

**SAN FRANCISCO UNIFIED
SCHOOL DISTRICT**

Program Evaluation &
Research Unit

Evaluation
Report

Project SEED

2009-2010

Aimée Tabor, Program Evaluator

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
SUMMARY OF FINDINGS	3
PROGRAM DESIGN	4
PROGRAM DESCRIPTION.....	4
PROGRAM OBJECTIVES	4
PROGRAM STRATEGIES, RESOURCES AND ACTIVITIES	4
EVALUATION DESIGN	5
EVALUATION METHODOLOGY	6
EVALUATION OBJECTIVES	6
DATA COLLECTION METHODS	7
DATA ANALYSIS.....	7
EVALUATION FINDINGS.....	7
LIMITATIONS OF THE DATA.....	10
SUGGESTIONS TO CONSIDER FOR CONTINUAL IMPROVEMENT.....	11
HOW CAN THE PROGRAM BE IMPROVED?	11
REFERENCES.....	12
APPENDIX.....	13

EXECUTIVE SUMMARY

Project SEED is a classroom instruction and professional development program that attempts to increase student engagement in the classroom, increase math skills particularly in pre-Algebra and Algebra, and increase the cultural relevance of the classroom for students involved in the program. In this *Project SEED* evaluation report, there are three guiding questions: 1) What evidence is available to suggest that Project SEED had an impact on student achievement? 2) What evidence is available to suggest that students were more engaged in math? 3) Did teachers have enough support to successfully implement strategies and activities? These guiding questions were used to frame the evaluation design and make sense of the evaluation findings.

Findings

- Quantitative analysis revealed, 93 students (44%) made no change in their CST Math proficiency level; 70 students (32%) of students decreased one or more proficiency levels on the California Standards Math Test; 54 students (24%) increased one or more proficiency levels on the California Standards Math Test. Based on this quantitative analysis, Project SEED had no measurable impact on CST Math outcomes for Bayview/Hunters Point students.
- Classroom observations revealed that students were engaged with the Socratic Method used by Project SEED Instructors. Students used hand signals with ease and actively participated.
- However, during classroom observations, teachers were not engaged with the work of Project SEED. They chose to do different activities at the time and only became minimally involved. Follow-ups revealed that teachers do not use the Project SEED instruction techniques with fidelity.

Program Improvement

- A major concern for the implementation of Project SEED in San Francisco Unified School District is the lack of teacher investment in the techniques. In order to see a greater impact for students, teachers have to be committed to the program and use the techniques at times other than when the Project SEED instructor is present.
- Project SEED schools and their administrators should set clear outcomes for the use of Project SEED at each school. It may be more important that Project SEED instructors/master teachers observe SFUSD teachers, hone their techniques, and co-teach with teachers instead of SFUSD teachers taking a purely passive role.
- Project SEED instruction is not linked to the CST for Mathematics. The CST for Mathematics is not the best indicator of student progress after Project SEED intervention. Schools may want to use appropriate formative assessments to determine any additional impact of the Project SEED Program.

PROGRAM DESIGN

PROGRAM DESCRIPTION

San Francisco Unified School District is in Program Improvement for failure to meet AYP targets in Mathematics and Language Arts for several targeted populations of students. These students are African American, Latino, Samoan, English Language Learners and those receiving Special Education services. In an attempt to address the achievement gap, the district contracted with Project SEED to address the needs of target students in the Mission and Bayview/Hunter's Point areas.

Project SEED is a classroom instruction and professional development program that attempts to increase student engagement in the classroom, increase math skills particularly in pre-Algebra and Algebra, and increase the cultural relevance of the classroom for students involved in the program. The program employs mathematicians and mathematics master teachers who use a unique Socratic Method of instruction to teach higher mathematics to entire classes of under-achieving students. Project SEED mathematicians also provide teachers with the tools to use the Socratic technique and hand signals through modeling and coaching. Teachers are present and encouraged to actively participate in Project SEED sessions. Project SEED is currently in use at Malcolm X Elementary, G.W. Carver Elementary, Dr. Charles Drew Elementary, Bret Harte Elementary, and Willie Brown College Preparatory Academy in grades three through five.

PROGRAM OBJECTIVES

Project SEED specifies four main programmatic goals:

1. To provide teachers with coaching, modeling, and tools to increase student engagement.
2. To provide methods for planning lessons that introduces new concepts while reinforcing student prior knowledge.
3. To improve students' critical thinking and math achievement.
4. To provide an alternative technique to teaching mathematical concepts.

PROGRAM STRATEGIES, RESOURCES AND ACTIVITIES

Recent research on mathematics suggests that increased opportunities to learn mathematics predicted higher mathematics achievement for students from low-income families, especially African Americans and Caucasians (Wang, 2010). Under-achieving students who received explicit instruction, who had opportunities to grapple with problems and form solutions, who received appropriate questions from a teacher, and who received lessons that were at a rapid pace were more engaged in math and had better mathematics outcomes (Baker Et al., 2002; Witzel Et. al., 2003).

The program strategies and activities of Project SEED for elementary and middle school math teachers in the San Francisco Unified School District serve to address and support:

Explicit Mathematics Instruction. Teachers demonstrate a specific plan or strategy for solving problems and students use this plan to think their way through to a solution.

Skill Efficacy. Teachers use questioning, modeling, and pacing to transition students into error-free practice.

Mathematics Engagement. Students expend effort to make sense of mathematical ideas or make sense of mathematics to figure something out that is not immediately apparent. In addition, students are given the opportunity to make sense verbally, with other students, or the whole class.

Modeling, Coaching, and Support of Mathematics Teachers. Coaches provide the necessary supports such as modeling, coaching, lesson planning, and team teaching to teachers to aid the implementation of strategies and techniques.

