





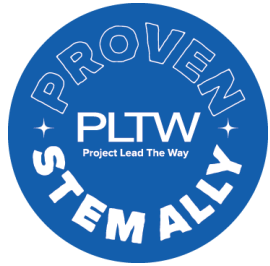
PLTW  
**ALGEBRA 1  
ADVANTAGE**



**PROVEN**  
PLTW  
Project Lead The Way  
**STEM ALLY**



Project Lead The Way (PLTW) equips PreK-12 students for a STEM-driven world with teacher-empowered curriculum in computer science, engineering, biomedical science, and more. For over 25 years, PLTW's curriculum coupled with its best-in-class professional development has supported teachers in creating an environment to make every student STEM successful.



**Access**



**Real-World Experience**



**Career Readiness**



**Professional Development**

## OUR PROGRAMS:



Available in all  
**50 states, D.C.,  
and U.S. territories**



**108,224**  
teachers  
trained

**2.47**  
*Million*  
**students**

*(as of June 30, 2023)*








**15,707**  
programs

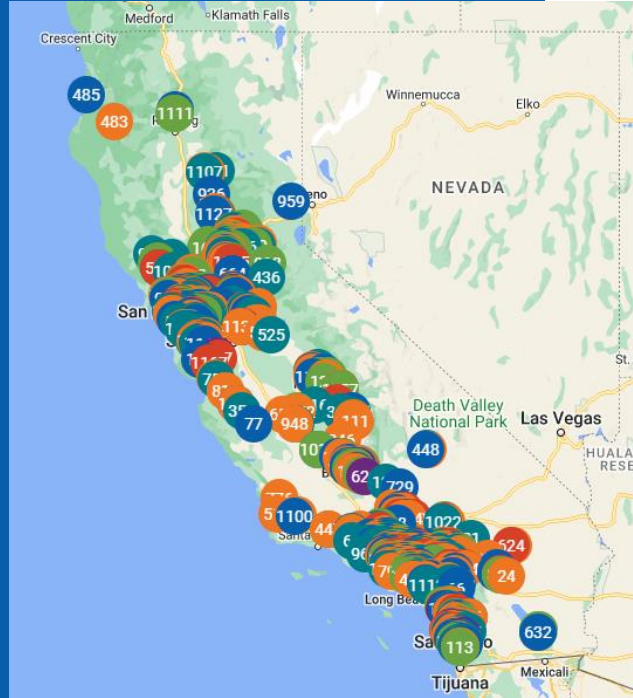



**12,572**  
schools

# CA PLTW Footprint

-  305 Launch (TK-5)
-  510 Gateway (6-8)
-  344 Engineering (9-12)
-  183 Biomedical Science (9-12)
-  120 Computer Science (9-12)

