

# SAMR In Context: The EdTech Quintet

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Ruben R. Puentedura, Ph.D.

**Transformation**

**Redefinition**

*Tech allows for the creation of new tasks,  
previously inconceivable*

**Modification**

*Tech allows for significant task redesign*

**Augmentation**






*Tech acts as a direct tool substitute, with  
functional improvement*

**Substitution**

*Tech acts as a direct tool substitute, with no  
functional change*

**Enhancement**



Social	Mobility	Visualization	Storytelling	Gaming
200,000 years	70,000 years	40,000 years	17,000 years	8,000 years
				



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Bookmarks



RSS Feeds

Discussions



Microblogging

Blogging



Wikis

Telepresence



File Sharing



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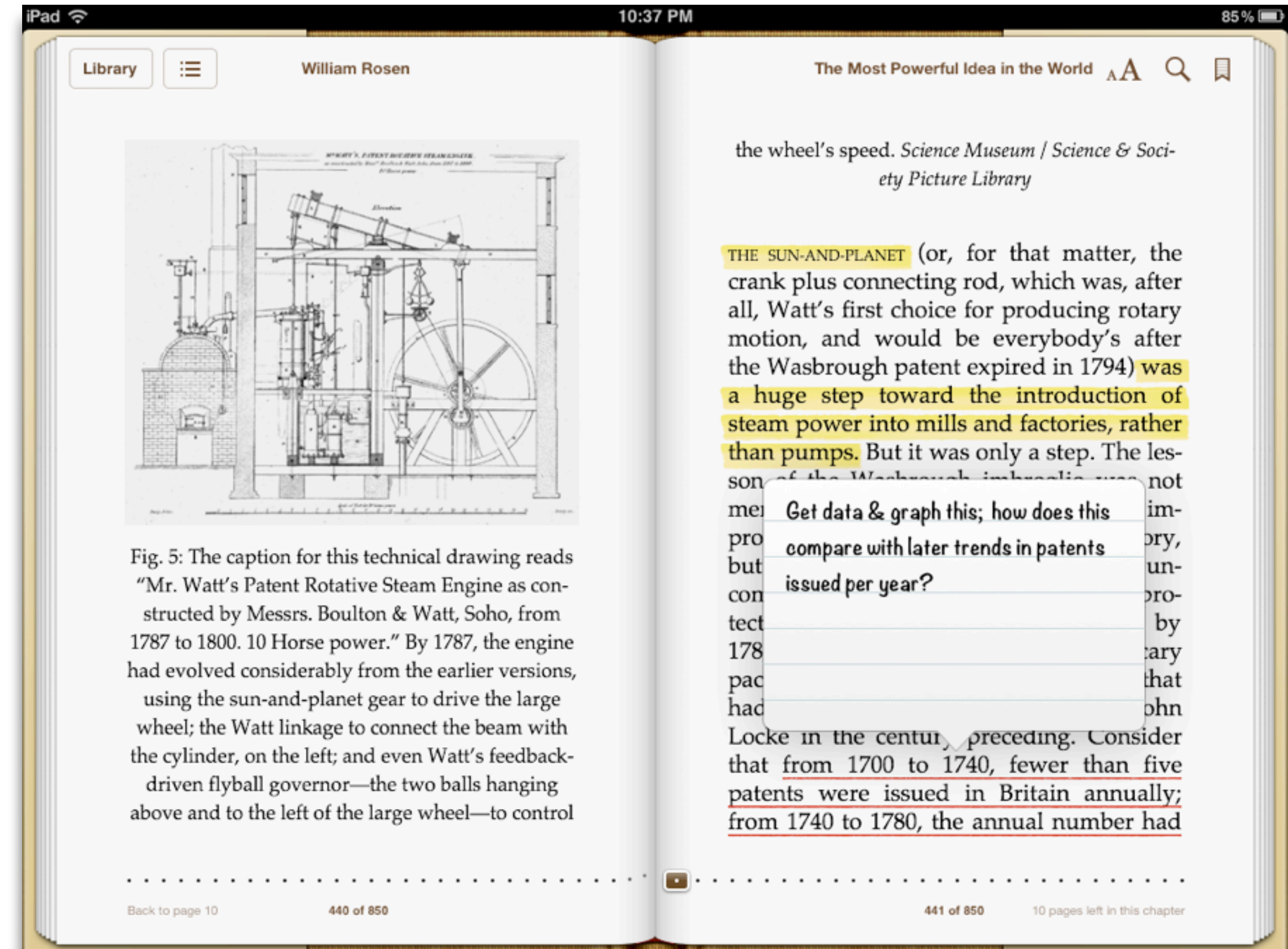
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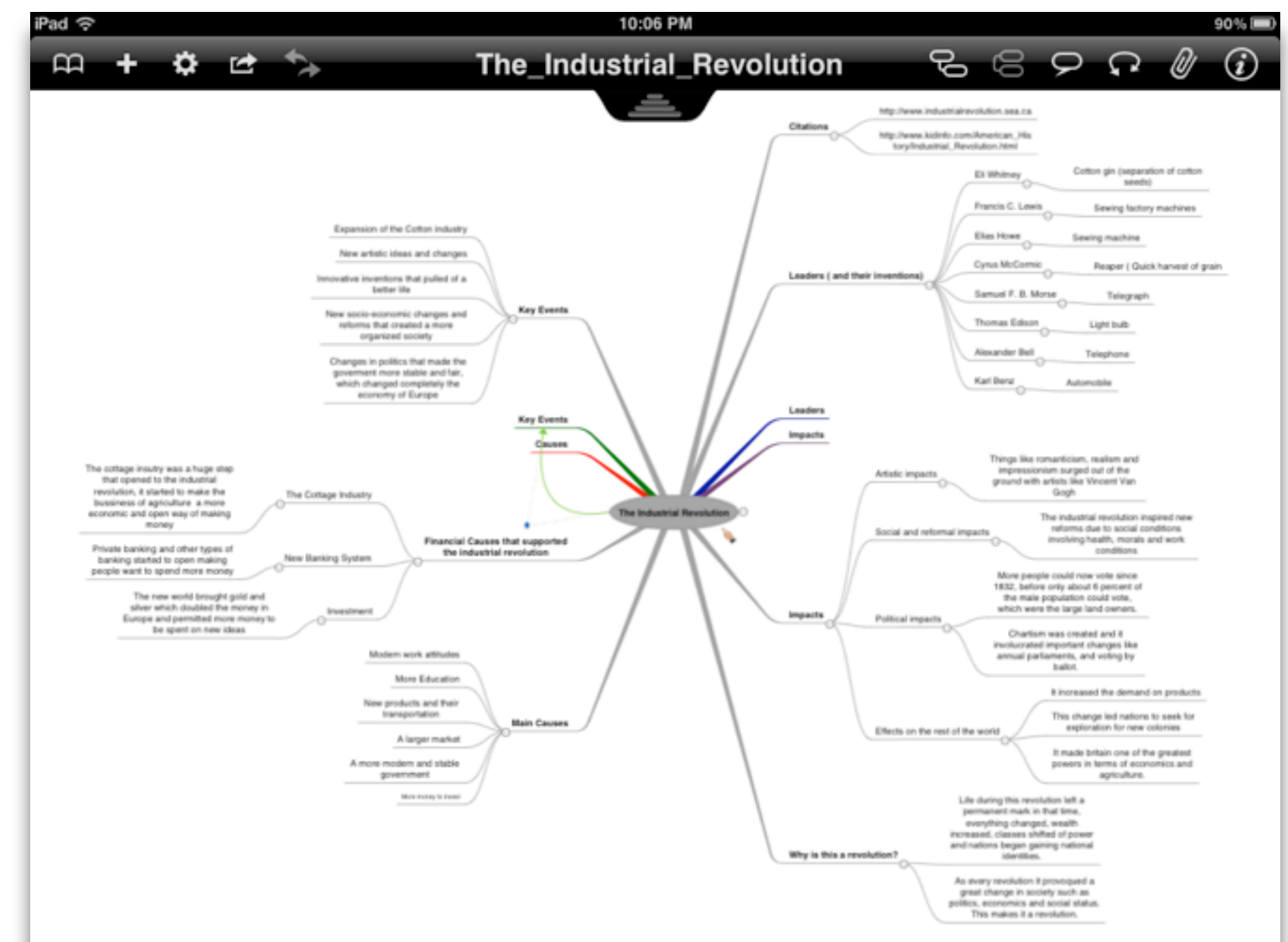
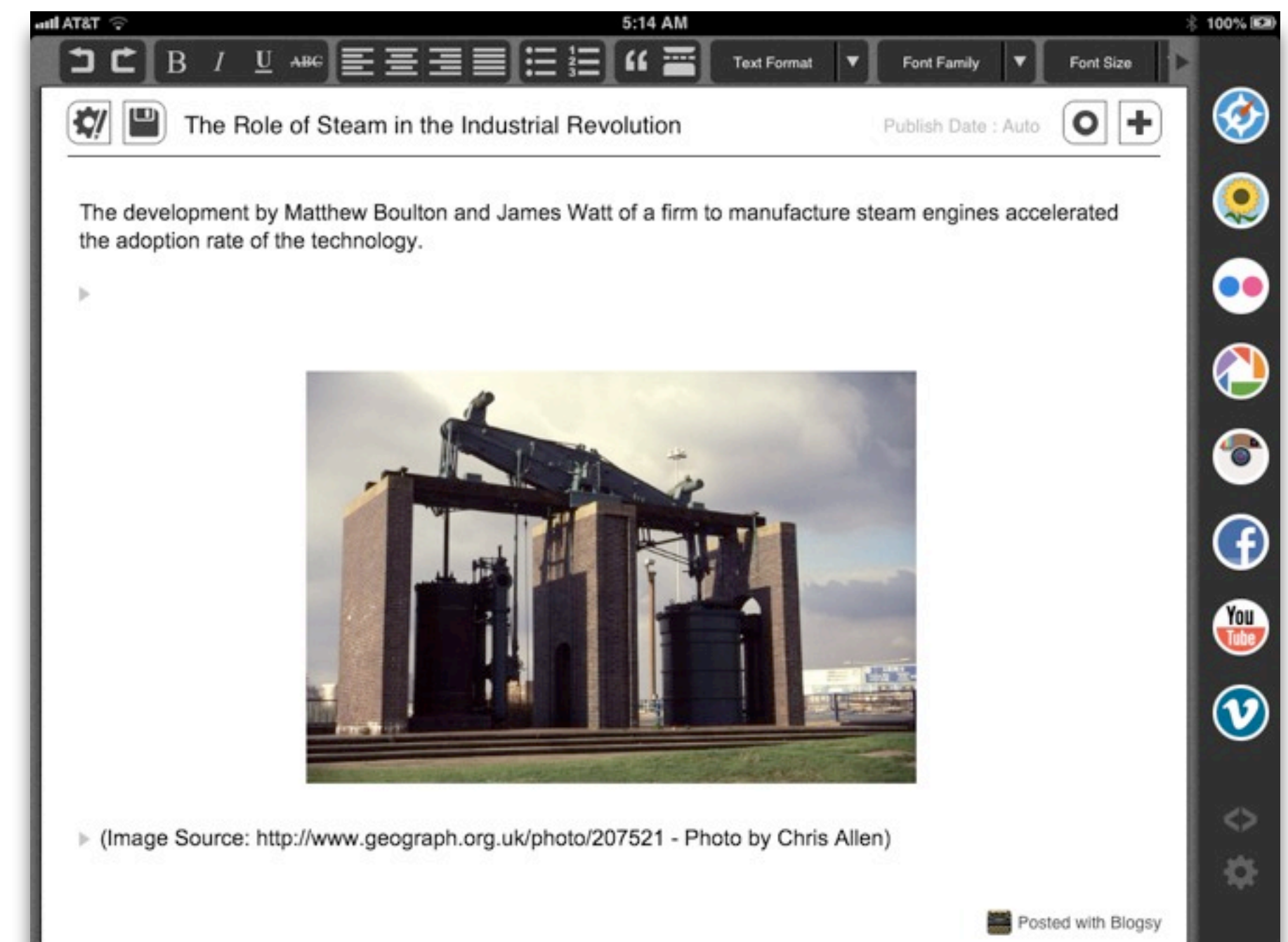
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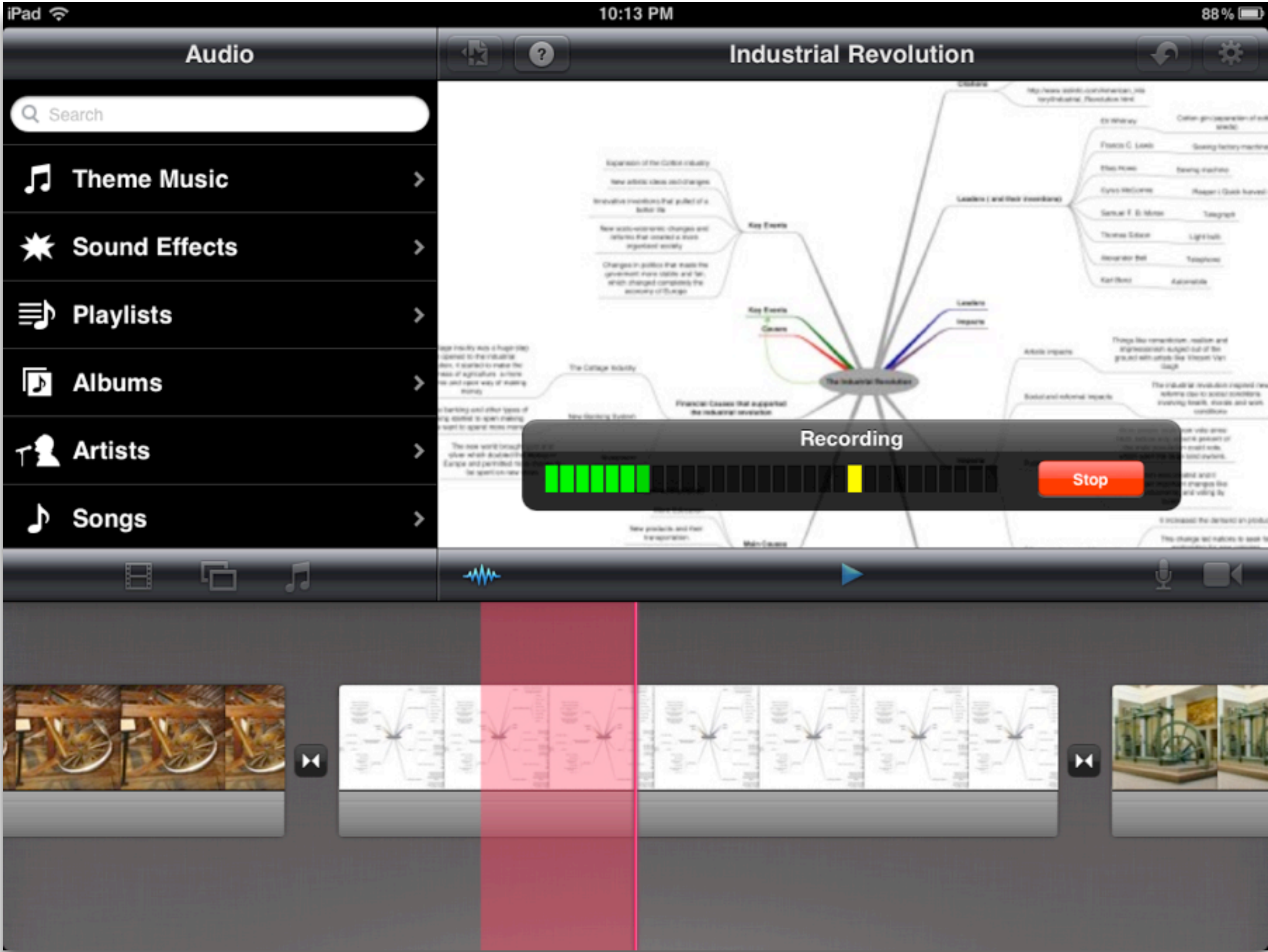
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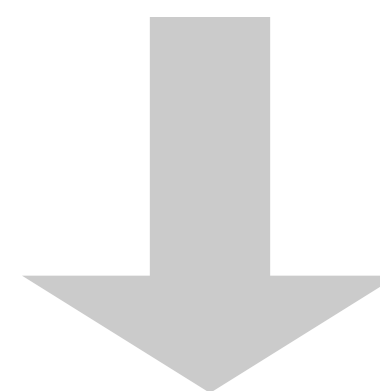