Project SEED instruction combines a, non-lecture, questioning method with techniques designed to encourage constant verbal and nonverbal feedback, promote student participation, and improve focus. A typical lesson consists of carefully crafted questions which lead students to the discovery of mathematical concepts. In addition to individual responses, the instructor solicits group feedback through silent hand signals, chorus responses, and quick surveys of written work. These and other strategies are used to provide all students with frequent opportunities to respond and encourage the participation of shy or unsure students. They also allow the instructor to adjust the lesson to provide appropriate learning opportunities for students of all skill levels. Constant feedback also helps maintain student focus. By continual questioning in the Socratic style, the specialist models critical thinking/questioning for the students to help them become effective learners. Students are encouraged to think for themselves and articulate their reasoning. The use of silent feedback, such as agreement and disagreement signals, allows students to interact and communicate with one another in a non-disruptive and polite fashion. A Project SEED classroom is meant to be a safe environment where students can take academic risks without fear of embarrassment or humiliation.

EVALUATION DESIGN

EVALUATION METHODOLOGY

At SFUSD, the Program Evaluation and Research Office employs an approach to evaluation that is participatory (Cousins & Earl, 1992), utilization-focused (Patton, 1986, 1994), and integrated with processes of continuous improvement and program planning (Fetterman, Kaftarian & Wandersman, 1996). Our approach is based on the idea that participation of program directors and coordinators in the evaluation process is key to insuring that program planners and managers use evaluation data to support decision-making. The involvement of program directors and coordinators has the potential to encourage program staff to think more systematically about the relationship between program activities and objectives. Such systematic reflection would be aimed at building a “culture of learning” (Patton, 1997, p. 147) to lead to continuous program improvement.

Evaluations are designed to address both program implementation (formative evaluation) and outcomes (summative evaluation) and are question-driven. Evaluators and program staff collaborate to develop evaluation questions that are linked to the program objectives and activities, and to the interests of all program stakeholders. In addition, research on the best practices in the project’s domain of activity informs the evaluation framework. The evaluation design involves a mix of qualitative and quantitative data collection and analysis methods, such as surveys, open-ended

response questions and one-on-one interviews. Each evaluation design involves the triangulation of multiple sources of data brought to bear on crucial evaluation questions.

EVALUATION OBJECTIVES

The design of this evaluation examines the program objectives, which are: to increase student outcomes and achievement in mathematics; to increase student engagement in mathematics; and to provide teachers with research based, alternative methods to math instruction that impact target populations of students.

Using these objectives as the guide, the evaluation is designed to address the following questions:

- 1) What evidence is available to suggest that students were more engaged in math?
- 2) Did teachers have enough support to successfully implement strategies and activities? Was the program easy for them to implement and did they like the program?
- 3) What evidence is available to suggest that Mathematics Project Seed had an impact on student achievement?

DATA COLLECTION METHODS

To assess the success of the implementation and impact of the Mathematics Professional Development Programs, the following data collection methods were used: (1) classroom observations, (2) document review, and (3) student quantitative math data.

Classroom Observations

Classroom observations were conducted to gain further understanding of the processes and practices that went along with each program, for example, to see examples of modeling and team teaching. Classroom observations also revealed data about the fidelity to which teachers implemented strategies. Classroom observations were conducted at Dr. Charles Drew and Malcolm X.

Review of Program Documents

Program documents were reviewed to gain a more detailed understanding of the program. Coach feedback reports to the district were reviewed for evidence of teacher and classroom progress. And end of year program reports were reviewed to determine if students were making progress on assessments given by the program.

Student Quantitative Data

Students who were rostered to teachers in the Project SEED program were identified by student ID/HO Number. Based on these numbers, the program evaluator can link to district databases to review student middle school math grades, CST Math scores, and formative math assessments (if available).

DATA ANALYSIS

Each aspect of the evaluation design provides information for triangulation. Classroom observations allow the program evaluator to observe student-specialist interactions, student and teacher involvement in the programs, and the alignment of the contracted services to the delivery of

services. Qualitative data are used to gather a summative view of student performance after the service intervention. All quantitative analyses were performed on SPSS 18.0.

EVALUATION FINDINGS

This section of the report is organized around the findings of the various data sources this evaluation. Guided by the following questions: 1) What evidence is available to suggest that students were more engaged in math? 2) Did teachers have enough support to successfully implement strategies and activities? 3) What evidence is available to suggest that Project SEED had an impact on student achievement?

Qualitative Data

Classroom Observations

The Program Evaluator visited one third grade classroom and one fourth grade classroom at Malcolm X and Charles Drew to observe Project SEED instruction. Based on evaluator observations, students enjoyed Project SEED in their classroom. Several left their desks and came to sit on the floor in front of the white board where they could interact with the Project SEED instructor. Students were familiar with hand signals and used them the majority of the time. When students became rowdy, noisy, or critical of one another, the Project SEED instructor did not correct students but redirected them with a change in activity. Only as a last resort did the instructor use the “Quiet Points” system. The class would receive points for cooperating and being quiet and lose points when they shouted or were disruptive.

Teachers, however, did not seem invested in Project SEED. Both teachers observed took the time to look over lecture notes, leave the room, or prepare for their next lesson. Project SEED instructors attempted to engage teachers in the sessions but participation was minimal. Occasionally, if the teacher felt the class was getting out of hand, they might interject a corrective measure but then they would go back to what they were doing. Project SEED instructors also left each teacher with a quick survey to get feedback and engage teachers in the techniques.

