of the number to be served. Where applicable, and if it lends greater understanding to the concept, similar information be included regarding the indirect population – those impacted by the project even though not directly engaged. (500-word limit)

The CodePhx target population is under-represented youth ages 5-16. In the first year, programming will be offered at 12 sites in seven Phoenix communities (as defined by City of Phoenix Village Planning). These communities were selected because of a combination of available staff, appropriate facilities and proximity to low-income residential areas.

Phoenix Planning Village	**CodePHX Sites (Year One)**
Alhambra	Yucca Library*
Central City	Burton Barr Central Library*
	Harmon Library*
	Vernell Coleman Recreation Center
Maryvale	Palo Verde Library*
	Bret Tarver Learning Center
North Mountain	Cholla Library
	Sunnyslope Youth Center
Laveen	Cesar Chavez Library
Estrella	Desert Sage Library
Deer Valley	Mountain View Community Center
Ahwatukee Foothills	Ironwood Library
	*City funded

Per City-Data.com, 34.2 percent of the children in Phoenix are living below the poverty level. Across these communities, the average percent of families living below poverty is 11 percent. Eight of the 12 sites are concentrated in the communities with the highest rates of poverty – in Central City, 38 percent of families are below poverty; in Maryvale , 31 percent; and in North Mountain and Alhambra, 16 percent of families live below the poverty level. There are more than 280,000 children ages 5-17 in these seven communities and 71 percent of them are minority youth, predominantly Hispanic.

Many of these same children are underperforming on the AZ Merit tests for math and English. In many schools in the districts that span these communities (including Washington, Cartwright, Isaac, Tolleson, Murphy, and Phoenix elementary districts), less than 20 percent of third grade students are meeting English and math standards. Students who are not proficient readers by the end of third grade are particularly vulnerable to falling behind in every subject and are much more likely to drop out of school. Per Code.org, there is some evidence that computer science instruction helps students make gains in math and reading. It's a two-fold effect. The hands-on experience in coding teaches computational thinking, persistence and problem-solving. The sense of accomplishment also leads to a more positive view and interest in school and STEM subjects.

CodePhx will serve at least 500 unique students in the first year, growing to 1,500 students by year three, for a total of at least 3,000 children served over three years (conservative estimates). Two-hour programs at libraries will be offered year-round on a drop-in basis, as well as four-day camps during winter, spring and fall school breaks. Programs at recreation centers will be structured as eight-week workshops meeting two hours a week for a total of 16 hours per session. Three sessions will be held during the year, as well as shorter sessions during holiday and school breaks.

Indirect benefits will accrue to the wider population of children in the community by increasing the visibility of and demand for coding programs, both in school and after school.

Goals, objectives and Strategies: Outline the goals, objectives and key strategies for engaging and retaining and impacting the population or community that will be served. (500-word limit)

The goal is to encourage girls, minorities and children from low-income families to pursue post-secondary education and careers in high-paying STEM careers.

Objectives:

- Create out-of-school communities of learning around coding that are fun and engaging for children ages 5-17.
- Engage 500+ youth in coding programs in the first year.
- Foster critical thinking and problem solving skills.
- Expand program over three years to a total of 29 sites (in yrs. 2 & 3 – 9 libraries + 12 community centers).
- Libraries: Acacia, Agave, Century, Desert Broom, Juniper, Mesquite, Ocotillo, Saguaro, South Mountain Community.
- Community Centers: Desert West, Devonshire, Eastlake, Faye Gray, Hayden Neighborhood, Longview, Marc Atkinson, Muriel Smith, Sunnyslope Community Center, University Park, Verde Park, Washington Activity Center,

Strategies include:

- Scale existing library coding programs to have 12 sites in the first year to serve more youth.
- Fine tune curriculum as the program grows to meet industry standards.
- Market the programs at workshop sites, neighboring school districts and other community locations using a variety of media.
- Track participation in coding classes with sign in sheets, work product and pre/post surveys.
- Develop student incentives for achievement.