Social	Mobility	Visualization	Storytelling	Gaming
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Class

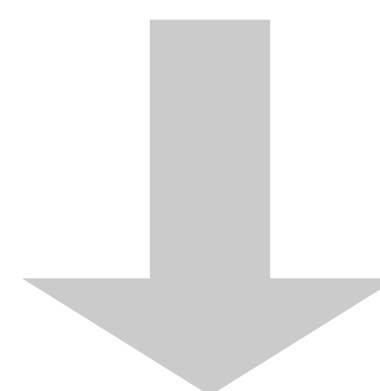
Homework



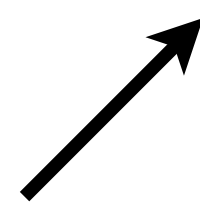
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World

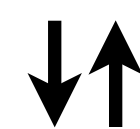
Home



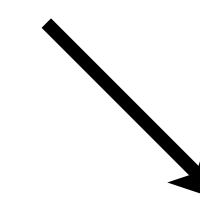
Learning Environments



*Contextual Search  
Augmented Reality*



*Cloud Resources  
Mobile Tools*



*Sensors  
Recorders*



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1:15 PM 85%

### Aquatic Biomes

Aquatic biomes cover 75 percent of the surface of the Earth. The aquatic and terrestrial biomes are similar in some ways

**bi•ome** | 'bī,ōm |  
noun Ecology  
a large naturally occurring community of flora and fauna occupying a major habitat, e.g., forest or tundra.

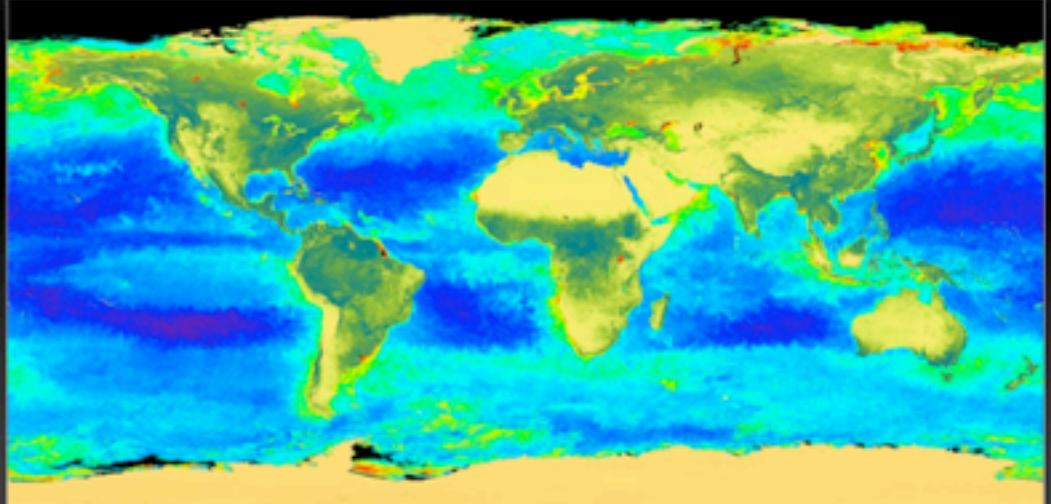
ORIGIN early 20th cent.: from **BIO-** 'life' + **-OME**

[Search Web](#) [Search Wikipedia](#)

is more common for organisms to be confined to one of the two environments.

Aquatic environments have less variation globally than those on land. Taking a broad view (the lumpers' perspective), there are four kinds of aquatic biomes: surface waters, deep waters, shores, and bottoms. Within these categories are a variety of distinctive marine and freshwater life zones that are frequently designated as separate biomes.

#### Worldwide Photosynthetic Activity



Some aquatic organisms are adapted to both conditions for parts of their lives, such as salmon and some eels, but it

Interactive The latitudes of peak photosynthesis change with the seasons.

31



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EURASIAN COLLARED-DOVE

Streptopelia decaocto

Locally common, exotic

12½–13 in. (32–33 cm)

Recent colonizer of N. America from Caribbean but native to Eurasia; rapidly increasing and spreading. Slightly chunkier than Mourning Dove, paler beige, and with square-cut tail. Note narrow black ring on hindneck. Grayish undertail coverts. Three-toned wing pattern in flight.

SPOTTED DOVE

Streptopelia chinensis

Uncommon, local, exotic

12 in. (30–31 cm)

Note broad collar of black and white spots on hindneck. A bit larger than Mourning Dove; tail rounded with much white in corners. Juvenile: Lacks collar, but can be told by shape of spread tail.

ROCK PIGEON (ROCK DOVE, DOMESTIC PIGEON)

Columba livia

Common, exotic

12½ in. (32 cm)

Typical birds are gray with whitish rump, two black wing bars, and broad, dark tail band. Domestic stock or feral birds may have many color variants.

Rock Pigeon (Rock Dove, Domestic Pigeon)

AA

RED-BILLED PIGEON

AFRICAN COLLARED-DOVE

EURASIAN COLLARED-DOVE

SPOTTED DOVE

plumage variable


typical form

ROCK PIGEON (ROCK DOVE, DOMESTIC PIGEON)

Cancel

Bird Sighting

Save



ROCK PIGEON (ROCK DOVE, DOMESTIC PIGEON...)