Review of Program Documents

At the beginning of the year, Project SEED provides the district with a book on their program. The book contains the history, objectives, goals, and research on the program. In addition they provide the district with a CD that demonstrates Project SEED lessons and instruction. The program evaluator read through the book and articles to become familiar with the techniques for observations. The CD provided an example of similar instruction that was observed in the classroom. The program evaluator also reviewed copies of surveys used to collect feedback on each Project SEED session and the results of the end-of-year surveys with students and teachers about Project SEED. The results of these surveys and teacher comments can be found in the appendix.

Analysis

Based on the qualitative data available, students were engaged by the math and the techniques of the Project SEED Instruction. Students used hand signals and were allowed to move around during instruction. Students demonstrated the ability to do long division in their heads and on paper. They

were also involved in pre-algebra type math questions by Project SEED instructors. Student comments and work show progress in this area.

Data on teacher involvement seemed mixed. Many teachers gave positive comments that are available in the Project SEED report (Appendix). However, classroom observations did not reveal a lot of teacher involvement. Teachers seemed to sit to the side, take a break, or use the time in other ways. Additional classroom observations demonstrated that teachers did not use the Project SEED techniques unless the Project SEED coach was present.

Quantitative Data

Project SEED math specialists worked with 267 students in grades three, four, and five in the Bayview Hunter’s Point area of San Francisco. Schools included Bret Hart Elementary, Malcolm X Elementary, George Washington Carver Elementary, Dr. Charles Drew Academy, and Willie Brown Academy. Students were composed of a wide variety of ethnic groups but were primarily African American, Samoan, and Latino.

2009-10 Project SEED Participation by Grade

Grade	Count	Percent
3	138	51.7%
4	88	33.0%
5	41	15.4%
Total	267	100.0%

2009-10 Project SEED Participation by Ethnicity

Ethnicity	Count	Percent
American Indian	3	1.1%
Arabic	1	.4%
African American	181	67.8%
Decline to State	13	4.9%
Filipino	4	1.5%
Japanese	1	.4%
Other Non-White	3	1.1%
Other White	2	.7%
Samoan	37	13.9%
Southeast Asian	1	.4%
Latino	21	7.9%
Total	267	100.0%

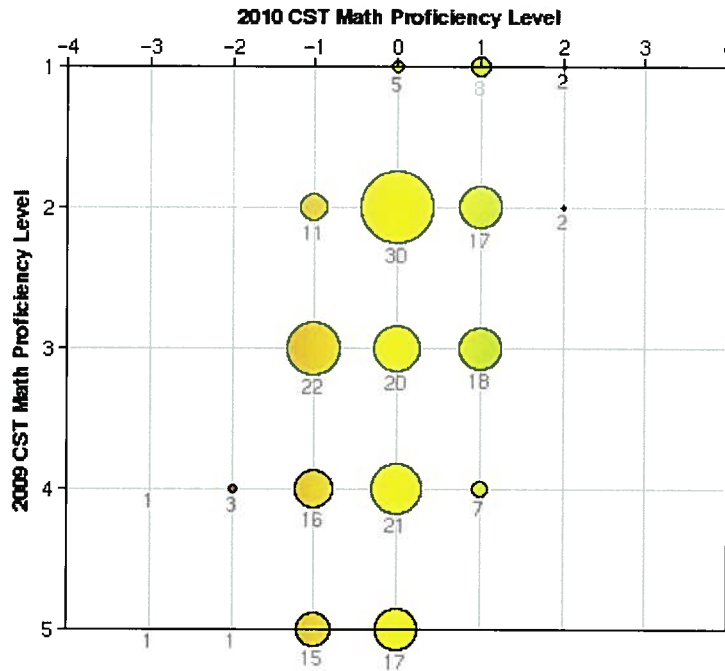
The majority of students in the Project SEED population would be considered high needs students who are impacted by the achievement gap in San Francisco Unified School District. Approximately 70% of the students were African American and 14% were Samoan. Of the student population, 91.8% of them qualify for free or reduced lunch.

SOCIOECONOMIC STATUS

Free or Reduced Lunch	Frequency	Percent	Cumulative Percent
No	22	8.2%	8.2%
Yes	245	91.8%	100.0%
Total	267	100.0%	

Changes in Math Proficiency Level

Elementary school students in San Francisco Unified do not receive letter grades. A change in proficiency level on the CST for Mathematics was used to determine the impact of programming. The following graph and table show the changes in student proficiency level. Zero indicates no change. A positive number indicates that a student gained that number of proficiency levels while a negative number indicates that a student decreased that number of proficiency levels.



	-4	-3	-2	-1	0	1	2	3	4	Total
Far Below Basic					5 5%	8 16%	2 50%	0 0%	0 0%	15 7%
Below Basic				11 17%	30 32%	17 34%	2 50%	0 0%		60 28%
Basic			0 0%	22 34%	20 22%	18 36%	0 0%			60 28%
Proficient		1 50%	3 75%	16 25%	21 23%	7 14%				48 22%
Advanced	0 0%	1 50%	1 25%	15 23%	17 18%					34 16%
Total Students:	0 0%	2 1%	4 2%	64 29%	93 43%	50 23%	4 2%	0 0%	0 0%	217 100%

Analysis

Based on the available quantitative data on ethnicity and socioeconomic status, the program specialists worked with the targeted student population. Ninety-three students (44%) made no change in their CST Math proficiency level; seventy students (32%) of students decreased one or more proficiency levels on the California Standards Math Test; fifty-four students (24%) increased one or more proficiency levels on the California Standards Math Test. These data would suggest that although the targeted population was served, services had minimal impact on student achievement on the CST for Mathematics.

