

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Sustainable Energy - Community and Economic Development

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	25%			
723	Hazards to Human Health and Safety	10%			
801	Individual and Family Resource Management	10%			
802	Human Development and Family Well-Being	25%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	20%			
805	Community Institutions, Health, and Social Services	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	5.2	0.0	0.0	0.0
Actual Paid Professional	4.2	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
42022	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
16070	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Community meetings will be held to determine community values, attitudes and vision on which to develop strategies and action plans.

Partner with local economic development entities, agencies, businesses/industry and organizations to implement goals and plans of action.

Partner with local adult education entities to identify class offerings.

Work to plan for potential disasters that may occur in a community, e.g., EDEN.

Training opportunities will be available for people serving on boards, councils and committees in both the public and private sectors.

2. Brief description of the target audience

Adults interested in education
 Business and Community Leaders
 Local Development Entities
 Local Economic Development Entities
 Chamber of Commerce Members
 Tourism Leadership - local/state
 County and City Government
 Individuals interested in start-up and expansion or business
 County DES, Law Enforcement Emergency Response Coordinators
 Current community leadership/potential community leaders
 Landowners
 Adults/Youth serving on Boards
 Elected officials
 Tribal members

3. How was eXtension used?

Extension professionals and clientele are encouraged to use the eXtension system as a resource for locating information and educational materials related to specific questions and interests.

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	12875	16517	543	10163

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2012

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	10	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Community Resource Development: Number of Extension lead activities such as facilitation services, assistance in feasibility studies, strategic planning processes, development of business retention and expansion plans/programs. Number of partnerships and existing relationships utilized to strengthen sustainability of county and private efforts in community and economic development.

Year	Actual
2012	953

Output #2

Output Measure

- Adult and Community Education Number of collaborations with community organizations to identify and establish classes to be offered in adult educational settings. Number of adult education classes offered during the year.

Year	Actual
2012	149

Output #3

Output Measure

- EDEN (Extension Disaster Emergency Network): Number of workshops/presentations/activities focused on disaster mitigation. Number of responses from PSA's, web site, etc. for emergency service entities.

Year	Actual
2012	1014

Output #4

Output Measure

- Horizons Program: Number of Study Circle and Leadership Plenty meetings conducted. Number of people who have not been involved in community problem solving activities in the past. Number of community members trained and serving as facilitators for programs. Number of community members involved in Study circles and Leadership Plenty process.

Year	Actual
2012	4347

Output #5

Output Measure

- CITIZEN LEADERSHIP AND GOOD GOVERNANCE: Number of people attending workshops/presentations focused on board responsibilities and authorities. Number of elected officials attending workshops on ethics.

Year	Actual
2012	7000

Output #6

Output Measure

- Community Development with Tribal Populations: Number of tribal members involved with community development issues related to the reservation(s).

Year	Actual
2012	60

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	EDEN: The public will understand how they access local emergency services and take steps to prepare for a disaster. Reduction of accidents, loss of property and human life due to disasters.
2	COMMUNITY RESOURCE DEVELOPMENT: Community leaders, agency personnel, organization members and other citizens that will gain an understanding of the value of creating a community development/economic development plan. Community leaders, agency personnel, organization membership that will collaborate on economic development strategies. Communities will utilize an inclusive process to establish goals and action plans. Counties will establish and maintain a sustainable population with a viable and diversified economy. Communities will be prepared and able to deal with and direct change so it will reflect its goals, values and vision.
3	ADULT/COMMUNITY EDUCATION Participants will gain new knowledge leading them to try a new activity or making an informed decision as result of attending an adult education class. Participants will use a new skill, practice or technique as a result of attending a class.
4	HORIZONS: Communities demonstrate awareness and interest in poverty reduction. Community members become aware of opportunities, tools and techniques available to engage in poverty reduction. Communities begin to recognize and own poverty as a community issue about which they can take action. Communities begin to recognize and own leadership as a community issue about which they can take action. Communities demonstrate an interest in poverty reduction and begin the process of learning to recruit and mobilize others. Communities are mobilized to create and adopt a shared vision for poverty reduction. Communities will directly engage people living in poverty in leadership training and action planning. Communities will define leadership for poverty reduction as collective, rather than individual actions. Communities will implement inclusive processes and decision-making methods. Leadership base of communities will mirror the demographics of their community. Communities have a commitment to poverty reduction. Communities will implement and sustain changes that contribute to poverty reduction in the community. Communities will be able to demonstrate progress toward reducing poverty. Communities will conduct Study Circles and Leadership Plenty activities and involve people new to the community problem solving. People trained as facilitators for the Study Circle and Leadership Plenty process are able to assist community groups. People who have developed or enhanced their leadership skills are able to apply those newly acquired skills and techniques.
5	CITIZEN LEADERSHIP AND GOOD GOVERNANCE: Number of people serving on boards, councils and/or committees who are prepared for the responsibilities/authorities of the entity. Number of boards, councils or committees that are successful in conducting the responsibilities/authorities of the group.
6	COMMUNITY DEVELOPMENT WITH TRIBAL POPULATIONS: Culturally sensitive programs focused on community needs will be developed through partnerships with tribal populations.

