NEW MEXICO
MAKERSTATE INITIATIVE

FINAL REPORT 2017

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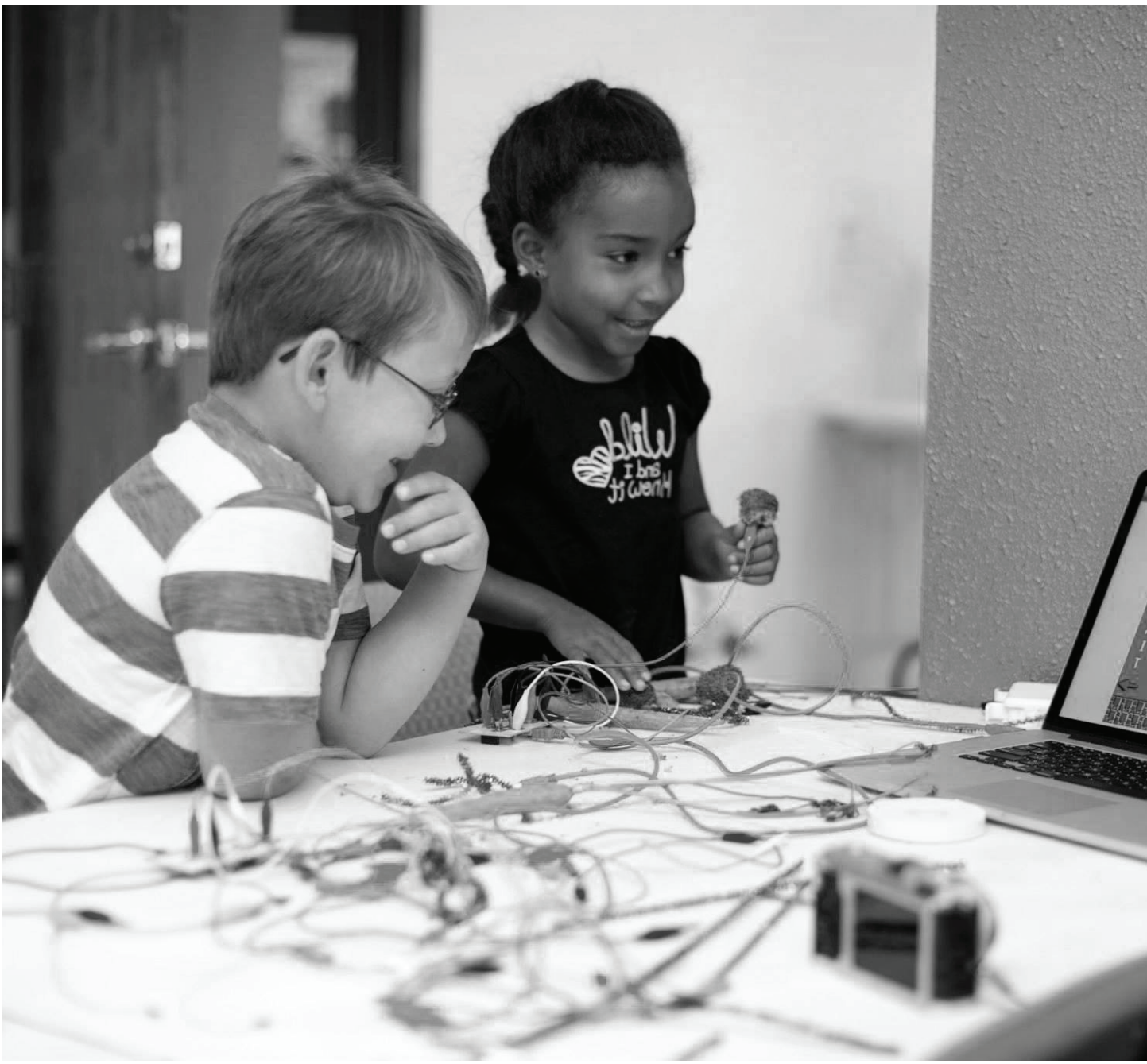

