Executive Summary

The "AIMING for Success in TEAMS" SUMMER SUPER SCHOLARS program was designed to improve proficiency in the area of math and science. The four week curriculum was provided on a daily basis. The class schedule was as follows: class start time 9:00 am and end time at 11:00am. The program was made available daily Monday – Thursday. Twenty-two students were enrolled and an additional nine youth leaders from local high schools provided tutoring and assistance. There was a minimum of 45 minutes of instruction for each subject (math and science). To enhance the curriculum students were encouraged to socialize, team build, and learn forms of leadership via weekly speakers. The program also included field trips to the Arizona Science Center, Audubon Center (located in South Phoenix), and Sky Harbor Air National Guard facility.

CES Inc. recognizes the importance of ready minds for learning so the program offered breakfast and lunch to energize minds, body, and spirit. To accomplish our goals and objectives partners and volunteers were procured and offered a number of leveraged activities and services. The partners and volunteers for the "AIMING for Success in TEAMS" SUMMER SUPER SCHOLARS program were: Arizona Facts of Life (AZFOL), Black Nurses Association (prevention training), Kids Café, Roosevelt School District Summer Food Program, MentorKids USA (recruitment and outreach), Salt River Project (volunteers), Tanner Community Development Corporation (prevention and wellness), and Tigermountain Foundation (urban agriculture through community gardening).

Program modifications were necessary because of limited funding and budget resources. Therefore, the technology and engineering enhancement skills were not presented. The funding did not allow for the training of junior high school students in computer technology and the program was four weeks in duration rather than the planned eight week session. The program was able to assist twenty-two students rather than the desired sixty. However, with anticipated funding CES, Inc. and the community partners are working to replicate the program in September and with abundant funding will serve more students.

The technique for student enrichment utilized four components:

Exposure – introduce through exposure and provide an explanation of the idea and/or concept;
Exploration – explore idea/concept and decide which activity/concept will be mastered;
Preparation – perform the activity until comfortable or perfected; and
Demonstration – Demonstrate student's ability to explain and perform activity/concept;

To implement and develop the areas of competency the following activities and concepts were offered.

- Pre and post examinations to measure and monitor development and growth.
- Weekly observations and in depth assessments for acceleration in math and science.
- Daily math drills, science projects, and increased learning activities.
- Fun science and math experiments which increase concepts and learning.
- Up close and personal interviews with math and science experts.

The objectives of the math academy offered students and encouraged participation in daily oral drills of addition, subtraction, multiplication, and division facts; followed with written timed assessments in order to increase proficiency in mathematical facts. For word problem development, students worked daily to build problem solving skills. An area of significant deficiency identified was the inability to solve word problems. To build confidence, promote leadership, and the concepts of team, students worked in daily small groups. Following the pre-test/assessments students' education plans were specialized to enhance learning.

Students also explored the many fields of science coming into an understanding that science is always a work in progress, and scientific ideas are developed through reasoning that does not prove or conclude, but corrects itself. The fields of geology, anatomy, physiology, nutrition, agriculture, oceanography, paleontology, geography, and botany were explored throughout science activities and experiments. The students at this location had the added benefit of being

exposed to a community garden consisting of various forms of nature and allowed for the exploration of irrigation, earth, rocks, and vegetation. Weekly field trips and science experiments offered the opportunity to conduct learning experiments **using hypothesis and drawing** conclusions. Following the pre-test/assessments students' education plans were again specialized to enhance learning.

MATH ACADEMY OVERVIEW

Students participated in daily oral drills of addition, subtraction, multiplication, and division facts; followed with a written timed assessment in order to demonstrate proficiency in Arithmetic facts. In addition, students were work with word problems daily to build problem solving skills.

Goals

- Become more confident in knowing math facts.
- Demonstrate proficiency in math facts.
- Examine various techniques used in problem solving.
- Increase problem solving abilities.
- Increase confidence in working with math.

