

EXPLORING A NEW WAY TO

LEARN

Using **A**ugmented **R**eality in-and-out of the classroom

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# Project Goals

**We want to enhance the future of learning and how the next generation of students will interact with their environment.**

Ultimately, the goal of Anytime, Anywhere is to reiterate the idea that **learning can take place beyond the traditional classroom** and encourage students to take initiative with their education by extending the “classroom” in any environment. Through the use of **augmented reality**, students are given the opportunity to express their thoughts and perspectives in a virtual setting.

In an **analog version** of Anytime, Anywhere, students are still encouraged to incorporate the idea of an extended classroom by creating physical representations of their expressions as contribution.

Augmented reality in education creates a fascinating quest-like experience to engage students through learner-centered experiences. Students are able to explore their surroundings, develop their peer-to-peer learning skills, and contribute their opinions around topics they are passionate about. We aim for students to gain experience initiating their own learning and collaborating with their peers through a sharing community. There is a lot to be said of community story telling and being part of a larger entity.

# What is **Augmented Reality**?

We asked ourselves: how can we integrate augmented reality into learning experiences that occur anytime and anywhere?

**Augment Reality, or AR, is a technology that allows for computer-generated virtual imagery to be superimposed onto a live direct or indirect real world environment in real time.**

(The term Augmented Reality was coined by Thad Starner at MIT in the 1990s; Starner is now head of the Google Glass Project.)

AR is a new technology that we have not seen used much in the educational setting. However this is the kind of innovation that gets students excited about learning, while keeping them in touch with new methods.

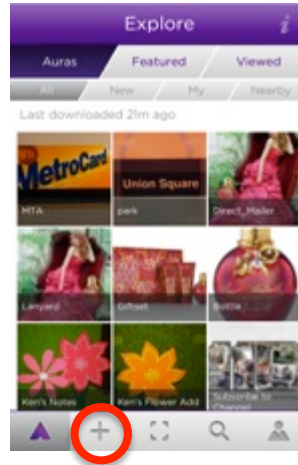


***Aurasma***, available for download as an application onto a smart device, is a free augmented reality platform that allows users to discover, create, and share virtual content cohesively into the real world.

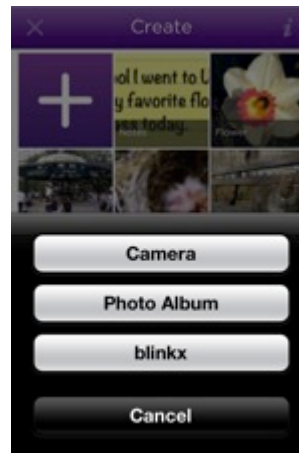
Available on smart devices, *Aurasma* was created out of technology that is capable of recognizing images, symbols and objects in the real world and understanding them. It can then deliver digital content in real time, including videos, animations, audio or webpages. With an app like *Aurasma*, users can scan flat objects to trigger any form of virtual content. AR is a new avenue for student engagement.

Through augmented reality students will be able to interact with educational content both inside and outside the classroom. We specifically use *Aurasma* because it is customizable and can be personalized for each school.

# Using Aurasma

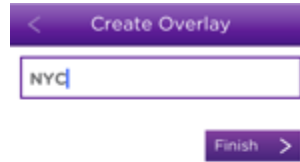


1. Open Aurasma and push (+) to start creating an Aura.

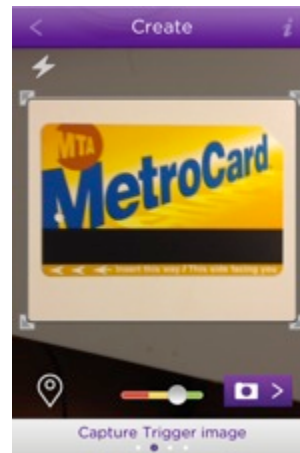


2. What do you want to link to the image to? Select an Aurasma animation, image or 3D model, or a video from blinkx or one from your own library. Once you have selected something, you can then name your Aura.

# Using Aurasma



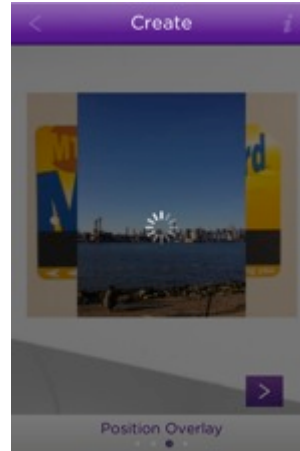
3. After selecting your image, give your Aura a name.



4. Select a “Trigger Image” for your Aura. A “Trigger Image” can be an image or flat object.

Capture your image in the view pane. Pick a flat image with a green bar for strength. Choose between creating a regular Aura (an Aura visible anywhere) or a Location Aura (appearing in one significant geographical location). Then click .