Columba livia

Common, exotic

Count

1 Bird >

Date

Jun 9, 2012 4:35 PM >

Place

>

Weather

Not Recorded >



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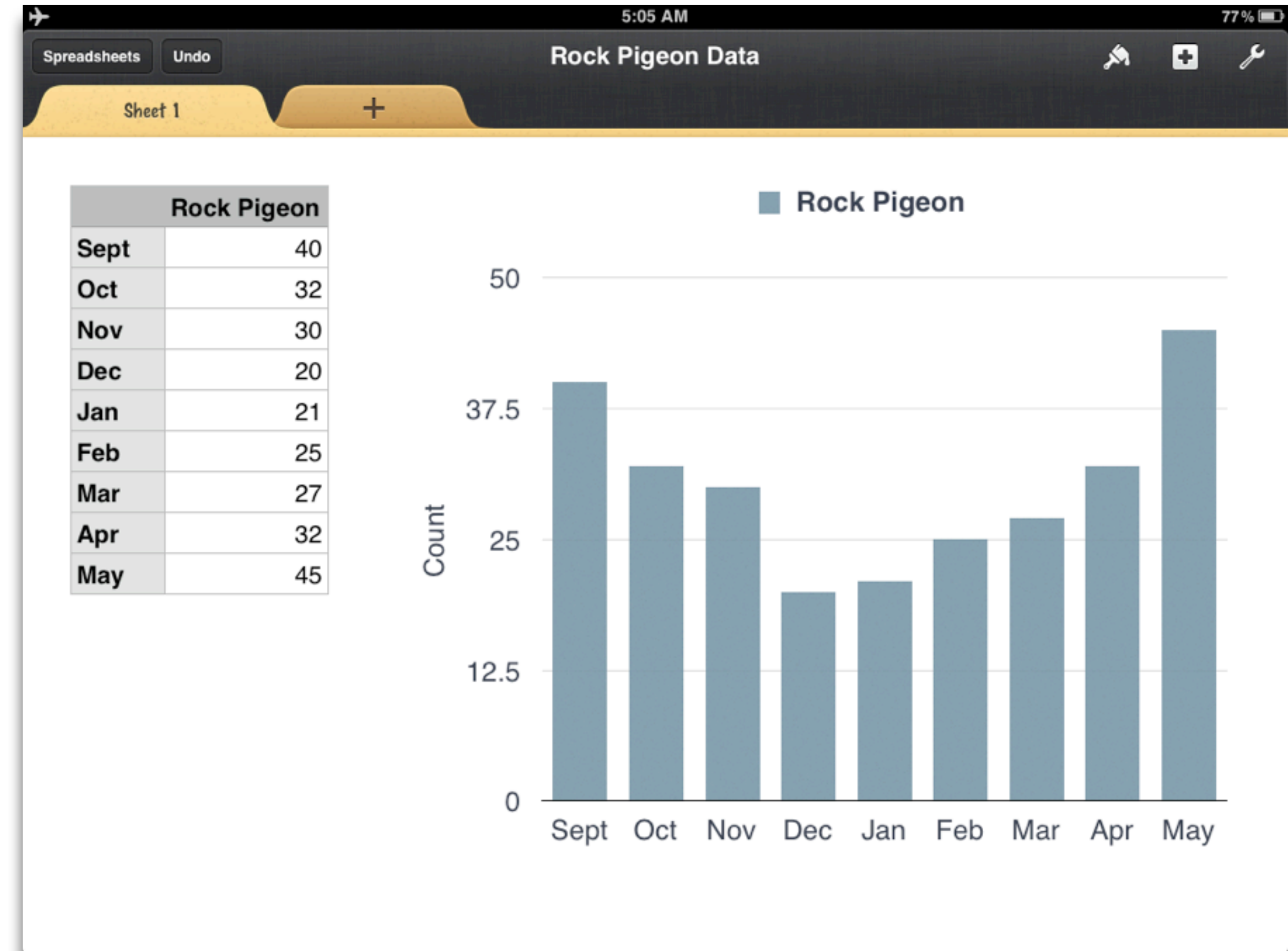
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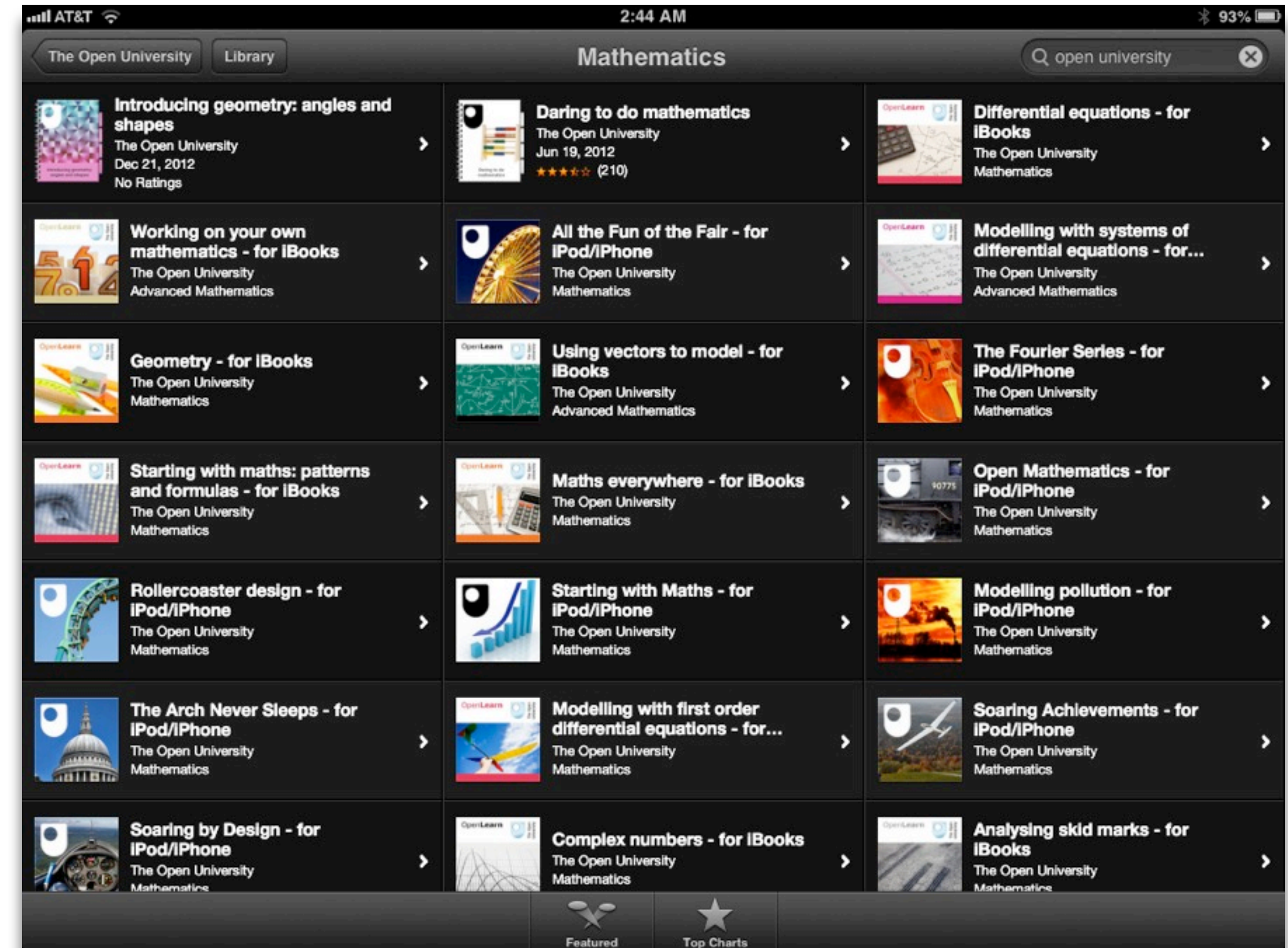