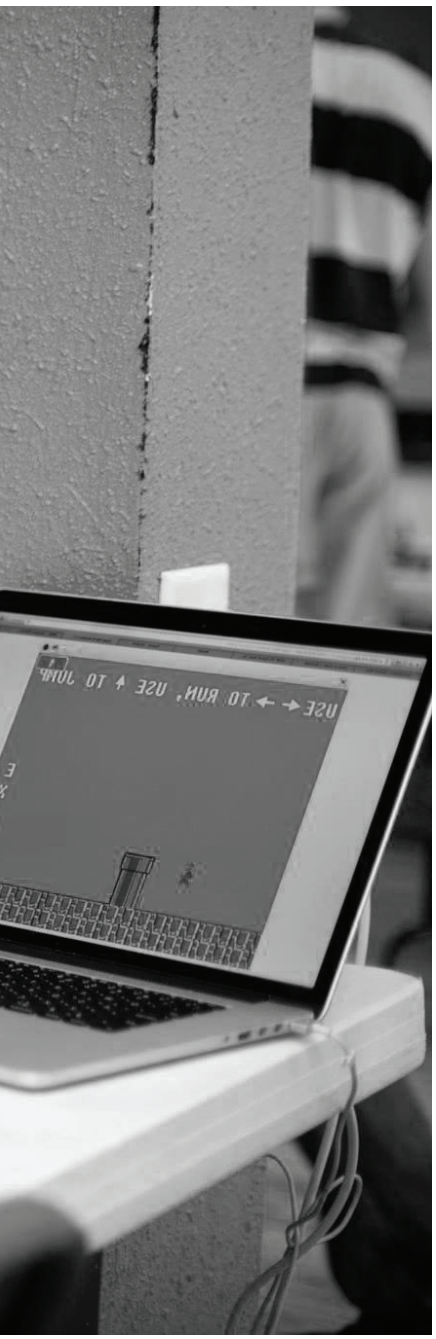

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MAKERSTATE INITIATIVE

ABOUT

ALEXANDRIA BURNQUIST
Program Coordinator

The New Mexico Makerstate Initiative is a free state-wide program offered through the New Mexico State Library. Over the last three years Makerstate Initiative crew members have travelled the state of New Mexico providing pop up makerspace workshops to children, teens, and families in public libraries. During our pop up makerspace workshops we teach participants the building blocks for inventing and prototyping through combining traditional crafting methods with emerging technologies. Our programs introduce design and engineering concepts through tinkering and inventing with simple circuits, electronic textiles, coding, and 3D printing.

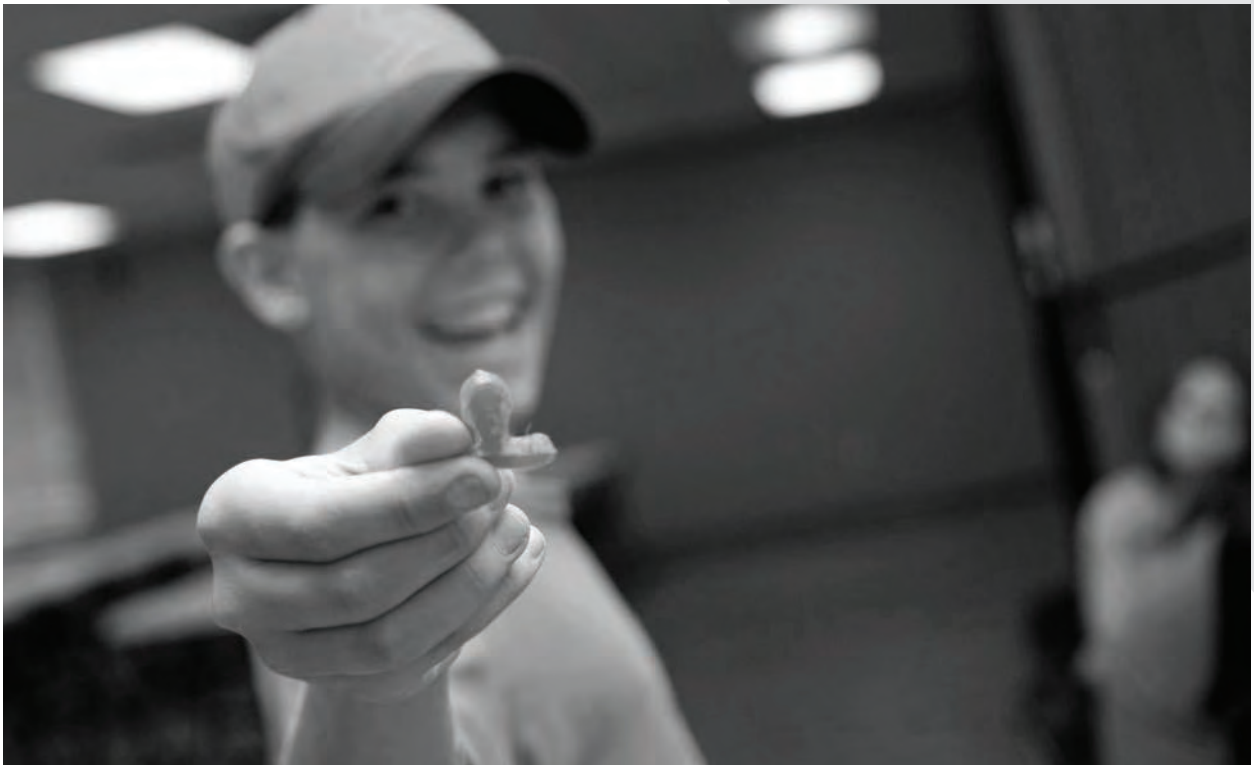
This year the Makerstate Initiative shifted focus towards professional development for librarians. This shift allowed the program to transition from seasonal pop up makerspace workshops administered by our traveling staff to consistent community makerspace programming facilitated by local librarians and library staff.