Outcome #1

1. Outcome Measures

EDEN: The public will understand how they access local emergency services and take steps to prepare for a disaster. Reduction of accidents, loss of property and human life due to disasters.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	1014

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

All 50 states and three territories are represented on the Extension Disaster Education Network (EDEN). All disasters and emergencies are local. The immediate response to events is dependent upon educated public and local responders to mitigate the ultimate impact. It is essential for the public to learn their role and become aware of the capabilities of the local emergency response agencies. Because of their history of working with other agencies, across disciplines and across state lines; Extension is increasingly called upon to provide assistance during an emergency.

What has been done

At the invitation of the EDEN Executive Committee, Chouteau County participated in a test of the capabilities of EDEN to distribute information in a timely manner. Selected by the Institute of Medicine (IOM), Chouteau County was one of only three locations nation-wide to host a public engagement workshop to explore the public perception of the safety, feasibility and acceptability of potential alternative strategies for the distribution of antiviral medications during an influenza pandemic. Deer Lodge County participated as the Western Region Pilot for the pilot FEMA ReadyCommunity Program. With approximately 80,000 acres of timber land burnt in the Musselshell and Golden Valley counties, Extension responded to landowners with assistance.

Results

The EDEN test showed that the contact system is effective. More than 80% received the test message and passed it on within 2 hours. The IOM pandemic workshop showed a general trust in CDC guidelines, local professionals and pharmacists. It also showed a need for better transparency, consistency and specific information from local sources. Input from this exercise will be utilized by the CDC to form public policy and health guidelines in the event of a pandemic disease event. As a result of the ReadyCommunity program, Deer Lodge County has a new generator backing up their water system, a shelter getting a back-up generator and residents are more prepared to help themselves in a disaster. Following the Dahl Fire recovery workshop,

landowners knew how to tell if a scorched tree could survive, how to use burnt trees to prevent erosion and when there was a need to reseed. Based on visual inspection, several landowners started work the day after the workshop.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

Outcome #2

1. Outcome Measures

COMMUNITY RESOURCE DEVELOPMENT: Community leaders, agency personnel, organization members and other citizens that will gain an understanding of the value of creating a community development/economic development plan. Community leaders, agency personnel, organization membership that will collaborate on economic development strategies. Communities will utilize an inclusive process to establish goals and action plans. Counties will establish and maintain a sustainable population with a viable and diversified economy. Communities will be prepared and able to deal with and direct change so it will reflect its goals, values and vision.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	953

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Montana Community Foundation estimates a large transfer of wealth will take place in Montana within the next ten years. Sustainability of rural communities is becoming increasingly more difficult. Creating community foundations helps ensure vitality of a community by providing a mechanism to keep local financial capital from exiting the area when transfers of wealth occur. Partnerships are needed to study and promote existing businesses and improve community infrastructure as a means of meeting the economic needs of the community. MSU Extension provides education and support to community organizations. Partnerships create robust results that maximize financial and human resources.

What has been done

The Montana Community Foundation is partnering with and offering support to Horizon alumni communities and is coordinating all grant allocations and providing assistance with grant

proposals and budgets. People within these communities who have personally lived in poverty are part of the leadership teams and many of the communities have learned to focus the collective resources of the community towards major projects and growth.

