

SAMR, the EdTech Quintet and 21C Learning

Ruben R. Puentedura, Ph.D.

Goals

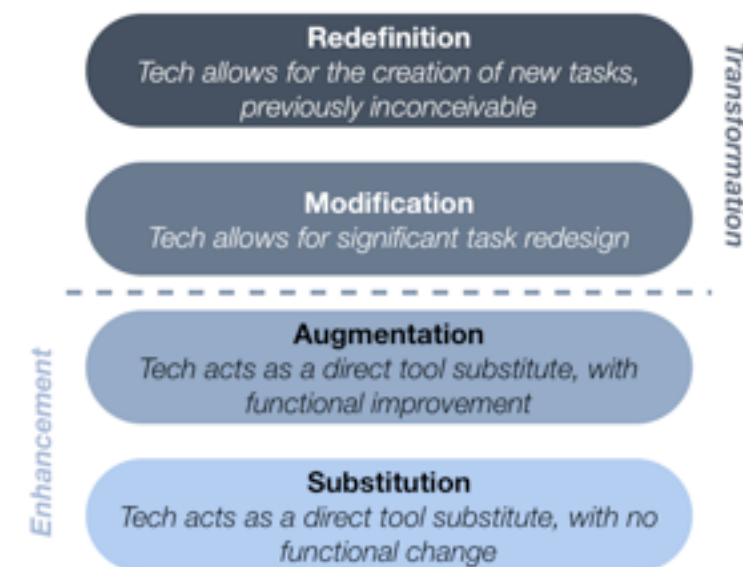
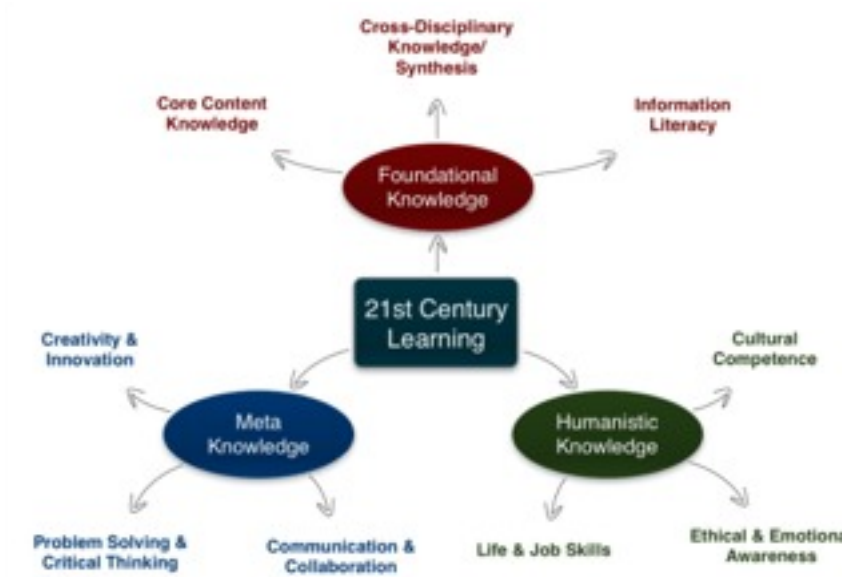
Focus