Along with providing librarians the training to develop and administer their own makerspace programs, we also supported this transitions through continuing to facilitate our pop up makerspace workshops during our Teen Tech Week and Summer Makerspace Tours.

MAKERSTATE INITIATIVE

MISSION

The mission of the New Mexico Makerstate Initiative is to promote public libraries as places of discovery and collaboration through hands-on experiences in Science, Technology, Engineering, Art and Math. We aspire to stimulate digital literacy in rural communities while encouraging participants to reclaim New Mexico's rich culture of making in a fun and accessible way.



MAKERSTATE INITIATIVE

CALL FOR APPLICANTS

Although we work hard to bring as many pop up makerspace workshops as possible to libraries throughout the state, there are several factors we have to take into consideration when planning a Makerstate Initiative Tour.

CALL FOR APPLICANTS

In order to reach as many public libraries throughout New Mexico as possible we begin by sending out a "Call to Librarians" through the New Mexico State Library's Hitchhiker Blog. Included in the call for applicants are details on the Makerstate Initiative, a list of requirements to host a program, details on our selection process, a link to the application form, and the Menu of Makerstate Initiative Workshops. Application forms help us determine which locations will meet our program requirements and are the most appropriate to host a Makerstate Initiative workshop.

PROGRAM REQUIREMENTS

In order to be considered to host a Makerstate Initiative workshop libraries must be a public or tribal library recognized by the New Mexico State Library. Libraries must also promote the event, sign up participants in advance, and have at least one library staff member attend and participant in the event. Although it is our goal to serve as many libraries as possible we cannot guarantee that every library that applies will be selected to host a Makerstate Initiative workshop.

SELECTION PROCESS

In order to ensure the success of our programs we take several factors into consideration during our selection process. First we look at the applicants ability to meet our program requirements. Then we look at the geographic proximity of the library to other applicants. Selecting applicants in close proximity to each other allows us to visit more locations in a short time frame while best utilizing our budget. Although we are more likely to select libraries that have not hosted us, we do still return to locations where we have had successful programs.

MAKERSTATE INITIATIVE

MENU OF WORKSHOPS

We work closely with selected host librarians to plan workshops that will best suit their communities needs. This includes, but is not limited to helping librarians select the date and time of the program, the program size and length, and the recommended age level for the program.

SIMPLE CIRCUITRY

During this workshop participants learn about electricity, simple circuitry, sensors, and actuators. Participants have the opportunity to experiment with electrical engineering kits like MakeyMakey, LittleBits, Snap Circuits, and Cubelets.

PAPER ENGINEERING

During this workshop participants learn about design, engineering, electricity, and simple circuitry. Participants have the opportunity to create their own interactive pop up cards and light up origami.

SCRATCH PROGRAMMING

During this workshop participants learn about design, logic, structure, organization, and problem-solving. Participants have the opportunity to create their own animations and video games.

ELECTRONIC TEXTILES

During this workshop participants learn about electricity, simple circuitry, design, and sewing. Participants have the opportunity to create their own light up bookmark with sewable electronics.

