Explorando los impactos de inundaciones en nuestro barrio / Exploring the impacts of flooding in our neighborhood

Context

This unit was designed in the Winter-Spring of 2022 for an after school coding club run by a long-time PiLa-CS partner teacher who taught Science bilingually at a middle school in Upper Manhattan. The club was held weekly, sometimes twice weekly. Student attendance ranged from 2-7 students, they attended intermittently around other after school commitments. Many students had experiences with strong storms from living in New York City and/or the Caribbean. The teacher asked students if they'd want to create Scratch projects about the issue of flooding, and students expressed interest. Students were all bilinguals (Spanish/English), though none who attended were designated "English Language Learners" at the time. The unit unfolded fluidly, in response to student and teacher interests.

Essential Questions: How can digital maps and stories help us address problems caused by flooding? How do communities come together in times of need?

Goals: Students will create Scratch projects that illustrate / explain the experience of a person in the area during this Summer's flooding. The project should share some problem caused by flooding and/or a potential solution to flooding.

Designers: Karen Silfa, Kyla Yujiri, Sarane James, Sara Vogel, Lauren Vogelstein, Chris Hoadley, Raya Hudson

Sponsored by the National Science Foundation under NSF grant CNS-1738645 and DRL-1837446. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Attribution-ShareAlike 4.0 International (CC BY-SA 4.0) | Participating in Literacies and Computer Science

Question of the day / Pregunta del día

How do **floods** impact our neighborhoods? How do floods impact the lives of people we know?

¿Cuáles son los impactos de **las inundaciones** en nuestro barrio? ¿En las vidas de nuestros conocidos?

Warm up / Calentamiento

¿Cuáles recuerdos tienes tú de las tormentas de lluvia fuerte que pasaron este verano, o de otras tormentas fuertes?

What memories do you have of the strong storms that hit this summer, or of other strong storms?

See think wonder

¿Qué ves?

¿Qué piensas?

¿Cuáles preguntas tienes?

See think wonder

¿Qué ves?

¿Qué piensas?

¿Cuáles preguntas tienes?

¿Conoces este lugar?

What kinds of problems is the rain causing for people, places, and things in the videos?

¿Cuáles problemas está causando la lluvia para la gente, las cosas, y los sitios en los videos?

(draw - dibujar)

La meta de este after school / Goal of this after school:

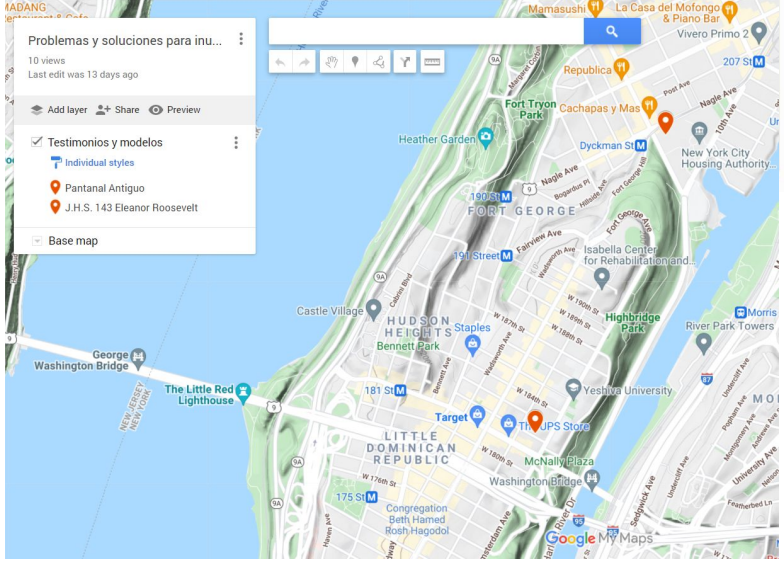
Diseñar y programar proyectos digitales con Scratch y crear un mapa digital para compartir las historias del barrio con respeto a las inundaciones – sus causas, problemas, y soluciones.

Design and program digital projects with Scratch and create a digital map to share stories from the neighborhood about flooding – its causes, problems, and solutions.

¿Por qué piensas que sería importante hacer este tipo de proyecto?

Why do you think this kind of project would be important to do?

Ejemplo de un proyecto del otro año



Para empezar nuestra investigación…
To start our investigation…

Haremos una entrevista!

Hay que ESCUCHAR BIEN y SACAR APUNTES

Let’s conduct an interview!

You have to listen closely and take notes.

Question of the day / Pregunta del día

How can we use the program **Scratch** to tell digital stories about **flooding** in our area and its impacts for people we know?

¿Cómo podemos usar el programa **Scratch** para contar historias sobre **inundaciones** en nuestro área y sus impactos para nuestros conocidos?

Warm up / Calentamiento

What did you learn during your interview? What did your interviewee share?

¿Qué aprendiste durante tu entrevista? ¿Qué compartió tu entrevistado/a?

What was hard, easy, and fun about doing your interview?

¿Qué de hacer tu entrevista fue difícil, fácil, y divertido?

La meta de este after school / Goal of this after school:

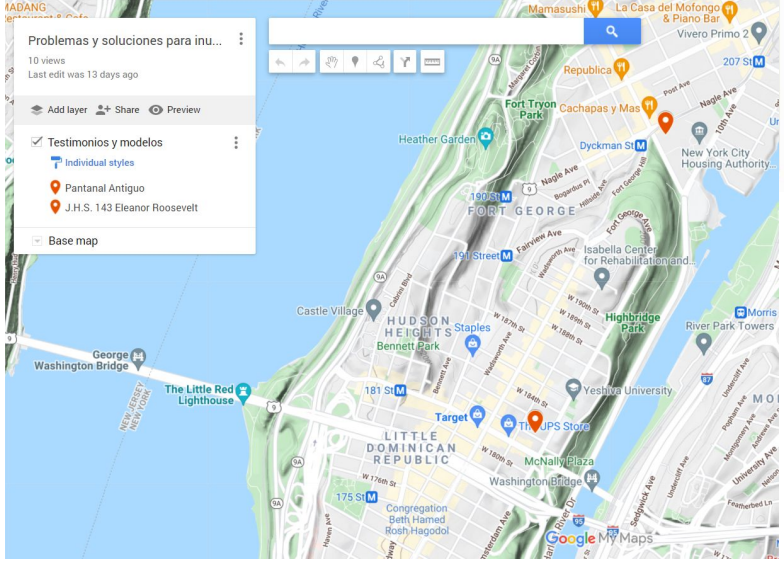
Diseñar y programar proyectos digitales con Scratch y crear un mapa digital para compartir las historias del barrio con respeto a las inundaciones – sus causas, problemas, y soluciones.

Design and program digital projects with Scratch and create a digital map to share stories from the neighborhood about flooding – its causes, problems, and solutions.

¿Por qué piensas que sería importante hacer este tipo de proyecto?

Why do you think this kind of project would be important to do?

Ejemplo de un proyecto del otro año



Primer paso / First step: INTRO to Scratch

Play video on the Scratch Homepage:
https://scratch.mit.edu

What do you think Scratch is?
What can you do with it?

¿Qué piensas que es Scratch?
¿Qué puedes hacer con ello?

Scratch: Un sitio en el web donde programadores jóvenes pueden programar y hacer animaciones, juegos, y otros proyectos digitales

Scratch: A website where young programmers can program and make animations, games, and other digital projects

¡Ahora presentamos el equipo de apoyo! - Let's meet our support team!