Project SEED administers pre- and post-tests to students in their program. Tests are based on topics presented during Project SEED instruction with students. Project SEED tests include topics covered in the California State Math Standards but are not linked to California State Content Standards. Based on Project SEED pre- and post- tests, third graders experienced an increase of 23%, fourth graders experienced an increase of 24%, and fifth graders experienced an increase of 27% on scores of post-tests. Please see the appendix for the full Project SEED Report.

LIMITATIONS OF THE DATA

Project SEED instruction, covers a few but not all of the California State Standards. Project SEED tests are not correlated to the CST for Mathematics. The CST for Math may not be the most appropriate measure of student progress in Mathematics. Project SEED pre- and post- tests are more appropriate for a formative assessment of student progress. In addition, teacher fidelity to techniques used by project seed was minimal so there is likely to be little impact of Project SEED instruction on students CST outcomes.

COST ANALYSIS

The Project SEED contract cost the district \$158,000. The following is the cost per student based on the number of students served:

Cost of Contract	\$158,000
Number of Students Served	267
Cost Per Student	\$591.76

ISSUES TO CONSIDER FOR CONTINUAL IMPROVEMENT

- The major issue with the use of Project SEED in San Francisco Unified School District is the lack of teacher investment in the techniques. In order to see a greater impact for students, teachers have to be committed to the program and use the techniques at times other than when the Project SEED instructor is present.
- At a minimum, Project SEED schools and their administrators should set clear outcomes for the use of Project SEED at each school. It may be more important that Project SEED instructors/master teachers observe SFUSD teachers, hone their techniques, and co-teach with teachers instead of SFUSD teachers taking a purely passive role.
- Project SEED instruction is not linked to the California Standards Test for Mathematics. The California Standards Test for Mathematics is not the best indicator of student progress after Project SEED intervention. Schools may want to use appropriate formative assessments to determine any additional impact of the Project SEED Program.

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APPENDIX



Summary Report

Project SEED® Activities in the San Francisco Unified School District 2009 – 2010

Helen Smiler, National Projects Coordinator
Project SEED®, Inc.
2530 San Pablo Avenue, Suite K
Berkeley, CA 94702
(510) 644-3422
hsmiler@projectseed.org
www.projectseed.org

Overview

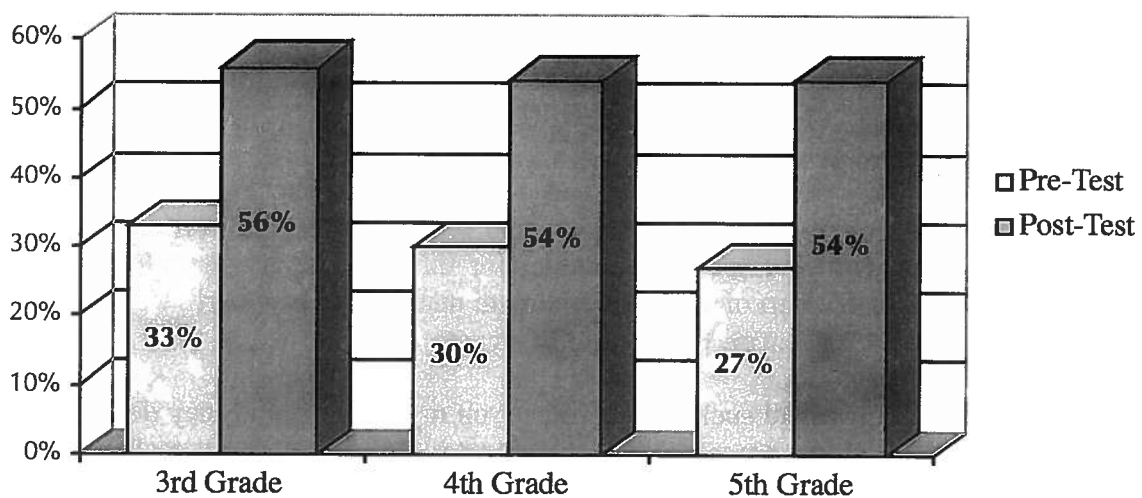
During the 2009-2010 school year, Project SEED mathematics specialists worked with 15 classes at Malcolm X, George Washington Carver, Bret Harte, Willie Brown, and Charles Drew Schools for 10 weeks each. In each class, the Project SEED instructors worked with the class four periods per week presenting instruction on advanced mathematical topics such as algebra, functions and group theory and provided professional development for the classroom teachers. These lessons served to reinforce students' grade level skills and introduce them to skills needed to thrive in more advanced classes.



Project SEED provided professional development for teachers using manifold activities. Each Project SEED lesson is designed to model Project SEED's group-discovery teaching strategies for the classroom teachers observing the lesson in their classrooms. In addition, teachers were presented with materials detailing the Project SEED methodology and philosophy. These materials allowed for participating teachers to better understand the purpose of the group involvement techniques and questioning strategies employed during the Project SEED lesson. Project SEED specialists also provided follow-up support to teachers after the 10-week sessions, including assistance with lesson planning, demonstrating the introduction of new concepts, and observing instruction and giving feedback.

Project SEED students took pre-tests and post-tests covering the topics presented during the SEED instruction. These tests included topics from the California State Math Standards for the grade and Project SEED curriculum. A summary of the results of student pre- and post-tests is shown below. Exemplary finals from each grade level are included on pages 7-22.

Student Scores



In November, Project SEED participated in the Math Literacy Day event for families in the Bayview/Hunter's Point neighborhood. During the event, Project SEED presented an interactive lesson for the parents and children attending and offered algebra and geometry activities. (See photographs.)



At the conclusion of the term, both students and teachers were asked to fill out surveys regarding their experiences with Project SEED. These surveys asked them to rate the overall effectiveness of Project SEED and comment on the program. The reactions to Project SEED were very positive. *Every teacher reported that they learned new and effective teaching strategies from observing the Project SEED sessions.* Furthermore, most teachers report that they now use signals to gain feedback from their students. The results of the 175 student questionnaires are presented in the table below.