Projected Outcomes and Related Indicators: Detail the intended outcomes of the conceptualized project/program. Identify the indicators that will point to the degrees that the outcomes have been

attained. Explain the evaluation methodology envisioned including a description of who will conduct the evaluation activities. (500-word limit)

Outcomes	Indicators
Expose more youth to coding.	Repeat students and consistent student attendance will be measured to guide motivation and curriculum.
Increase access to caring adults in youth's lives.	500 students will attend a coding class at either a library or a community center in the first year.
Students gain critical thinking, problem solving and computational skills.	250 of the students will complete a class, produce a digital product or demonstrate increased skill in coding or robotics in the first year.
Students are engaged and motivated to build, create and explore.	Post-Training evaluations will show students enjoy coding and robotics and are excited to learn more.
Students express interest in post-secondary education and careers in STEM.	Entrance and exit surveys will show participants interact with staff mentors to deepen their knowledge in areas of personal interest related to coding and robotics.

In addition to the collection of demographic statistics at each site, students will be assessed using pre- and post surveys. Surveys will be distributed and collected by the onsite course instructors and will be collated and evaluated by their supervisors. Pre/post surveys will evaluate students' comfort levels regarding the subject matter, excitement about the subject matter, intent regarding continued learning in the subject, career interest and satisfaction with instructors and classes. Students will be monitored for skills progression in some classes utilizing teacher dash boards in web tools such as code.org and kodable.com.

Collaborative Partners: Describe the role, relations and value-added of other organizations key to the success of the concept. (500-word limit)

Parks and Recreation Department with the Library Department will collaborate to offer high quality, year-round coding programs at libraries and community centers. The Library Department will provide the curriculum, staff training and equipment specifications. Both departments will oversee the hiring of part-time staff to teach workshops. In the first year, Parks staff will coordinate the classes in four community centers (Vernell Coleman Recreation Center, Bret Tarver Learning Center, Mountain View Community Center, Sunnyslope Youth Center). Phoenix Public Library will continue successful coding programs at Burton Barr Central Library and Palo Verde Library and add programs at Harmon, Yucca, Cesar Chavez, Desert Sage, Ironwood, and Cholla libraries (note: expansion at Harmon, Yucca and Palo

Verde is paid for through $50,000 in funding provided by the City of Phoenix, and the mobile unit is also paid for by another $50,000 provided by the City of Phoenix). By coordinating staff training, fidelity to a proven curriculum and equipment purchases, more students can be reached.

Both departments will reach out to schools adjacent to program sites to promote the coding workshops. The Library Department has a fulltime Literacy Outreach Librarian who has extensive contacts in these school districts. In fact, she is already leading a STEM Communities of Learning project with six schools in the Washington Elementary School District. The coding programs at Cholla Library and the Sunnyslope Recreation Center will be a natural extension of this existing partnership. School districts that will be engaged in the first year include: Phoenix Union High School District, Deer Valley Unified, and Phoenix, Washington, Cartwright, Isaac, Murphy, Laveen, Pendergast, Riverside, Tolleson, and Wilson elementary districts.

Library staff, through the MACH1 makerspace, have a broad list of community partners which will take part in CodePHX. MACH1 staff will work with other makerspaces such as: Gangplank, CO+HOOTS, CREATE, and HeatSync Labs. Other community organizations that will be involved in CodePHX include: Arizona SciTech, Science Arizona, Arizona State University, Grand Canyon University, Arizona FIRST LEGO League, and Girl Scouts-Arizona Cactus-Pine Chapter.

Implementation Plan: Describe the conceptualized implementation including associated timelines, contingencies and deadlines. Note key staff roles and explain the expertise that qualifies the organizations to address the described needs. (500-word limit)

Activity	**Timeframe**	**Responsible Parties**
Finalize Curriculum	November 2016	Library
Order Equipment	February 2017	Library provides list / Parks places order
Hire and train staff	January-March 2017	Library
Pilot Classes at four locations (4)	April-May 2017	Library / Parks
Evaluate Pilot Classes	May 2017	Library / Parks
Train Summer Volunteers	May 2017	Library / Parks
Launch Marketing Campaign	May 2017 (ongoing)	Library / Parks
Launch Summer Classes at 12 sites and Camps at 5 sites	June 2017	Library / Parks
Evaluate Summer Classes and Camps	August 2017	Library / Parks
Launch Fall programs at 12 sites at Fall camps at 5 sites	September 2017	Library / Parks
Order supplemental Equipment in preparation for year two expansion	September 2017	Parks
Hire staff for year two expansion	October 2017	Library / Parks