Objectives

- Students practiced daily oral math fact drills follow by written assessment.
- Students practiced daily solving word problems.
- Students learned to work as a team in small groups daily solving word problems following discussion on how the answer was obtained.

Activities included oral drills in addition, subtraction, multiplication, fractions, decimals, division, assessment worksheets, and working with a variety of math enrichment techniques.

Baseline Student Assessment of 4^{th} – 6^{th} grades

- 60% expressed that they were not confident in knowledge of math facts
- 5% lacked proficiency or were assessed as needing improvement in term of math facts.
- 24% lacked ability to use effective techniques in problem solving.
- 6% demonstrated lack of problem solving abilities.
- 24% demonstrated confidence in working with math.

Student Outcomes of 4^{th} – 6^{th} grades

- 80% expressed that they were confident in knowledge of math facts
- 90% demonstrated proficiency and improvements in term of math facts.
- 30% improved ability to use effective techniques in problem solving.
- 90% demonstrated improvement of problem solving abilities.
- 90% demonstrated increased confidence in working with math.

Summer Super Scholars Testimonies and Highlights (Math)

1. What was enjoyed most about the math portion of summer program?
   While speaking with the students, they most enjoyed doing the multiplication drills. These drills consisted of the students forming two, single file lines and the volunteers would give each of them a multiplication problem. The students would give the answer verbally and when they missed more than three, they had a math worksheet to practice.
   The 4^{th}-6^{th} grade students showed great confidence with these drills and all of them did well. "I like doing multiplication!" states student J.W. The students also played

multiplication bingo. Not only did they practice math, but they also worked on their control by playing silently. "Staying quiet is really hard, I have a lot to say Ms. Dee" says one of the students to their teacher.

2. What math/science speaker did you enjoy most?
   The guest speaker the students enjoyed the most for their math portion was Dr. Don Campbell. He came in and discussed the importance of education. He shared is life experience with his family and his level of education.

3. What would you tell others about the program in terms of developing confidence math ?
   When asked about his opinion on math at the beginning of the program, N. L., 5th grade, stated "it's hard. I don't really like it. "Most students have the same opinion. Students who lack confidence often need help. The summer program has assured the students that asking for help is nothing to be ashamed of. Once the students have realized that, they become more comfortable with doing their work.

4. What did you learn that will help you in school?
   D. S., 6th grade, says when asked about what she learned this summer "I learned that there are people who will help you when you need it." N. L. says "I learned that math is important for my future."

SCIENCE EXPLORATION OVERVIEW

Students were given the opportunity to explore the many fields of science coming into an understanding that science is always a work in progress, and scientific ideas are developed through reasoning that does not prove or conclude, but corrects itself.

Goals

- Increase knowledge of the different fields of science.
- Increase appreciation for the natural world.
- Gain experience in reasoning.
- Investigate the plant kingdom.
- Increase knowledge about food labels.
- Raise awareness concerning active lifestyles.

Objectives

- Students were challenged to learn about 8 -10 fields of science (Geology, Anatomy, Physiology, Zoology, Oceanography, Paleontology, Geography, and Botany).
- Students conducted experiments using hypothesis and drawing a conclusions.
- Students explored nature examining earth, rocks and vegetation.
- Students evaluated food labels for a week.

Activities included weekly science experiments, nomenclature cards, science development worksheets, nature walks, community gardening and planting, and the introduction of the body diagram.

Baseline Student Assessment of 4th – 6th grades

- 50% expressed that they were not confident in their knowledge of different fields of science.
- 0% lacked interest or were assessed as lacking appreciation for the natural world.

- 56% lacked ability to use effective techniques in problem solving and reasoning.
- 6% expressed minimal knowledge of the plant kingdom.
- 6% lacked knowledge in regards to active lifestyles and good eating habits.