Models

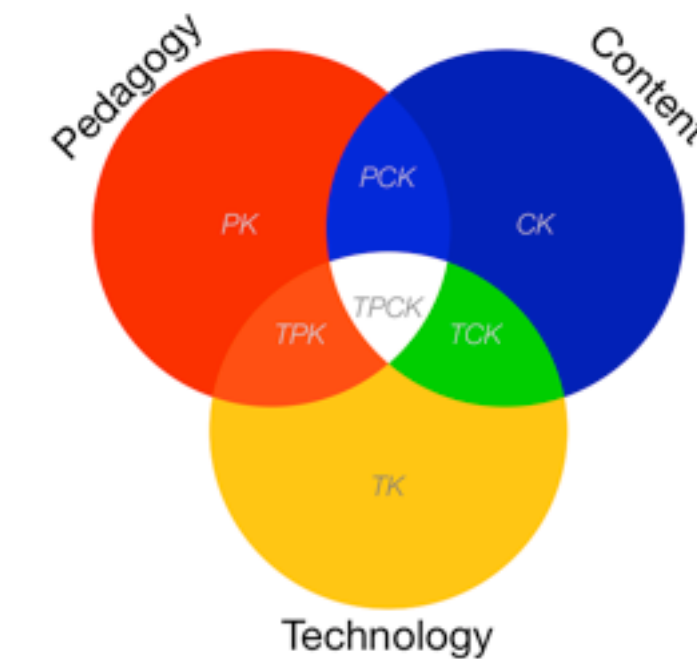
Technology



Augmenting Human Intellect & Learning Capacity



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



One-to-One Technologies

Transformation

Redefinition

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

Modification

Tech allows for significant task redesign






Augmentation

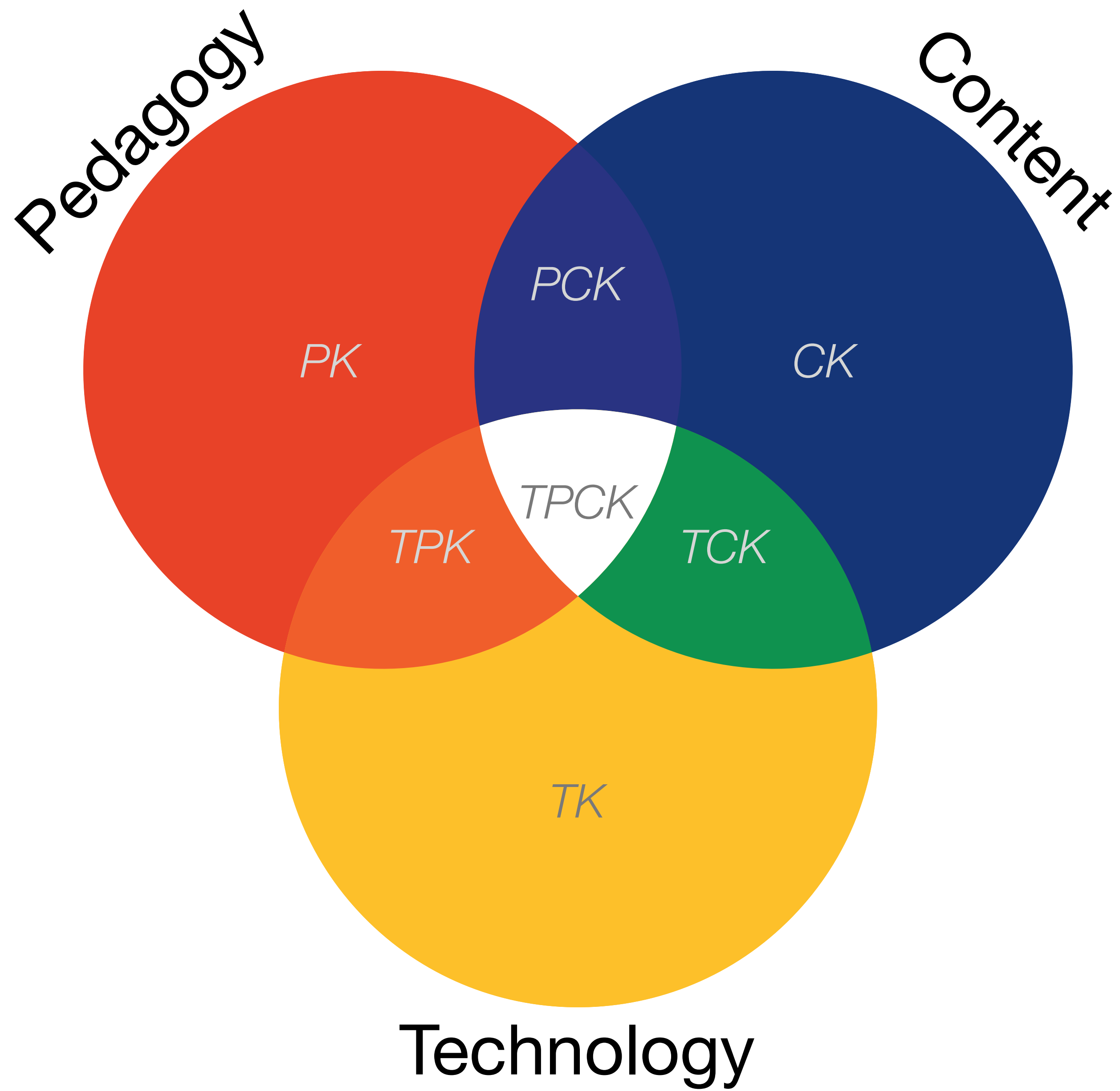
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functional improvement*