Results

MSU Community Development Extension specialists calculate that over a million dollars has been secured through various fund raising, donations, in-kind contributions, and grant opportunities in all 20 Horizons Alumni communities. In Anaconda, a Certified Nurse Assistant program was formed. Graduates of the program are now employed with a livable wage and full benefits with more than 50% planning to continue their career with LPN training and approximately 15% also planning RN certification. In Big Timber, a local floral shop has been purchased by community residents rather than closing. In Boulder, the 21st Century Afterschool Program continues to serve the children and families in the community. The children in the program have joined the Farmers Market in the summer selling their produce and then reinvesting the money raised into their gardening efforts. In Whitehall, Horizons participants worked with Extension personnel to secure a \$655,000 U.S. Commerce Department Economic Development Administration (EDA) special appropriation (with county matching dollars) which will allow the Sunlight Business Park infrastructure to be developed.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #3

1. Outcome Measures

ADULT/COMMUNITY EDUCATION Participants will gain new knowledge leading them to try a new activity or making an informed decision as result of attending an adult education class. Participants will use a new skill, practice or technique as a result of attending a class.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	149

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need for continuing education to enhance the lives of Montana citizens. The economic

downturn has increased the desire in many folks to learn new skills to retool. They feel an urgency to be as prepared as possible for the uncertain job market. Additionally, many of the adult education classes help by learning new skills and information they can put to use in their home or business environments.

What has been done

Extension agents are heavily involved in adult education. Data from related programs is found under the Master Gardener program, food safety and preservation programs, weed control, crops and nearly every other area of this report. Extensive education opportunities are provided daily, year-round and statewide, both directly and online.

Results

Impacts from many adult education programs are found throughout this report. In Powell County, MSU Extension and a volunteer group design adult community education classes that are affordable, help the elderly with technology and are conveniently located. In 2012, 26 classes were offered including couponing and how to use an iPad. Classes are well attended with some having waiting lists.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

Outcome #4

1. Outcome Measures

HORIZONS: Communities demonstrate awareness and interest in poverty reduction. Community members become aware of opportunities, tools and techniques available to engage in poverty reduction. Communities begin to recognize and own poverty as a community issue about which they can take action. Communities begin to recognize and own leadership as a community issue about which they can take action. Communities demonstrate an interest in poverty reduction and begin the process of learning to recruit and mobilize others. Communities are mobilized to create and adopt a shared vision for poverty reduction. Communities will directly engage people living in poverty in leadership training and action planning. Communities will define leadership for poverty reduction as collective, rather than individual actions. Communities will implement inclusive processes and decision-making methods. Leadership base of communities will mirror the demographics of their community. Communities have a commitment to poverty reduction. Communities will implement and sustain changes that contribute to poverty reduction in the community. Communities will be able to demonstrate progress toward reducing poverty. Communities will conduct Study Circles and Leadership Plenty activities and involve people new to the community problem solving. People trained as facilitators for the Study Circle and Leadership Plenty process are able to assist community groups. People who have developed or enhanced their leadership skills are able to apply those newly acquired skills and techniques.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	4347

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many Montana communities have a high percentage of people living below the poverty line. These areas have a slow economy and are often losing population. The Horizons Program involved select communities in education and training in how to build leadership from within and recognize opportunities, tools and techniques available to reduce the poverty. Communities learned to mobilize themselves toward positive changes. Following the conclusion of the Horizons Grant, Horizons alumni communities continue to maintain and are developing new partnerships leading to new funding sources and meeting expanded program objectives.

What has been done

Local Extension Offices have played an integral role in helping rural communities remain thriving by building community capacity through the development and implementation of community foundations, active participation on local economic development boards, and participation and leadership in community-wide projects. In 2012, Extension agents and community development specialists worked extensively with their communities and partners on activities that met the needs of their individual communities. Among other things, they partnered with other organizations to build a community garden, advance cultural tourism projects, and plan and implement a field day highlighting the agriculture sector.

Results

Twenty Horizons alumni communities secured approximately \$1.3 million by various fundraising efforts including donations, in-kind contributions and grant opportunities. Assessments conducted before and after Horizons Study circles showed that participants substantially improved their knowledge of issues related to poverty and that the largest gains were in areas related to how poverty affects communities and what community actions can reduce poverty. Daniels County is a good example of how this knowledge, and the resulting action positively impacts communities. With Community Foundation funds, Daniels County Extension, the County Health Department and Daniels Memorial Hospital sponsored 6 raised gardens, growing a variety of vegetables used in the hospital and school. A garden shed was built by the Scobey High shop class, stepping stones were made by the Scobey High art class and a composter was installed at the site to aid in teaching proper composting practices. The community worked together to create a lasting resource, bring people together and expand the skills and knowledge of individuals in a way that will continue to benefit the community as a whole.