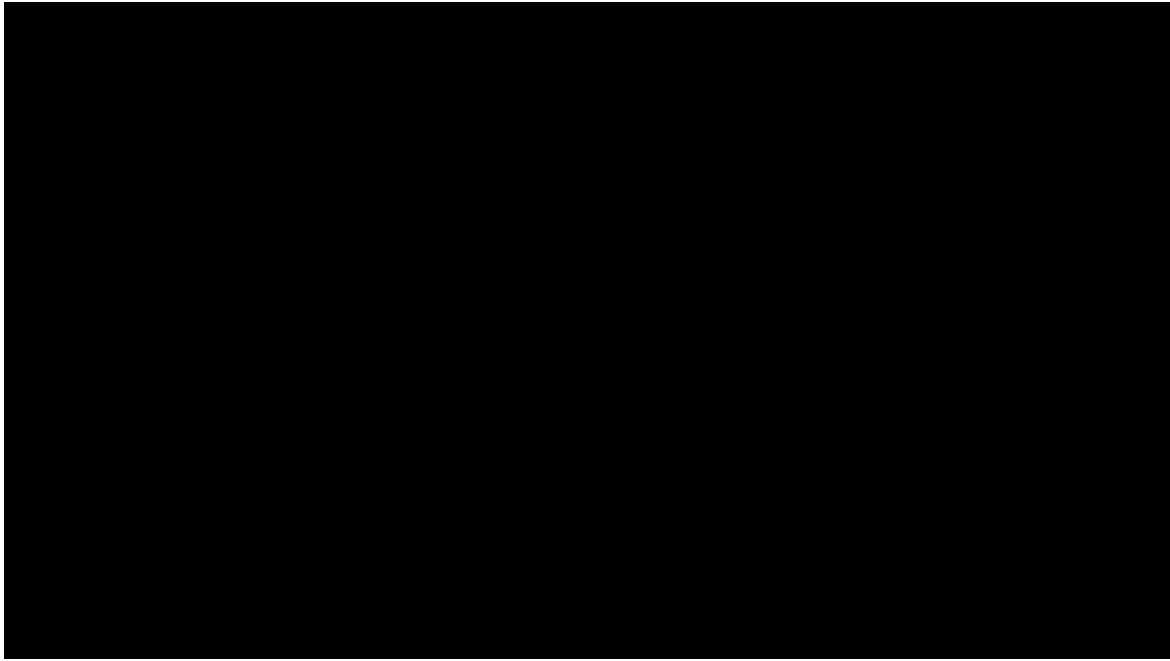
This university team is going to support us to learn Scratch and make our stories.

¡Este equipo universitario va a apoyarnos a aprender Scratch y crear nuestras historias!

—----------

What did Kyla make her project about? How did she make it, and why?

¿De qué se trata el cuento digital de Kyla? ¿Cómo lo hizo y por qué?



¿Quieren hacer sus propios versiones del proyecto en Scratch?

Want to make your own versions of the project in Scratch?

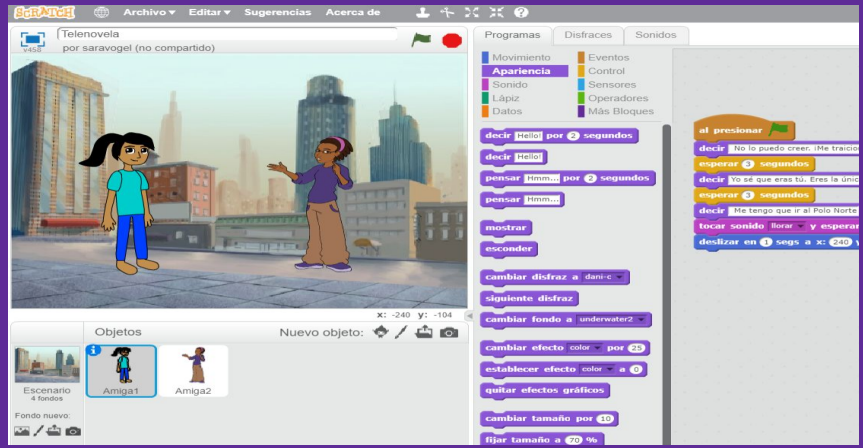
Sigue las instrucciones en la hoja para abrir una cuenta con Scratch
Follow the instructions on the sheet to open a Scratch account

Scratch.mit.edu

Después vayan al link abajo para explorar. Comparte tus observaciones en la segunda página de la hoja.

After, go here to explore, and share your noticings **on the second page of the sheet**

https://scratch.mit.edu/studios/30907793



Reflexión - Reflection

¿Qué cambiarías o agregarías a este proyecto para contar tu historia o la de tu entrevistado/a?

What would you change or add to this project to tell your story or the story of your interviewee?

¿Cuáles otras historias quisieras hacer y compartir con Scratch? ¿Por qué?

What other stories would you want to tell and share with Scratch? Why?

Question of the day / Pregunta del día

How can we remix someone else's project in **Scratch** to tell our own digital story about experiences in the floods?

¿Cómo podemos hacer un remix en **Scratch** para contar sobre nuestras experiencias durante las inundaciones?

Warm up / Calentamiento

What do you notice about these two videos? What makes them the same? What makes them different?

What is a remix? Why do artists make them?

What other remixes do you know about?

Ozuna - CARAMELO —>

Ozuna x Karol G x Myke Towers - CARAMELO (Remix) —>

Warm up / Calentamiento

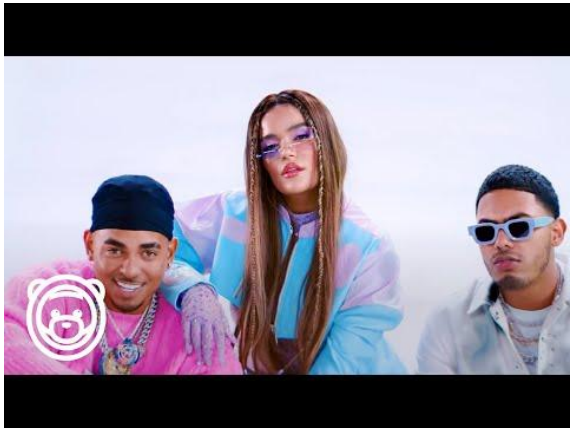
Just the way artists and musicians make remixes, computer scientists make remixes of other people's digital projects!

Remix: A version of a project that builds on what someone else made and puts your own spin on it.

It is important to **get permission** before you remix, and to **give credit** to the original creator.

CARAMELO —>

CARAMELO Remix —>



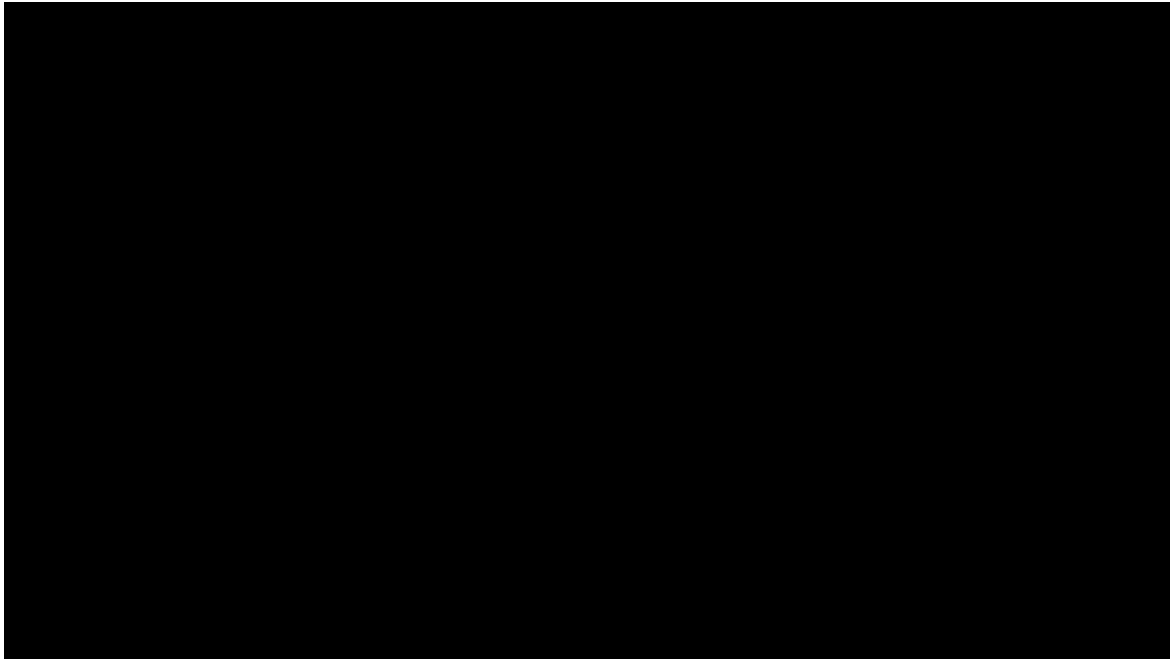
Vamos a hacer un remix...

We are going to remix Kyla's Scratch project to tell our own stories.

As you watch the video again: What things would you need to change about Kyla's project in order to tell a story from your interview?

Let's make a list of things to change!

Kyla's project



Haremos un plan

Before going to Scratch, we will make a **PAPER PROTOTYPE**, a version of the project on paper.

Computer scientists make paper prototypes to **plan** out their work before they go to the computer.

