

Using Strategies, Technology, English, and Math (STEM) to Support EL Students

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Background



Center Middle School

Newcomers

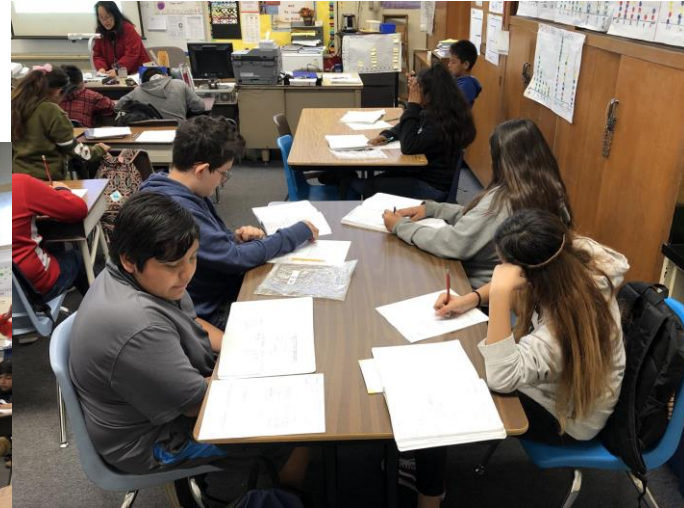
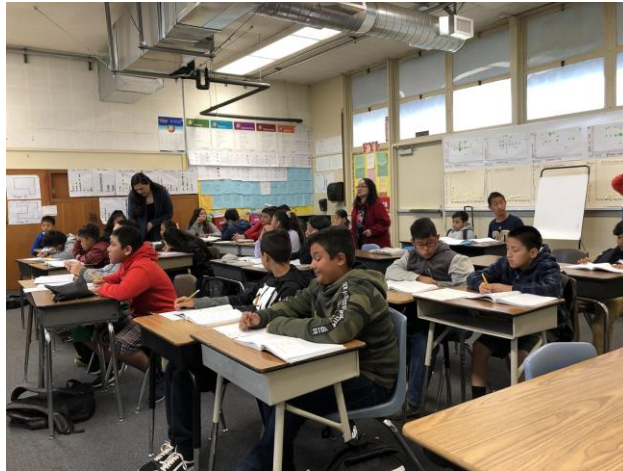
Subgroup: All Students, Gender: All

Language Code	Language Name	Total	Percent of Total
01	Spanish	141	97.24%
07	Mandarin (Putonghua)	2	1.38%
02	Vietnamese	1	0.69%
05	Filipino (Pilipino or Tagalog)	1	0.69%

Total Enrollment: 436

Strategies (Structure)

- **Groups**
 - Groups of 2
 - Groups of 4



- **Bilingual aids**
 - small groups
 - one-on-one.
- **EL Student in close proximity to each other**
 - Level 1 Clusters
 - Level 2 and 3
 - Level 3 with RFEP



Technology

Google Translate- Desktops

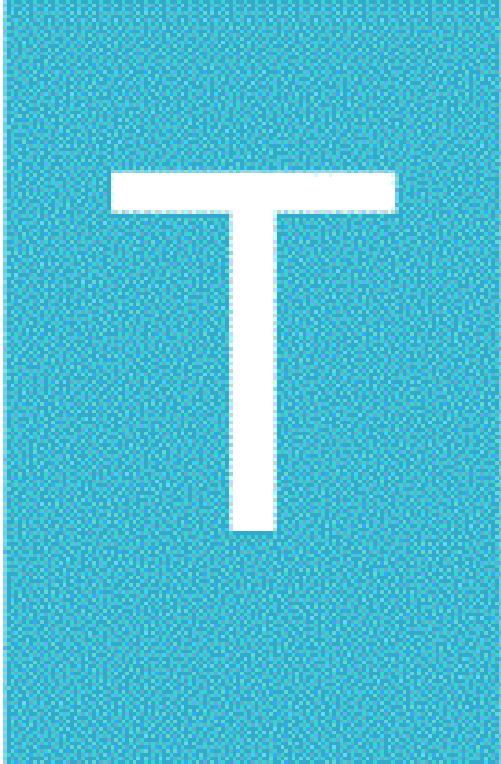
IPad- Google translate App.

Red Dot- Video Recording

<https://videorecorder.kwiius.com/>

Google Classroom- Upload work and videos of students talking about the mathematical content.

CPM Ebooks- ebooks.cpm.org



T

Google Translate: On a computer

https://www.google.com/search?q=combining+like+terms&rlz=1CACLSF_enUS838&oq=Combining+Like+Terms&aqs=chrome.0.0i6.1081j...

combining like terms

All Videos Images Books More Settings Tools

About 209,000,000 results (0.32 seconds)

1. Step 2: **Combine** the coefficients.
2. $5h + 11g + 1h - 8g$.
3. $(5 + 1)h + (11 - 8)g$.
4. $6h + 3g$.
5. Step 1: Organize your **like terms**.
6. $5x + 8x + 10x^2 - 7x^2 - 4x$.
7. Step 2: **Combine** the coefficients. $(5 + 8 - 4)x + (10 - 7)x^2$ $9x + 3x^2$ Related Links: **Combining Like Terms** Worksheets. **Combining Like Terms** Quiz. Algebraic Expressions.