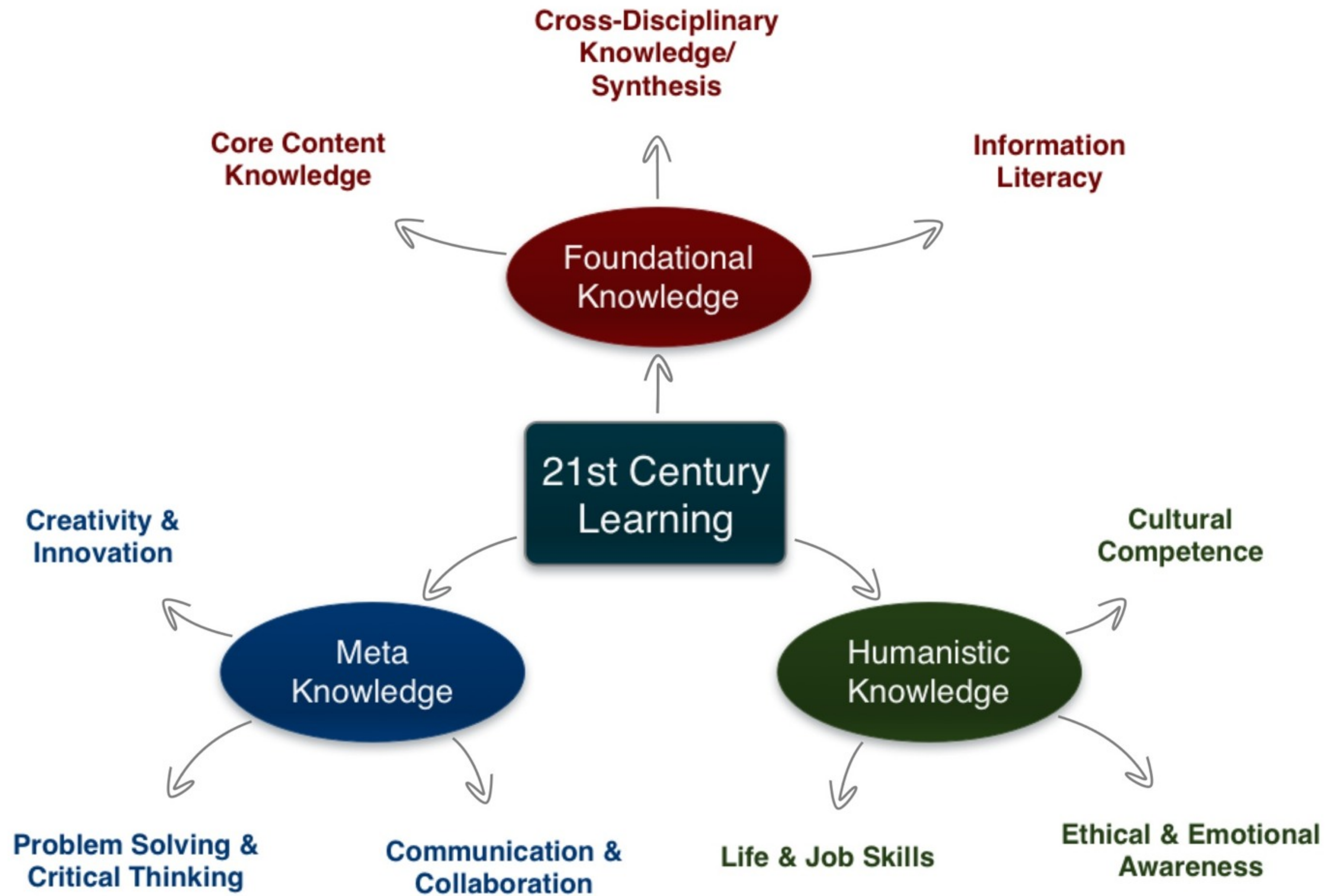
Substitution

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Enhancement

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Bookmarks



RSS Feeds

Discussions



Microblogging

Blogging



Wikis