[Handout]

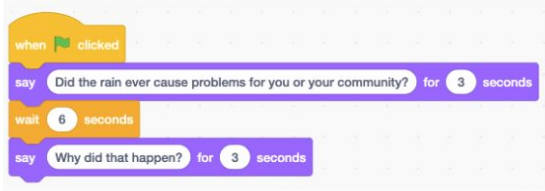
Reinvención-Remix de "Entrevista de lluvia/inundación"

Who you interviewed _____

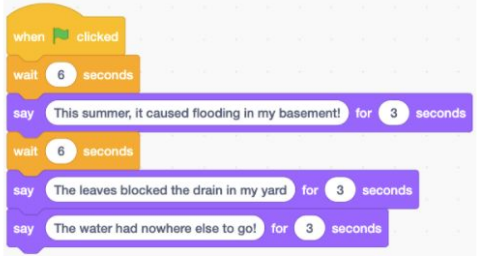
What are the questions that you will ask the person you interviewed?	• • •

What will you change about Kyla's program in your remix? Draw lines from the code on the left and write and draw your ideas in the space on the right.

Me



My Interviewee



Haremos un plan

Before going to Scratch, we will make a **PAPER PROTOTYPE**, a version of the project on paper.

Computer scientists make paper prototypes to **plan out their work** so they know what to do when they get to the computer.

Handout

Reinvención-Remix de "Entrevista de lluvia/inundación"

Do the following in order to complete your remix project:

Costume of Me and My Friend Sprites:	❑ I changed the characters' costumes so that it would reflect my interviewee and I.
Costumes of Thought Bubbles	❑ I changed the costumes of the thought bubbles so that it would reflect my interviewee's thoughts.
The scripts (code)	***Following my plan from the previous page..,*** ❑ I changed the dialogue text in the appropriate code to reflect my questions. ❑ I changed the dialogue text in the

¡Ahora, a Scratch!

Step 1: Go to

scratch.mit.edu

Step 2: Sign in with your username and password.

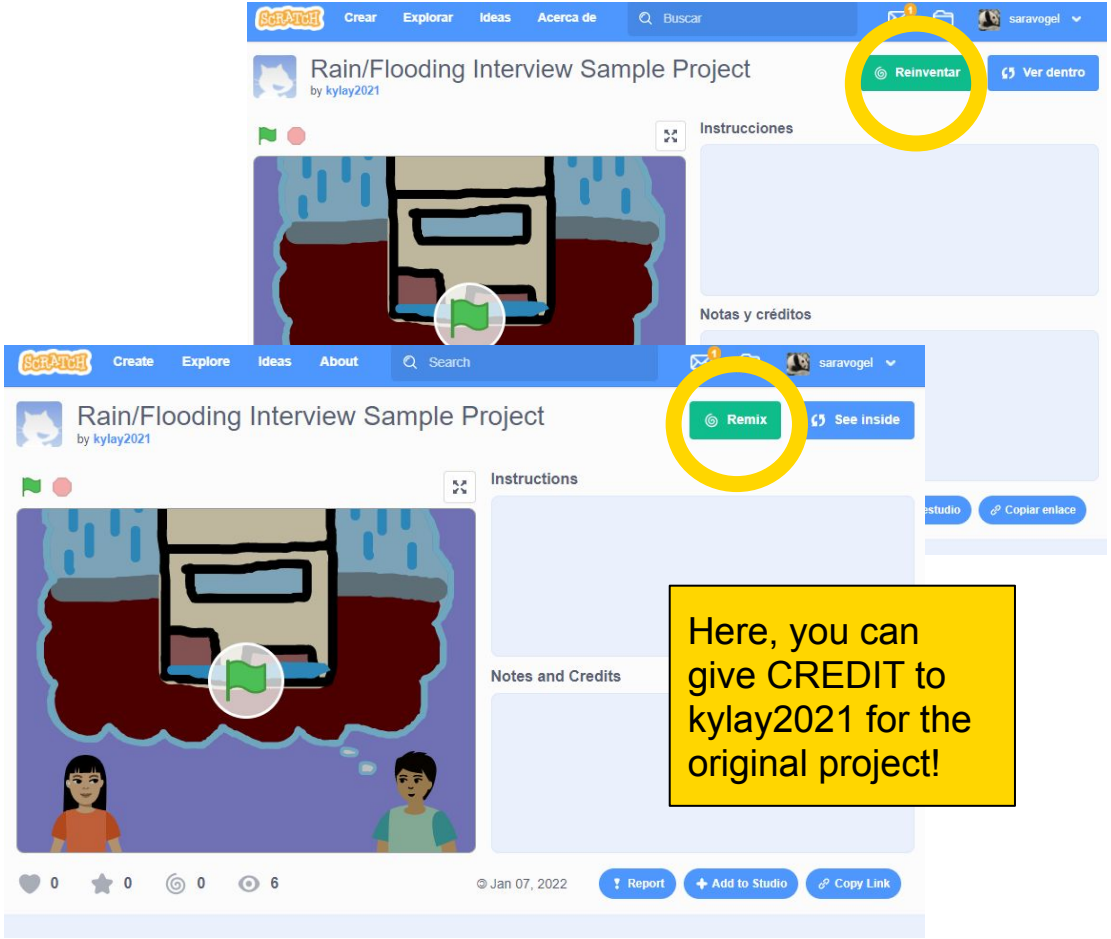
Step 3: Go to

scratch.mit.edu/projects/624983604/

Step 4: Click the **Remix-Reinventar** green button

Step 5: Begin making your changes!

Step 6: Click “see project page” to give credit and thanks to Kyla!



Compartimos

Click the “share” button so everyone can see your project! It’s OK if you are not done. Call it a “work in progress”

What **changes** did you make today to Kyla’s project for your **remix**? Why?

Did any bugs or confusions come up? In coding, they always do!

How did you work to figure them out?

¡Compartimos!
Let's share our work in progress!

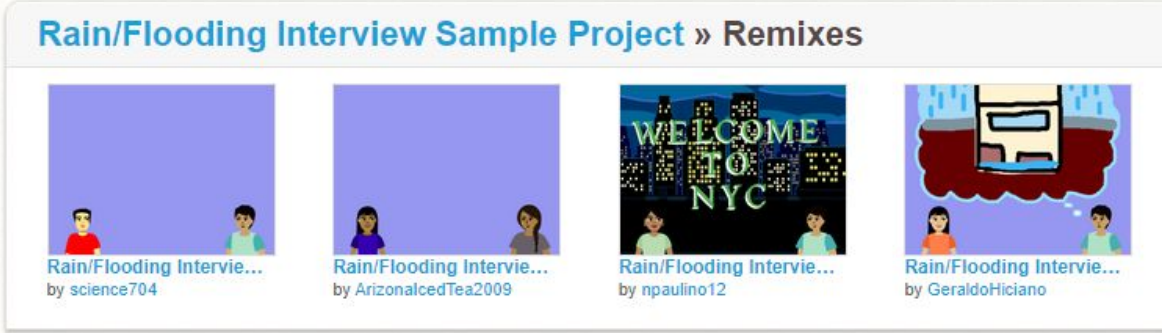
Class remixes

What did you change?

What do you want to have happen next in your story?

What else could you change?

Let's make some changes together!



Question of the day / Pregunta del día

How can we predict where flooding might occur? Why is it important to make these predictions?

¿Cómo podemos predecir dónde las inundaciones podrán ocurrir? ¿Por qué sería importante hacer estas predicciones?

Warm up / Calentamiento

Remember this video?

What problems do you think people in this video might be having?

What questions would you want to ask the people in the video to learn more?

Warm up / Calentamiento

The video was filmed near our school!

For our project telling stories about flooding in the community, we might take a field trip to this part of the neighborhood.

Where is our school on the map? Where is the place in the video?