3D PRINTING & DESIGN

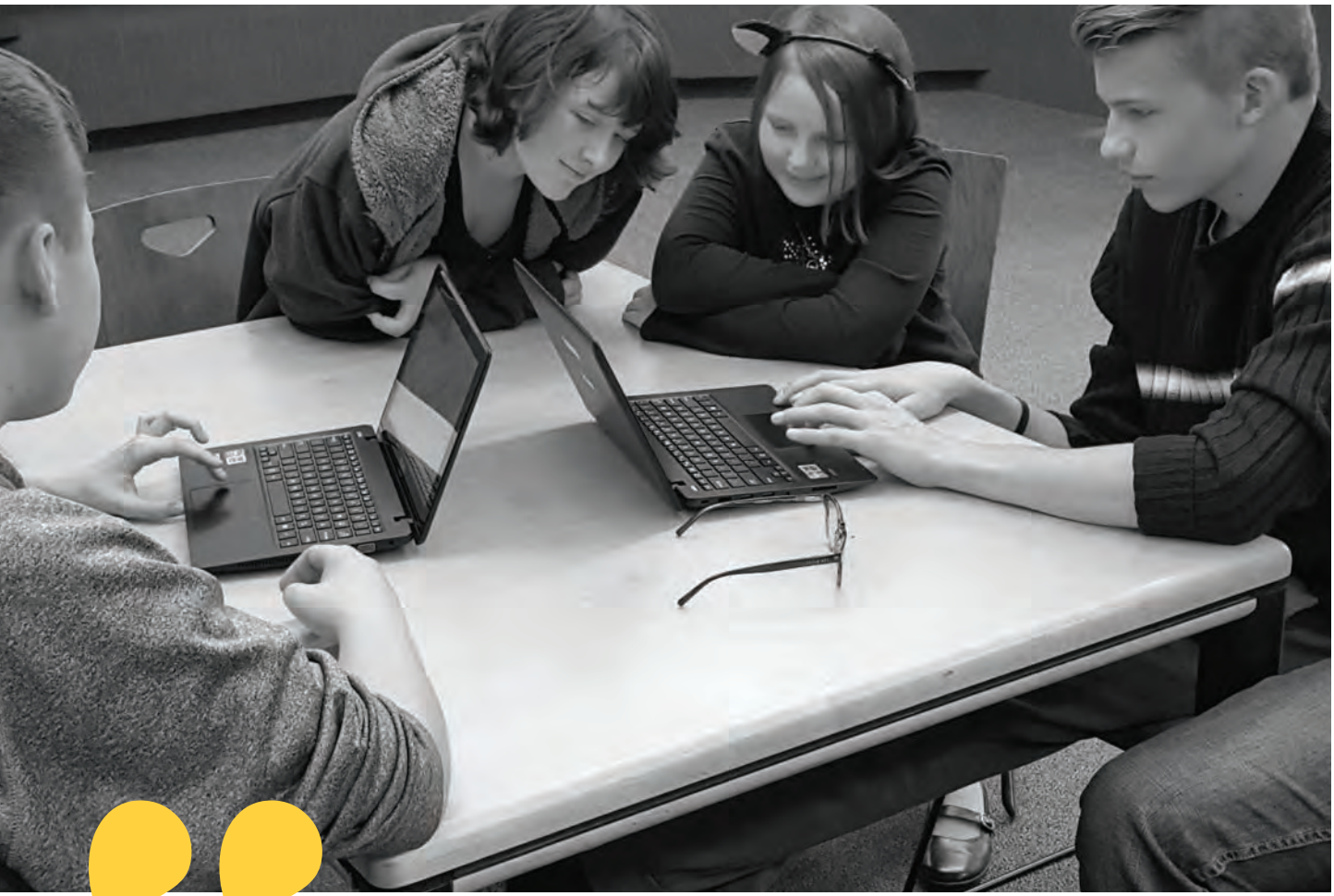
During this workshop participants learn about 3D Printing, Scanning, and Design. Participants have the opportunity to create their own designs or get scanned for costume 3D prints.

MAKERSTATE INITIATIVE

TEEN TECH WEEK 2017

TEEN TECH WEEK 2017
BE THE SOURCE OF CHANGE

Teen Tech Week is an annual nationwide initiative to connect teens to their local libraries in efforts to encourage students to utilize the digital resources available to help them succeed in school and prepare for college and 21st century careers. Since 2014 the Makerstate Initiative has supported the Teen Tech Week initiative by traveling to public libraries around New Mexico to provide opportunities for teens to gain hands-on experiences with emerging technologies while increasing digital literacy skills. This year the Makerstate Initiative was able to work with tribal, rural, and urban public libraries.



These makerspace programs allow students to be exposed to new tools and new ideas that they might not have access to in any other way. Myself and my co-worker, Kimberly, were really impressed and happy with the resources shared with us and hope to find ways to use some of these ideas in future programs here at our branch.

JILLIAN HARTKE
SOUTH VALLEY LIBRARY, ALBUQUERQUE

MAKERSTATE INITIATIVE

TEEN TECH WEEK 2017

Teen Tech Week participant Nick Miliates, age 16 stated that we was excited to learn about 3D Printing, Scanning, and Design at Juan Tabo Public Library because his school has a 3D Printer, but does not offer any classes or training on how to use it. Nick wants to be a designer and engineer for LEGO when he grows up and looks forward to utilizing 3D Printing to practice and prepare for his future career.

SCHEDULE OF EVENTS

ALBUQUERQUE, NM Cherry Hills Branch	MARCH 6 4:30 pm - 7:30 pm	3D PRINTING
ALBUQUERQUE, NM Juan Tabo Branch	MARCH 6 4:30 pm - 7:30 pm	3D PRINTING
SAN FELIPE PUEBLO, NM Pueblo of San Felipe Community Library	MARCH 8 4:00 pm - 7:00 pm	POP UP MAKERSPACE
FORT SUMNER, NM Fort Sumner Public Library	MARCH 9 2:00 pm - 5:00 pm	3D PRINTING
ALBUQUERQUE, NM South Valley Branch	MARCH 11 2:00 pm - 5:00 pm	PAPER ENGINEERING

STATISTICS

LIBRARY	BOYS	GIRLS	MEN	WOMEN	TOTAL
Cherry Hills	8	3	2	1	14
Juan Tabo	6	2	1	4	13
San Felipe Community Library	7	8	1	5	21
Fort Sumner Public Library	8	3	5	4	20
South Valley	3	4	0	5	12
TOTAL	32	20	9	19	80

MAKERSTATE INITIATIVE

SUMMER MAKER TOUR

The Makerstate Initiative is a great resource for rural libraries, especially libraries far from the Albuquerque/Santa Fe area. To expose our community to programs that encourage lifelong learning is fantastic. Without Makerstate our kids would have never seen, let alone understood how a 3D Printer worked.