[Combining Like Terms - SoftSchools](http://www.softschools.com/math/topics/combining_like_terms/)
www.softschools.com/math/topics/combining_like_terms/

Options

Page language: English

Translation language: English

Always translate

Done Cancel

Expand the expression and combine like terms:
 $2 - 4(5p + 1)$
 $-20p - 2$
 $-5p - 4$

Get a hint
www.khanacademy.org

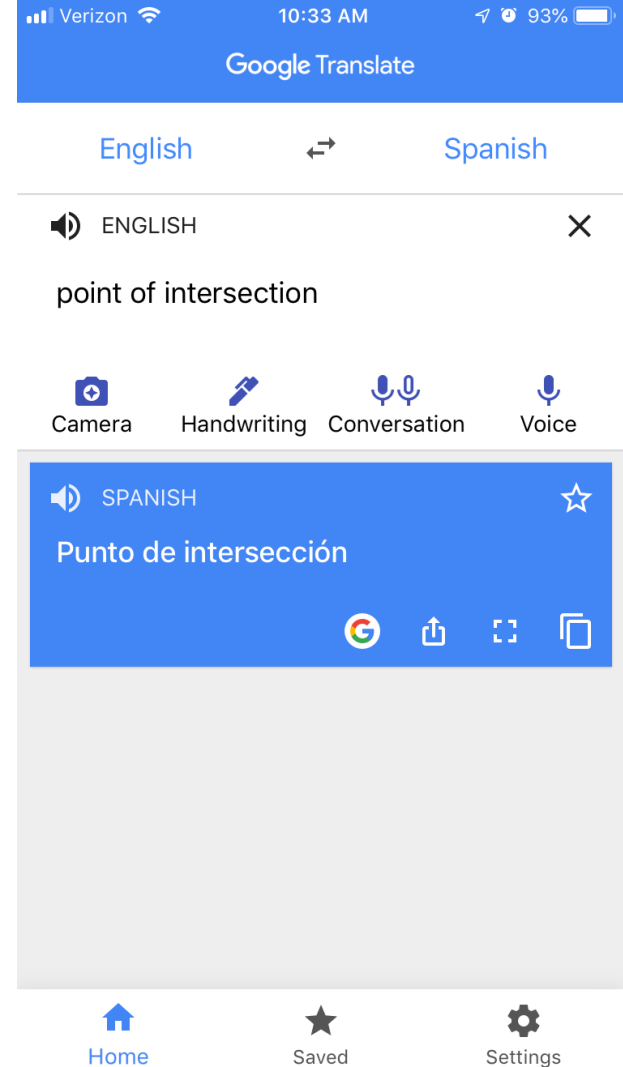
Double finger - Double click

People also ask

US 10:48

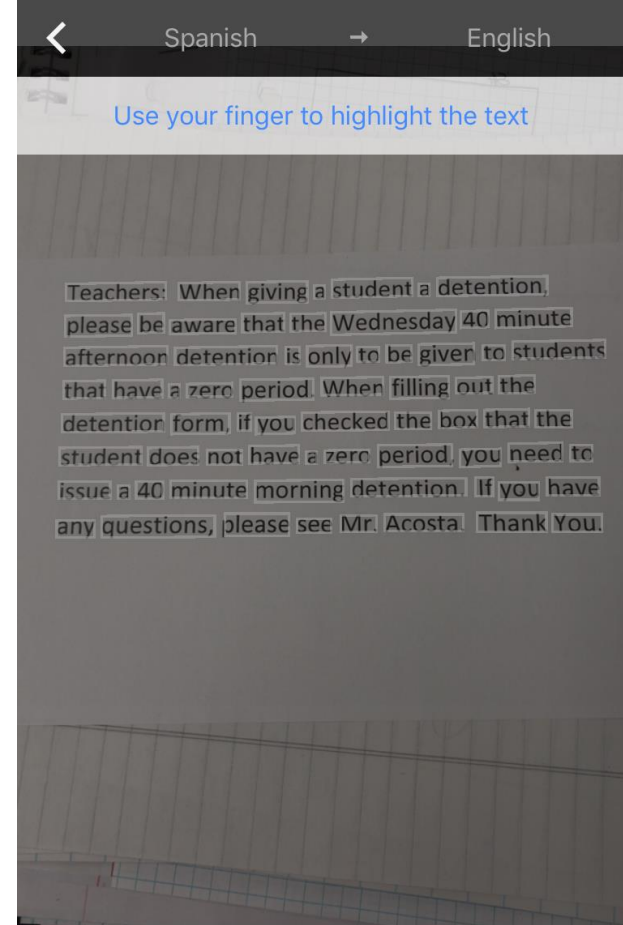
Google Translate: App for Ipad and Cell Phones

- Download google translate on a phone or Ipad (districts can download it on any Ipad for free)
- Students can 1) translate a word or phrase or 2) take a picture and highlight the part that needs to be translated
- Students need to communicate to make mathematical progress. They also need to be accountable for the information presented in class.