Launch Student Mentor Program	December 2017	Library / Parks
Launch spring classes at 20 sites and camps at 9 sites	January 2018	Library / Parks
Evaluate Spring Programs Break Camps	April 2018	Library / Parks
Evaluate Spring classes	May 2018	Library / Parks
Launch Summer classes at 20 sites and camps at 9 sites	June 2018	Library / Parks
Evaluate Summer classes and camps	August 2018	Library / Parks
Launch Fall after school classes at 20 sites	September 2018	Library / Parks
Order supplemental equipment in preparation for year three expansion	September 2018	Parks
Hire staff for year three expansion	October 2018	Library/Parks
Train staff for year three expansion	November 2018	Library / Parks
Evaluate Fall afterschool classes	December 2018	Library / Parks
Launch spring classes 29 sites	January 2019	Library / Parks
Investigate permanent funding for additional staffing	February 2019	Library / Parks
Evaluate Spring Classes and camps	May 2019	Library / Parks
Launch Summer classes and camps at 29 sites	June 2019	Library / Parks
Evaluate Summer classes and camps	August 2019	Library / Parks
Launch fall after school classes	September 2019	Library / Parks
Evaluate fall after school classes	December 2019	Library / Parks

The marketing plan will include flyers, posters and banners in school districts, libraries, community centers and community partner sites (including high density apartment complexes adjacent to class sites). There will be a social media and newsletter campaign by Library and Parks and Recreation as well as targeted outreach to schools and teachers. In addition, the Public Information Officers in both departments will pitch articles and news coverage to various media outlets, particularly Spanish-language. The Library will also use their market segmentation software to create and send direct email messaging to households in surrounding communities.

The Parks and Recreation IT professional that is a part of the CodePHX Project Team will oversee the purchase and installation of equipment and coordinate instructors in the community centers. The Library Manager for the MACH1 space will oversee all training and will supervise instructors. The Project

Team will hold monthly meetings to facilitate coordination and ensure all sites are implementing successful programs in the community with consistent curriculum.

Sustainability: Explain the plans for sustaining the conceptualized project/program and/or impact beyond the timeline associated with supported planning and/or implementations activities. (500-word limit)

STEM learning has been part of the strategic plan at the Library Department for more than three years. The current Library Strategic Plan (2016-2019) has the following high-level Goal and Objectives related to STEM education:

> **Goal 2:** *Phoenix Public Library will expand access to engaging afterschool activities for youth that promote 21st century skills.*
>
> > **Objective 1:** Expand our STEM and maker programming both at Burton Barr Library and system wide through June 30, 2019.
> >
> > **Objective 2:** Offer more regular coding programs for tweens and teens system-wide by June 30, 2017.
> >
> > **Objective 3:** Provide library staff with training in the area of fostering 21st Century skills in children through June 30, 2019.

As a matter of procedure, when new programs are piloted and deemed successful, they are quickly integrated into core staff competencies. For example, in 2013 a new STEM-focused story time model was trialed at the Library and then all youth staff were trained to deliver the program within six months. Extending training to existing staff to make coding programs a routine offering in libraries and community centers is a key strategy in creating sustainability.

With respect to equipment, CodePHX will purchase equipment that is durable and easy to maintain. A rigorous schedule of maintenance and repair will be established. Library and Parks and Recreation staff will also develop partnerships with local businesses to donate equipment to CodePHX.

CodePHX will actively solicit and train volunteers from educational and business partners to grow the number of qualified instructors without adding to payroll costs. By the third year of the grant, CodePHX will establish a student mentorship program to engage and reward high school students who have participated by creating student internships to increase the number of qualified mentors in the classroom.

The City of Phoenix respectfully requests $250,000 from the Phoenix IDA to support the expansion of CodePHX. During this grant period, CodePHX will continue to seek additional funding and partnerships to grow and staff the program.