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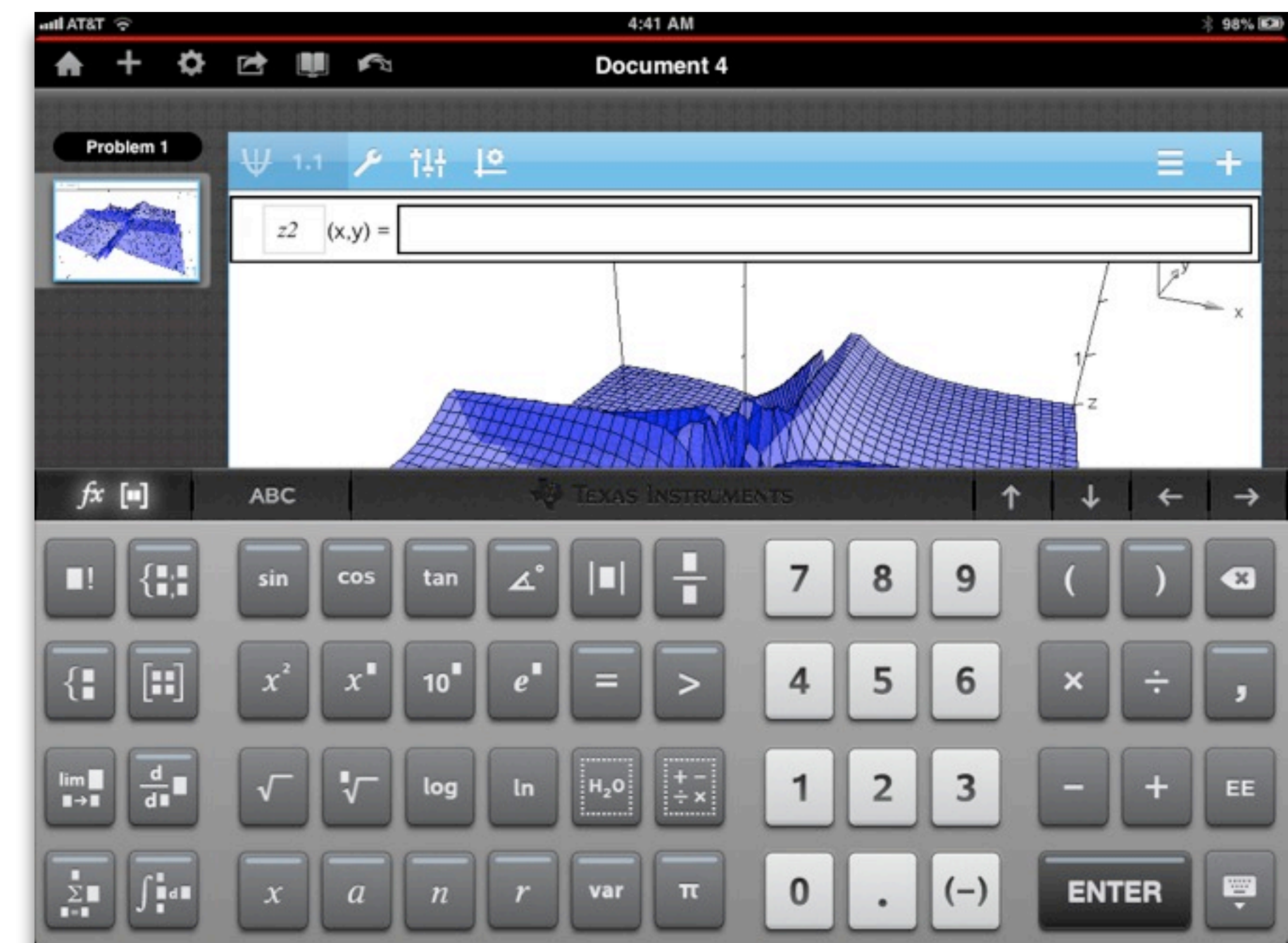
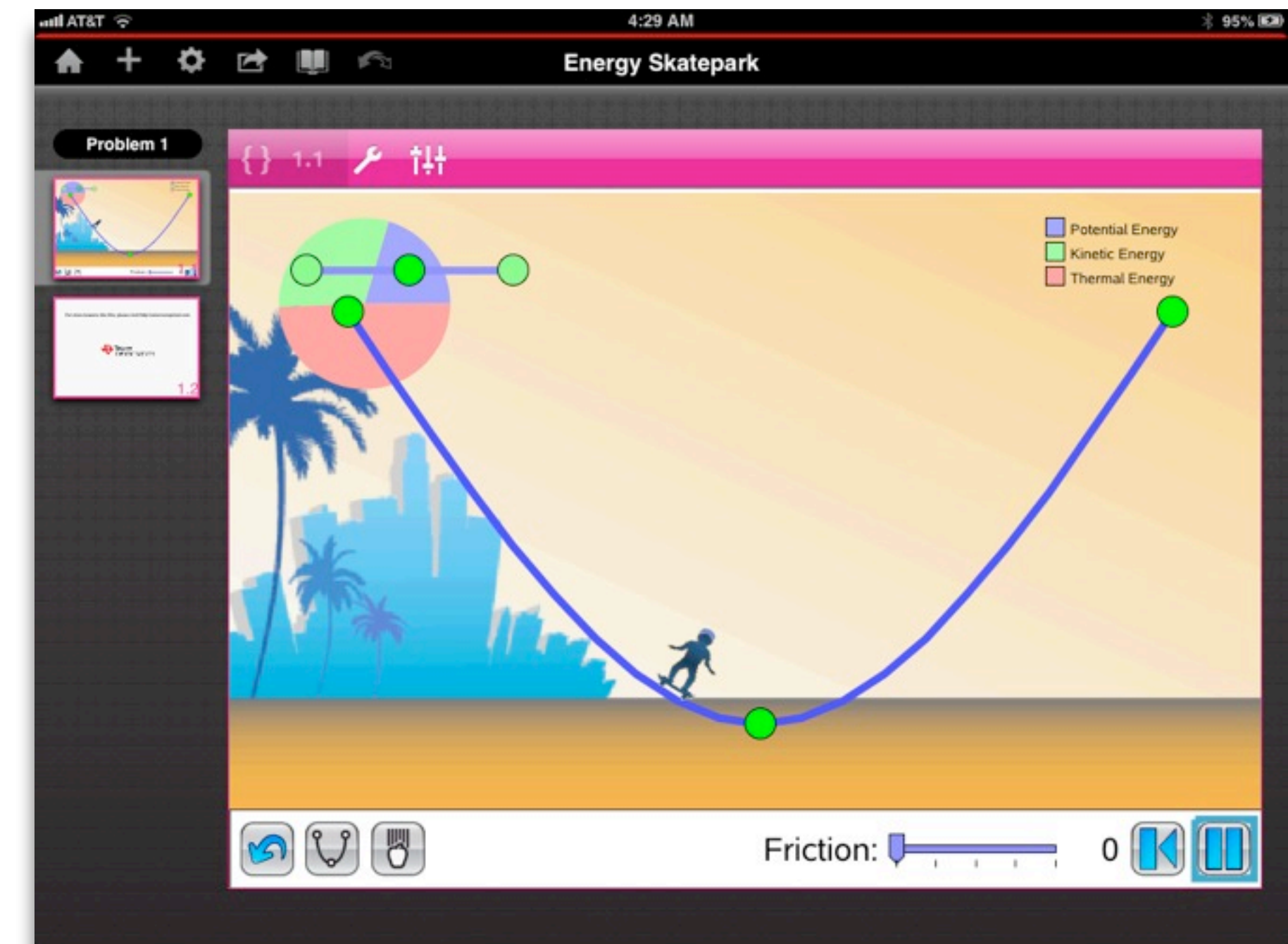
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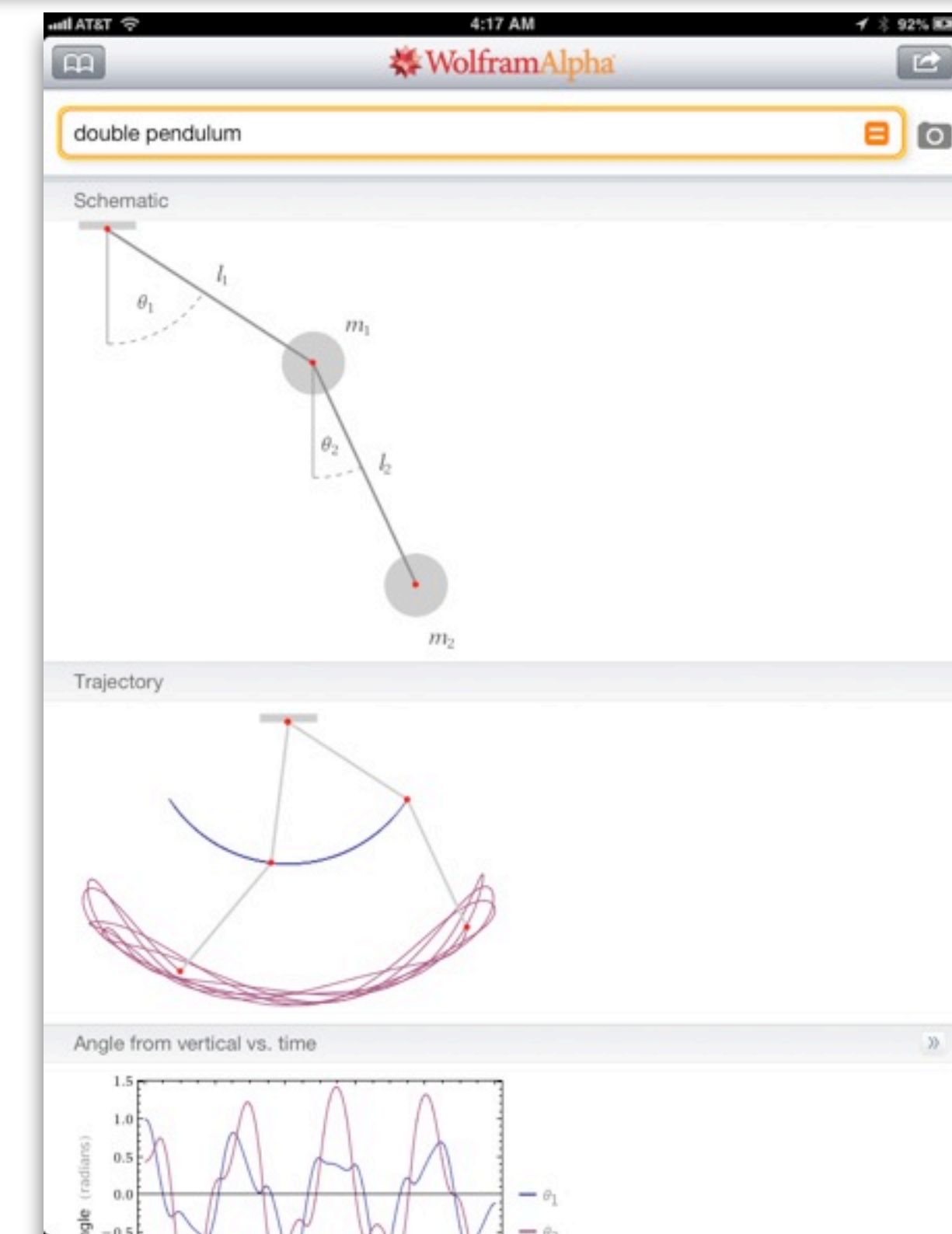
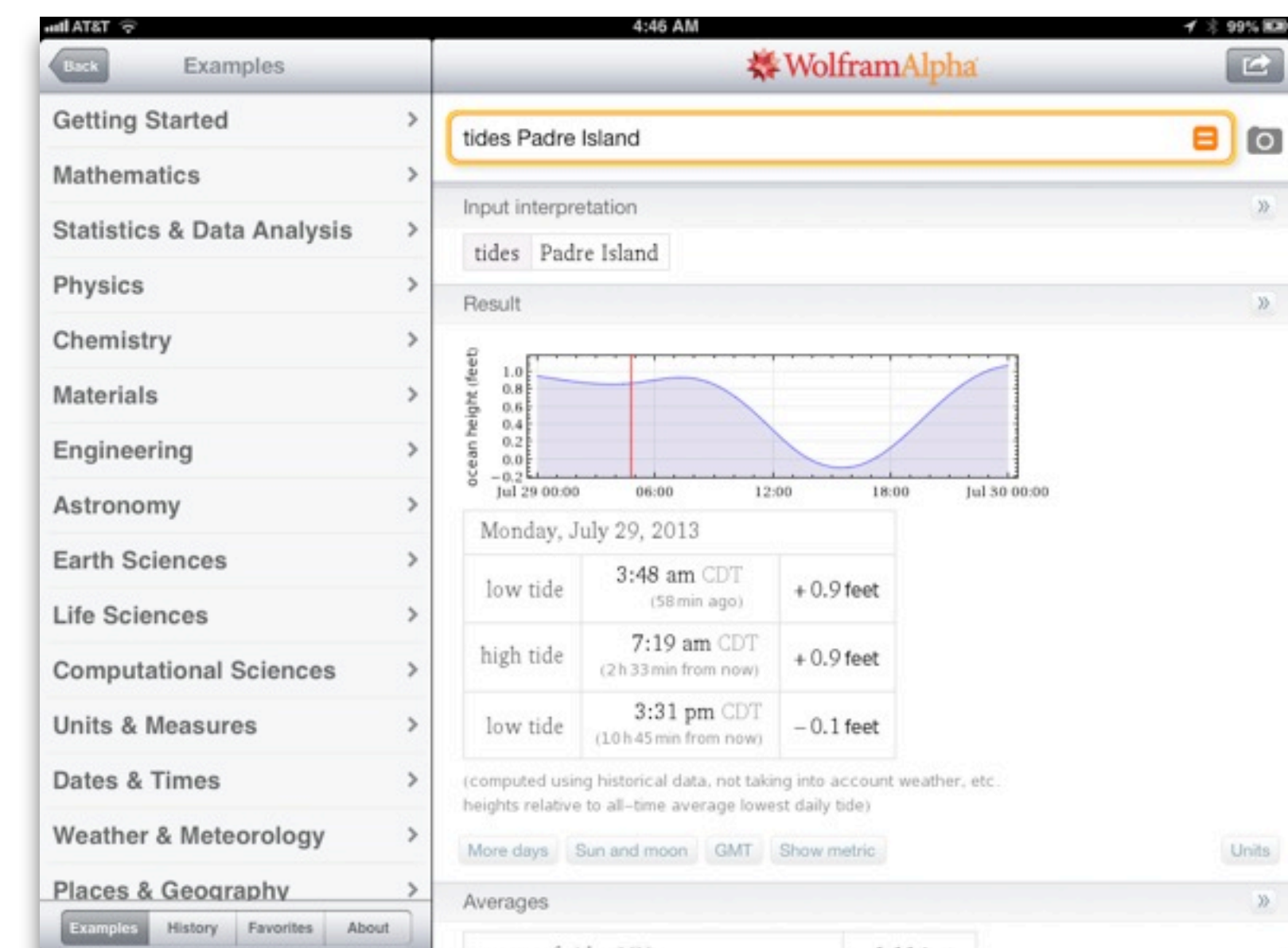