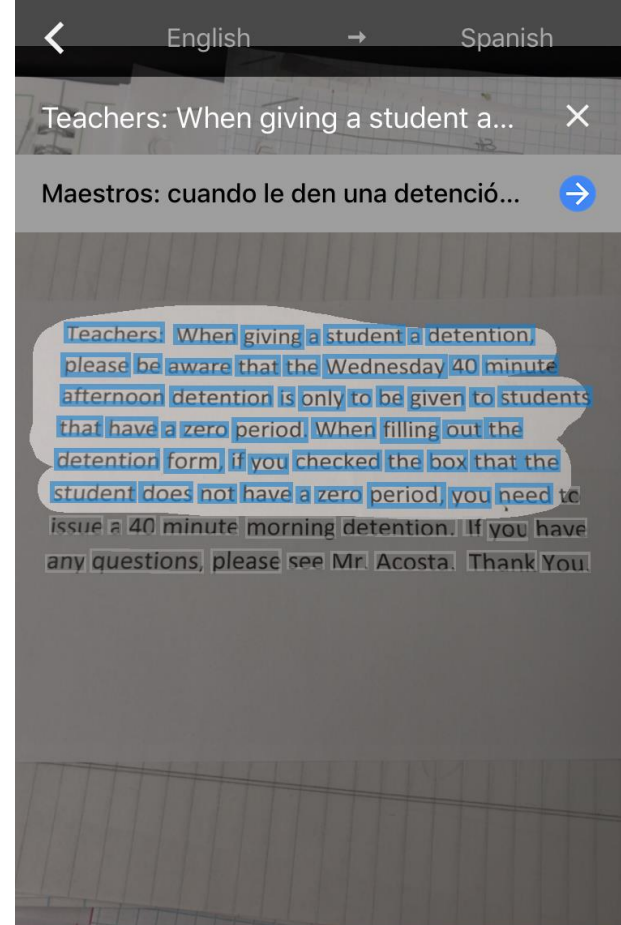
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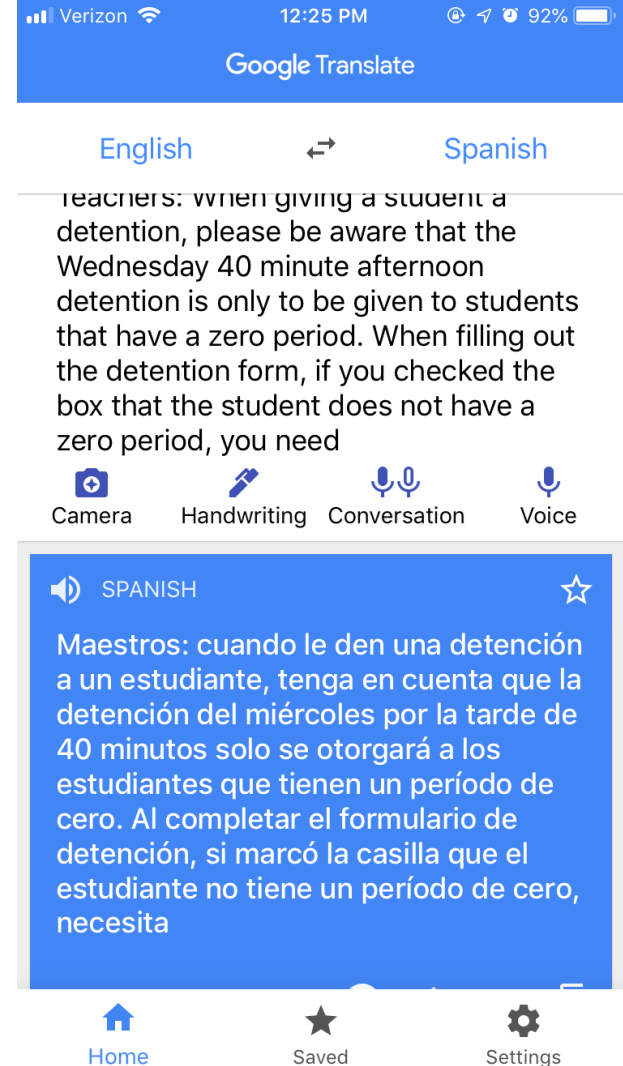
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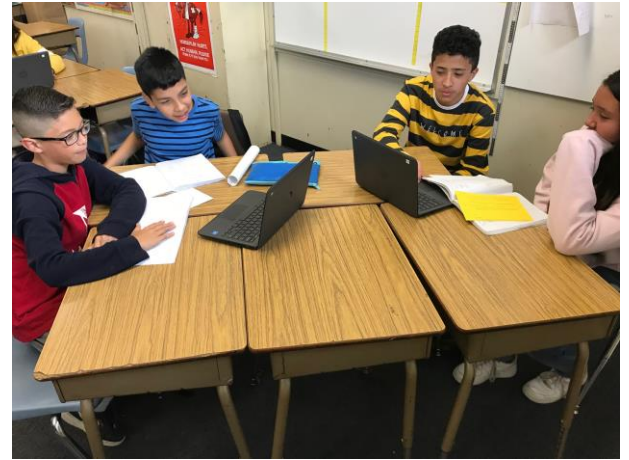
Red Dot- Video App

- Get EL students talking with General ED Student
- One more **modality** to show understanding of the **content**
- Additional opportunity to **hear, see** and **experience** the mathematical content.