Responses to Student Questionnaires

<i>Question</i>	<i>Yes</i>	<i>No</i>
Did you enjoy the Project SEED algebra class?	92%	8%
Did the Project SEED algebra class help you with math?	94%	6%
Would you like to receive Project SEED lessons again?	79%	21%
Do you think the Project SEED class will help you in the math classes you will take in middle school and high school?	86%	14%

A full summary of the 15 teacher questionnaires is included on pages 5-6.

Teacher Comments

Project SEED is a fantastic program! The signals of agreement/disagreement carry over into every part of the school day. Engagement in lessons has increased because of Project SEED. The techniques learned have been incorporated into my teaching of all subjects, but especially math. Teaching by asking questions and probing has become more comfortable.

3rd Grade Teacher, George Washington Carver

Project SEED came into a very challenging and difficult class. [The Project SEED instructor] was patient, had excellent engagement strategies, and provided powerful reflection in class and in meetings. This provided me increased strategies for full day instruction. [The Project SEED instructor] was an invaluable part of our class and math instruction this year!

3rd Grade Teacher, George Washington Carver

Project SEED is amazing! It had such a great impact on my students and they definitely became more engaged as the lessons progressed. I am able to carry over many techniques such as agreement/disagreement signals, chorus answering, etc. to other lessons. Thank you!

4th Grade Teacher, George Washington Carver

I use silent signals, students call on each other, and students repeating other students' answers in all subject areas.

5th Grade Teacher, Willie Brown

I would like test-taking strategies for how to incorporate problem solving skills and critical think into CST-like questions.

3rd Grade Teacher, Charles Drew

I would love to attend the Project SEED workshop. How do I sign up? [The Project SEED instructor] was very well prepared and knowledgeable. Thank you!

3rd Grade Teacher, Charles Drew

I love stealing the techniques to use throughout my day! Project SEED always gives me a chance to be proud of my students. I would like to see more lessons/concepts that we can continue to explore in the "Project SEED way."

3rd/4th Grade Teacher, Bret Harte

I would like to see more multi-step algebra problems. Also I would like to see less on multiplication facts and more variable problems.

3rd Grade Teacher, Bret Harte

I think [Project SEED] is an amazing program – it prompts student to think critically and notice patterns in math. It also exposes students to more sophisticated concepts. On the other hand I think this is a difficult format for some students e.g. the whole class instruction and note-taking. I am not sure that it met the diverse needs of the class. The engagement strategies were phenomenal but I see this as a class for more students with a deeper understanding of math concepts.

3rd Grade Teacher, Malcolm X

Our class uses [Project SEED] hand signals in other subject area. Project SEED techniques have helped me streamline Everyday Math lessons, especially warm-ups and whiteboard work: by using hand signals and showing answers on fingers, I can eliminate student whiteboards and save time! The one-on-one meetings helped align Project SEED with the SFUSD pacing guide.

4th Grade Teacher, Malcolm X

I wish we had more time to plan together so that I could participate more meaningfully [in the Project SEED lesson].

5th Grade Teacher, Malcolm X

Student Comments

It helps me in math. It is going to help me in high school. It makes me happy and good in my heart. Thank you for teaching me all of these lessons.

5th Grade Student, Willie Brown

I love algebra class I wish I can do this all day.

3rd Grade Student, Bret Harte

I think Project SEED is the best math class so far this year. Now I love math and math is the best thanks to Project SEED.

4th Grade Student, Bret Harte

I really liked [the Project SEED instructor's] lessons. I think that if I have more algebra lessons I can be a math genius.

3rd Grade Student, Charles Drew

I enjoy algebra and it really helped my brain and me get a lot smarter.

3rd Grade Student, George Washington Carver

I wish that I can have [the Project SEED instructor] as an algebra teacher for the rest of my life.

4th Grade Student, George Washington Carver

My comment is that I think Project SEED is the best school program ever.

4th Grade Student, George Washington Carver

My favorite part of Project SEED was working with and learning about alpha, beta, and omega. My favorite part was learning times tables and about adding the same number when you are working on times tables. Thank you for all your help!

3rd Grade Student, Malcolm X

I think that Project SEED will help anybody really. It help me improve in my grades. It is a really great program that everybody should have.

5th Grade Student, Malcolm X

Teacher Questionnaire Data

The following summarizes the responses of all 15 teachers who had Project SEED in their classroom.

1. How would you rate student enthusiasm and participation during the Project SEED instruction?

__53%__	excellent	(80% of the class or more)
__47%__	good	(60% of the class or more)
__0%__	fair	(40% of the class or more)
__0%__	poor	(20% of the class or more)

2. Considering the difficulty of the subject matter, how well did students understand the material presented to them?

__35%__	very well
__58%__	better than expected
__7%__	as well as expected
__0%__	not very well

3. How well did Project SEED stimulate student interest in mathematics?

__47%__	a great deal
__53%__	quite a lot
__0%__	somewhat
__0%__	not much

4. How well did Project SEED help your students improve their critical thinking and problem solving abilities?

__34%__	a great deal
__53%__	quite a lot
__13%__	somewhat
__0%__	not much

5. How much did Project SEED affect your students' performances in their regular math program?

__40%__	a great deal
__47%__	quite a lot
__13%__	somewhat
__0%__	not much

6. Do you have any shy or withdrawn students who participated more actively in the Project SEED classes than you would have expected?