Telepresence



File Sharing

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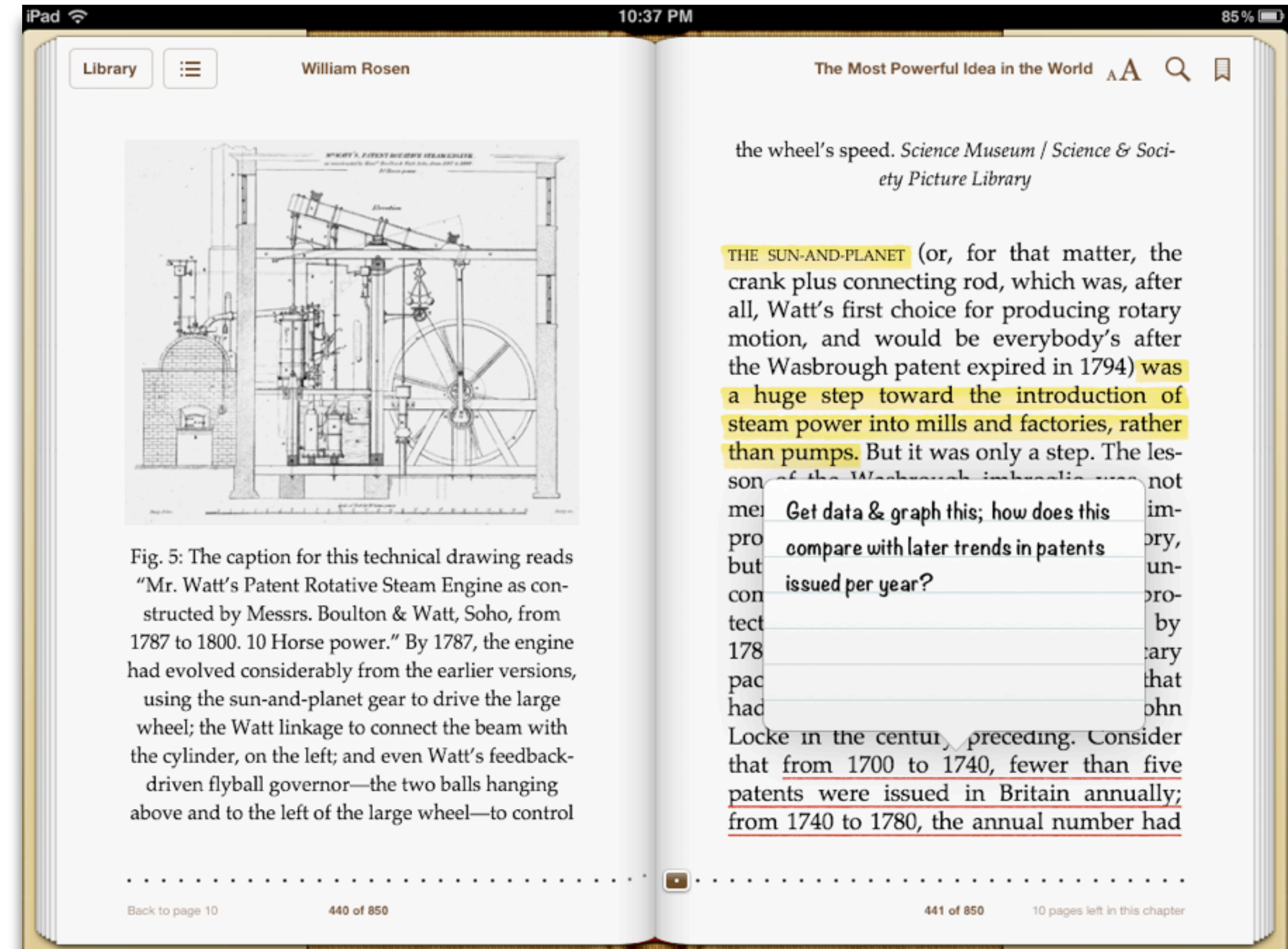
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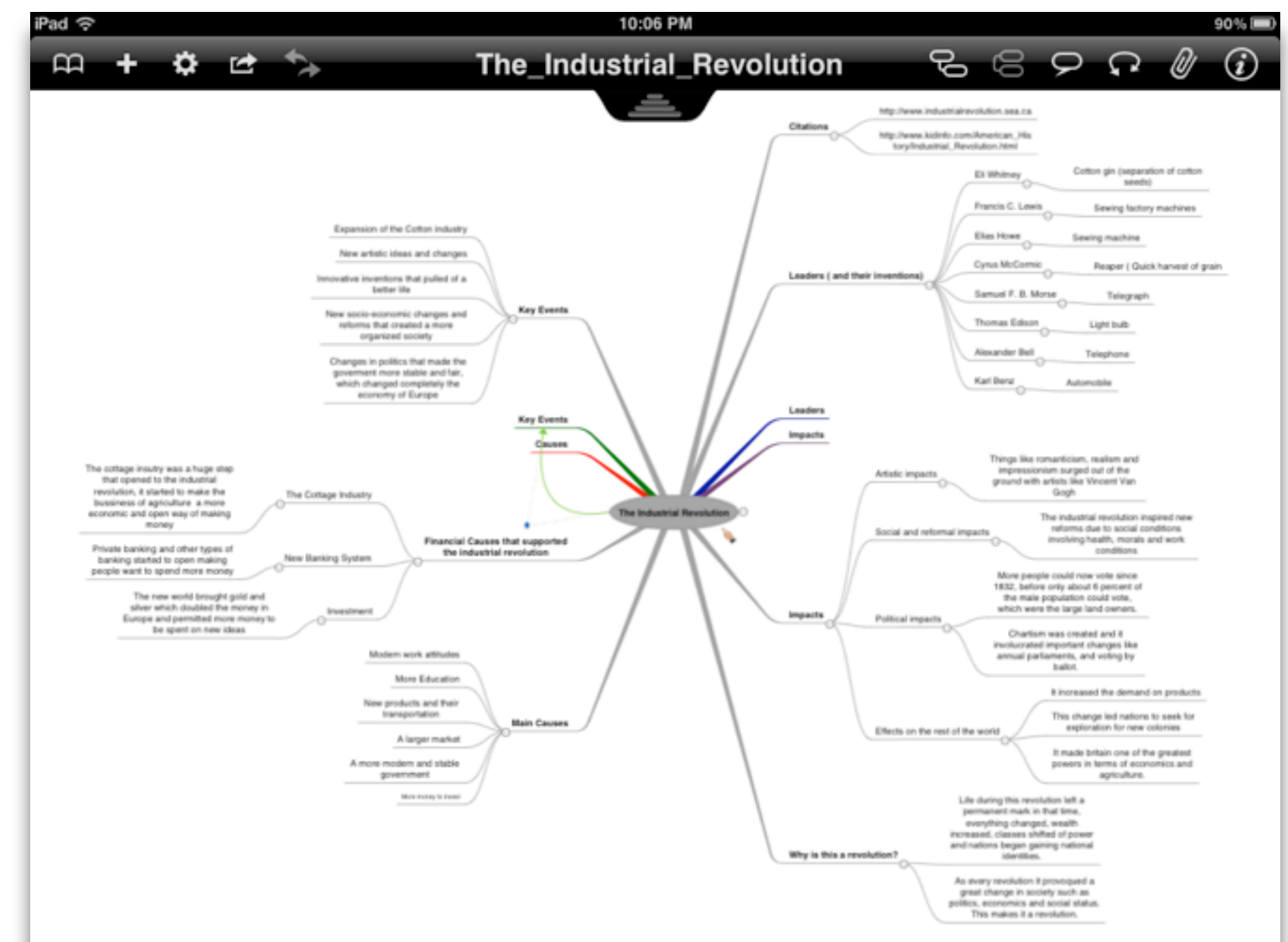
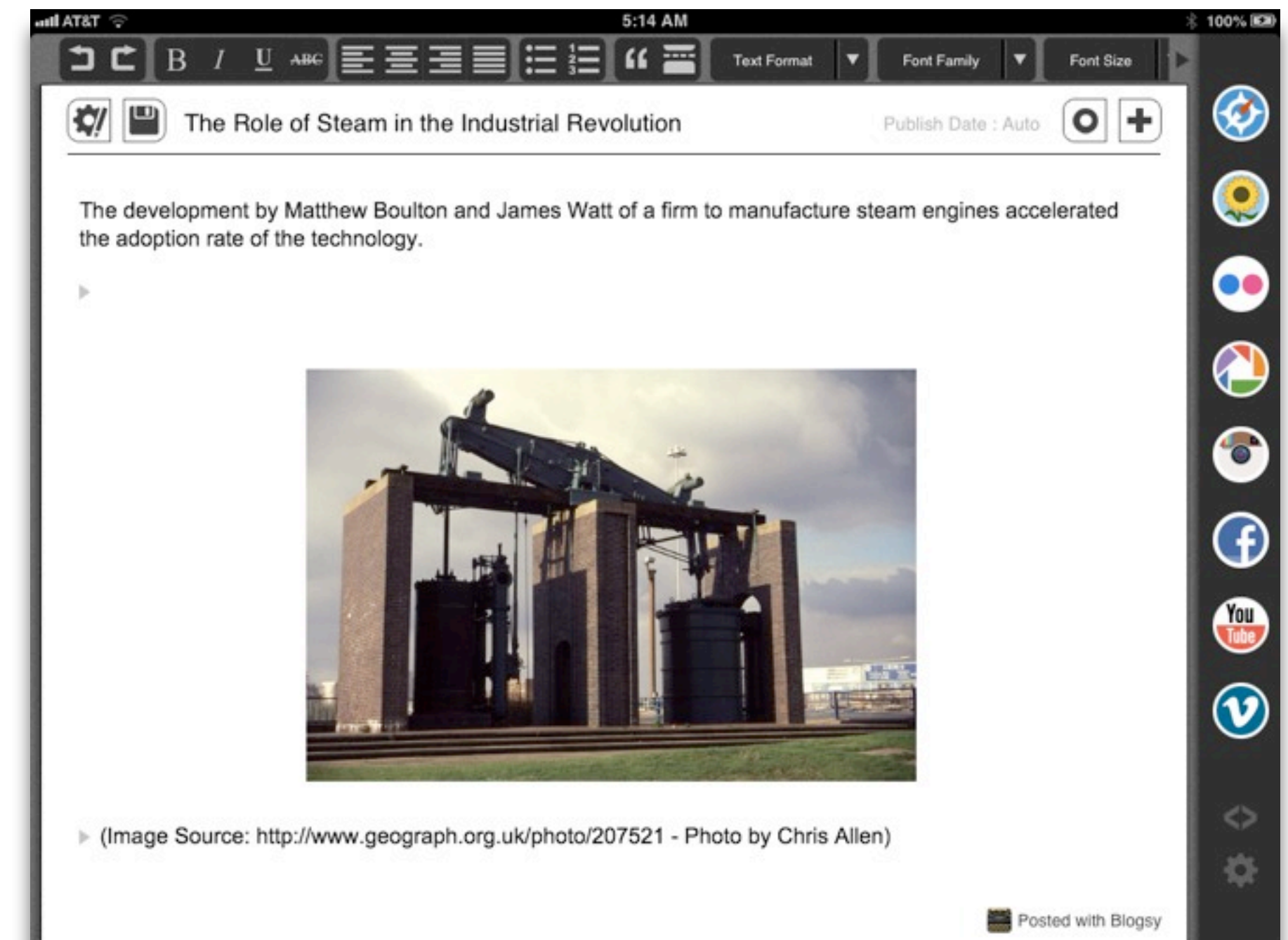