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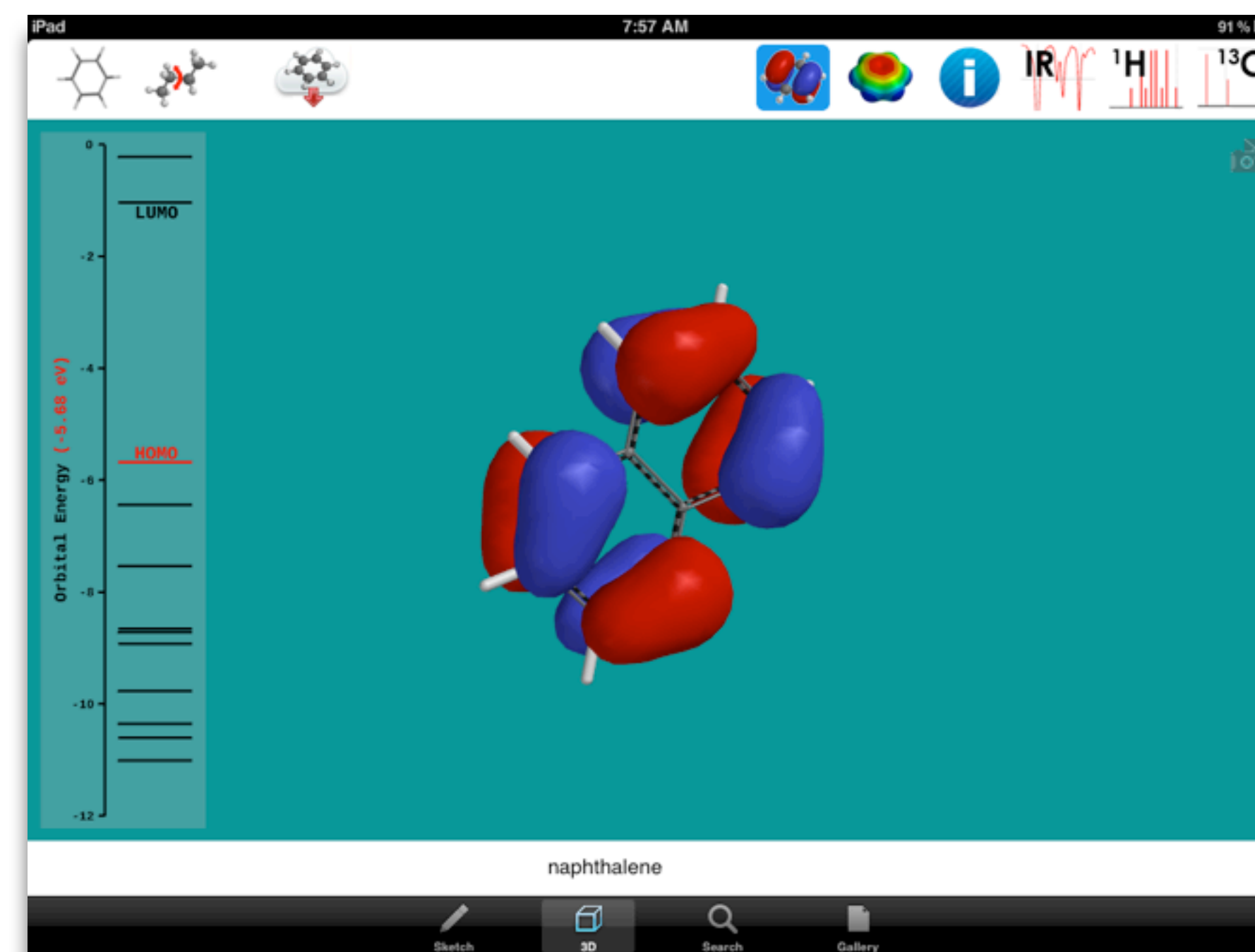
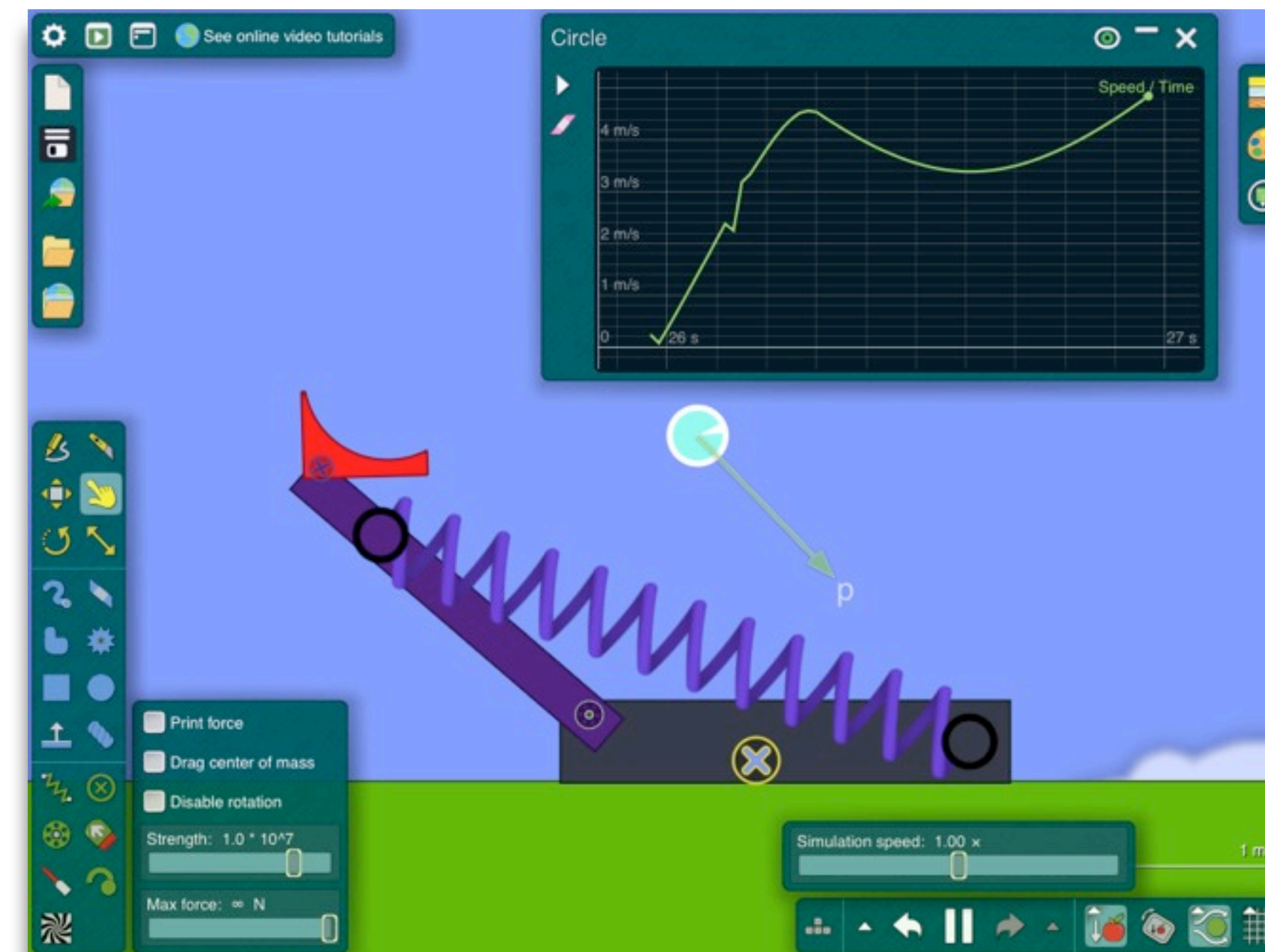
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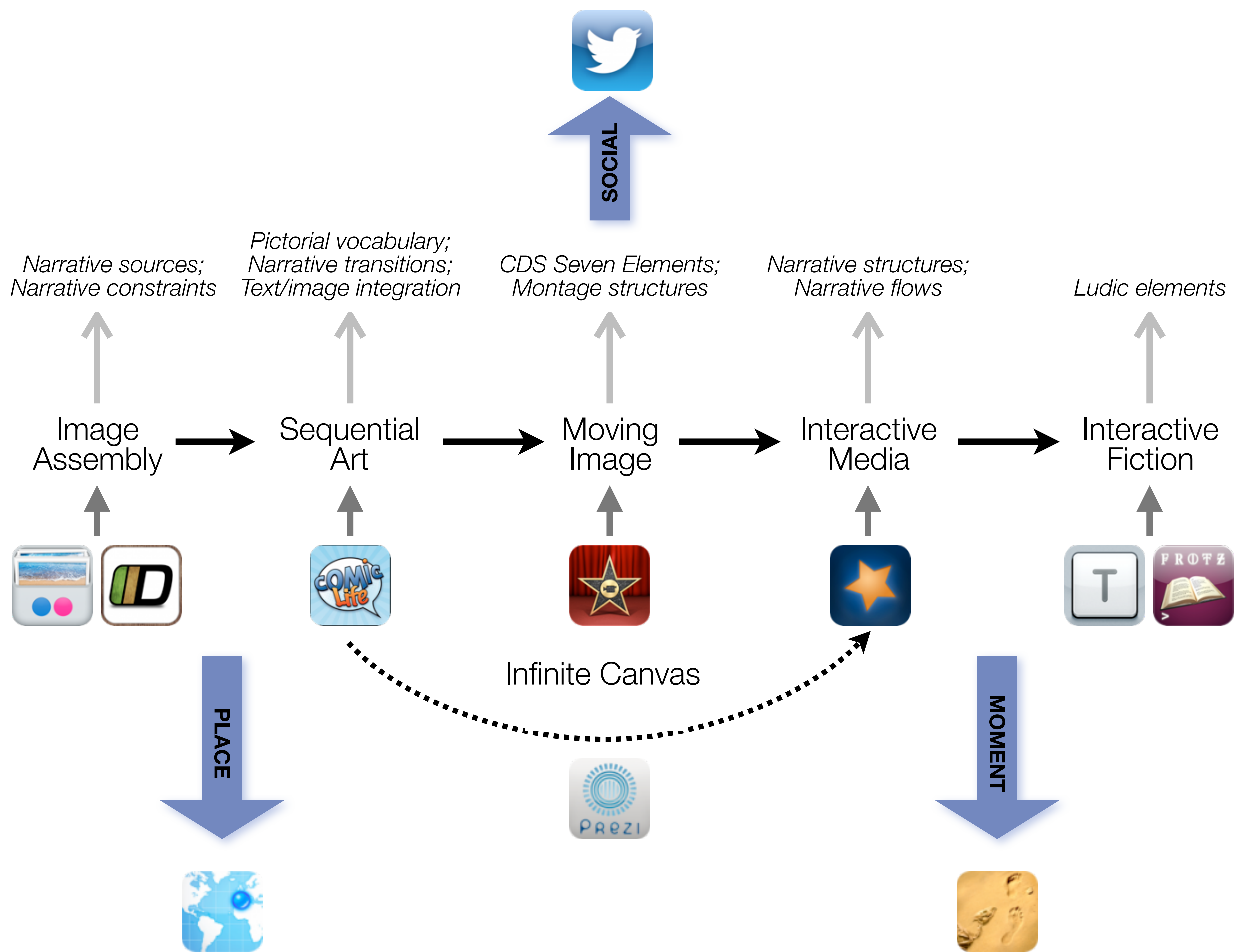
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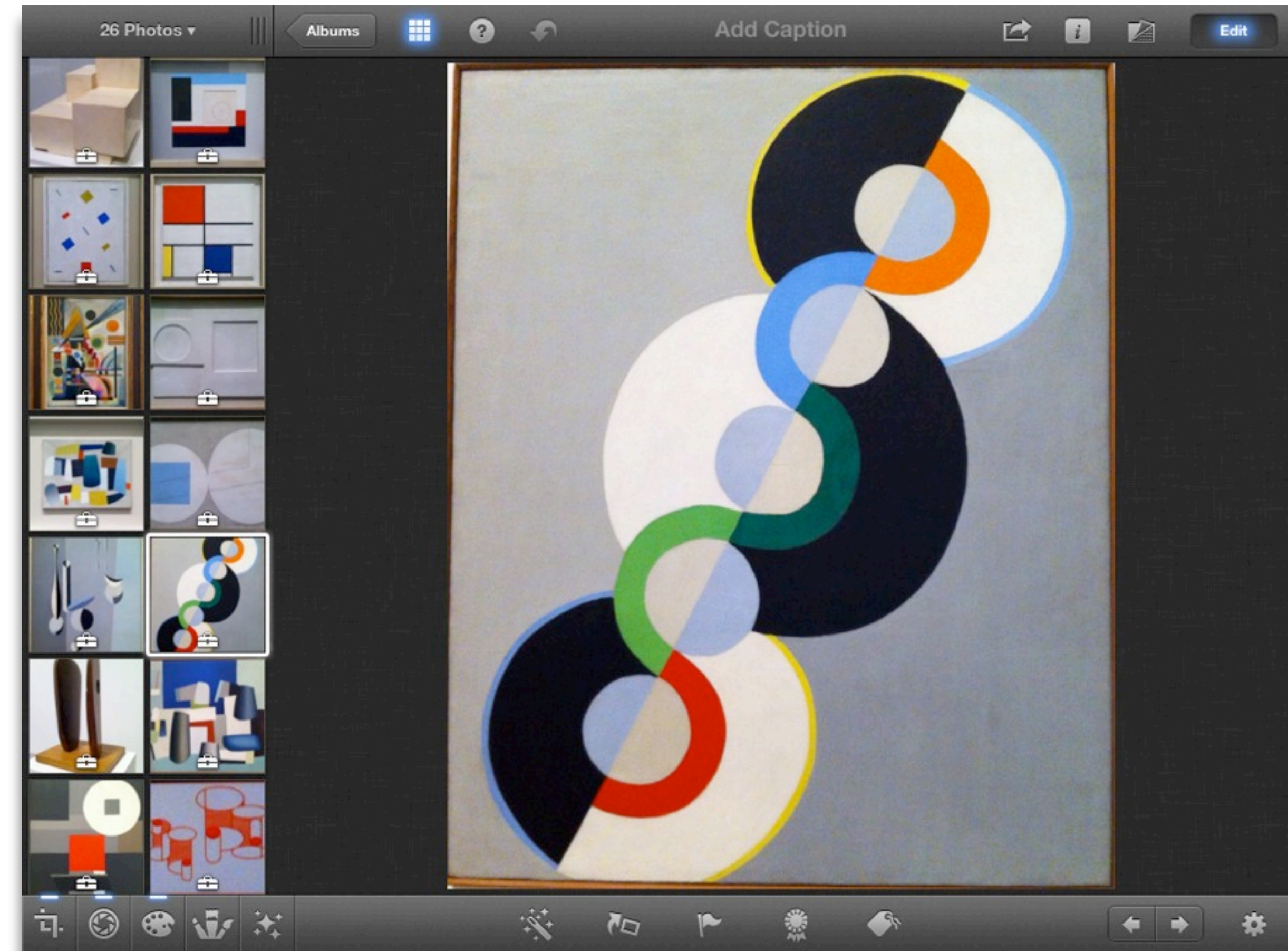