__100%__	yes
__0%__	no

7. How well does Project SEED:

	A great deal	Quite a lot	Somewhat	Not much
Motivate students to learn?	__40%__	__53%__	__7%__	__0%__
Build students' self-confidence?	__53%__	__34%__	__13%__	__0%__
Improve communications skills?	__40%__	__53%__	__7%__	__0%__
Help students relate more positively to their peers?	__33%__	__27%__	__40%__	__0%__

8. How effective are the teaching methods employed by the Project SEED instructor?
 ___100%___ extremely effective
 ___0%___ somewhat effective
 ___0%___ not very effective
 ___0%___ not effective
9. Did the Project SEED lessons provide you with any new or insightful ways of teaching math concepts?
 ___100%___ yes
 ___0%___ no
10. Please indicate which Project SEED techniques you now use more frequently or more effectively in your own teaching
 ___87%___ agreement and disagreement signals
 ___33%___ deliberate mistakes
 ___80%___ chorus reading/chorus answering
 ___80%___ having a student who has made a mistake call on another student for help
 ___93%___ having students show answers on their fingers
 ___60%___ having students repeat other students' responses
 ___43%___ exploring the thinking behind "wrong answers" so as to give credit for a thoughtful answer even though it may be technically incorrect
 ___60%___ positive reinforcement
11. Please rate each of the following components of Project SEED's professional development on a scale of 1 to 4, 1 being **least** helpful, 4 being **most** helpful: (if any do not apply, please write n/a)
 ___3.86___ Watching instruction in your own classroom
 ___3.07___ One-on-one meetings with Project SEED staff
 ___3.16___ Project SEED handouts
 ___N/A___ Project SEED workshops
 ___3.44___ Observation by and feedback from Project SEED specialist

Sample Student Finals



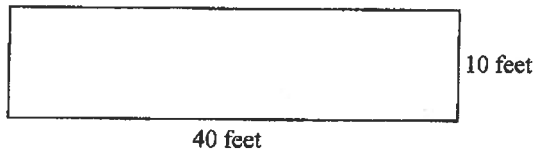
3rd Grade Post-Test

100% Awesome (20)

Name [REDACTED]
School Bret Harte
Date 03-25-10

1. There are 1,000 meters in 1 kilometer. How many meters are in 5 kilometers?
 - a. 50 meters
 - b. 1,000 meters
 - c. 1,005 meters
 - d. 5,000 meters

2. A backyard is shaped like a rectangle 40 feet long and 10 feet wide?



What is the perimeter in feet of the backyard?

- a. 50 feet
 - b. 60 feet
 - c. 90 feet
 - d. 100 feet
3. What number makes this number sentence true?
 $4 \times 9 > 3 \times \underline{\quad}$
 - a. 11
 - b. 12
 - c. 13
 - d. 14

4. Which sign goes in the box to make the number sentence true?

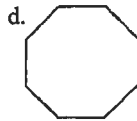
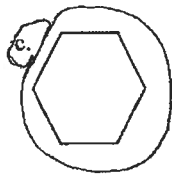
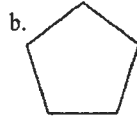
$$35 \boxed{\quad} 5 = 7$$

- a. +
- b. -
- c. x
- d. ÷

5. Which of the following is used to find out how many inches are in 3 feet?

- a. $3 + 12$
- b. $12 - 3$
- c. 3×12
- d. $12 \div 3$

6. Which of these is a hexagon?



7. A rhombus **MUST** have 4 sides

- a. 4 sides that are the same length.
- b. 3 sides that are the same length.
- c. 2 sides that are the same length.
- d. no sides that are the same length.

8. One stamp costs 41 cents. Two stamps cost 82 cents. Three stamps cost \$1.23. If the cost of each stamp remains the same, how much would 4 stamps cost?

- a. \$1.34
- b. \$1.43
- c. \$1.46
- d. \$1.64

9. $\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$

- a. $\frac{3}{14}$
- b. $\frac{5}{14}$
- c. $\frac{5}{7}$
- d. $\frac{6}{7}$

10. A pizza was divided into eighths. Sam ate $\frac{1}{8}$ of the pizza. Max ate $\frac{2}{8}$ of the pizza. Harold ate $\frac{4}{8}$ of the pizza. How much of the pizza was left?

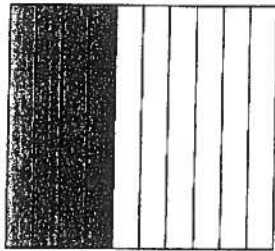
a. $\frac{1}{8}$

b. $\frac{2}{8}$

c. $\frac{3}{8}$

d. $\frac{7}{8}$

11. Joe shaded $\frac{4}{10}$ of the figure.



Which decimal equals $\frac{4}{10}$?

a. 0.04

b. 0.4

c. 0.440

d. 4.0

12. If $q + q = 3$, then $q = \frac{1}{2}$.

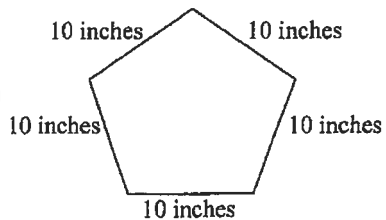
a. $\frac{1}{2}$

b. 1

c. $1\frac{1}{2}$

d. 3

13. What is the perimeter of the figure?



- a. 40 inches
- b. 50 inches
- c. 60 inches
- d. 70 inches

14. John did this division problem.

$$408 \div 24 = 17$$

Which problem could he do to check his answer?

- a. $24 + 17 = \square$
- b. $24 - 17 = \square$
- c. $24 \times 17 = 408$
- d. $24 \div 17 = \square$

15. $7 \times 0 = 0$ is an example of what generalization?