The screenshot displays a Google Classroom interface. At the top, the task is titled "5.3.2- Solving a Word Problem". Below the task, a video player is embedded, showing two students, Bryan Pacheco and Diego Santos, in a classroom. The video player has a play button in the center. To the right of the video player is a "Comment bank" section with a "Files" list and a "Private comments" section. The "Files" list shows two files uploaded by "Bryan Pacheco and Diego Sa...". The "Private comments" section has a text input field and "Cancel" and "Post" buttons. The bottom of the screenshot shows the Windows taskbar with the time 10:49 AM and date 3/19/2019.

<https://videorecorder.kwiius.com/>

Steps to using **Red Dot** and **Google Classroom.**



1) Create assignment

1) Student records

1) Videos save to **their** google drive

1) Open assignment in Google Classroom

1) Upload from Google Drive

Create Assignment

CC2
Period 1

Stream Classwork People

Settings App Store S ?

CC2
Period 1
Class code owfiuuk

Select theme
Upload photo

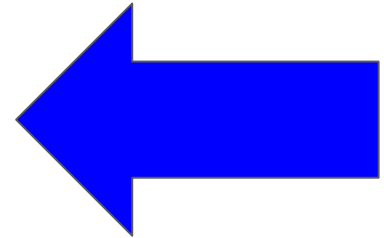
Upcoming
No work due soon
View all

Share something with your class...

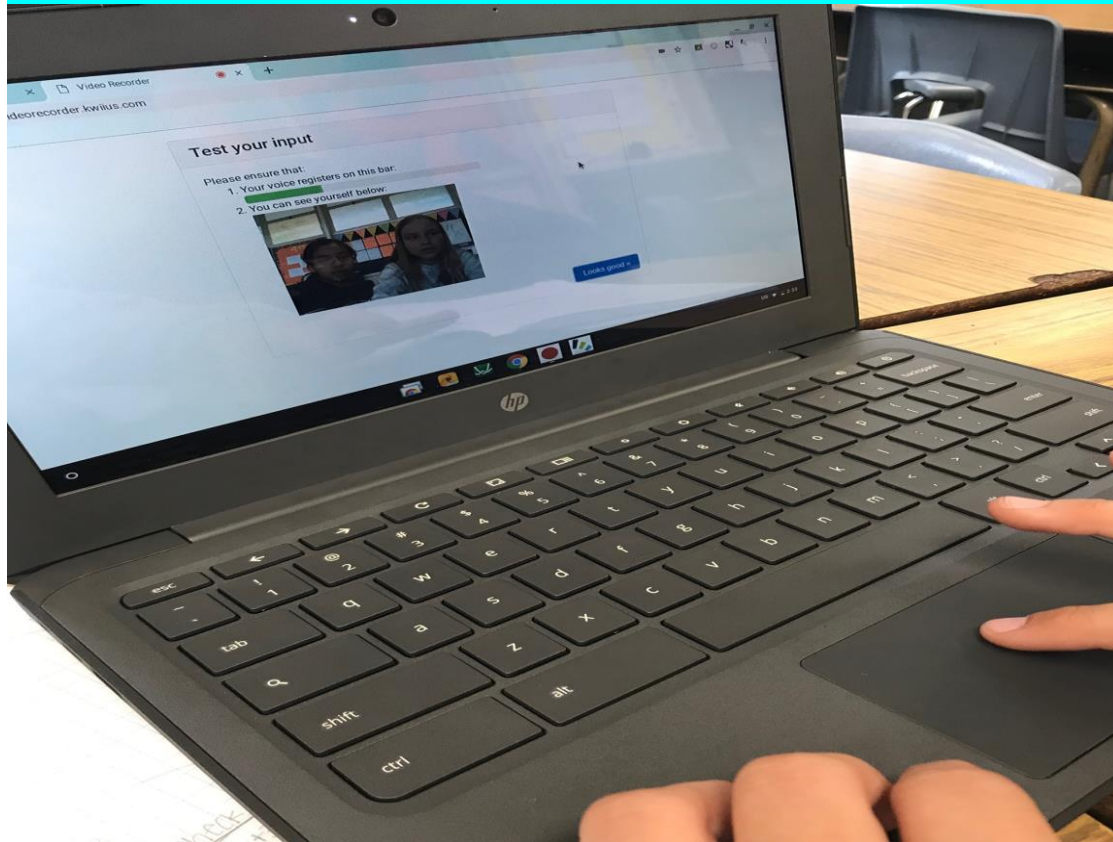
Stephanie Erickson posted a new assignment: 7.1.2 Scaling Factors Red Dot video
Mar 20

Stephanie Erickson posted a new assignment: 5.3.2- Solving Word Problems
Feb 8

Stephanie Erickson posted a new assignment: 4.3.3 - Links



Student Records- Red Dot



Go back to their Google Classroom

The screenshot shows a Google Classroom interface for a class named "CC2 Period 1". At the top, there are navigation tabs for "Stream", "Classwork", and "People". The "Stream" tab is active. Below the navigation, there is a large purple header area with the text "CC2 Period 1" and a downward arrow. To the left of the stream, there is a box labeled "Upcoming" with the text "Woohoo, no work due soon!" and a "View all" link. The stream itself contains two assignment posts by "Stephanie Erickson": one titled "7.1.2 Scaling Factors Red Dot video" dated "Mar 20" and another titled "5.3.2- Solving Word Problems" dated "Feb 8". A large red arrow points from the right side of the screen towards the stream of assignments. At the bottom, there is a taskbar with various application icons and a system tray showing "US", signal strength, Wi-Fi, and the time "3:05".