# Using Aurasma



5. Your “Aura” will load once your “Trigger Image” is created.

A prompt will appear shortly after to let you know your Aura is ready for viewing.



6. You’re done!

While Auras can only be uploaded to one device, they may be viewed by any device with Aurasma installed.



# Classroom Integration

So how can we implement this technology? How can we integrate this within existing conditions? **This can be possible through the teamwork of both teachers and students.** Essentially, teachers and students will work together to identify discussion topics everyone is interested in. This technology can facilitate classroom learning as well as prompt discussions in more informal environments such as the school bus, the playground, or during recess.

Students may glide a smart device over pre-programmed content in a controlled environment to discover and receive additional embedded information. This design solution prompts students to explore learning through nontraditional approaches. Since this system requires students to look for information, the idea of learning anytime and anywhere is reinforced. In an educational environment, students can see dynamic content related to a number of student related activities: lessons, clubs, sports teams, school history, etc.



## How might we use Aurasma for learning?

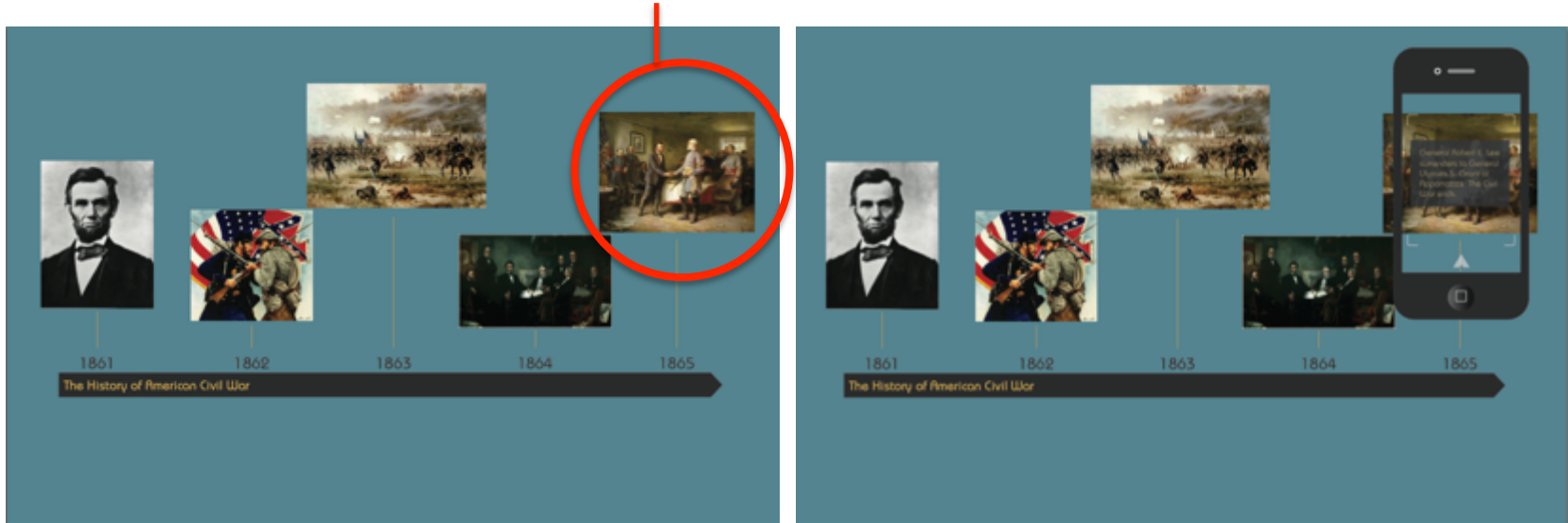
**Here are a few ways to integrate Augmented Reality into the classroom environment.**

Some possibilities include:

- An Enhanced Timeline
- An Interactive Scene
- Homework Help
- Information Boards

There are endless ways to use AR to enhance any lesson. As you get familiar with the application, the more creative you will be.