ERIN LOVELAND
ARTESIA PUBLIC LIBRARY, ARTESIA

SUMMER MAKER TOUR
REACHING RURAL COMMUNITIES

In support of our mission to stimulate digital literacy in rural communities we provide a series of free pop up makerspace workshops throughout New Mexico during our Summer Maker Tour. We are able to foster exploration, experimentation, creation, and invention through hands-on, mentor led workshops. During our programs in simple circuitry, paper engineering, Scratch programming, electronic textiles, and 3D printing we are able to promote problem solving and self confidence building skills through tactile learning experiences. This year we were able to provide 22 workshops in 16 communities in the state. Reaching over 450 children, teens, and adults in less than 3 months.

MAKERSTATE INITIATIVE

SUMMER MAKER TOUR

SCHEDULE OF EVENTS

APRIL 2017

ARTESIA, NM Artesia Public Library	APRIL 6 4:00 pm - 6:00 pm	SIMPLE CIRCUITS
ROSWELL, NM Rosewell Public Library	APRIL 8 10:00 am - 1:00 pm	SCRATCH PROGRAMMING
EDGEWOOD, NM Edgewood Community Library	APRIL 22 10:30 am - 1:30 pm	PAPER ENGINEERING
SILVER CITY, NM The Public Library of Silver City	APRIL 27 4:00 pm - 6:00 pm	POP UP MAKERSPACE

MAY 2017

TUCUMCARI, NM Bookmobile East	MAY 1 10:00 am - 10:55 am	SIMPLE CIRCUITS
TUCUMCARI, NM Bookmobile East	MAY 1 11:00 am - 11:55 am	SIMPLE CIRCUITS
TUCUMCARI, NM Bookmobile East	MAY 1 12:40 pm - 1:35 pm	SIMPLE CIRCUITS
TUCUMCARI, NM Bookmobile East	MAY 1 1:40 pm -2:35 pm	SIMPLE CIRCUITS
GRANTS, NM Mother Whiteside Memorial Library	MAY 3 12:00 pm - 2:00 pm	POP UP MAKERSPACE
SANTA FE, NM Santa Fe Southside Branch	MAY 5 2:30 pm - 4:30 pm	SIMPLE CIRCUITS
SAN ILDEFONSO PUEBLO, NM Pueblo de San Ildefonso Library	MAY 9 4:00 pm - 7:00 pm	3D PRINTING
TESUQUE, NM Taytsugeh Oweengeh Library	MAY 11 1:00 pm - 4:00 pm	POP UP MAKERSPACE
SOCORRO, NM Socorro Public Library	MAY 19 3:30 pm - 6:30 pm	POP UP MAKERSPACE
SANTA FE, NM Santa Fe La Farge Branch	MAY 22 2:30 pm - 5:30 pm	3D PRINTING

SANTA FE, NM Santa Fe Main Branch	MAY 23 2:30 pm - 5:30 pm	3D PRINTING
ESTANCIA, NM Estancia Public Library	MAY 24 1:00 pm - 4:00 pm	SIMPLE CIRCUITS
MORIARTY, NM Moriarty Community Library	MAY 25 3:00 pm -6:00 pm	SIMPLE CIRCUITS
ELDORADO, NM Vista Grande Public Library	MAY 30 3:30 pm - 6:30 pm	PAPER ENGINEERING

JUNE 2017

ESPANOLA, NM Espanola Public Library	JUNE 5 10:30 am - 1:30 pm	ELECTRONIC TEXTILES
LA JOYA, NM Rio Abajo Community Library	JUNE 6 1:00 pm - 4:00 pm	POP UP MAKERSPACE
TUCUMCARI, NM Tucumcari Public Library	JUNE 7 1:00 pm - 3:00 pm	3D PRINTING
BERNALILLO, NM Town of Bernalillo Public Library	JUNE 8 1:30 pm - 4:30 pm	POP UP MAKERSPACE

MAKERSTATE INITIATIVE

SUMMER MAKER TOUR

STATISTICS

LIBRARY	BOYS	GIRLS	MEN	WOMEN	TOTAL
Artesia Public Library	6	6	1	5	18
Roswell Public Library	4	1	2	0	7
Edgewood Community Library	2	4	1	1	8
The Public Library of Silver City	9	4	3	5	21
Bookmobile East	11	7	0	2	20
Bookmobile East	8	8	0	1	17
Bookmobile East	10	7	0	1	18
Bookmobile East	8	7	1	0	16
Mother Whiteside Memorial Library	5	6	2	4	17
Santa Fe Southside Branch	8	5	1	7	21
Pueblo de San Ildefonso Library	10	18	1	4	33
Taytsugeh Oweengeh Library	15	12	0	8	35
Socorro Public Library	10	5	2	4	21
Santa Fe La Farge Branch	7	5	3	7	22
Santa Fe Main Branch	0	4	5	1	10
Estancia Public Library	10	8	0	3	21
Moriarty Community Library	3	3	2	4	12