Student Outcomes of 4th – 6th grades

- 70% expressed improved confidence in their knowledge of different fields of science.
- 0% showed increase interest and appreciation for the natural world.
- 78% showed improved ability to use effective techniques in problem solving and reasoning.
- 10% demonstrated increase knowledge of the plant kingdom.
- 90% increased knowledge and participation in active lifestyles and good eating habits.

Summer Super Scholars Testimonies and Highlights (Science)

1. What was enjoyed most about the science portion of summer
   When asked, the students stated that they enjoyed the Arizona Science Center the most this summer. They were able to see the dissection of a cow's eye, experience different weather types with the forces of nature exhibit. The center is all hands-on keeping the students interested the complete duration of their visit. Earlier, they had a science poster project. Each group was given a science word to define and find visuals on their particular word. They put together collages of what they found out and presented them to the class. Some of the words included geology, biology, zoology, and agriculture.

2. What math/science speaker did you enjoy most?
   During the science portion, the students had former football player J.D Hill. He spoke to the children with encouraging words and chants to get them excited about being who they are. The sayings he left them with were used often after he left.

3. Select one science related improvement from a student(s).
   G., 6th grade, was the first to raise his hand when asked about the different parts of the corn after the trip to the corn field. He was also able to tell whether the corn was fresh and ready to be picked.

4. What did you learn that will help you in school?
   "I got to see what was inside the human eye ball and I learned that it's the size of a marble" G. stated.

The "AIMING for Success in TEAMS" SUMMER SUPER SCHOLARS program utilized the Spectrum math workbook series, which provided quality educational activities and tools which meet students' needs for learning achievement and success. Based on assessments and outcomes students and youth leaders improved and strengthened their math skills. To increase their knowledge of science the techniques and strategies shared were designed to improve and strengthen the student's knowledge of science.

The program achieved its expected outcomes over all and learned more about what motivates, engages, and retains a student. One area we would like to further develop is our green sustainability education components and environmental and agricultural impacts on the students' communities to increase the student's appreciation and knowledge of the natural world and its' abundant of resources.

Attachment #1 – Lesson Plan

Lesson Plan

Fourth	Fifth	Sixth
6/6 **Math: Pretest Chapter 1 = Adding and Subtracting 1 and 2 Digits** **Science: Agriculture and Botany**	**6/6** Math: Pretest Chapter 1 = Adding and Subtracting through 6 Digits Science: Agriculture and Botany	**6/6** Math: Pretest Chapter 1 = Adding and Subtracting through 6 Digits Science: Agriculture and Botany
6/7 **Math: Pretest Chapter 1 – word problems** **Science: Black Nurses Association and TCDC Blood Pressure Check training**	**6/7** Math: Pretest Chapter 1 – word problems Black Nurses Association and TCDC Blood Pressure Check training	**6/7** Math: Pretest Chapter 1 – word problems Black Nurses Association and TCDC Blood Pressure Check training
6/8 **Math: Practice adding and Subtracting 1 and 2 Digits** **Science: Agriculture poster development**	**6/8** Math: Practice adding and Subtracting through 6 Digits Science: Agriculture poster development	**6/8** Math: Practice adding and Subtracting through 6 Digits Science: Agriculture poster development
6/9 **Math: Demonstrate adding and Subtracting 1 and 2 Digits** **Science: Demonstrate knowledge of agriculture**	**6/9** Math: Demonstrate adding and Subtracting through 6 Digits Science: Demonstrate knowledge of agriculture	**6/9** Math: Demonstrate adding and Subtracting through 6 Digits Science: Demonstrate knowledge of agriculture
6/13 **Science: Oceanography Trip to Tempe Town Lake**	**6/13** Science: Oceanography Trip to Tempe Town Lake	**6/13** Science: Oceanography Trip to Tempe Town Lake