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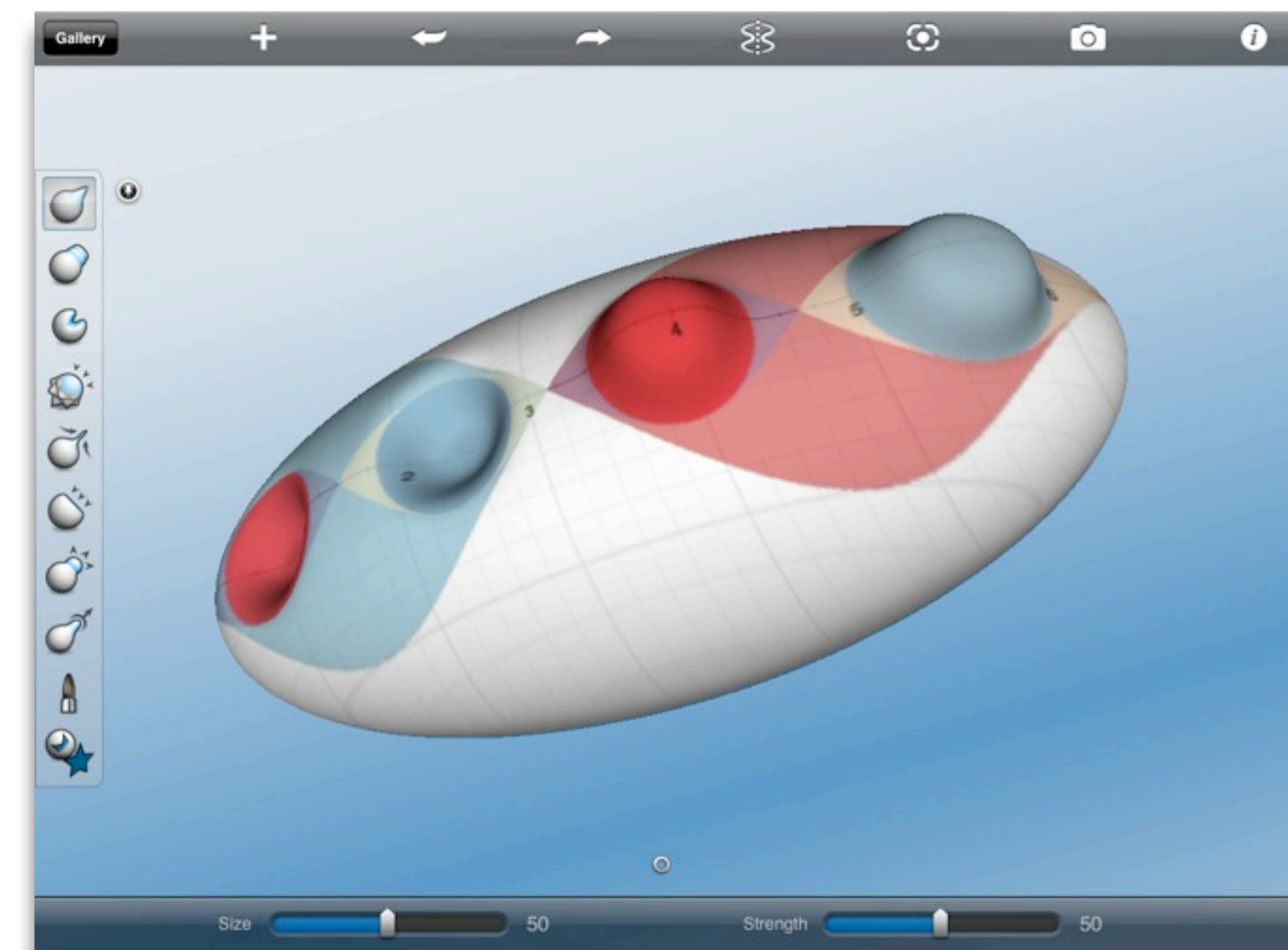
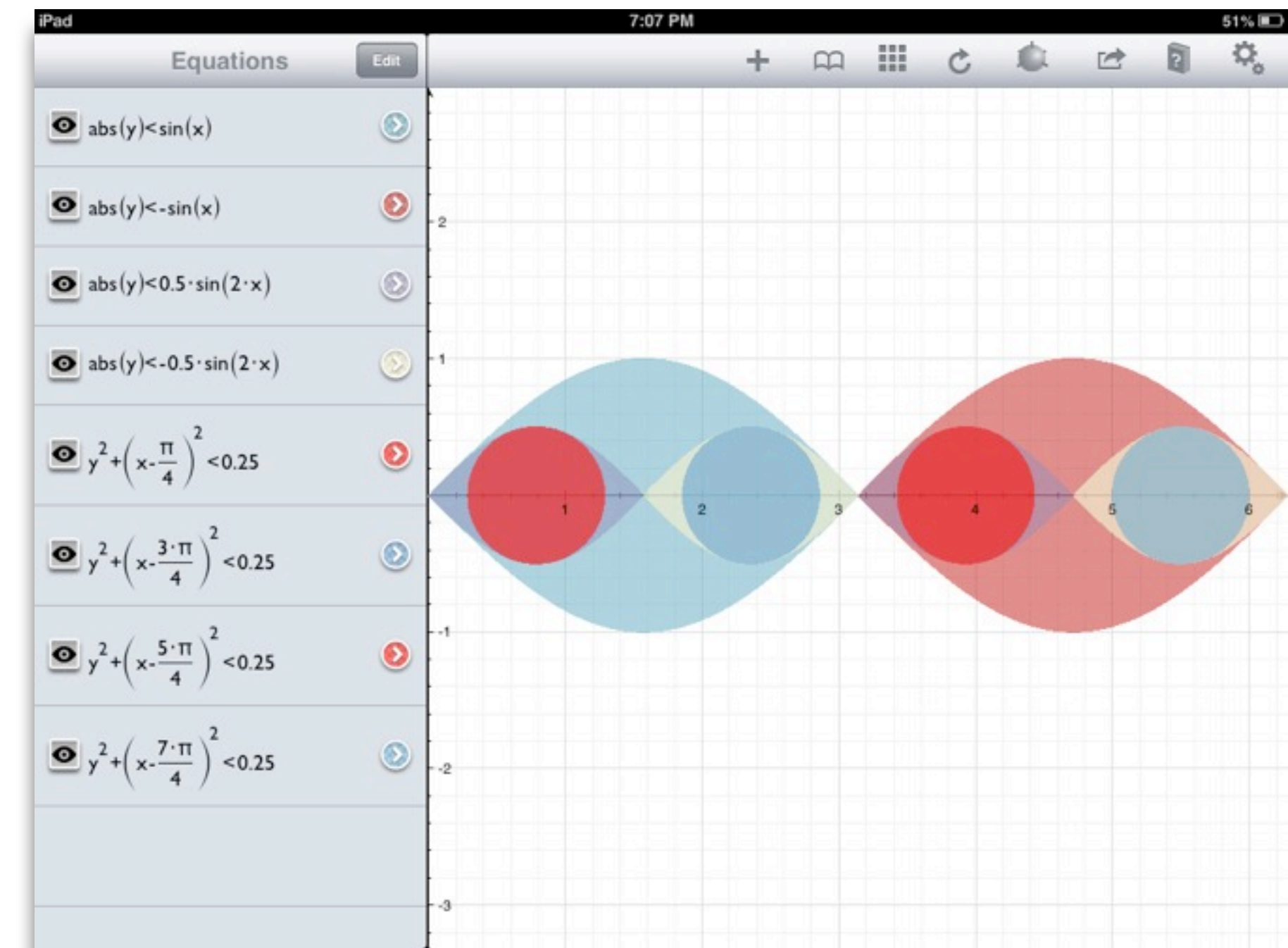
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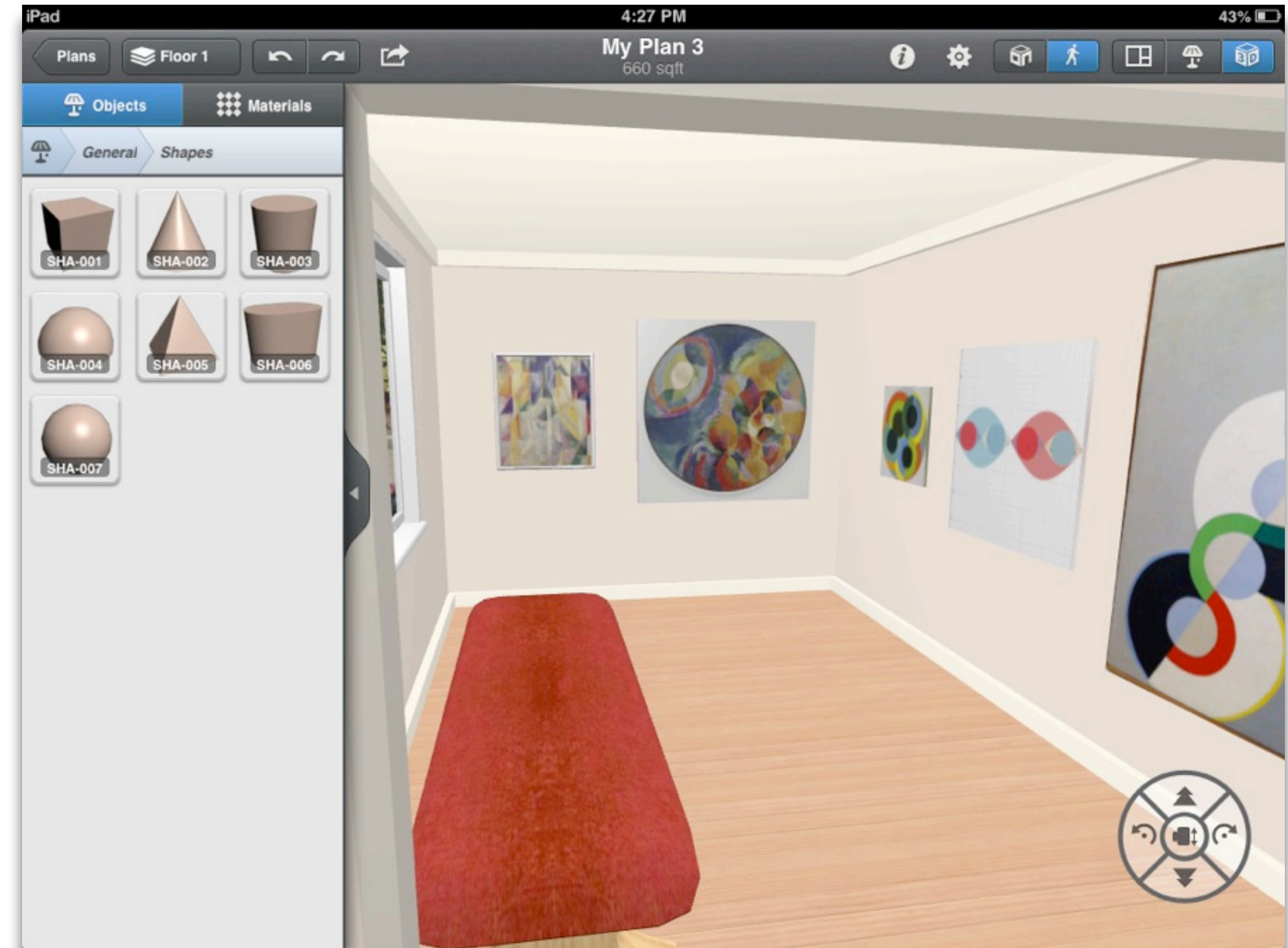
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## Formal Definition of **Game** (Salen & Zimmerman)