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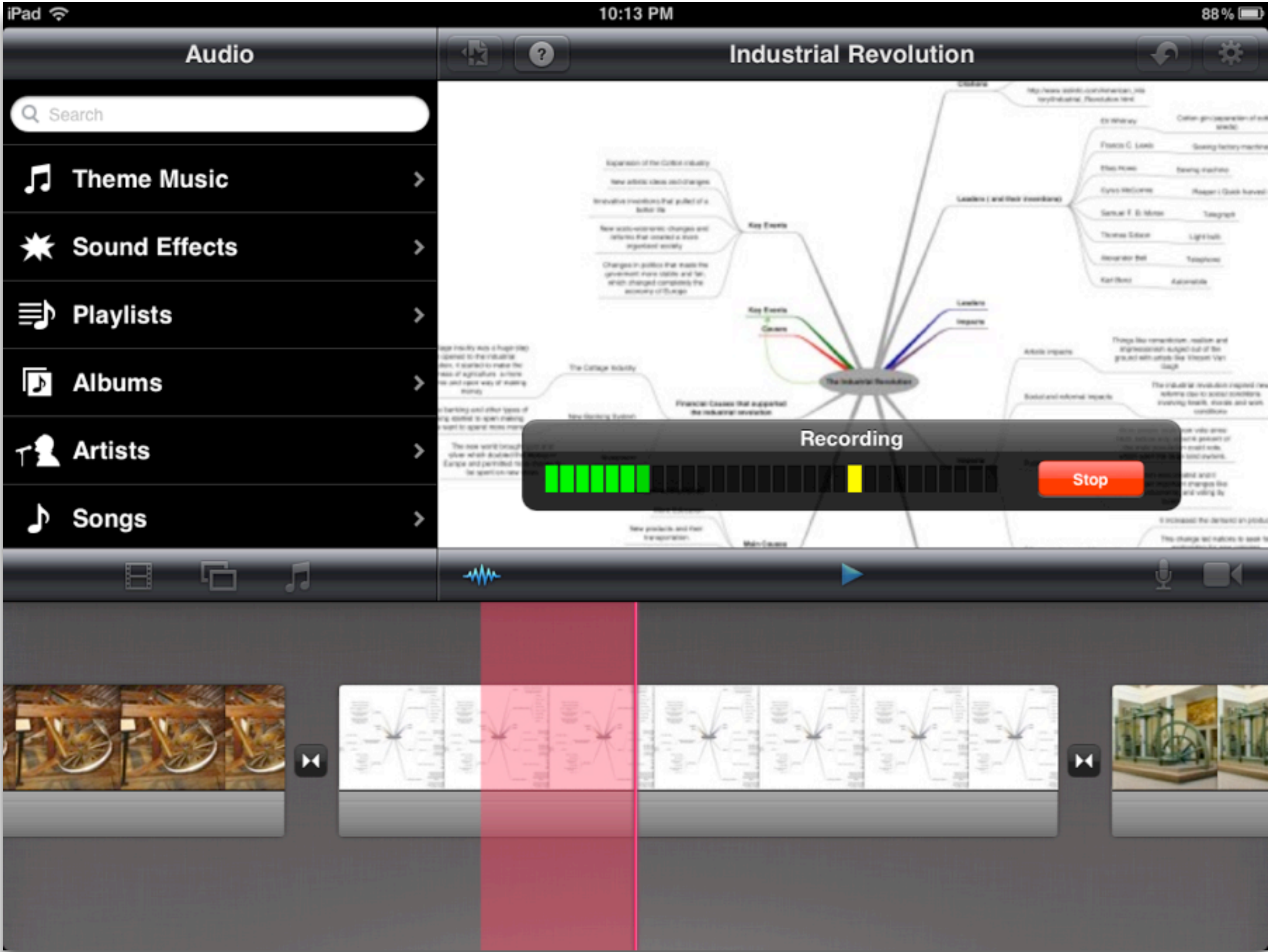
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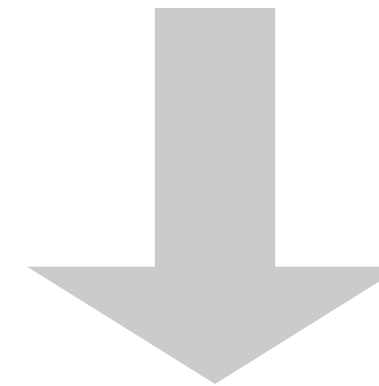
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Class