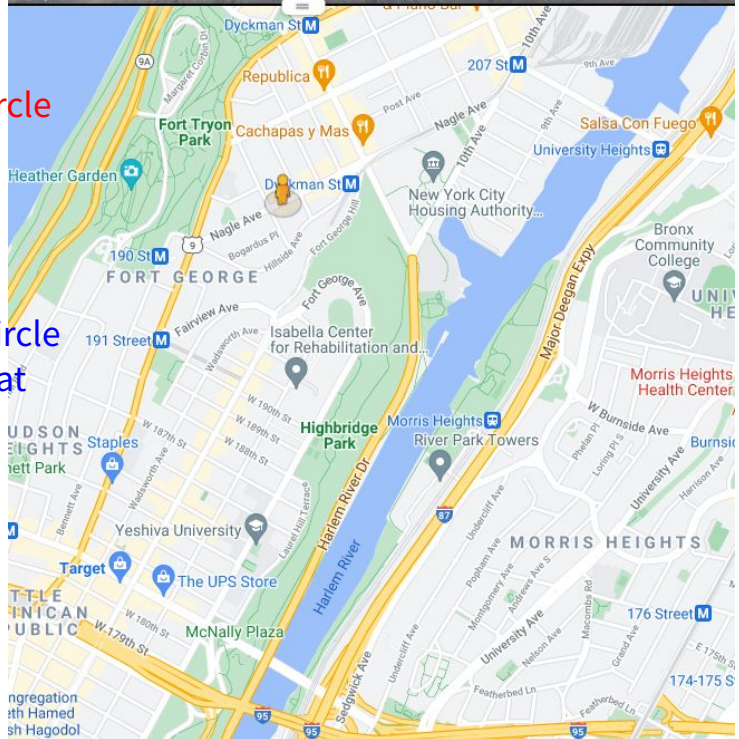
Do you know any other places around this area? (parks, homes, bodegas, schools, streets, subway)

Did any of those places flood?

Why might some places flood, but not others?

Put the red circle on our school

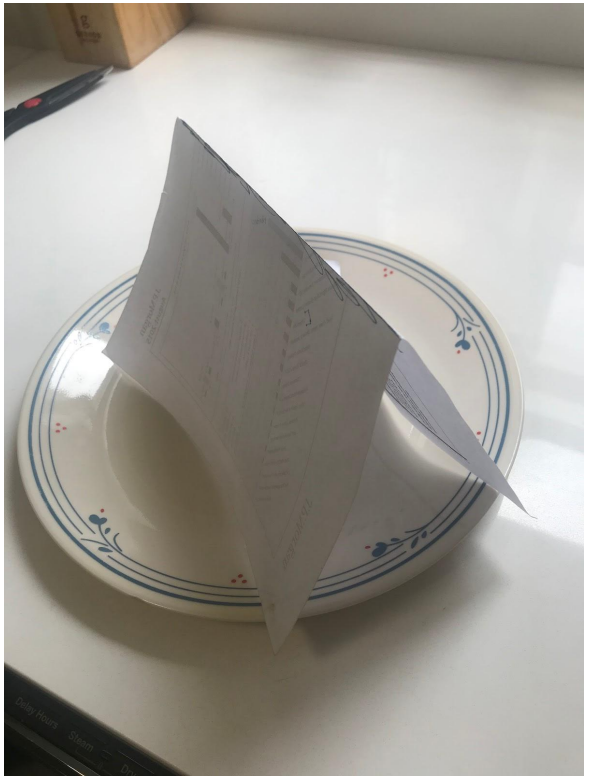
Put the blue circle on the area that flooded



Imagine this paper is our neighborhood

What do you think the fold represents?

What do you predict will happen when it rains?



Imagine this paper is our neighborhood

What do you think the folds represent?

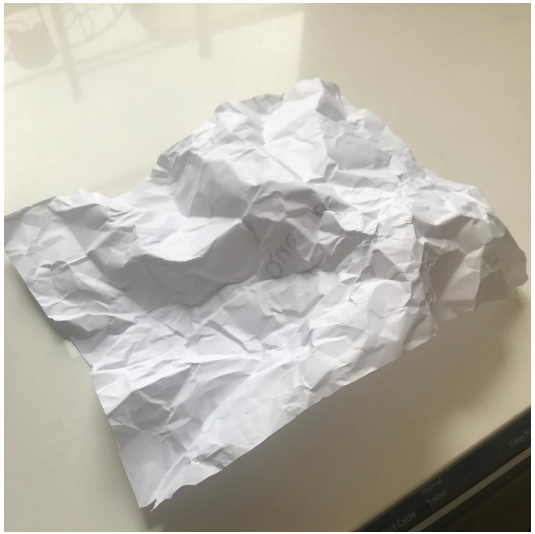
What do you predict will happen when it rains?

Imagine this paper is our neighborhood

What do you think the creases represent?

Now, let's add a gas station.

What do you predict will happen when it rains?



Reflection

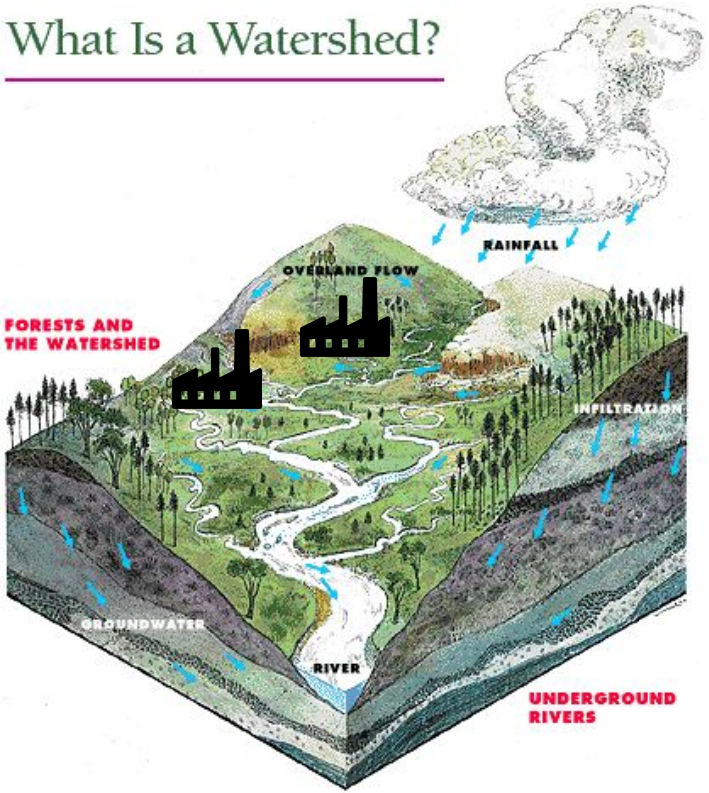
- Where does most of the rain collect? What would those areas represent?
- What changes did you observe in the “land” once you made it rain?
- What happened to the gas from the gas station?
- Where in the watershed would YOU want to live? Why?
- What actions do you think we should take in real life to protect the water quality?

We just made a model of a “watershed!”

Watershed: A place where all the water drains into the same body of water.

It includes all the plants, animals and people who live in it, as well as non-living things like rocks, soil, buildings, and streets.

We are all part of a watershed, and everything we do can affect the water in the watershed.



Let’s make a prediction

Why do you think flooding might have happened in this part of our watershed?

What do you notice about the flow of the water?

Let’s look at the area more closely

Topographic Map

What do you see on this map? (if you click, need to change “basemap” to terrain)

What is it trying to show us?

A **topographic** map tells us the land’s **ELEVATION** (highs and lows)

Put the red circle on our school

Put the blue circle on the area that flooded in the video

Let's predict!

What do you think might happen in our neighborhood during the next big storm? Why?

Put the red circle on our school

Put the blue circle on the area that flooded in the video

Draw and label your ideas and stories on the map!

Let's share!

Let's share our maps!

What ideas and stories did you draw and write about?

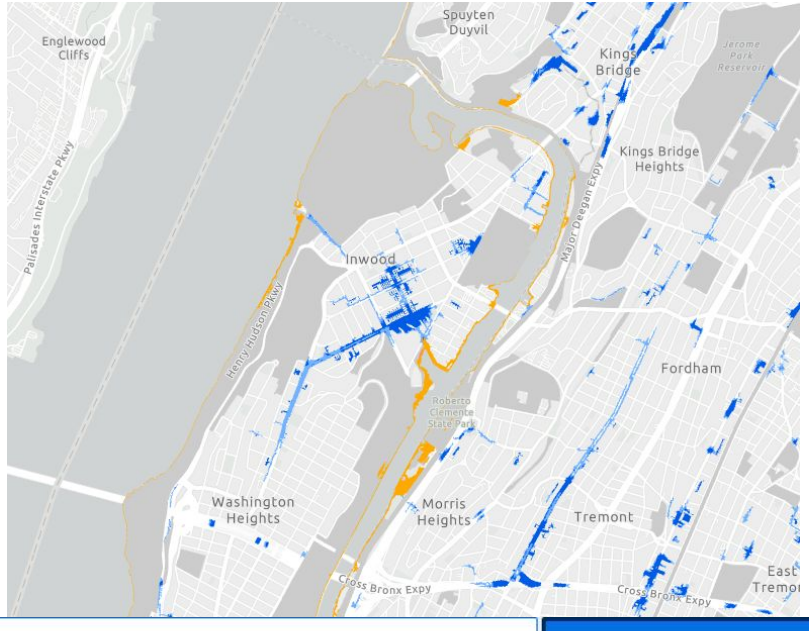
Where do you think the water might go and why?