Budget: Include the actual dollar amount of the request along with the dollar amount and source of any other revenue, including in-kind resources. Provide a general description of how funds will be utilized including the main expense categories. Attach a copy of the budget for the project/program and a copy of the org 501c3 IRS letter

City of Phoenix Council District: All

City Council letter of support: Include a letter of support from the city council member indicating their knowledge of the program/project and endorsement.

City of Phoenix
OFFICE OF THE CITY COUNCIL

Daniel T. Valenzuela
Councilmember

District 5
602-262-7446
Fax: 602-495-0628
TTY: 602-495-5810

phoenix.gov/district5
facebook.com/danielforphoenix
twitter.com/daniel4phoenix
youtube.com/DTVPHX

March 2, 2017

Mr. Sal Rivera
President
Phoenix IDA Board of Directors
251 W. Washington Street, 9th Floor
Phoenix, AZ 85003

Dear Mr. Rivera,

Since taking office on the City Council I have been committed to leading the city of Phoenix in its efforts to build momentum as an epicenter for entrepreneurship that will diversify and strengthen our economy.

Three years ago I had the opportunity to join CO+HOOTS, a local co-working space, in launching the first global entrepreneur exchange program – a program that is designed to bring together the world's most innovative entrepreneurs and coworkers to share ideas in cities throughout the world. Through my involvement with CO+HOOTS I have been able to join a diverse confederation of the business community who had the foresight to identify a very clear shift in the entrepreneurial ecosystem in Phoenix. This collective of socially conscience entrepreneurs are dedicated to helping one another and came together to create the "#yesphx Rising", with a mission to support a movement of entrepreneurs in Phoenix and across the country.

As Chair of the Phoenix Downtown, Aviation, Economy and Innovation Subcommittee and inspired by #yesphx, I have continued to push the envelope of a new economy even further through a city partnership with Arizona State University to create The Hive, a program at Burton Barr Library that provides a discovery space for business entrepreneurs that combines elements of a co-working space with services and resources.

The Hive became a success very early, and since opening its doors 93 startups have been launched and 139 jobs have been created as a result of the partnership and investment. The Hive has not only set the tone for public models to embrace Phoenix as a destination for success, but also made me aware that the entrepreneurs of tomorrow must be developed in the classrooms of today.

I am asking for your consideration of an investment in the CodePHX program because I believe that coding and STEM education should be made equitable, accessible and free to every youth in Phoenix who wants the opportunity to prepare and consider careers in technology fields, specifically coding, which at its essence is the writing and developing of software commands to achieve the outcome for a task, program or game.

The funding request before the Phoenix IDA Board of Directors will augment a $596,631 commitment, both in-kind and cash, from the City of Phoenix and provide for the expansion of successful city pilot that provides free computer coding instruction in two public libraries, enabling CodePHX to reach all 17 Phoenix library branches and an additional 12 community center over the next three years.

If the City of Phoenix is going to great lengths to getting startups and innovators comfortable in Phoenix at the early stage, we should ensure our students are prepared and have the opportunity to participate. I can think of no better way to do this than by transforming our library system into hubs and incubators that expose youth to equitable, accessible and free computer coding and STEM skills that will help them achieve success in school, life and career.

Companies like Apple and Intel started in basements and garages, so why can't the next great Phoenix company start in a local library branch with momentum from the CodePHX program.

Thank you for your time, consideration, and service on the Phoenix IDA Board of Directors.

Sincerely,

Councilman Daniel T. Valenzuela
City of Phoenix
District 5

bc: Phoenix IDA Board of Directors
Mr. Juan Salgado
Mr. Ed Zuercher

CodePHX Project

Sources	Year 1	Year 2	Year 3	Total
City of Phoenix*	$ 170,111	$ 198,877	$ 227,643	$ 596,631
ACF	83,333	83,333	83,333	250,000
Phoenix IDA	150,000	100,000		250,000
TBD	16,839	75,298	229,433	321,570
Total	$ 420,283	$ 457,508	$ 540,409	$ 1,418,201
City %	*40.5%*	*43.5%*	*42.1%*	*42.1%*