Homework



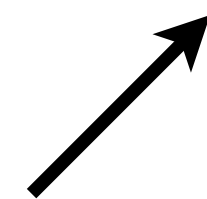
School

World

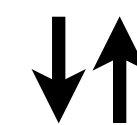
Home



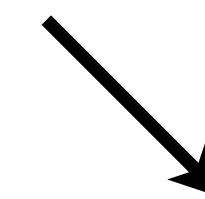
Learning Environments



Contextual Search
Augmented Reality



Cloud Resources
Mobile Tools



Sensors
Recorders

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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.

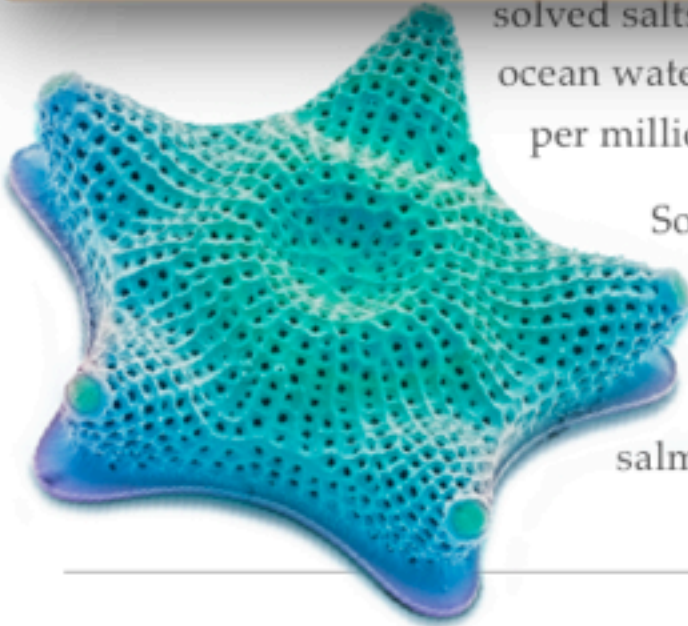
ORIGIN early 20th cent.: from BIO- 'life' + -OME

Search Web

Search Wikipedia

ns, the ability of is the food nt for arth and ous oxy- e carbon oy pro- nts. d ma- on of dis- dissolved salts (0.05 percent), whereas ocean water has about 35,000 parts per million (3.5 percent).

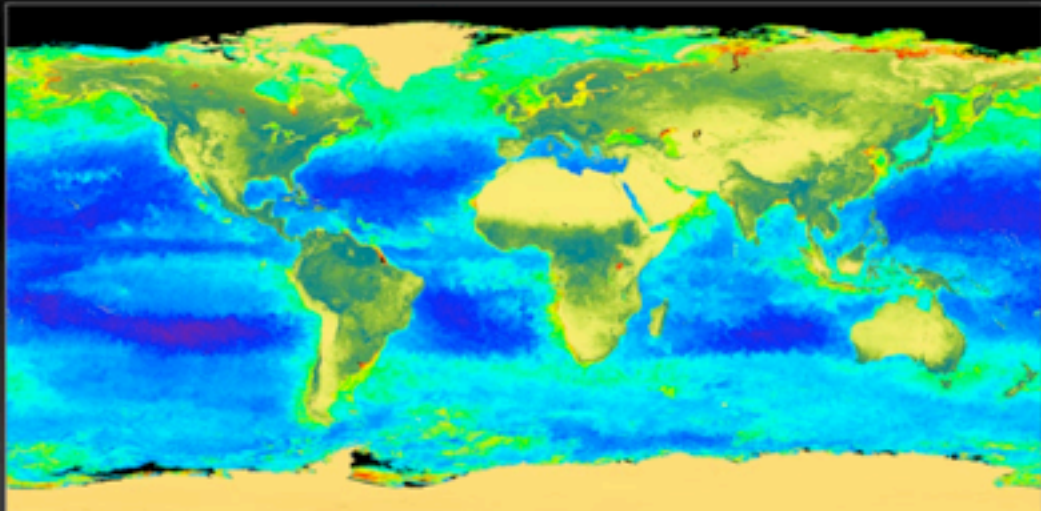
Some aquatic organisms are adapted to both conditions for parts of their lives, such as salmon and some eels, but it



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



June Dec June Dec

Interactive The latitudes of peak photosynthesis change with the seasons.