Open assignment in Google Classroom

7.1.2 Scaling Factors Red Dot video



Stephanie Erickson

Mar 20



Add class comment

Upload link here

Your work

Assigned

Files you add or create can be viewed and edited by your teacher

Mark as done or attach work to turn in



Add



Create

MARK AS DONE



Add private comment...

Upload from Google Drive

7.1.2 Scaling Factors Red Dot video

 Stephanie Erickson Mar 20  Add class comment

Upload link here

Your work

Assigned

Files you add or create can be viewed and edited by your teacher

Mark as done or attach work to turn in

 Add  Create

MARK AS DONE

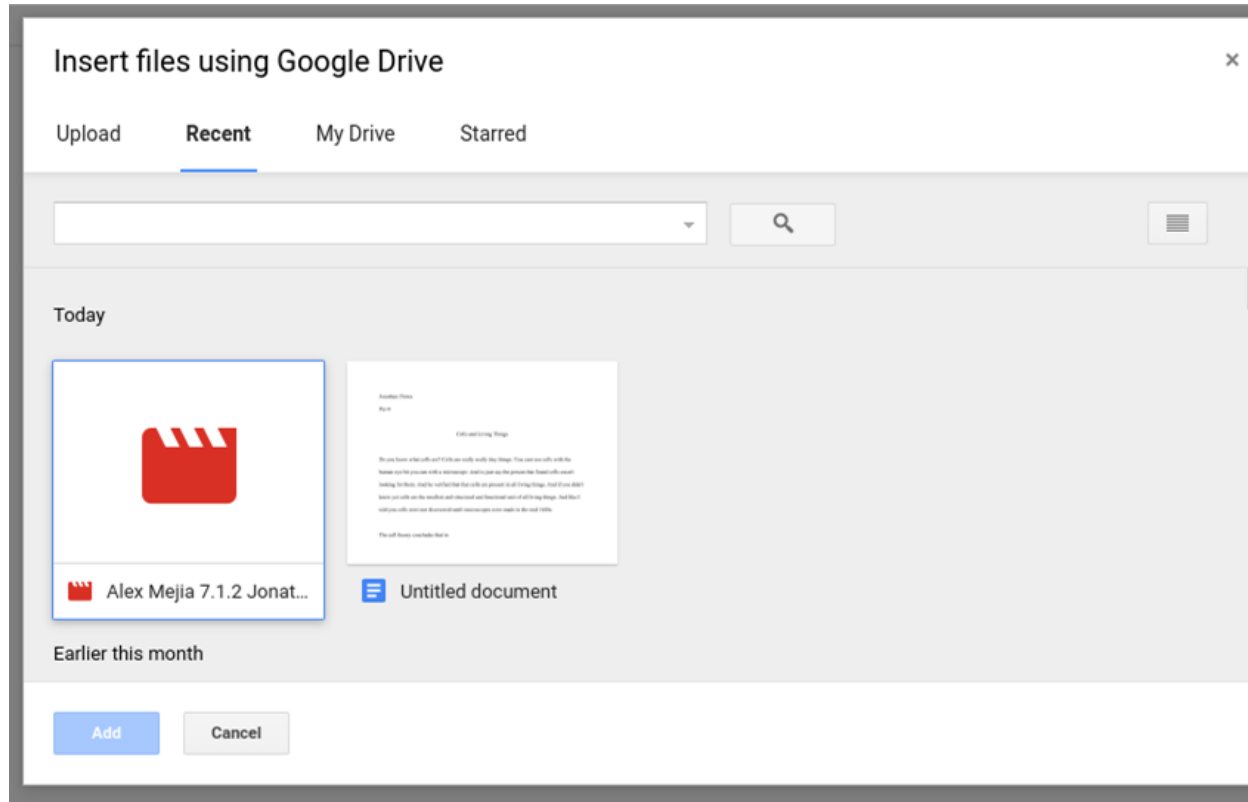
 Google Drive

 Link

 File



Videos save to **their** google drive



Students turn in assignment


7.1.2 Scaling Factors Red Dot video



 Stephanie Erickson Mar 20  Add class comment


Upload link here

Your work Assigned

Files you add or create can be viewed and edited by your teacher

 **Alex Mejia 7.1.2 Jonathan Flores**
Video ✕

 Add  Create TURN IN

 Add private comment...



Google Classroom

We use google classroom to submit red dot videos and easily grade work submitted in groups or pairs

The screenshot shows a Google Classroom interface for a class named 'CC2 Period 1'. The assignment is titled '7.1.2 Scaling Factors Red Dot video' and is worth 10 points. The 'Student work' tab is active, showing a grid of student submissions. Each submission includes a student's name, a video thumbnail, and the status 'Turned In'. The submission grid is as follows:

Student Name	Submission Status
Jane Bailon-Villalva	Turned In
Kelsey Elizalde	Turned In
Alex Garcia	Turned In
Ricardo Garcia Jr	Turned In
Maximo Quinones	Turned In
Tanisha Renteria Barrios	Turned In
Desiree Sanchez	Turned In
Kennede Zamora-Cabrera	Turned In
Esmeralda Blanco Perez	Not Submitted
Joanna Clavel	Not Submitted
Sujely Colon-Castaneda	Not Submitted
Anthony Cordon	Not Submitted

Summary statistics for the assignment: 8 Turned In, 26 Assigned, 1 Graded.