- a. $n + 0 = n$
- b. $n - n = 0$
- c. $n \times 0 = 0$
- d. $n \times 1 = n$

16. What number can be multiplied by 3586 to give the answer 3586?

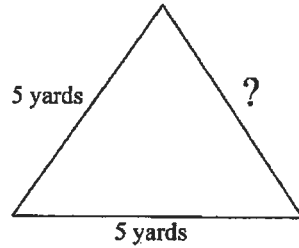
$$3586 \times \square = 3586$$

- a. 0
- b. 1
- c. 2
- d. 10

17. $\square \times 4 = 6 + 6 + 6 + 6$

- a. 3
- b. 6
- c. 24
- d. 28

18. What measurement is missing on the equilateral triangle below?



- a. 1 yard
- b. 5 yards
- c. 10 yards
- d. 25 yards

19. Which option is another way to write $\beta \times 5$?

- a. α
- b. $5 + \beta$
- c. $5 + 5 + 5 + 5 + 5$
- d. $\beta + \beta + \beta + \beta + \beta$

20. $\beta \times 1 = \triangle$?

- a. α
- b. β
- c. 0
- d. 2



4th Grade Post-Test

100% **A** SUPERB JOB!

Name _____

School _____

Date _____

1. The numbers in the pattern increase by the same amount each time. What are the next three numbers in this pattern?

-10, -8, -6, -4, -2, , ,

- a. 0, 2, 4
- b. 0, 1, 2
- c. 0, -1, -2
- d. 0, -2, -4

2. $45 + 8 = 45 + \square$

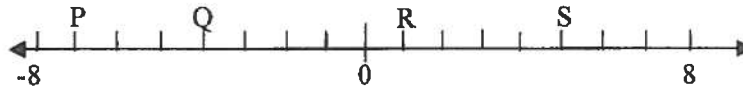
$\square = ?$

- a. $2 + 2$
- b. 2×2
- c. $2 + 4$
- d. 2×4

3. If $24 \times 6 = 6 \times w$, what is the value of w ?

- a. 4
- b. 6
- c. 12
- d. 24

4. Which letter is located at -4 on the number line below?



- a. P
- b. Q
- c. R
- d. S

5. $\alpha + -\alpha = \square$

- a. $-\alpha$
- b. α
- c. 2α
- d. 0

6. The sum of x and y equals 24. If $x = 18$, which equation can be used to find the value of y ?

- a. $y - 18 = 24$
- b. $18 + y = 24$
- c. $x - y = 24$
- d. $x + 18 = 24$

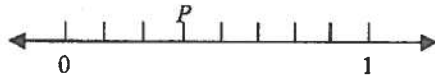
7. Which fraction represents the largest part of a whole?

- a. $\frac{1}{6}$
- b. $\frac{1}{4}$
- c. $\frac{1}{3}$
- d. $\frac{1}{2}$

8. Which fraction means the same as 0.19?

- a. $\frac{19}{10}$
- b. $\frac{19}{100}$
- c. $\frac{19}{1000}$
- d. $\frac{19}{1}$

9. What fraction is best represented by point P on this number line?



- a. $\frac{1}{8}$
- b. $\frac{1}{5}$
- c. $\frac{3}{8}$
- d. $\frac{7}{8}$

10. Which number is represented by n ?

$$8 \times n = 120$$

- a. 13
- b. 14
- c. 15
- d. 16

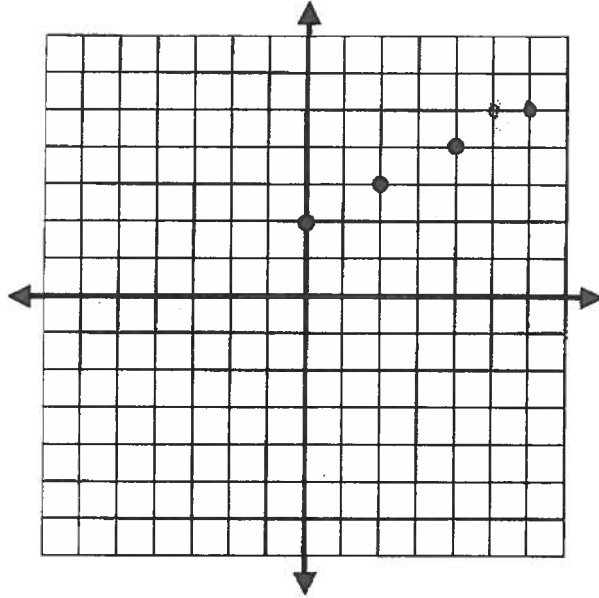
$$\begin{array}{r} 15 \\ 8 \overline{)120} \\ \underline{16} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

11. What is the value of the expression below if $a = 2$?

$$15 - (a + 8)$$

- a. 5
- b. 12
- c. 21
- d. 25

12. Alex plotted three points on a grid. The three points were all on the same straight line.



If he plots another point on the line, what could be its coordinates?

- a. (2, 0)
- b. (4, 4)
- c. (5, 5)
- d. (6, 5)