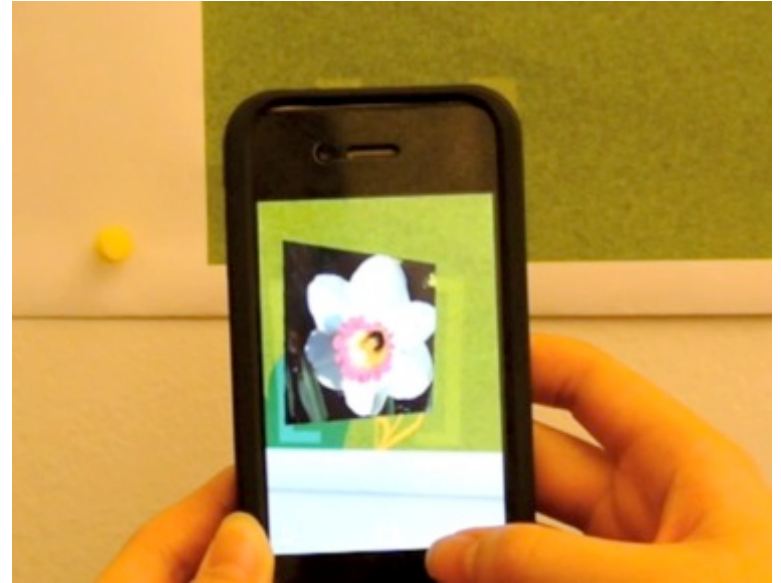
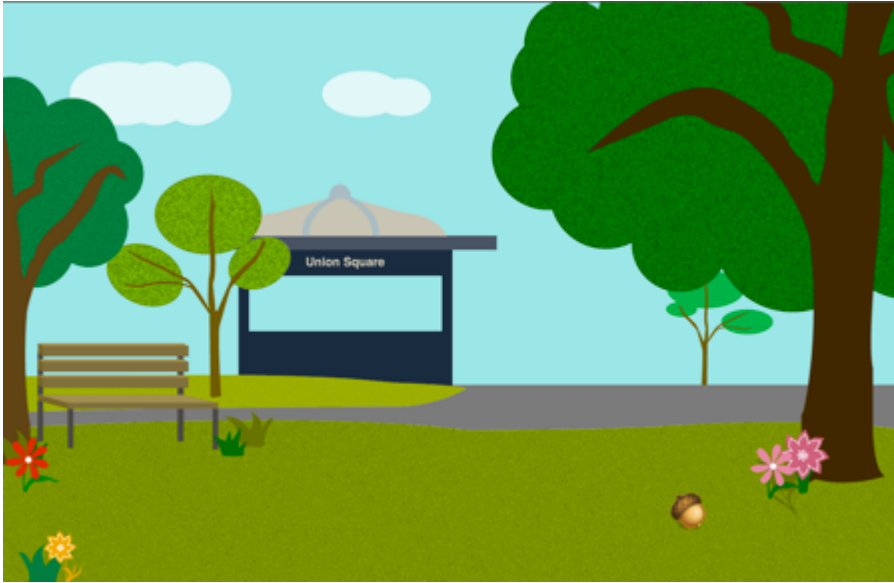
Scan over image to reveal text.



## Enhanced Timeline

At one point or another, every history class has assigned a timeline project to highlight significant events from the past. An enhanced timeline moves away from the traditional static display of events to an interactive experience filled with dynamic student generated content.

By offering students an alternative way to interpret events and express comprehension, they have the opportunity to become more creative learners. A video of students reenacting their understanding of the Civil War demonstrates a different level of comprehension versus writing a report on the subject.



## An Interactive Scene

Stationary imagery on posters is a thing of the past. Interactive scenes embedded into the imagery tell a more interesting story.

While text and images can articulate the messages, embedding a video in action provides a fuller picture. Scanning over an image of a flower to receive a more detailed video enhances the content and learning experience in real time over reading a short blurb.

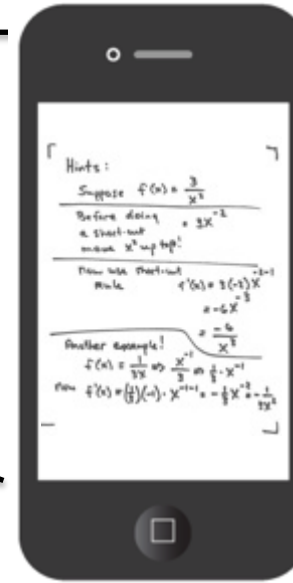
Collage images together to create a AR scene based on a class lesson.

Name: \_\_\_\_\_  
Calculus Homework #3

1.  $\int_0^{\pi/2} \frac{dx}{1 + \tan^6 x}$



Need help  
MOOving on?



## Homework Help

With every lesson, teachers have goals on what the students will be able to do. Even with the best teachers providing instructions and giving examples, students may still need additional assistance when it is time for them to return home and complete their assignments.

Enhanced homework assistance gives students the opportunity to receive immediate encouragement and the push they need to succeed. Imagine scanning over a math problem you are struggling with and being able to view that special technique used in class today.

## FUNFRUIT FACTS I



## Information Boards

Informational bulletin boards can be used for clubs and sports teams. Healthy eating tips and meal choices can be suggested to the student body. Special announcements about prom can be embedded. Younger children can share book reports and videos of rapping about history. It can be a platform to engage a range of ideas and inform the school community.

Learning will not just be for the classroom, but for the school community. Students can encounter augmented reality in class, the hallways, and various locations around campus.

# Other Ideas

Brainstorming with Patrick Murray

December 13, 2012

## **Outside of the Classroom**

- Field Trips (teachers pre-plan lessons)

## **In the Lunch room**

- Photo near each food/story board of food
- Wall with images of food

## **In the Classroom**

- Health Class/Balancing diet

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