6/14 **Math: Chapter 1 Review** **Post Test Chapter 1** **Science: Oceanography experiment**	**6/14** Math: Chapter 1 Review Post Test Chapter 1 Science: Oceanography experiment	**6/14** Math: Chapter 1 Review Post Test Chapter 1 Science: Oceanography experiment
6/15 **Math: Chapter 2 - Numeration through 1,000,000** **Science: Oceanography project**	**6/15** Math: Chapter 2 - Multiplying through 4 Digits by 3 Digits Science: Oceanography project	**6/15** Math: Chapter 2 - Multiplying and Dividing Whole Numbers Science: Oceanography project
6/16 **Math: Demonstrate Numeration through 1,000,000** **Science: Demonstrate knowledge of oceanography**	**6/16** Math: Demonstrate Multiplying through 4 Digits by 3 Digits Science: Demonstrate knowledge of oceanography	**6/16** Math: Demonstrate Multiplying and Dividing Whole Numbers Science: Demonstrate knowledge of oceanography
6/20 **Math: Review and complete Chapter 2 Posttest** **Science: Explore Geology**	**6/20** Math: Review and complete Chapter 2 Posttest Science: Explore Geology	**6/20** Math: Review and complete Chapter 2 Posttest Science: Geology
6/21 **Math: Chapter 3 Adding and Subtracting 3 through 5 Digits** **Science: Geology project**	**6/21** Math: Chapter 3 Dividing through 5 Digits by 2 Digits Science: Geology project	**6/21** Math: Chapter 3 Understanding Fractions Science: Geology project
6/22 **Math: Oral drills - Adding and Subtracting 3 through 5 Digits** **Science: Geology project**	**6/22** Math: Oral drills - Dividing through 5 Digits by 2 Digits Science: Geology project	**6/22** Math: Oral drills - Understanding Fractions Science: Geology project
6/23 **Math: Demonstrate Adding and Subtracting 3 through 5 Digits** **Chapter 3 Posttest**	**6/23** Math: Demonstrate Dividing through 5 Digits by 2 Digits Chapter 3 Posttest	**6/23** Math: Demonstrate Understanding Fractions Chapter 3 Posttest

Science: Demonstrate knowledge of Geology	Science: Demonstrate knowledge of Geology	Science: Demonstrate knowledge of Geology
6/27 **Math: Pretest - Chapter 4 Multiplying through 3 Digits by 2 Digits**	**6/27** Math: Pretest - Chapter 4 Understanding Fractions	**6/27** Math: Pretest - Chapter 4 Adding and Subtracting Fractions
Science: Going Green	Science: Going Green	Science: Going Green
6/28 **Math: Practice - Chapter 4 Multiplying through 3 Digits by 2 Digits**	**6/28** Math: Practice - Chapter 4 Understanding Fractions	**6/28** Math: Practice - Chapter 4 Adding and Subtracting Fractions
Science: Arizona Science Center	Science: Arizona Science Center	Science: Arizona Science Center
6/29 **Math: Practice: Chapter 4 Multiplying through 3 Digits by 2 Digits**	**6/29** Math: Practice: Chapter 4 Understanding Fractions	**6/29** Math: Practice: Chapter 4 Adding and Subtracting Fractions
Science: Explore Earth and Solar System experiment	Science: Explore Earth and Solar System experiment	Science: Explore Earth and Solar System experiment

Attachment #2 – Attendance Roster

Last Name	First Name	6/6	6/7	6/8	6/9	6/14	6/15	6/16	6/20	6/21	6/22	6/	6/27	6/28	6/29	6/3
S.	N.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B.	D.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C.	J.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C.	C.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C.	J.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C.	E.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D.	S.					X	X	X	X	X	X	X	X	X	X	X
F.	M.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
G.	J.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
H.	R.					X	X	X	X	X	X	X	X	X	X	X

J.	Q.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K.	M.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K.	J.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L.	N.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
M.	M.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
P.	A.			X	X	X	X	X	X	X	X	X	X	X		
S.	T.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T.	N.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T.	G.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
W.	T.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
W.	J.	X	X	X	X	X	X	X	X	X	X	X	X	X		X
W.	K.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Attachment #3 Student Photos