13. $7 \times \frac{1}{7} = \square$

- a. $\frac{1}{49}$
- b. $\frac{1}{7}$
- c. 1
- d. $7\frac{1}{7}$

14. What is the value of the expression below?

$$(16 + 4) - (5 \times 3)$$

- a. 20
- b. 10
- c. 5
- d. 3

15. $\alpha + I_+$ =

- a. 0
- b. 3
- c. 6
- d. I_+

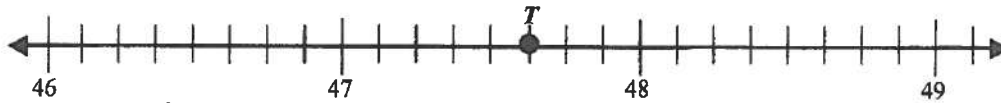
16. $5 + \beta + -7 + 7 + -\beta =$

- a. -19
- b. 5
- c. 7
- d. 12

17. $I_x \times I_x \times I_x \times I_x =$

- a. -1
- b. 0
- c. 1
- d. 4

18. On the number line below, what number does point T represent?

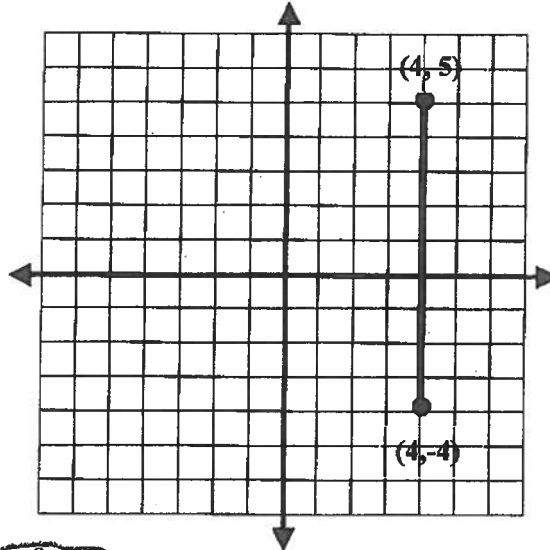


- a. $46\frac{3}{8}$
- b. $47\frac{5}{8}$
- c. $48\frac{3}{4}$
- d. $49\frac{1}{8}$

19. $\square + 18 + I_+ = 38$

- a. 8
- b. 20
- c. 56
- d. I_+

20. What is the length of the line segment shown on the grid?



- a. 9 units
- b. 7 units
- c. 5 units
- d. 4 units



5th Grade Post-Test

Name _____

School MXA

Date March 19 2010

Circle the best answer.

1. If $M = 7$, what is the value of $8M - 2$?

- a. 13
- b. 40
- c. 54
- d. 85

$$\frac{24}{25} = 96\%$$

A

Excellent Work!

2. If $A = 5$, what is the value of $6 \times A - 3$?

- a. 2
- b. 8
- c. 12
- d. 27

3. Which expression represents the product of 7 and n ?

- a. $7n$
- b. $7 - n$
- c. $7 + n$
- d. $7 \div n$

4. If $L = 41$, what is the value of $6 - L$?

- a. -47
- b. -35
- c. 35
- d. 47

5. If $q = 3$, what is $4 \times (7 - q)$?

- a. 4
- b. 8
- c. 16
- d. 25

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6. What value for k makes this equation true?

$$9 \times 47 = (9 \times 40) + (9 \times k)$$

- a. 7
- b. 8
- c. 40
- d. 47

7. What is the decimal 0.3 written as a fraction?

- a. $\frac{1}{3}$
- b. $\frac{3}{4}$
- c. $\frac{3}{10}$
- d. $\frac{3}{100}$

8. What is the fraction $\frac{1}{4}$ written as a decimal?

- a. 0.14
- b. 0.25
- c. 1.4
- d. 2.5

9. Which equation could have been used to create this function table?

- a. $y = \frac{x}{5}$
- b. $y = 5x$
- c. $y = x - 5$
- d. $y = x + 5$

X	Y
-9	-4
-2	3
4	9
11	16

10. Which equation could be used to create this function table?

- a. $y = \frac{x}{3}$
- b. $y = 3x$
- c. $y = x - 3$
- d. $y = x + 3$

X	Y
0	0
-2	-6
4	12
11	33

11. In the exponential form $3 \text{ E } 7$, the 7 _____.

- a. tells you to multiply 7 and 3
- b. is the exponent
- c. is the operation
- d. is the base

12. What is the factor form of 8^3 ?

- a. $8 \times 8 \times 8$
- b. 8×3
- c. 16
- d. 256

13. What is the exponential form of $\alpha \times \alpha \times \alpha \times \alpha$?

- a. $\alpha + 4$
- b. $\alpha \text{ E } 4$
- c. $\alpha \times 4$
- d. 4α

14. If $h^6 = 64$, then $h = \triangle$?

- a. 2
- b. 3
- c. 16
- d. 70

15. $7 \text{ E } 2 = \square$?

- a. 9
- b. 14
- c. 35
- d. 49

16. $7^3 \times 7^5 = \square$?

- a. 7^8
- b. 7^{15}
- c. 49^{15}
- d. 77^{35}

17. If $2^4 \times 2^{\square} = 2^8$, what is the missing exponent?

- a. 2
- b. 4
- c. 12
- d. 32

18. $\gamma^\alpha \times \gamma^\beta = \square$?

- a. $\gamma^{(\alpha + \beta)}$
- b. $\gamma^{(\alpha \times \beta)}$
- c. $(\gamma \times \gamma)^{(\alpha + \beta)}$
- d. $\gamma \times \alpha \times \beta$

19. What is the prime factorization of 40?

- a. $2^3 \times 5$
- b. $4^2 \times 5$
- c. $5^2 \times 2$
- d. $5^2 \times 8$

20. What is the prime factorization of 18?

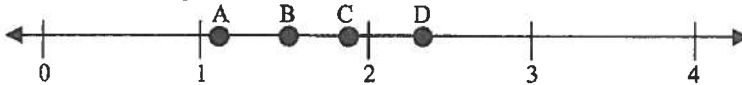
- a. 2×3^2
- b. $2^2 \times 3^2$
- c. 6×3
- d. 1×8

21. Which letter on the number line best identifies the location of -3?



- a. P
- b. Q
- c. R
- d. S

22. Which point best represents the location of 1.56 on the number line?



- a. Point A
- b. Point B
- c. Point C
- d. Point D