Where would a delivery worker have the hardest time getting around?

Put the red circle on our school

Put the blue circle on the area that flooded in the video

Officials in NYC made a flooding prediction map



[Link to map]

What do you see?

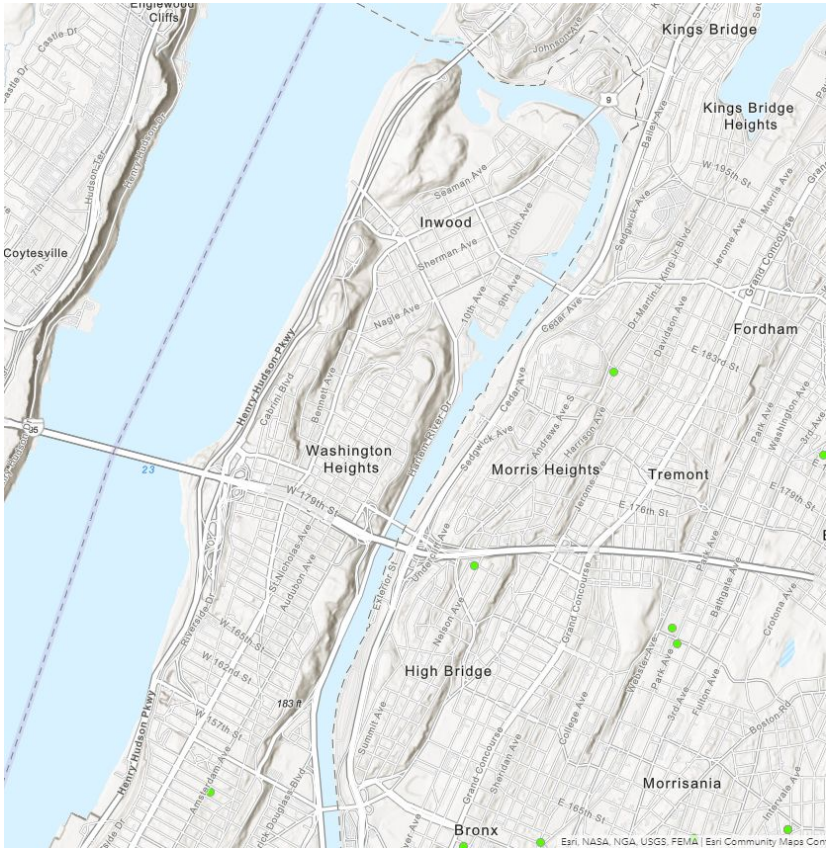
What do the colors mean?

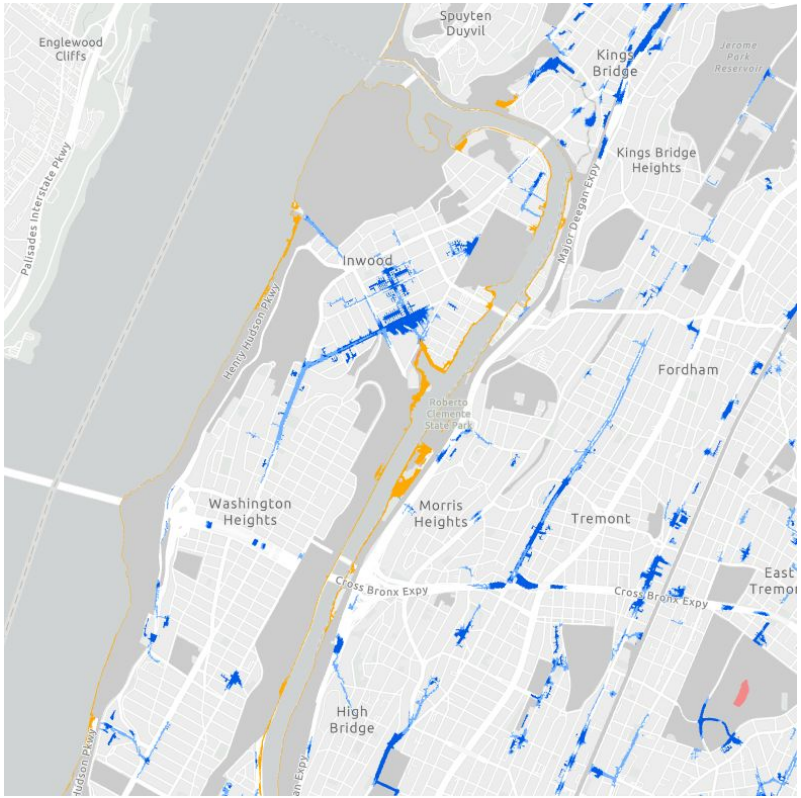
Moderate Stormwater Flood

Extreme Stormwater Flood

- Area not included in analysis
- Future High Tides 2080
- National Wetlands Inventory
- Deep and Contiguous Flooding (1ft and greater)
- Nuisance Flooding (greater or equal to 4 in and less than 1ft)

Let’s compare our predictions to the City’s

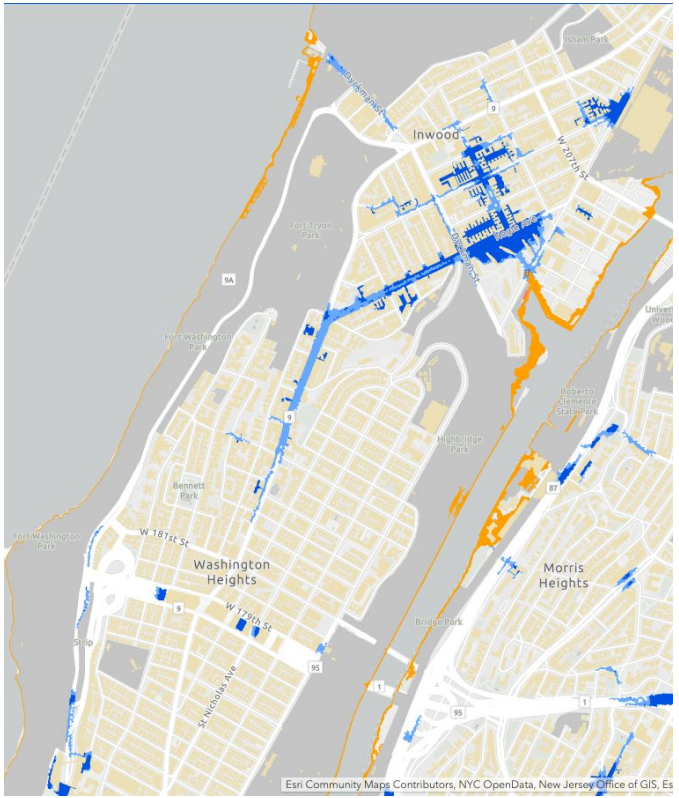




Let’s compare our predictions to the City’s

What did you include on your map that the city did not?

Was the city’s prediction what you expected? Why do you think these differences exist?



We know that elevation matters for flooding
What other things might have an effect?

Reflection

Why might it be important to make predictions about where flooding could occur?

Question of the day / Pregunta del día

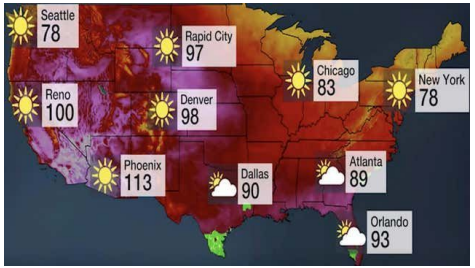
How can we use maps to understand our neighborhood and tell stories about stormwater and floods?