LIBRARY	BOYS	GIRLS	MEN	WOMEN	TOTAL
Vista Grande Public Library	4	2	0	3	9
Espanola Public Library	5	7	1	7	20
Rio Abajo Community Library	6	5	3	7	21
Tucumcari Public Library	7	17	5	21	50
Town of Bernalillo Public Library	15	4	4	10	33
TOTAL	163	145	37	105	450

MAKERSTATE INITIATIVE

PROFESSIONAL DEVELOPMENT

The New Mexico Makerstate Initiative believes that maker education should be accessible throughout the state. In order to support this goal we provide professional development to librarians and library staff interested in continuing to host maker focused programs in their libraries. Our training focuses on helping library staff turn their libraries into public maker hubs that support community collaboration, engagement, creativity and empowerment through maker eduction. This year we were able to administer five professional development workshops throughout the state, reaching over 50 librarians. During each professional development workshop we worked with public library staff to introduce maker programs and

> I have no expertise in this area, so it was beneficial to have this personal instruction. I have wanted to employ maker opportunities in my library because kids have enjoyed the programs which were hosted by visiting facilitators. Now I feel more confident that I could successfully run a maker activity myself.
>
> BETH NIEMAN
> CARLSBAD PUBLIC LIBRARY, CARLSBAD

increase staffs comfortability with the materials, equipment, curriculum and terminology used in makerspace workshops. Training was hands-on and included 3D printing, scanning, and design, simple circuitry, paper engineering, and electronic textiles. We spent time reviewing curriculum, tutorials, and resources, as well as discussed maker methods and teaching strategies. We worked with different kinds of maker equipment and tools while learning troubleshooting methods. We spent time discussing the logistics of organizing, promoting, administering, and documenting programs. We closed with a discussion about the adaptability of each workshop and opportunities for community collaboration.

STATE-WIDE NETWORK

We offered professional development in five cities throughout the state. We selected host libraries in locations that neighboured multiple rural communities to bring in participants from all over New Mexico. This year we hosted training in Southeast, Southwest, Central, and Northwest New Mexico. Visiting Artesia, Aztec, Deming, and Santa Fe with our maker focused workshops. We also brought Kelly Smith, Founder and CEO of Prenda to Albuquerque for a special training on how to run a code club in libraries.

MAKERSTATE INITIATIVE

PROFESSIONAL DEVELOPMENT

ATTENDEES

ALBUQUERQUE PROFESSIONAL DEVELOPMENT - FEBRUARY 23, 2017

PARTICIPATING LIBRARY	CITY	TOTAL
ABQ-BERNCO - Central and Unser	Albuquerque, NM	2
ABQ-BERNCO - East Mountain	Albuquerque, NM	1
ABQ-BERNCO - Juan Tabo	Albuquerque, NM	1
ABQ-BERNCO - Main	Albuquerque, NM	1
ABQ-BERNCO - Taylor Ranch	Albuquerque, NM	1
ABQ-BERNCO - Tony Hillerman	Albuquerque, NM	1
Corrales Community Library	Corrales, NM	1
Edgewood Community Library	Edgewood, NM	1
Laguna Public Library	Laguna Pueblo, NM	2
Magdalena Public Library	Magdalena, NM	1
Moriarty Community Library	Moriarty, NM	2
New Mexico State Library	Santa Fe, NM	2
Rio Rancho Public Library	Rio Rancho, NM	3
Sandia Pueblo Learning Resource Center	Sandia Pueblo, NM	1
TOTAL	9	20

ARTESIA PROFESSIONAL DEVELOPMENT - APRIL 7, 2017

PARTICIPATING LIBRARY	CITY	TOTAL
Artesia Public Library	Artesia, NM	3
Carlsbad Public Library	Carlsbad, NM	1
Eunice Public Library	Eunice, NM	2
TOTAL	3	6

AZTEC PROFESSIONAL DEVELOPMENT - APRIL 12, 2017

PARTICIPATING LIBRARY	CITY	TOTAL
Aztec Public Library	Aztec, NM	3
Farmington Public Library	Farmington, NM	2
TOTAL	2	5

SANTA FE PROFESSIONAL DEVELOPMENT - APRIL 21, 2017

PARTICIPATING LIBRARY	CITY	TOTAL
Espanola Public Library	Espanola, NM	2
Moriarty Community Library	Moriarty, NM	1
Mother Whiteside Memorial Library	Grants, NM	1
Pueblo of Isleta Library	Albuquerque, NM	2
Socorro Public Library	Socorro, NM	2
Taytsugeh Oweengeh Library	Tesuque, NM	3
TOTAL	6	11

MAKERSTATE INITIATIVE

PROFESSIONAL DEVELOPMENT

ATTENDEES

DEMING PROFESSIONAL DEVELOPMENT - APRIL 26, 2017

PARTICIPATING LIBRARY	CITY	TOTAL
Bayard Public Library	Bayard, NM	1
Hatch Public Library	Hatch, NM	2
Lordsburg-Hidalgo Library	Lordsburg, NM	2
Marshall Memorial Library	Deming, NM	2
The Public Library of Silver City	Silver City, NM	1
Thomas Branigan Memorial Library	Las Cruces, NM	1
TOTAL	6	9

This training is so important in order to stay current with trends and technology. Especially in rural areas where even the internet is not accessible to everyone.