English



CPM

- Ch vocabulary(Eng/ Sp) chart on tables
- Ch vocabulary chart for HW
- Sentence starters
- Choral read
- Use vocabulary frequently

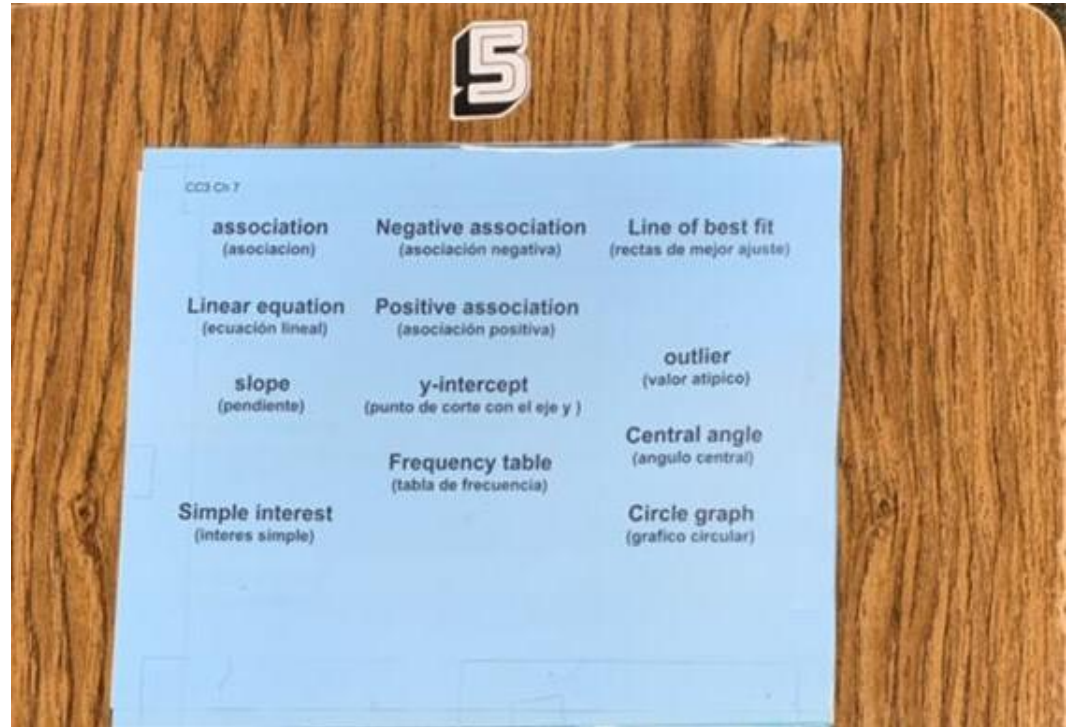


METHODS AND MEANINGS

MATH NOTES

Chapter Vocabulary Chart for the Tables



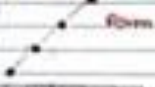



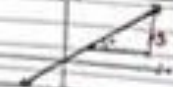

- One on each team table
- English/ Spanish
- By chapter



Chapter vocabulary chart for Homework

- Student work
- word/ definition/ diagram(example)
- Options
 - on google doc/ paper
 - write/ print/ email

Journal
Date: _____

Words	Definition	Image
Association	A relationship between two (or) variables. An association between two variables can be depicted in a scatterplot and described by its form.	
Circle graph	A way of displaying data that can be used to represent data. Each slice represents a category.	 <ul style="list-style-type: none"> • Segment • Semicircle • Quadrant • Circle
form	The form of an association can be linear or non-linear. The form of an association can be described.	
Line of best fit	A line of best fit is a line that represents the relationship between two variables. It is used to predict the value of one variable based on the value of another.	
Negative association	A relationship between two variables in which one variable increases as the other decreases.	
Positive slope	A line with a positive slope rises from left to right.	
Slope	The slope of a line is a number that describes the direction and the steepness of the line.	
$y = mx + b$	In the equation of a straight line, the constant is called the y-intercept.	

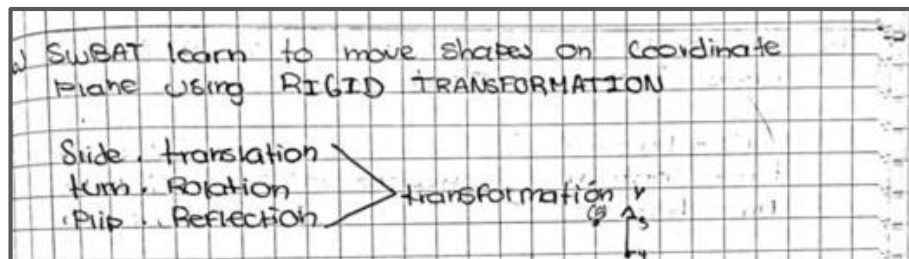
Choral Read...