4. Associated Knowledge Areas

KA Code **Knowledge Area**
608 Community Resource Planning and Development

Outcome #5

1. Outcome Measures

CITIZEN LEADERSHIP AND GOOD GOVERNANCE: Number of people serving on boards, councils and/or committees who are prepared for the responsibilities/authorities of the entity. Number of boards, councils or committees that are successful in conducting the responsibilities/authorities of the group.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	7000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Montana county and city officials are responsible for more than \$1 billion in public funds and more than 11,000 employees. Many of these public servants have little or no training in roles and responsibilities, human resources, public meeting laws or budgeting and financing. The MSU Extension Local Government Center (LGC) provides the only training and technical assistance of its kind for Montana city and county elected officials and employees. The Montana Constitution requires a Voter Review Process every 10 years for all local governments; the LGC is poised to provide assistance to communities for the 2014 review.

What has been done

The MSU Extension LGC offers more than 100 affordable professional development workshops each year. Ninety percent of newly-elected county commissioners attend a 40-hour (2-year) certification program and over 70% of municipal clerks, treasurers and finance officers receive certification through a 120 hour (3-year) training program. More than 7,000 officials and board members attended one or more LGC workshop in the last fiscal year. The LGC recently published a Municipal Officials Handbook and a Municipal Clerks, Treasurers and Finance Officers Procedures Manual.

Results

Evaluation summaries following the 2012 Montana Municipal Institute for Clerks, Treasurers and Finance Officers verify the impact of the LGC. Thirty-one sessions of the 3 day meeting were evaluated; 27 received an average score of over 4.0. Employee Motivation: Developing a Comic

Vision received a 4.87 for how well the program met the learning outcomes. Communicating with the Public, Municipal Services, Labor Law, Mediating Employee Disputes and the Design and Implementation of Financial Policies all received over 4.7 for usefulness. The Institute overall rated 4.57 for usefulness. The Elected County Officials Training/Commissioner Certification showed similar results with a 4.64 rating for the class, The MT Code of Ethics, and 4.77 for Managing Conflict Constructively. The overall usefulness of the training was 4.52.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

Outcome #6

1. Outcome Measures

COMMUNITY DEVELOPMENT WITH TRIBAL POPULATIONS: Culturally sensitive programs focused on community needs will be developed through partnerships with tribal populations.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	60

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Crow Reservation, headquartered at Crow Agency, is the largest reservation in Montana on 2.2 million acres. Families qualifying for free and reduced lunch, unemployment rates and poverty rates on the Reservation are 89.5%, 46.5% and 44.9% respectively (Young and Hayes 2011). The Pretty Eagle School is an Indian school for grades K-8, located 25 miles outside the nearest town in St. Xavier, an extremely rural area. There were no enrichment or after-school activities outside of sports. Kids needed a high-quality afterschool program and youth engagement. The Montana Sustainable Communities Project has filled this need.

What has been done

The Montana Sustainable Communities Project (SCP) serves youth at the Pretty Eagle School. Third through eighth grade students learn science, technology, critical thinking, problem-solving and communication skills through hands-on projects that engage community members and honor culture. Using a train-the-trainer model, technical experts from MSU train teachers to use video

technology and to build and program robots. Teachers integrate the technologies into their classrooms and after-school programs which has led to a sustainable program that involves youth in their community. Students learn to build and program robots and produce short, culturally-relevant science films like the physics of Arrow-Throwing. Younger students build storybook characters using robots to act out a story.

Results

The Montana SCP project was identified by the National 4-H Council as a Promising 4-H Science Program in 2012 due to its innovative approach of integrating 4-H afterschool principles into the regular school day (and afterschool programs), integrating school teachers with experts from MSU Extension and the MSU Film School, employing a stepwise model with 3rd to 8th graders and incorporating regular interactions with community members. Students learned technology, science and life skills. They learned team building and problem solving through building robots for competition, how to think critically about the process and content of their videos and science through their film content. Post evaluations showed 75% of students could identify robot parts, read and follow plans, add components, improve or modify a robot with little or no adult supervision. 84% understood the purpose of film, audiences, timelines and planning. 74% could develop questions, build rapport, and conduct interviews for video. Students indicated an increase in fun, pride, confidence and excitement. The Montana 4-H website hosts the student films.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Montana communities face a wide variety of challenges from declining population in

some areas to overwhelming growth in others. Natural disasters and transfer of wealth are huge issues. The goals of this program are met in a variety of ways ranging from disaster planning and management efforts to comprehensive work around building community foundations to extensive training for elected and city/county officials.