***\$1.3 Million in Grant Awards last year alone!***



 **1,462  
Programs  
and  
Growing!**

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# Curriculum

## PLTW LAUNCH



PreK-5  
42 Modules  
12-14 Hours Each

## PLTW GATEWAY



6-8  
10 Units  
36-45 Hours Each



## PLTW ALGEBRA 1 ADVANTAGE

Middle and High School  
Supplemental Course



## PLTW BIOMEDICAL SCIENCE

9-12  
4 Courses



## PLTW COMPUTER SCIENCE

9-12  
4 Courses



## PLTW ENGINEERING

9-12  
10 Courses

# PLTW CURRICULUM



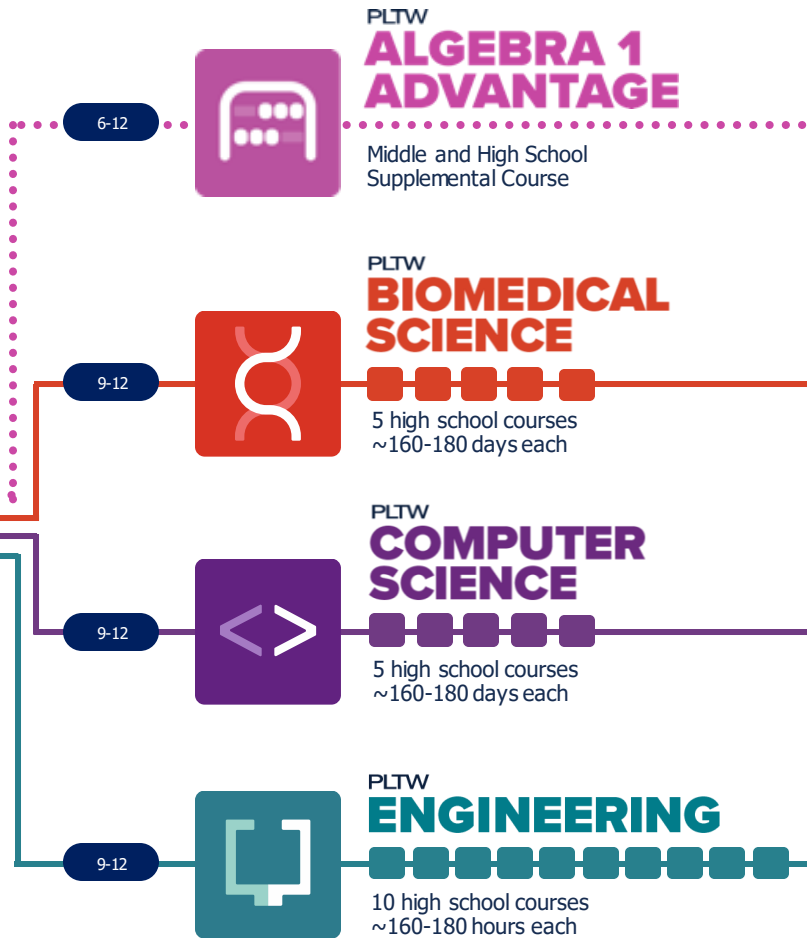
## PLTW LAUNCH

42 modules  
~12-14 hours each  
Life Sci / Physical Sci / Earth & Space Sci / BMS / CS / ENG



## PLTW GATEWAY

10 units  
~36-45 hours each  
BMS / CS / ENG





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# ALGEBRA 1 ADVANTAGE



Through dynamic, interactive problems and projects, students are immersed in real-world challenges showcasing Algebra's practical applications, bridging theory to reality.

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# Why Algebra 1 Advantage?

1. Recognizes the diverse learning needs of students and aims to provide a more inclusive and adaptable approach to teaching algebra
2. Ensures all students have access to engaging and effective algebra education
3. Makes Algebra relevant and accessible to a broader range of learners
4. Fosters success and interest in algebra for all students, regardless of their background or learning style

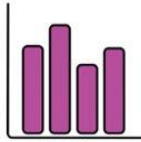




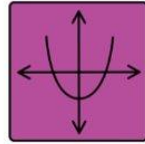
# Bridging Theory to Reality



Word Problem



Chart



Graph



Picture



Table


$$y=x^2+9$$

Equation

## Algebra 1 Advantage is...

- Supplemental
- Flexible in implementation
- Standards-aligned
- Interactive
- Connected to careers

## Topics connect math to...

- Financial literacy
- Societal/environmental impact
- Law/criminology
- Architecture/engineering
- And many more!

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# Algebra 1 Advantage Features

- **Teacher Empowered**

- Designed and classroom tested with input from educators and students

- **Standards Aligned**

- Inclusive of both states that have adopted CCSS and those that have opted out
- Aligned with a special emphasis on topics students struggle with most

- **Flexibility and Use**

- Educators can use Projects and Problems as they see fit with their core curriculum
- Projects and Problems can be filtered by Standard, Class Time, Topic, and Concept for easy integration into your classroom

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## Explore

Present the topic and spark curiosity

## Connect

Build a bridge that resonates, relates, or reminds

## Attempt

Find a solution for the problem or scenario

## Reflect

Evaluate and deepen understanding

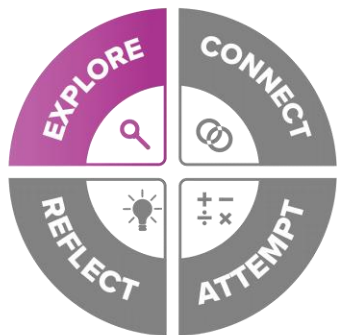
# Lesson Structure



# PROBLEM-BASED APPROACH: ACTIVITY-, PROJECT-, AND PROBLEM- BASED



# Real-world Problems



## PROBLEM 2.2

### Planning a Trip

Think about a vacation you've always wanted to go on. Where would you go? Who would you go with? What activities would you want to take part in?

Before you take off on your trip, it is important to figure out how much your trip will cost you and what you can afford to do.

Planning around a budget sets you up for success and having a good time!

In your research, you find:

- The best **group** deal costs \$4,200 for **seven** nights.
- The best **individual** airfare is \$500 and the lowest hotel cost is \$100 **per night** per person.