[**6-53.** Alana was also working with dilations. She wondered, "*What would happen if I multiplied each coordinate of a shape by $\frac{1}{3}$?*"]



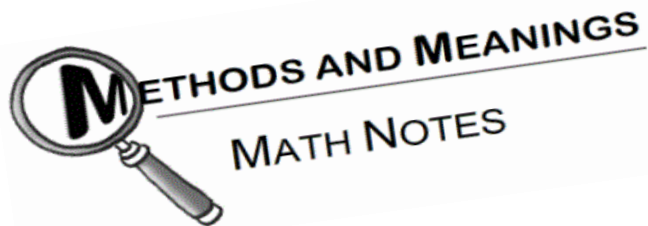
Use of Vocabulary

- Daily objective
- Reflections
- Methods & Meanings



Use repeated exposure to new words in multiple oral and written contexts and allow sufficient practice sessions.

Researchers estimate that it could take as many as **17 exposures** for a student to learn a new word.

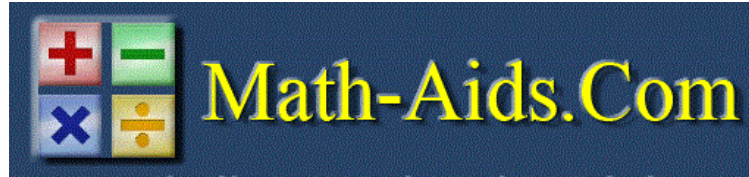


Math

Modified

1. Homework

- Support basic skills

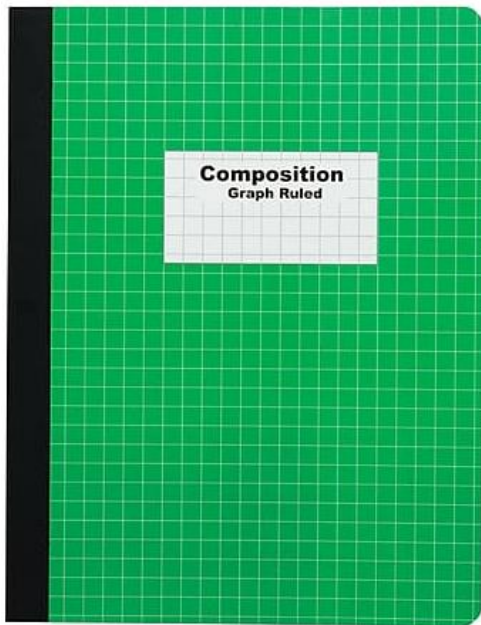


2. English and Spanish Classwork



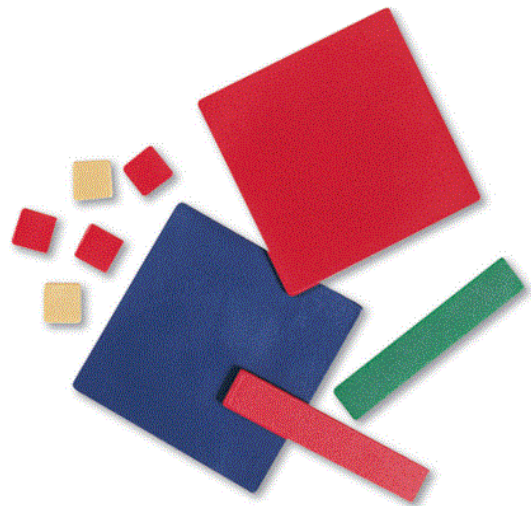
Student Resources

Graph notebooks



Manipulatives

- Algebra tiles



Student Cases



Leticia

Background

- **Born in Mexico**
- **Newcomer Program: Year 2**
- **Fluent in Spanish**
- **Chapter 8**
 - **Hesitates to share in English**
 - **Writes in simple English sentences.**
 - **Writes in Spanish if she needs to explain in detail.**

Leticia's Work

3-100

Para las siguientes ecuaciones, resuelva para la variable dada usando los movimientos legales. **Graba tu trabajo y comprueba la solución**, si es posible. Si no, explica por qué no.

a. $75c - 300 = 25c + 200$

$$50c + 300 = 200$$

$$+300 \quad +300$$

50	c	=	500
50			50

$c = 10$

b. $26y - 4 - 11y = 15y + 6$

$$11y + (-4) + (-11y) = 6$$

$$-4 \neq 6$$

No solution

Reflect

Una solución a una ecuación es a value of a variable which makes statements true

Una ecuación no tiene solución cuando no value makes statements true

Una ecuación tiene infinitas soluciones cuando All values make statements true

Una ecuación tiene una solución cuando only one value makes them true

Jailine

Background

- Born in Los Angeles, CA.
- Went to Mexico (under a year old) and schooled there
- Newcomer Program: Year 1
- Beginning wrote in Spanish
- By chapter 3 - uses Spanish worksheet but tries to write in English

Jailine's Work

7-57. IS SEEING BELIEVING?

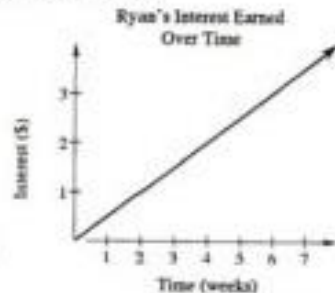
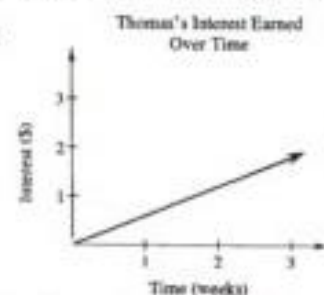
Did you know that a bank will pay you money (called **interest**) when you place your money in a savings account? The amount you receive is a portion of the amount you deposit. The **interest** rate often varies with each bank.