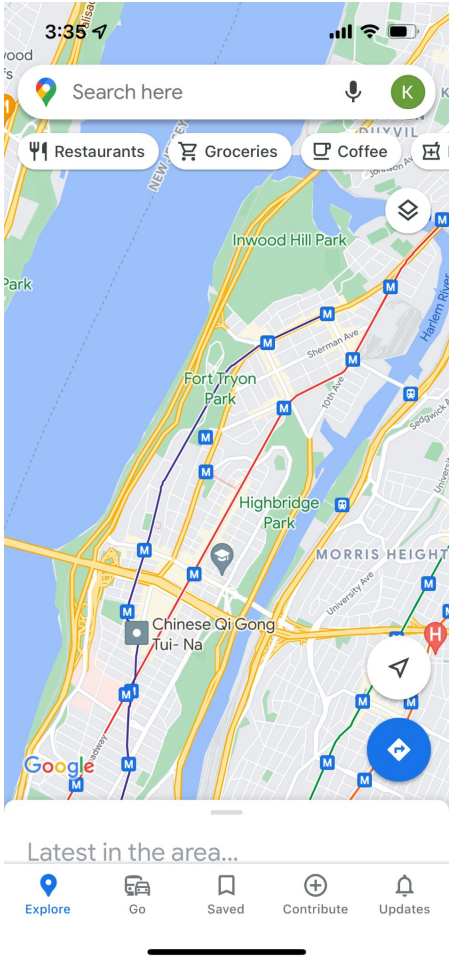
¿Cómo podemos usar mapas para entender nuestro barrio y contar historias sobre inundaciones?

Warm up / Calentamiento

Do you use maps? What do you use them for?

What maps have you seen? Where?





Let’s create a topographic map with clay

Which are the parts of the map we should show as higher elevation? How do we know?

How does this map help us understand our neighborhood?

Old Manhattan Map

[Welikia Manhatta Map]

This map shows what New York looked like from 1609 to the present.

How does this map help us understand our neighborhood?

What story is this map telling us about our neighborhood?

Maps can be used to tell a story

What are some of the stories we've already collected about flooding?

Where do they take place?

Who are they about?

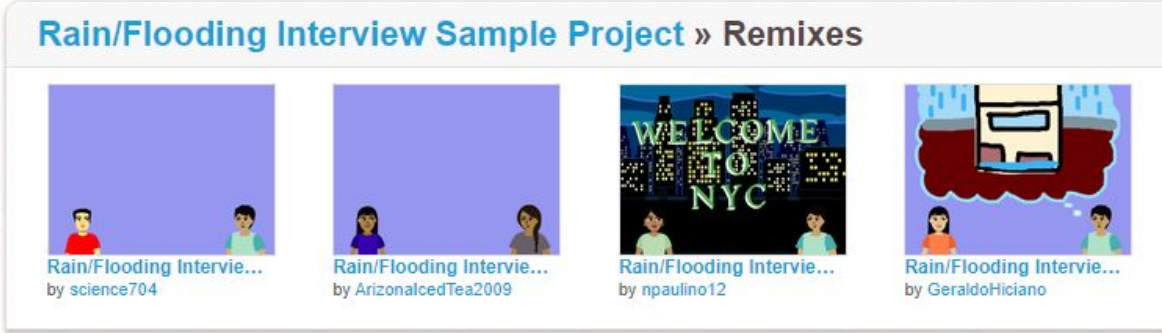
Stories Collection Slideshow

Story	Where does this story take place?	Who is the story about?

¡Seguimos!
Let's keep working on our remixes!

Class remixes

Make sure you are signed in to the right account.



Question of the day / Pregunta del día

How can we prepare to interview local business owners about their experiences with flooding this summer?

¿Cómo podemos preparar para entrevistar a los dueños de negocios locales sobre sus experiencias con inundaciones este verano?

See think wonder

¿Qué ves?

¿Qué piensas?

¿Cuáles preguntas tienes?

[Aesthetics World website]

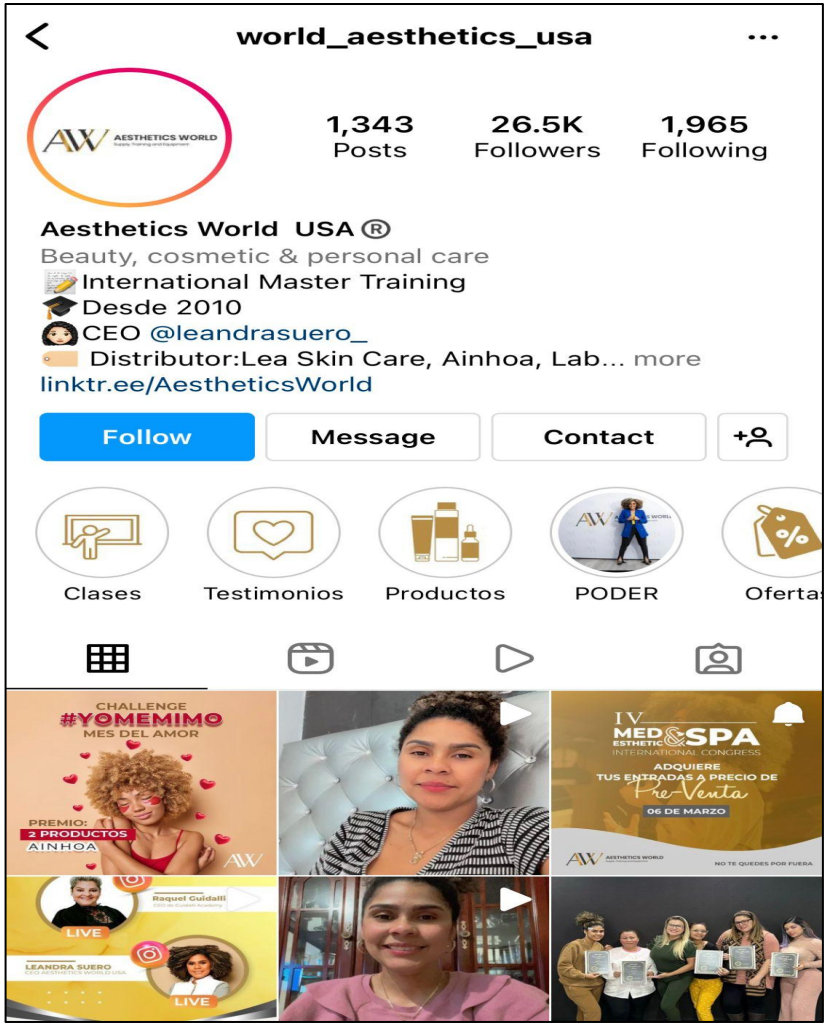
See think wonder

¿Qué ves?

¿Qué piensas?

¿Cuáles preguntas tienes?

[Aesthetics World instagram]



Let’s brainstorm some questions

Categories:

- Personal background
- About the spa business and what they do
- What happened this summer during Hurricane Ida
- Damages and problems from flooding
- How they resolved the problems and what support they got
- Preventing problems in the future
- Any other questions?

Our Goal Today

We want to interview Alexa, a worker at a local spa that flooded, so that we can tell her story using Scratch!

Let's do an icebreaker!

[Icebreaker Spinner]

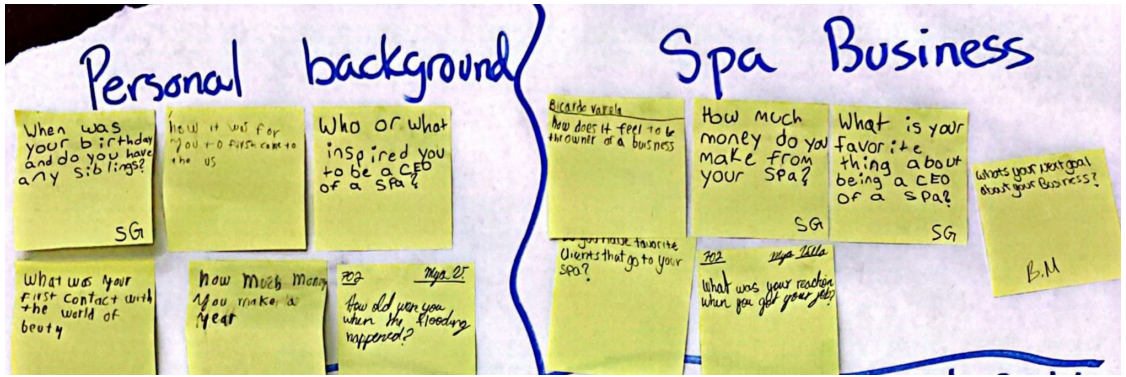
Each person will spin the wheel and answer the question it lands on

Remember to introduce yourself before answering your question

Let's interview Alexa on her background

Each student:

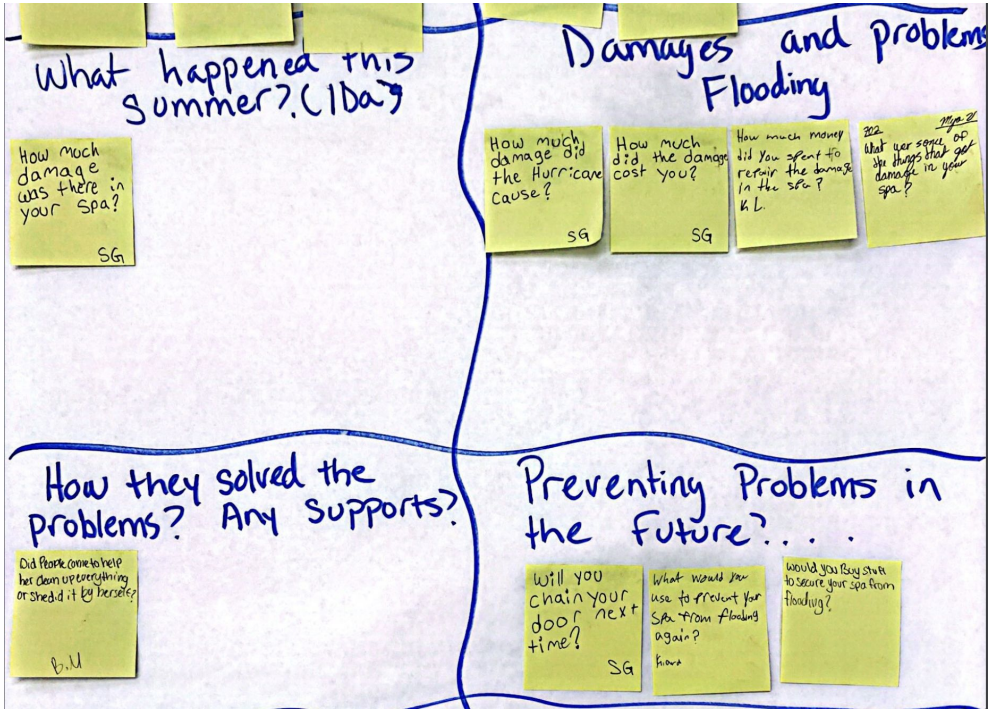
- Take one post-it from the **top two sections** of the question brainstorm
- Place the post-it on your handout
- Take turns asking Alexa your question and write down anything interesting on your handout



Let's interview Alexa about the flooding

Each student:

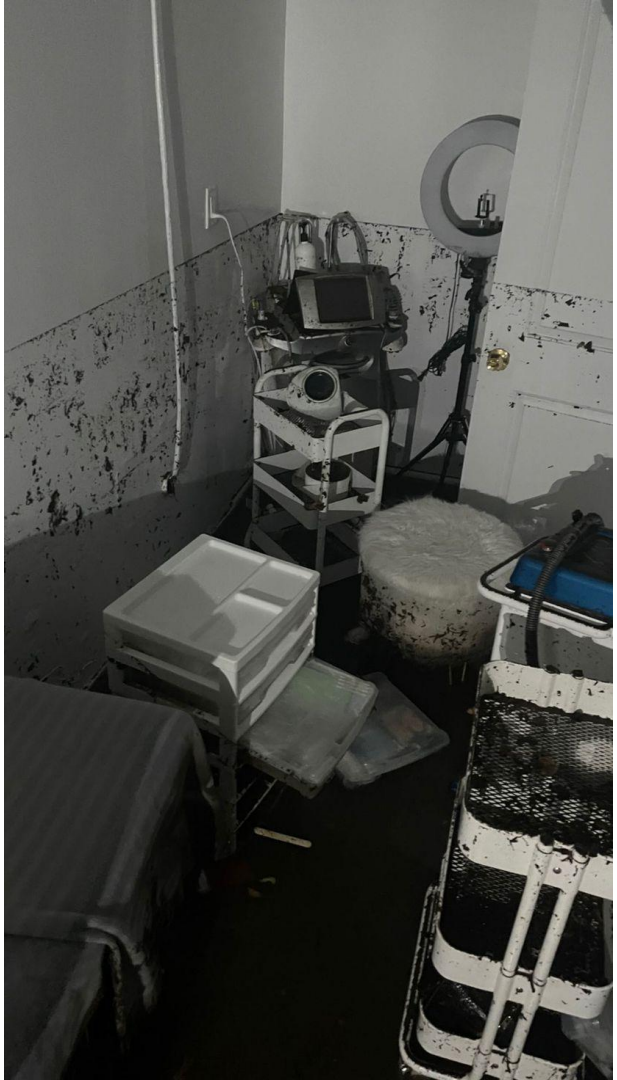
- Choose one post-it from the **next four sections** of the question brainstorm
- Place the post-it on your handout
- Take turns asking Alexa your question and write down anything interesting on your handout

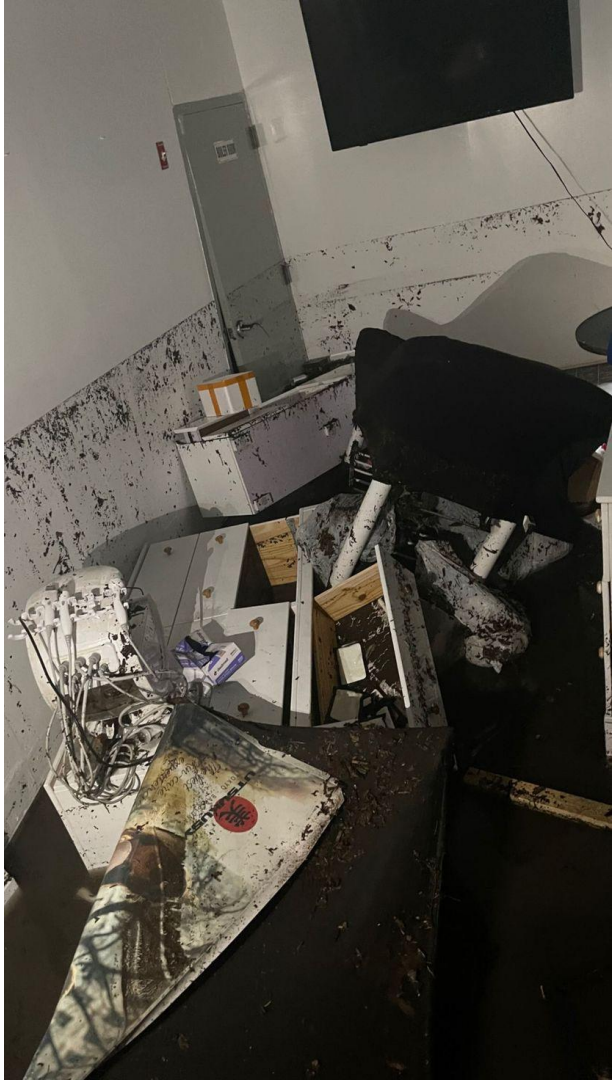


92
INSURANCE
INCOME TAX
(212) 304-8039
Motor Vehicles
Express Services
212.304.8039
LAUNDROMAT

LASH

Vida
Relax
Dreams
belleza
Cuerpo
Body
armonia
Vida
harmony
Meditacion
Sueños
Energy
Life
Vida
Energia
Cuerpo
beauty

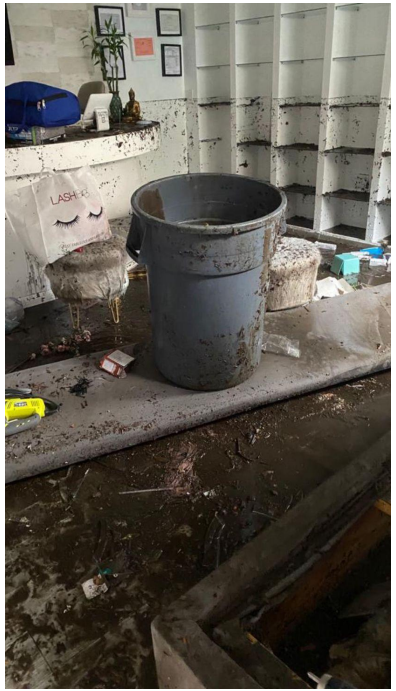




Flooding Stories

Let’s think about these questions with Alexa

- Who should hear or see these stories about flooding?
- Why should we tell these stories?
- What are some ways we can tell these stories?