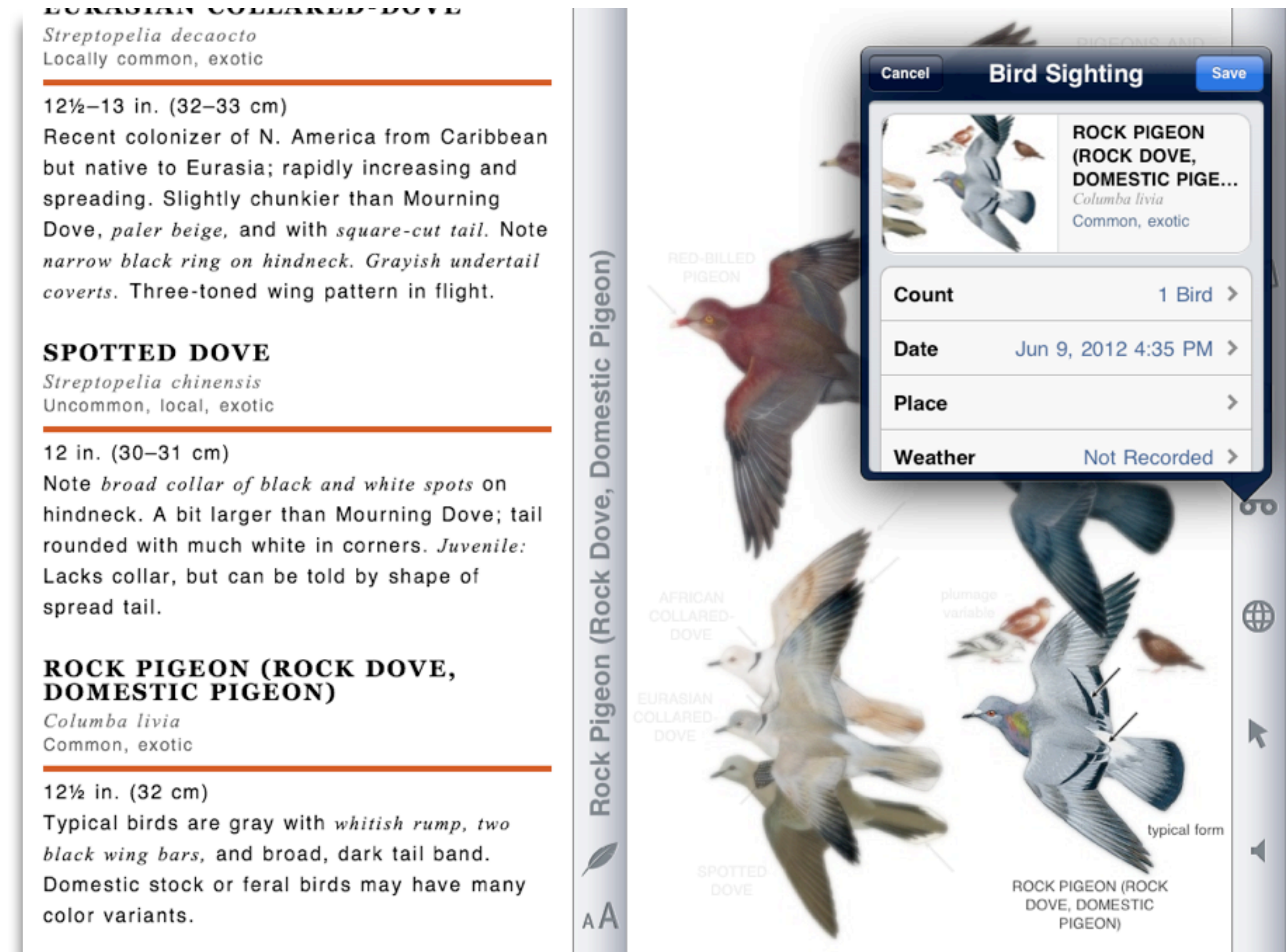
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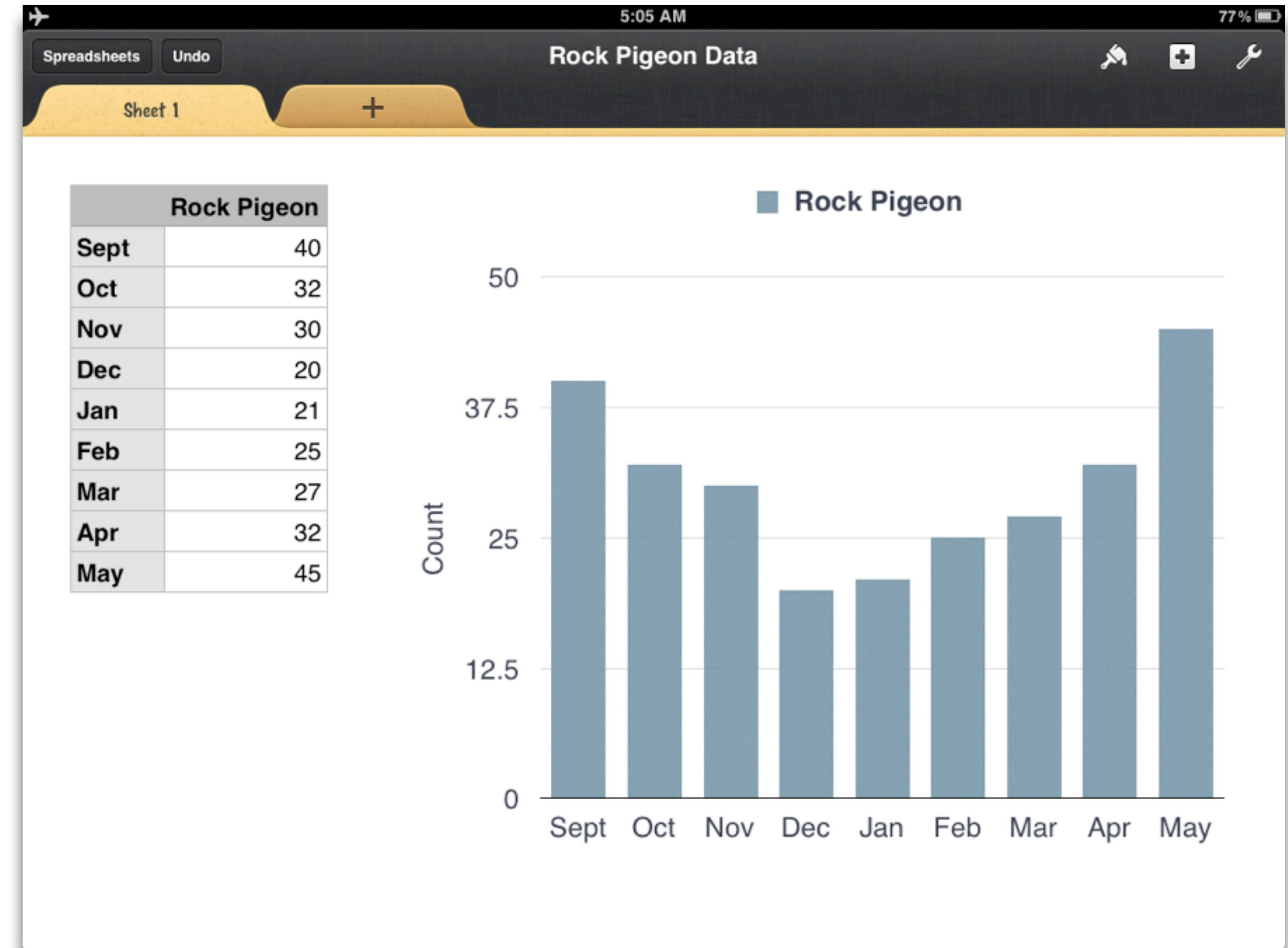
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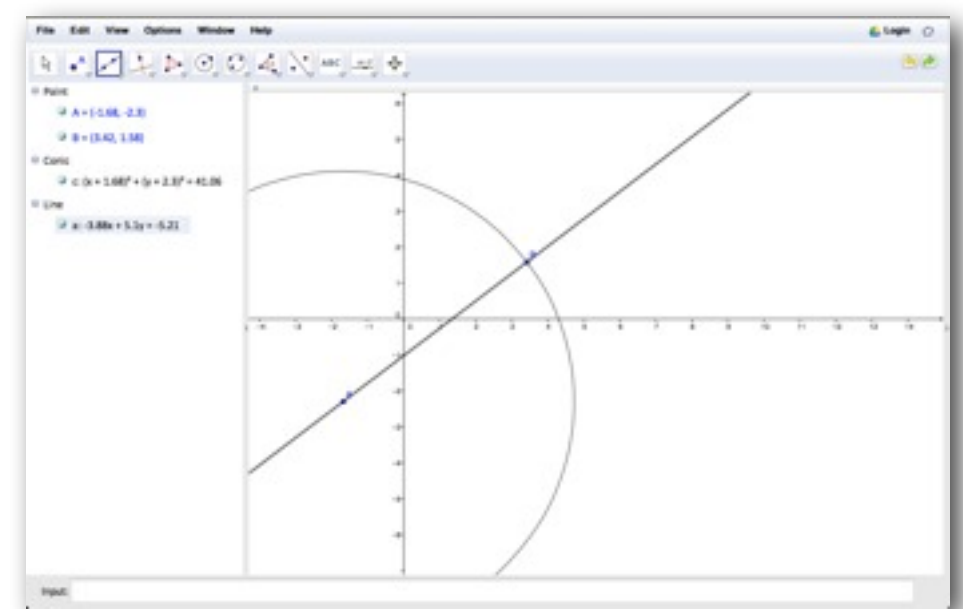