SONYA DIXON
BAYARD PUBLIC LIBRARY, BAYARD

30	24	50
LIBRARIES	COMMUNITIES	LIBRARIANS

PROGRAM IMPACT

PROGRAM IMPACT
TACTILE LEARNING EXPERIENCES

Maker education supports tactile learning through hands-on activities. Hands-on activities allow for opportunities to troubleshoot which directly leads to the development of problem solving skills. In turn this allows students to take ownership over their own learning experience which directly leads to self confidence building while also allowing opportunities for students to spark an interest in Science, Technology, Engineering, Art, and Math. Maker education helps students become more comfortable in these areas and make connections to what they are learning in school by experiencing real world application outside of the classroom while learning functionality.

This program is so inspiring! I can see how the hands-on aspect would help children make connections in class that they might miss otherwise.

ANGELA WILDS
MARSHALL MEMORIAL LIBRARY, DEMING

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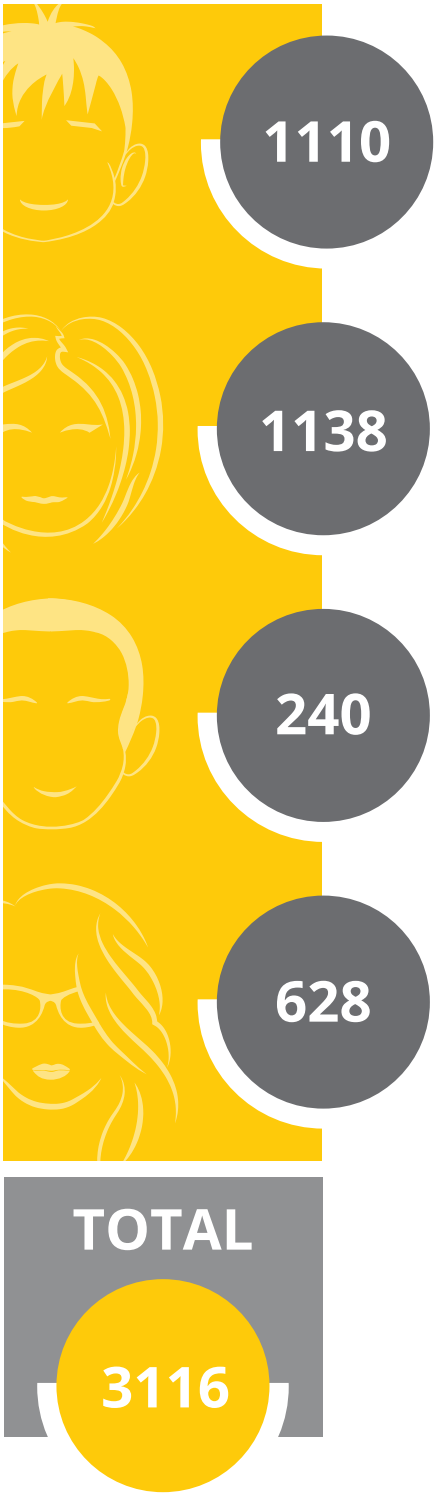