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“A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.”



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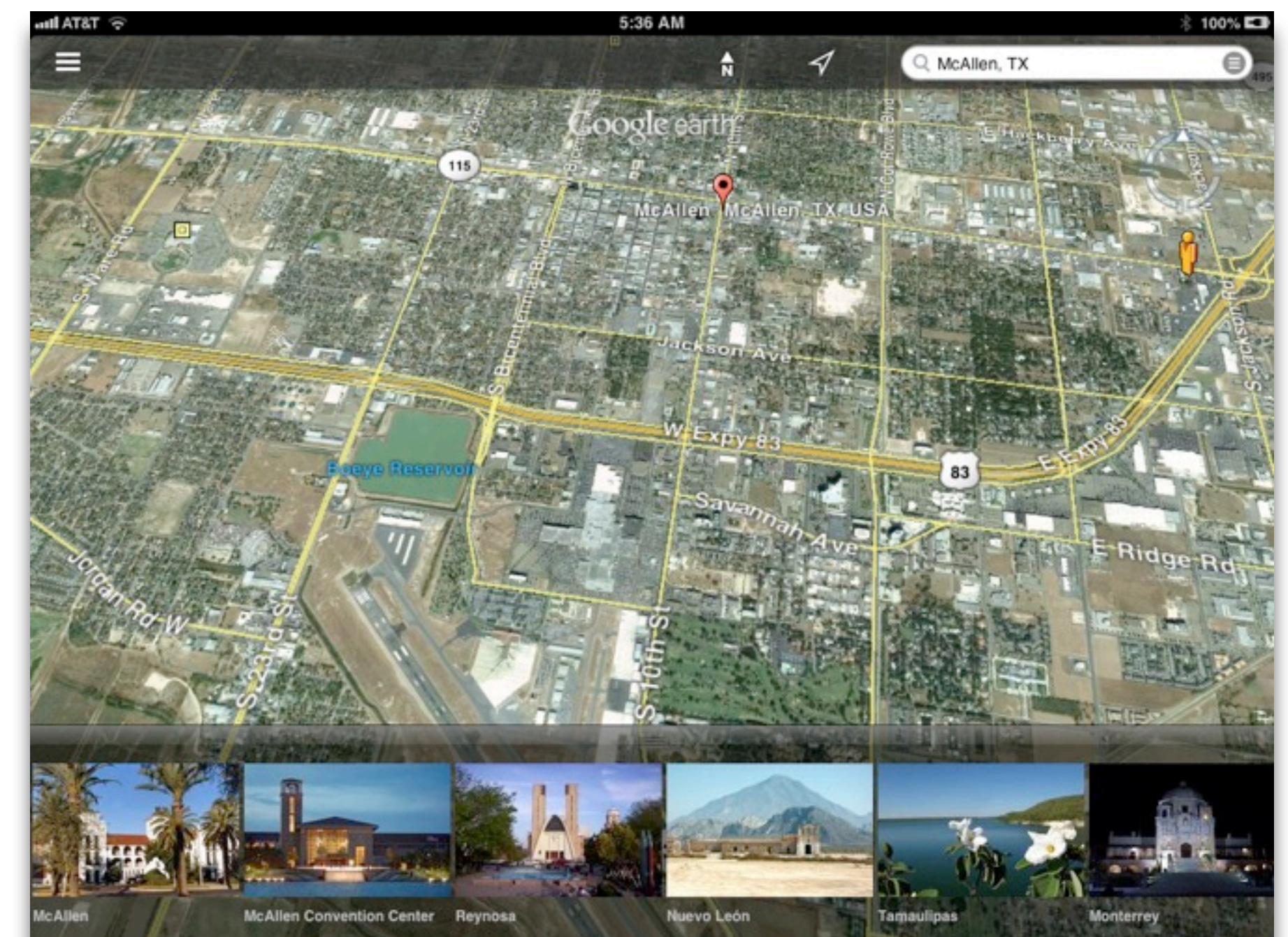
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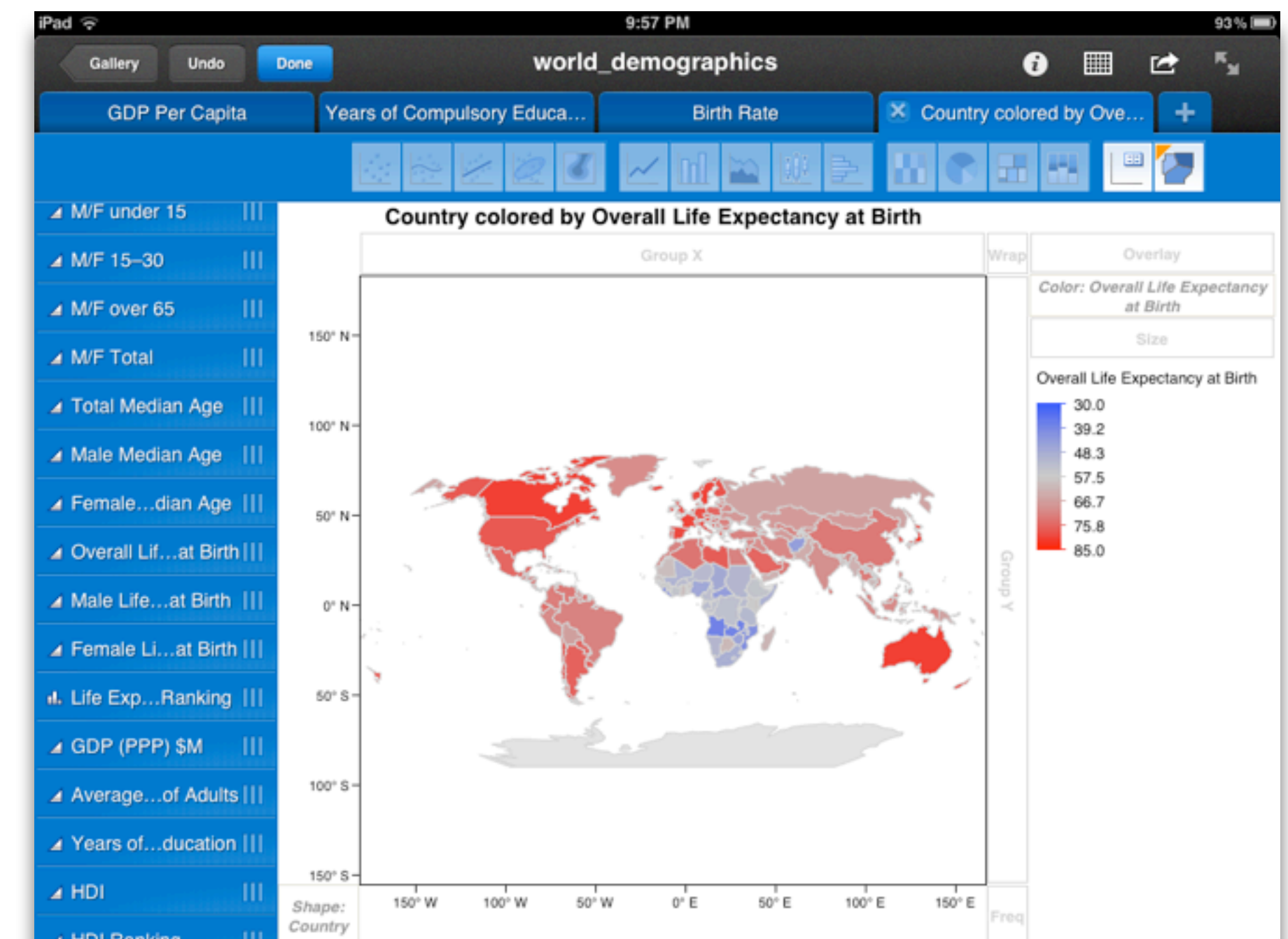
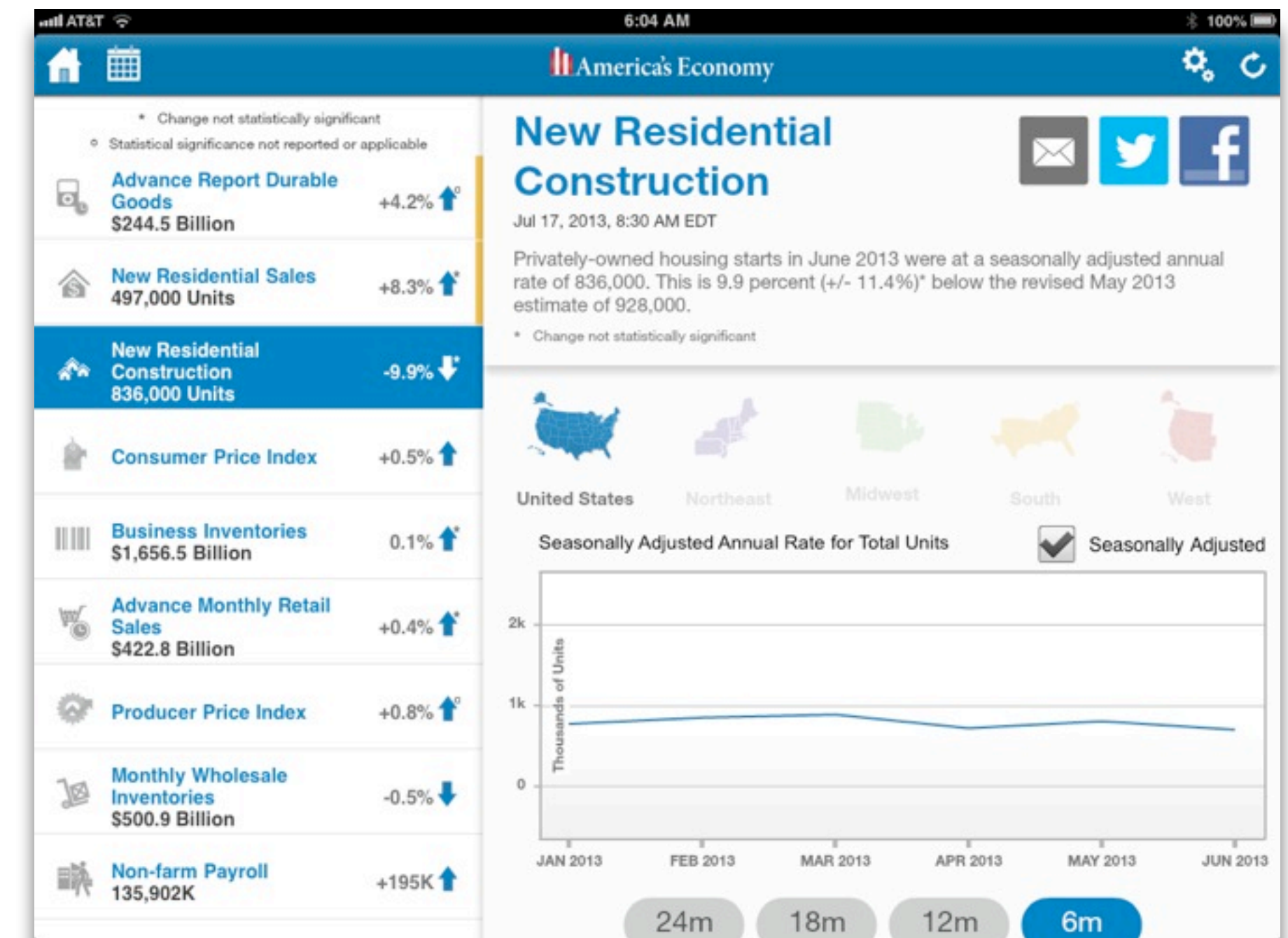
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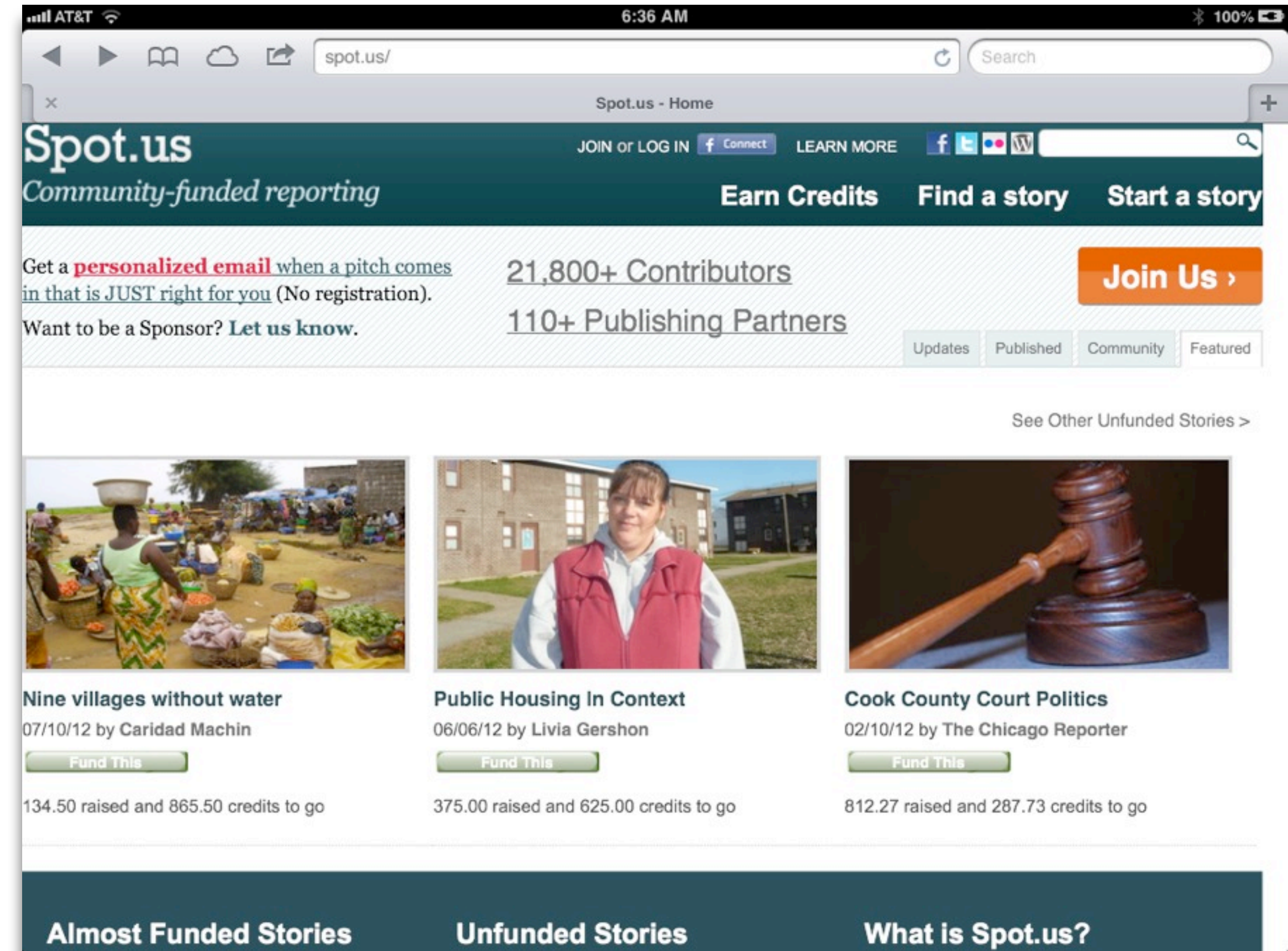
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# Resources