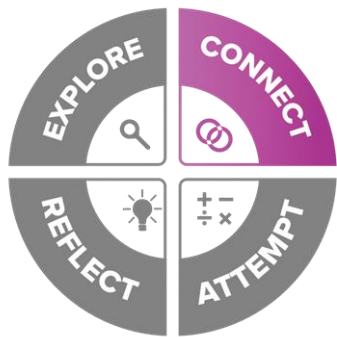
In this problem, you analyze which deal has the better value: the group deal or the individual costs combined.

## Discover the Grand Canyon



START >

# Real-world Problems



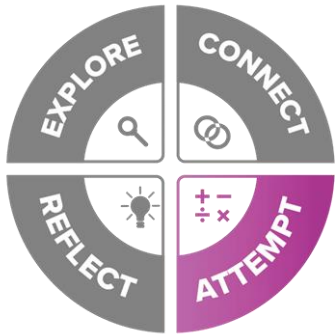
## PROBLEM 2.2

### Planning a Trip

- 1 To determine the better deal, you need to create an equation for each scenario; the per-person cost and the group cost. This will help determine where you start to save money!

For each person, the round-trip airfare is \$500, and the hotel cost is \$100 per night per person. What is you unknown?
- 2 **Individual Cost:** Create an equation that represents the per-person cost of your vacation per night.
- 3 **Combined Cost:** Create the equation that represents the total cost for all 4 people using the Individual Cost equation.
- 4 To determine the cost of the trip, substitute values for  $x$ . Use a table to help you track your values.
- 5 **Group Deal Cost:** Create an equation that represents the group cost of \$4,200.
- 6 Determine the difference between the combined cost equation and the group deal cost equation. Why is there such a difference?

# Real-world Problems



## PROBLEM 2.2

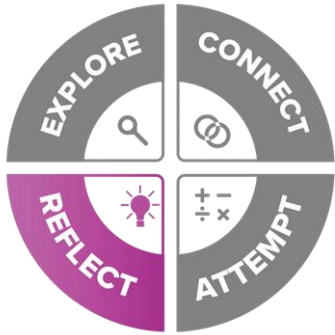
### Planning a Trip: Find the Better Value

So which deal is better? Now that you have two equations, you can create a **linear relationship** to solve this problem.



- 1 Determine how many nights you and your friends must stay for you to save money with the group deal cost.
- 2 Interpret your solution. What does the value of  $x$  represent in the problem?  
Determine the better deal.
- 3 When is the combined individual cost better to use?  
When is the group deal cost better to use?

# Real-world Problems



## PROBLEM 2.2

### Planning a Trip

#### Reflect

How do you know if a deal is really a good deal?

How can you truly get the best value out of your vacation deals?

#### Conclusion

- 1 What are some strategies you can use to help you create equations and inequalities from word problems?
- 2 How can you tell when a scenario should be represented by an equation as opposed to an inequality?

## Summary

### Being a Travel Agent

Travel agents spend much of their time finding deals for their clients and determining the cost of hotels, airfares, car rental, and activities. They calculate totals, find average costs of items in an area, and create budgets (or limits) for what their clients can spend. They may calculate distances between places their clients visit to get them the best transportation deal, whether by car, train, or airplane. If their clients travel abroad, they often look at other costs such as the cost of exchanging U.S. dollars to another currency.





## PLTW Delivers Results for ALL Students

The benefits of taking PLTW coursework are just as large for students with disabilities and students who are disadvantaged as for other students, and perhaps larger in high school.

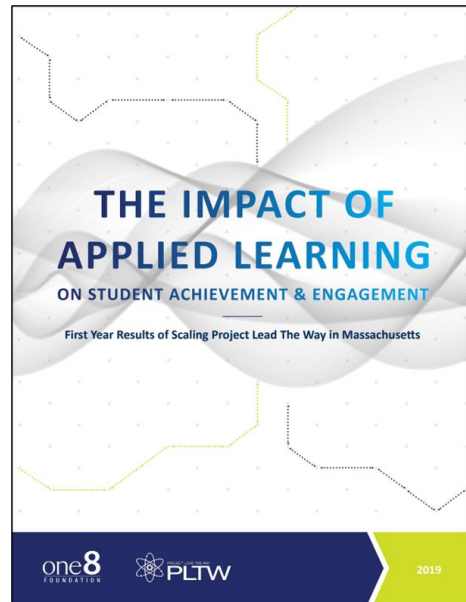
## Students Value PLTW Courses

Students report being satisfied with PLTW courses and find these courses valuable for school/career.

## PLTW Teachers Report Strong Satisfaction

Teachers report PLTW classes have increased their overall efficacy and satisfaction with their career.