Thomas and Ryan have each invested the same amount of money in different bank accounts that earn **simple interest**. Simple interest means the same amount of interest is added for each time period. In this case, the interest is added each week. Thomas and Ryan decided to compare their rate of earnings by graphing how much interest each of them has earned over time. Their graphs are shown below.

- a. When you look at the graphs, which investment seems to be growing fastest? Explain how you decided.

Ryan is growing fastest because the line is bigger



- b. The tables for Thomas's and Ryan's accounts are shown at right. Which table reflects Thomas's interest? Which one reflects Ryan's interest? How do you know?

because the first table is the Thomas because is growing 0.60 per 1 week, and second table is Ryan because is growing 0.50 per week.

Ryan

Time (in weeks)	Interest Earned (\$)
1	0.60
4	2.40
7	4.20
10	6.00

Thomas

Time (in weeks)	Interest Earned (\$)
2	1.00
3	1.50
6	3.00
12	6.00



Juan

Background

- **Born in a remote village in San Juan, Guatemala**
 - **Newcomer Program: Year 1**
 - **No writing background**
- **Chapter 8 - uses Spanish worksheet**
 - **Independent work is modified**
 - **Group work is Spanish worksheet with aide assistant**
 - **Homework is modified**

Juan's Work

Write the Rule:
 $y = mx + b$
 $y = 3x + 5$

Verifique su solución algebraicamente: use la equation para verificar la solución de la table.

bunny	explanation
$y = 3x + 5$	original
$y = 3(11 + 5)$	multiply
$y = 33 + 5$	add
$y = 38$	

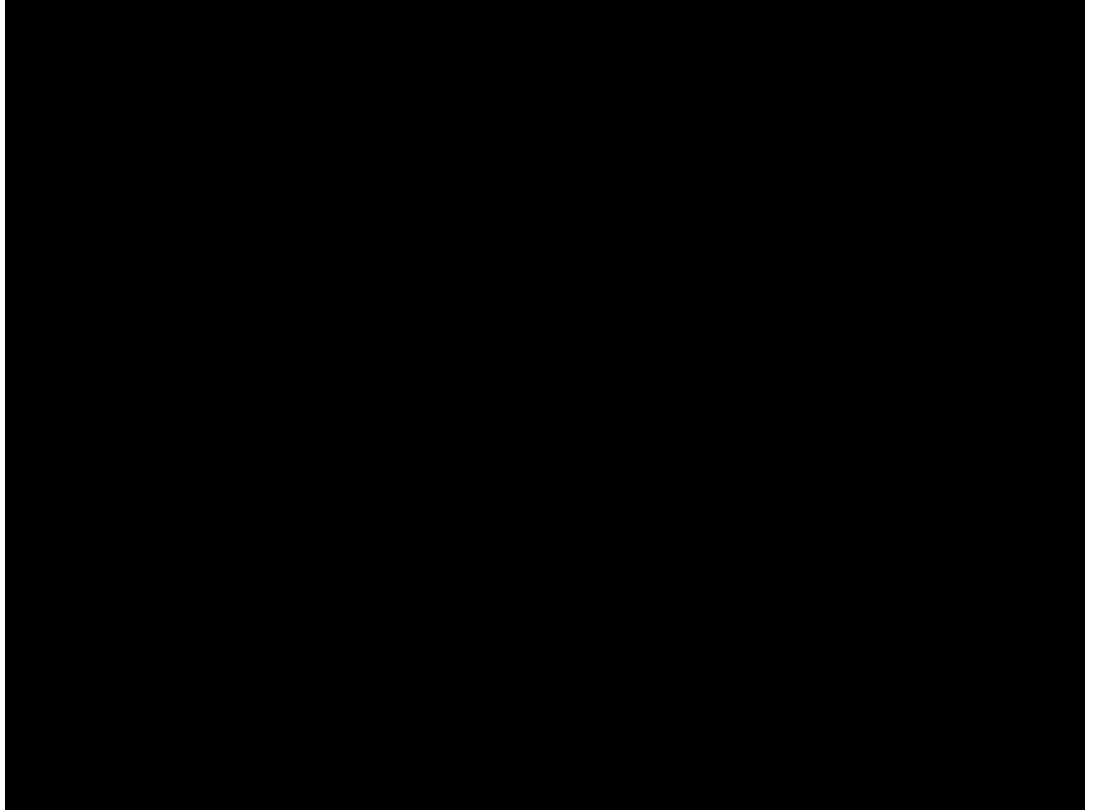
Analysis:

- 1) ¿Cuánto pesa el conejito al principio?
Es 5
- 2) ¿Cuánto pesa el conejito en 2 años?
11
- 3) ¿Cuánto pesa el conejito en cinco años?
20
- 4) ¿Qué tan rápido gana peso el conejito?
38
- 5) ¿Cuándo el conejito pesa 38 libras?
11
- 6) En la regla anterior, ¿qué representa x? ¿Qué representa y?

$y = 3x + 5$

**"Mathematics knows no
races or geographic
boundaries; for
mathematics, the
cultural world is one
country."**

David Hilbert





QUESTIONS

ANSWERS