Uses	Year 1	Year 2	Year 3	Total
Personnel Costs[1]	$ 106,153	$ 157,838	$ 211,999	$ 475,991
Hardware	141,150	123,150	123,150	387,450
Software	9,000	9,000	9,000	27,000
Promotion/Marketing	50,000	25,000	25,000	100,000
Supplies	2,400	4,000	5,800	12,200
Mileage	1,340	2,680	4,020	8,040
Expansion Costs[2]	50,000	50,000	50,000	150,000
Facility Costs[1]	25,600	51,200	76,800	153,600
Embedded Equipment[1]	34,640	34,640	34,640	103,920
Total	$ 420,283	$ 457,508	$ 540,409	$ 1,418,201

* City of Phoenix project contributions include:

[1] In-Kind contributions ($446,631, including a portion of Personnel Costs)

[2] Cash outlay ($150,000)

CODEPHX SITES		Data from Maricopa Association of Governments							
Cholla Dist 1		**Mt View Dist 2**			**Sunnyslope Dist 3**			**Tarver (Dist 4)**	
Age 5-17	20%	Age 5-17	15%		Age 5-17	17.20%		Age 5-17	23.10%
Male	20.30%	Male	14.40%		Male	18.10%		Male	23.50%
Female	19.80%	Female	14.60%		Female	13.10%		Female	22.70%
Population		Population			Population			Population	
Black	4.80%	Black	3.80%		Black	4.50%		Black	4.40%
Native American	2.40%	Native American	1.00%		Native American	1.30%		Native American	1.70%
Hispanic	40.70%	Hispanic	17.20%		Hispanic	27.40%		Hispanic	81.10%
Median Household Income	$38,389	Median Household Income	$46,529		Median Household Income	$42,137		Median Household Income	$22,137
Education		*Education*			*Education*			*Education*	
Less than 9th Grade	9.2%	Less than 9th Grade	3.1%		Less than 9th Grade	4.8%		Less than 9th Grade	32.3%
No High School Diploma	13.1%	No High School Diploma	5.9%		No High School Diploma	8.8%		No High School Diploma	19.8%
High School Graduate	29.9%	High School Graduate	24.0%		High School Graduate	31.1%		High School Graduate	27.7%
Some College	24.3%	Some College	28.7%		Some College	28.9%		Some College	13.0%
Associates	9.1%	Associates	8.5%		Associates	8.0%		Associates	2.4%
Bachelors	10.0%	Bachelors	17.9%		Bachelors	13.4%		Bachelors	3.0%
Graduate / Professional	4.3%	Graduate / Professional	12.0%		Graduate / Professional	4.9%		Graduate / Professional	1.7%
Occupation		Occupation			Occupation			Occupation	
Computer, engineering, and science occupations	3.5%	Computer, engineering, and science occupations	5.20%		Computer, engineering, and science occupations	5.60%		Computer, engineering, and science occupations	0.80%
Computer and mathematical occupations	1.9%	Computer and mathematical occupations	2.60%		Computer and mathematical occupations	3.70%		Computer and mathematical occupations	0.50%
Desert Sage (Dist 5)		**Ironwood (Dist 6)**			**Chavez (Dist 7)**			**Coleman (Dist 8)**	
Age 5-17	26.60%	Age 5-17	19.80%		Age 5-17	24.60%		Age 5-17	20.50%
Male	27%	Male	21.20%		Male	24.50%		Male	18%
Female	26.1	Female	18.50%		Female	24.70%		Female	22.90%
Population		Population			Population			Population	
Black	4.80%	Black	4.40%		Black	17.90%		Black	12.90%
Native American	2.00%	Native American	0.10%		Native American	6.00%		Native American	1.50%
Hispanic	84.40%	Hispanic	9.50%		Hispanic	41.20%		Hispanic	53.50%
Median Household Income	$31,065	Median Household Income	$95,628		Median Household Income	$63,690		Median Household Income	$27,200