Many Extension agents worked extensive hours in planning for, managing and recovering from fire and drought disasters over the past year. Several communities participated in national programs such as (EDEN testing), Institute of Medicine Pandemic Workshops and FEMA Ready Community pilot.

In Horizons communities especially, but also in other communities around the state, Extension Community and Economic Development Programs have helped develop new, specific programs and foundations to keep wealth within communities, pool resources, and combine the efforts of groups toward the singular good of rural communities. More than \$1.3 million has been raised in community funds in 20 Horizon sites alone. Programs which create jobs, train adults for particular skills and improve boards and groups are all part of Extension work. MSU Extension has secured a new USDA grant through a partnership with the Anaconda Local Development Corporation that will allow at least 20 Extension agents and 18 community foundations to receive, over a 3-year period, much needed training in grant making, fundraising, endowment building, and community collaborations.

The MSU Extension Local Government Center (LGC) provided training for more than 7,000 city and county officials who are responsible for more than \$1 billion in public funds and over 11,000 employees. The LGC also offered classes in leadership development, strategic planning, created written resources and an active listserv and blog for this clientele.

Key Items of Evaluation

EDEN (Extension Disaster Education Network)

The EDEN test showed that the contact system is effective. More than 80% of participants testing the system received the test message and passed it on within 2 hours.

Because of the ReadyCommunity program, Deer Lodge County has a new generator backing up their water system, a shelter getting a back-up generator and residents are more prepared to help themselves in a disaster.

Landowners who participated in the Dahl Fire Recovery classes all learned how to tell if a scorched tree could survive, how to use burnt trees to prevent erosion and when there was a need to reseed.

COMMUNITY RESOURCE DEVELOPMENT

In Anaconda, a Certified Nursing Assistant program was formed: employed graduates earn a livable wage with full benefits and more than 50% plan to continue their career with additional training.

In Boulder, children in the after-school program grow produce, sell it at the Farmer's Market and reinvest the money into further efforts.

In Whitehall, Horizons participants worked with Extension personal to secure a \$655,000 U.S. Commerce Department Economic Development Administration (EDA) special appropriation to help develop the Sunlight Business Park infrastructure.

HORIZONS

Twenty alumni Horizons communities secured approximately \$1.3 million by various fundraising including donations, in-kind contributions and grant opportunities.

Assessments conducted before and after Horizons Study circles showed that participants substantially improved their knowledge of issues related to poverty and the largest gains were in areas related to how poverty affects communities and which

community actions can reduce poverty.

GOOD GOVERNANCE

More than 7,000 officials and board members attended one or more LGC workshops in the last year.

Evaluation summaries following the 2012 Montana Municipal Institute for Clerks, Treasurers and Finance Officers show:

27 of 31 sessions received an average score of over 4.0 on a 1-5 scale with 5 being excellent.

Employee Motivation: Developing a Comic Vision received a 4.87 for how well the program met the learning outcomes.

Communicating with the Public, Municipal Services, Labor Law, Mediating Employee Disputes and the Design and Implementation of Financial Policies all received over 4.7 for usefulness.

The Institute overall rated 4.57 for usefulness.

The Elected County Officials Training/Commissioner Certification showed similar results with a 4.64 rating for the class, The MT Code of Ethics, and 4.77 for Managing Conflict Constructively.

The overall usefulness of the training was 4.52.

COMMUNITY DEVELOPMENT WITH TRIBAL POPULATIONS

The Montana Sustainable Communities Project at Pretty Eagle School on the Crow Reservation was identified by the National 4-H Council as a Promising 4-H Science Program.

Post evaluations showed 75% of students could identify robot parts, read and follow plans, add components, improve or modify a robot with little or no adult supervision.

84% understood the purpose of film, audiences, timelines and planning.

74% could develop questions, build rapport, and conduct interviews for video. Students indicated an increase in fun, pride, confidence and excitement.