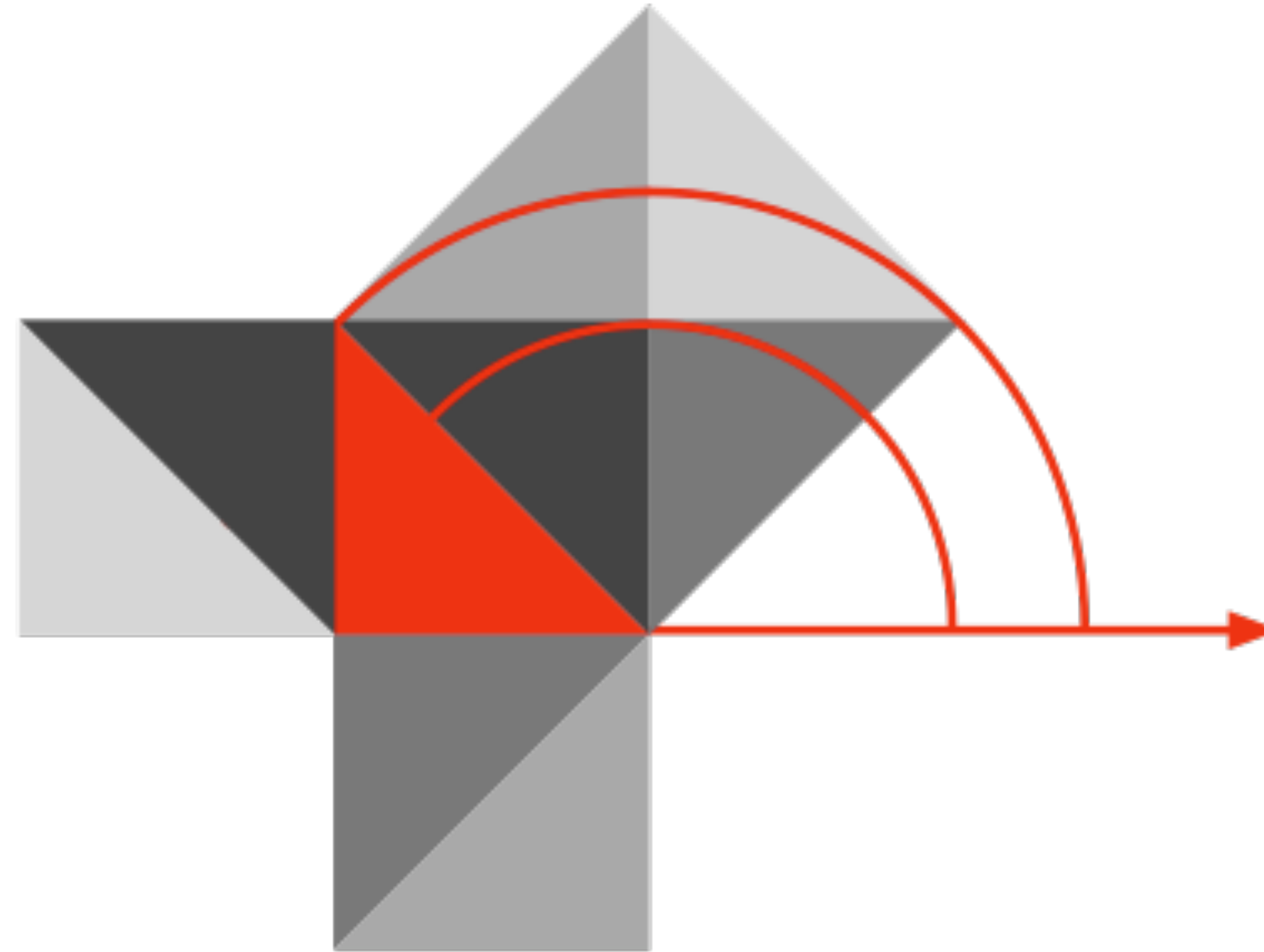
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- Ruben R. Puentedura, *Transformation, Technology, and Education*. (2006) Online at:  
<http://hippasus.com/resources/tte/>
- Ruben R. Puentedura, *As We May Teach: Educational Technology, From Theory Into Practice*. (2009) Online at:  
<http://tinyurl.com/aswemayteach>
- Ruben R. Puentedura, “Technology In Education: The First 200,000 Years” *The NMC Perspective Series: Ideas that Matter*. NMC Summer Conference. (2012)  
Online at:  
<http://www.youtube.com/watch?v=NemBarqD6qA>



# Hippasus

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