Education			*Education*			*Education*			*Education*	
Less than 9th Grade	23.4%		Less than 9th Grade	0.8%		Less than 9th Grade	7.6%		Less than 9th Grade	17.8%
No High School Diploma	19.4%		No High School Diploma	1.3%		No High School Diploma	7.9%		No High School Diploma	12.1%
High School Graduate	29.2%		High School Graduate	12.2%		High School Graduate	21.9%		High School Graduate	24.9%
Some College	16.6%		Some College	21.2%		Some College	26.2%		Some College	16.6%
Associates	3.5%		Associates	10.5%		Associates	11.0%		Associates	4.2%
Bachelors	6.2%		Bachelors	35.1%		Bachelors	16.8%		Bachelors	14.2%
Graduate / Professional	1.6%		Graduate / Professional	19.0%		Graduate / Professional	8.7%		Graduate / Professional	10.3%
Occupation			Occupation			Occupation			Occupation	
Computer, engineering, and science occupations	0.50%		Computer, engineering, and science occupations	10.10%		Computer, engineering, and science occupations	5.70%		Computer, engineering, and science occupations	5.40%
Computer and mathematical occupations	0.30%		Computer and mathematical occupations	4.80%		Computer and mathematical occupations	3.20%		Computer and mathematical occupations	2.70%

Description, Coder Dojo Coder Dojo is an all-encompassing name for a variety of classes taught that are considered 'traditional' coding classes. Because there are so many different coding languages (eg Python, JavaScript, HTML, etc.) each must be taught on its own to prevent confusion and encourage fluency. All classes need a computer, many need an internet connection and teaching tools include but are not limited to: Code.org, Scratch, Coder Dojo, Various HTML learning sites, JavaScript and block coding sites, etc. Each topic has its own curriculum. Classes are taught on a rotating basis and camps generally each focus on one topic. The final product will vary based on each topic. Past final products have included: Finished Website, Interactive Games, Synthesized Music and Completed Apps. Students generally present/demonstrate their final topic to the teachers.

Description, 3D Modeling 3D Modeling teaches students to create a 3D model which can be either 3D printed, used in animation such as cartoons or used in a video game environment. 3D modeling is complex and can be difficult to master. Classes need a computer and usually need access to the internet. A 3D printer is not necessary but can greatly enhance the student experience. There are hundreds of tools used to teach 3D modeling. Library classes have been narrowed to the following free resources: TinkerCad, InkScape, Sculptris and Blender. Drop-In classes teach all topics on a rotating basis. Library camps teach TinkerCad, Inkscape and Sculptris all in one camp (leaving out Blender, which is advanced and much more complex). Students are encouraged to create a finished 3D model using one of the tools. Many of these 3D models may be printed using the library's 3D printers.

Description, Robotics Robotics classes teach engineering, building and (in some classes) more advanced level coding. There are several types of Robotics classes and each is taught separately to encourage mastery and avoid confusion. Library Robotics classes include the following topics: LEGO MindStorms (FLL), VEX, Sphero/Dash & Dot, Simple Motorized Robots and Arduino. FLL and VEX are taught by local student interns who are on their High School Robotics teams. These require engineering, building and high level coding. Sphero/Dash & Dot are taught by library staff. They are Scratch based, coded robots (simple coding), which do not require engineering and building. Motorized robots are taught by library staff. They are simple machines which require engineering and building but no coding. Arduino robots are taught by adult volunteers from the business community. They require minimal building but higher level coding. Each topic requires different equipment and kits. Each topic has its own curriculum. Classes are taught when instructors are available, on a rotating basis. Camps are taught only in the summer. The final product will depend on the class taught but will usually center around a completed, moving robot. Final products are often presented to the entire class and instructors.

Description, Little Bytes Little Bytes classes teach very basic coding concepts to small children. Equipment includes printable games, board games, coding toys and NABI (Android) Tablets. Classes are taught on a regular rotation by library staff and last no more than an hour (usually 45 minutes). The curriculum has a 'storytime' structure in which children are taught vocabulary and concepts through repetition and parents are encouraged to participate at all times. Children can become frustrated with the concepts and need breaks and encouragement. These are built into the curriculum in the form of games and physical activities. Library staff use apps and board games to give children a chance to learn in different ways. Each class centers around one main concept so that children can become more comfortable with the concept before moving on. There is no final product associated with this class, although students can completely finish several games and apps.