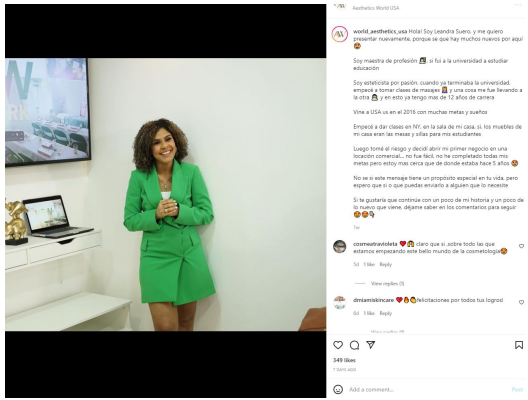


Activity: Let's tell the story of what happened using social media

Before we start, let's brainstorm some ideas with Alexa!

Questions to consider:

- What story do we want to tell?
- Who is our audience? Who do we want to view our profile?
- What does a professional Instagram look like? What does it have and what doesn't it have?
- What parts of an Instagram post help tell the story?



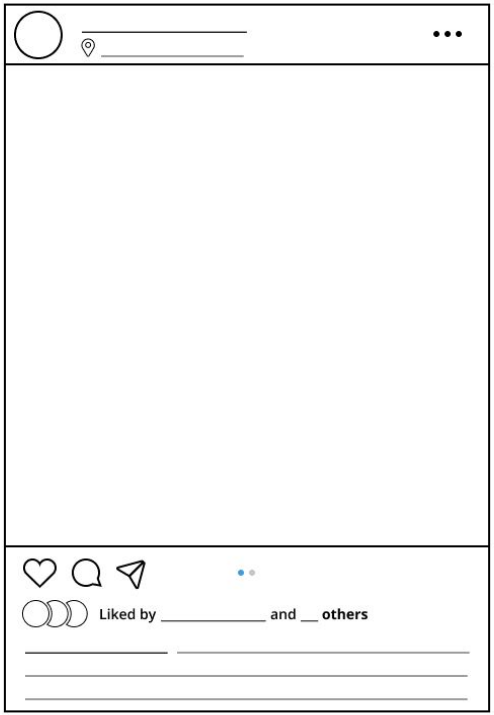
Activity: Let's tell a story using social media

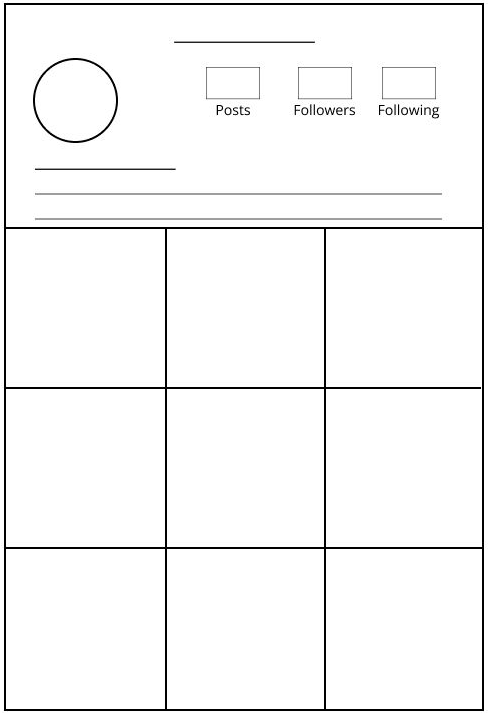
On the Instagram handout, customize the profile and post templates to tell a story about the flooding.

Things you can do:

- Write in a username, caption, bio, etc
- Crop the photos to fit and place them where you want
- Draw a profile picture or photos

Have fun!





Let’s share what we made!

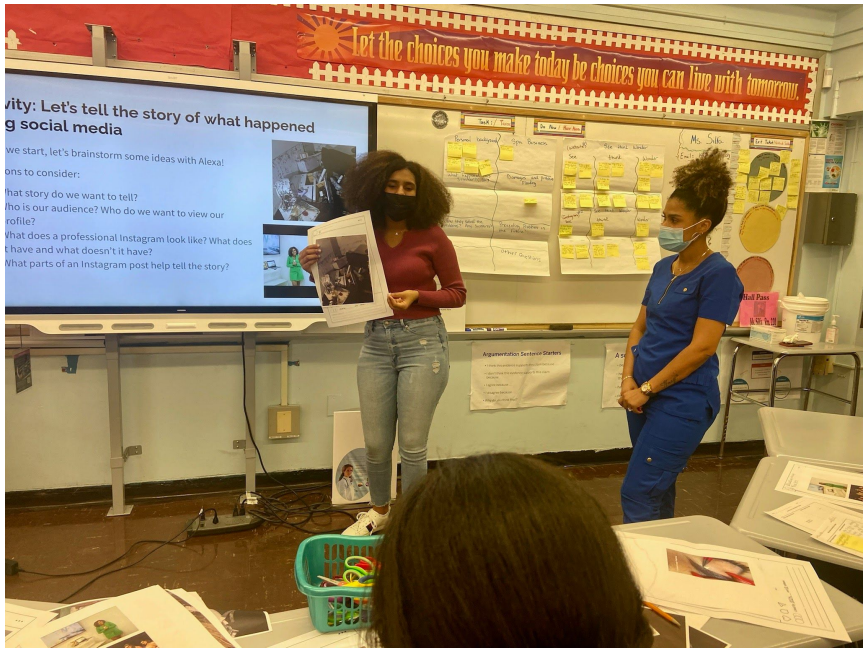
- What did you name your account?
- What did you write in the caption? In the bio? In the “geo tag”?
- How did you crop the photos? Where did you place the photos?

Question of the day / Pregunta del día

Leandra and Alexa's Visit

Two weeks ago, Leandra and Alexa of Aesthetics World USA visited us and told us about themselves, their work, and the flooding in their store!

- What do you remember about their visit?
- What was your main takeaway?
- What stood out to you?



Let’s make a thank you card

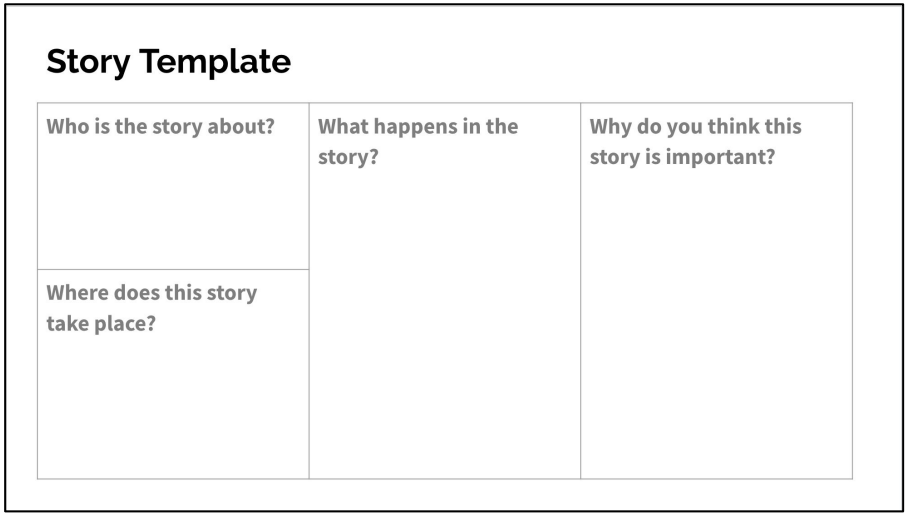
Because Leandra and Alexa took time out of their day to visit us and talk about their experiences, we should show them some appreciation by making them a card!

Telling Stories About Flooding

Leandra and Alexa's story is just one story of flooding we've heard. What other stories have we learned about?

Let's start making a collection of flood stories that we've heard:

[Flooding Stories Collection]



Using Scratch to Tell Our Stories

Do you remember Kyla's Scratch project?

Over the next few weeks, we'll be hearing more stories and each of you will be able to make your own project about the story you find most interesting or most important!

It can be similar to Kyla's or completely different! You get to decide how to tell the story you choose.

Emoti-Con NYC!

Emoti-Con is a project fair for middle school and high school students to show off their creative digital projects.

You can submit the Scratch projects you make in this program to their fair!

Let's look at some previous projects:

[Emoti-Con Website]

[2020 COVID-19 Scratch Projects]