PLTW teachers are more satisfied with PLTW courses than their other courses. Two-thirds of teachers report their PLTW experience has improved their satisfaction with teaching in general and 68% report that it improved their overall efficacy as a teacher.



# 70%

of students believe that PLTW classes help in other areas they want to study further

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# Student Perspective



This class (PLTW) has not only *expanded my knowledge* in the engineering field, but it has *given a purpose to other classes*. It has given an application to trigonometry and algebra through projects that *relate to real-world problems*. My past English classes have led me into better technical writing so that I can document projects.

The Project Lead The Way program has pushed me to *learn beyond the school's curriculum through projects that genuinely interest me.*"

- PLTW High School Engineering Student



PLTW  
**ALGEBRA 1  
ADVANTAGE**

“

“This training was awesome in the sense you literally walk through almost every single activity, project, and problem. It has **100% prepared** me to teach this in a school setting, whether it be virtually or in-person.”

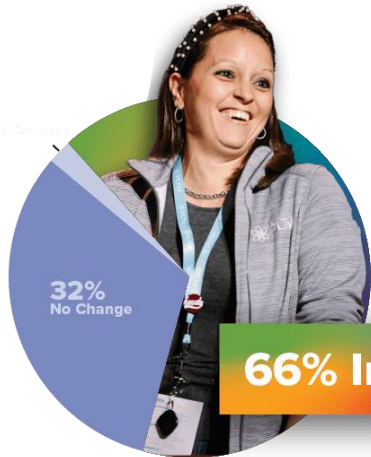
— PLTW Core Training Participant

PLTW Core Training  
*1 participant seat*

Two-day virtual sessions  
**\$500 per seat**

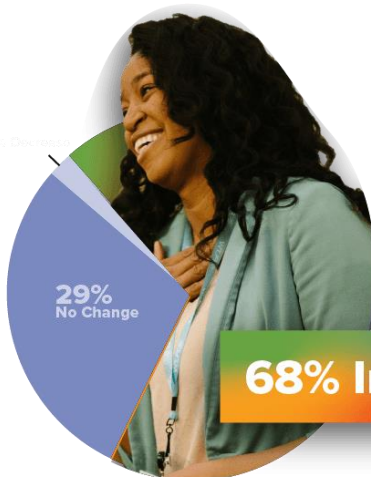
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How has experience with PLTW changed your *satisfaction* with teaching?

66% Increase



How has experience with PLTW changed your *efficacy* with teaching?

68% Increase

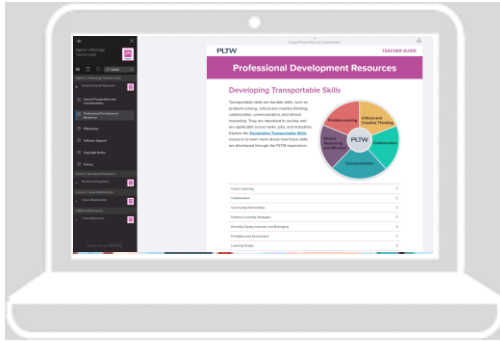
# 92

of PLTW Teachers say they are confident to return to their classrooms and teach their PLTW course after participating in Core Training

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# PLTW INVESTMENT CATEGORIES

PLTW programs vary in cost, but each program includes investments in three categories:



## ANNUAL PARTICIPATION FEE

The annual participation fee covers required software rights, program support features to the curriculum for which a school has trained teachers, as well as the associated support systems such as end of course assessments.



## PROFESSIONAL DEVELOPMENT

PLTW Core Training incorporates authentic, meaningful, and best-in-class online facilitation practices that ensure the quality delivery of course content.



## EQUIPMENT AND SUPPLIES

Equipment and supplies are unique program and curricular requirements necessary for PLTW program implementation and can be purchased through the PLTW store.



# Jimmy Benson

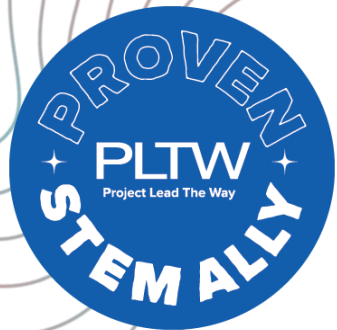
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Learn more at [www.pltw.org/A1A](http://www.pltw.org/A1A)





# PLTW CA Team Members



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Engagement



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BOCANEGRA**

Director of Strategic  
Accounts



**SUSAN  
KIM**

Director of School Success –  
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**MARYAM  
NOUH**

Director of School Success –  
Central & Northern CA