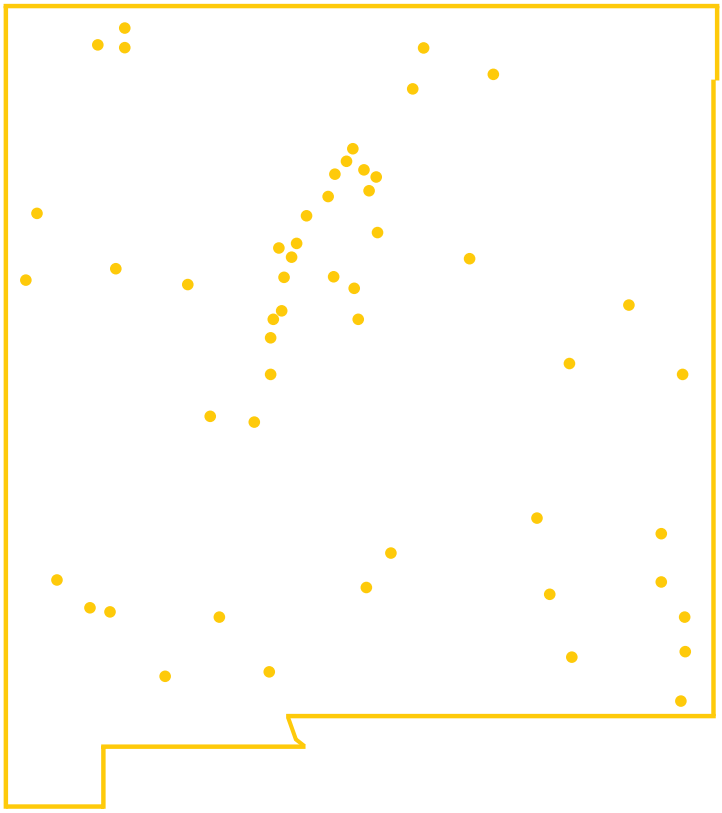
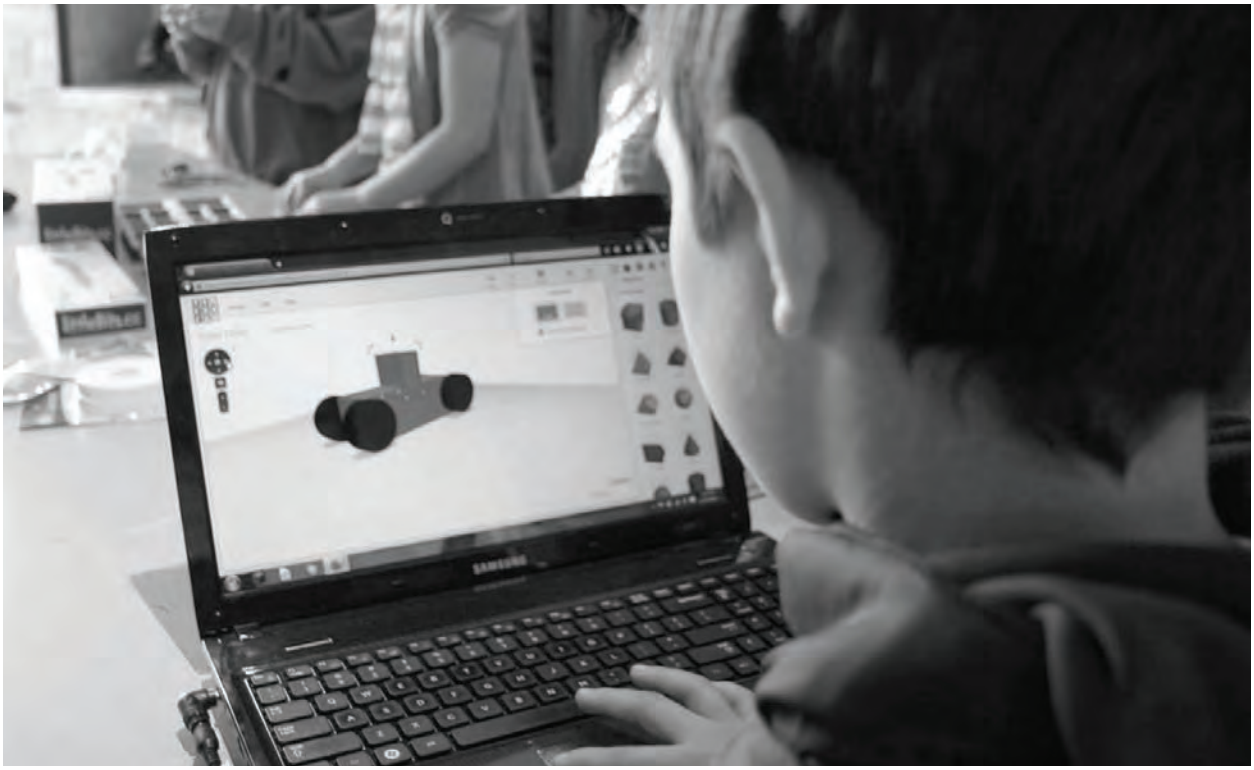
PROGRAM IMPACT



Over the last three years the New Mexico Makerstate Initiative has been able to reach 3,116 participants in 51 communities throughout the state. We have provided over 110 hands-on maker workshops in 58 libraries. We have encouraged participants to utilize their creativity while making with high-tech tools, promoted libraries as places of discovery and collaboration, and helped participants of all ages build problem solving skills through tactile learning experiences. We have trained librarians throughout New Mexico on maker education and hope to see it continue to grow through local programming. We believe that New Mexico serves as the ideal location to combine our rich culture of low-tech hand crafting with emerging technologies to create a true state of makers.





110	58	51
WORKSHOPS	LIBRARIES	COMMUNITIES

MAKERSTATE INITIATIVE

THANK YOU

ALEXANDRIA BURNQUIST
Program Coordinator

INSTITUTE of Museum and Library SERVICES
AMERICORPS
NEW MEXICO HIGHLANDS UNIVERSITY