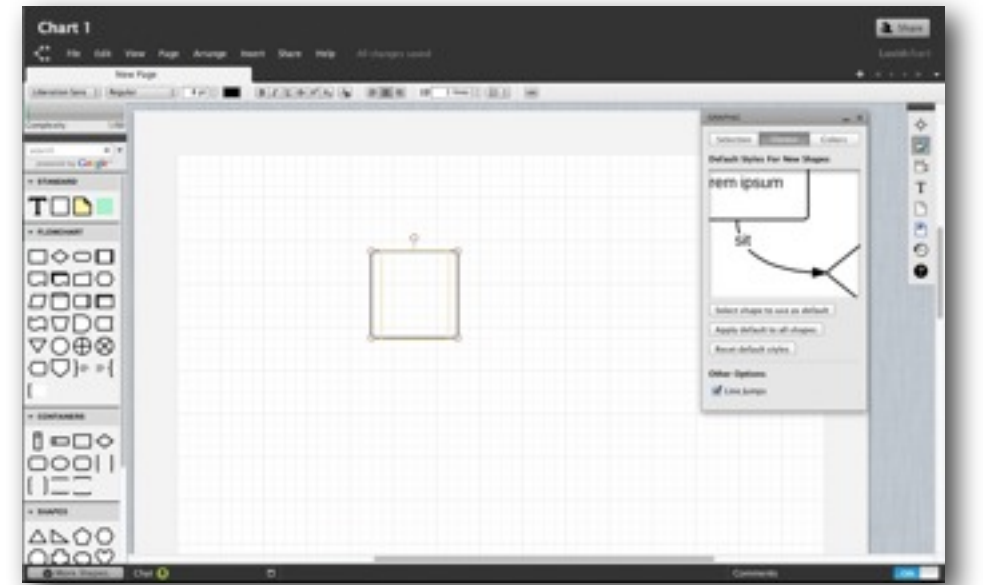
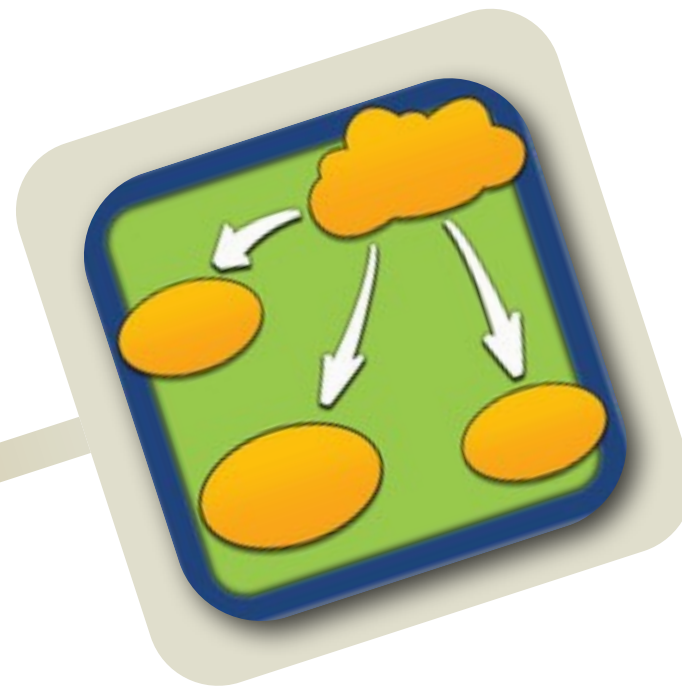
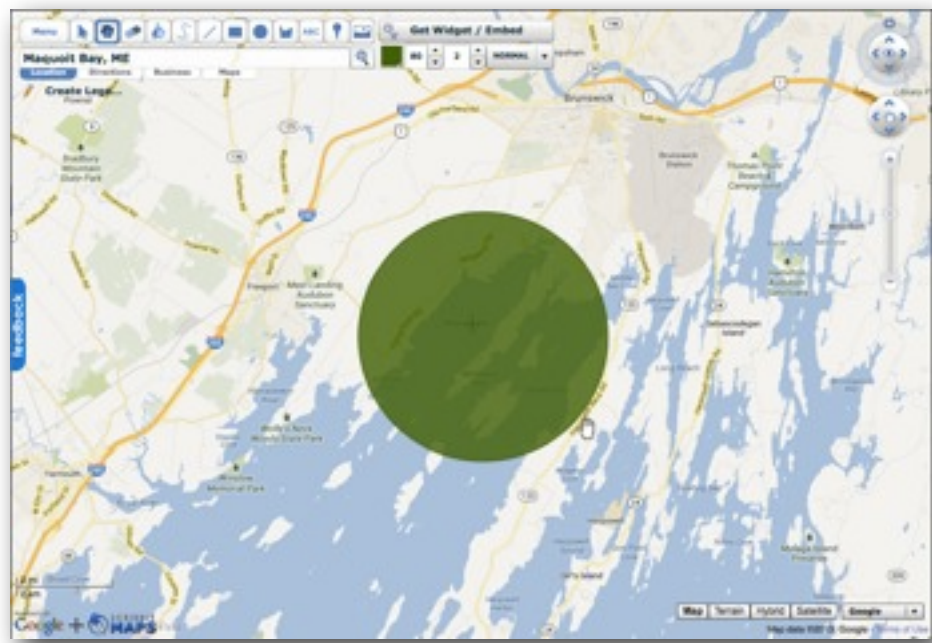
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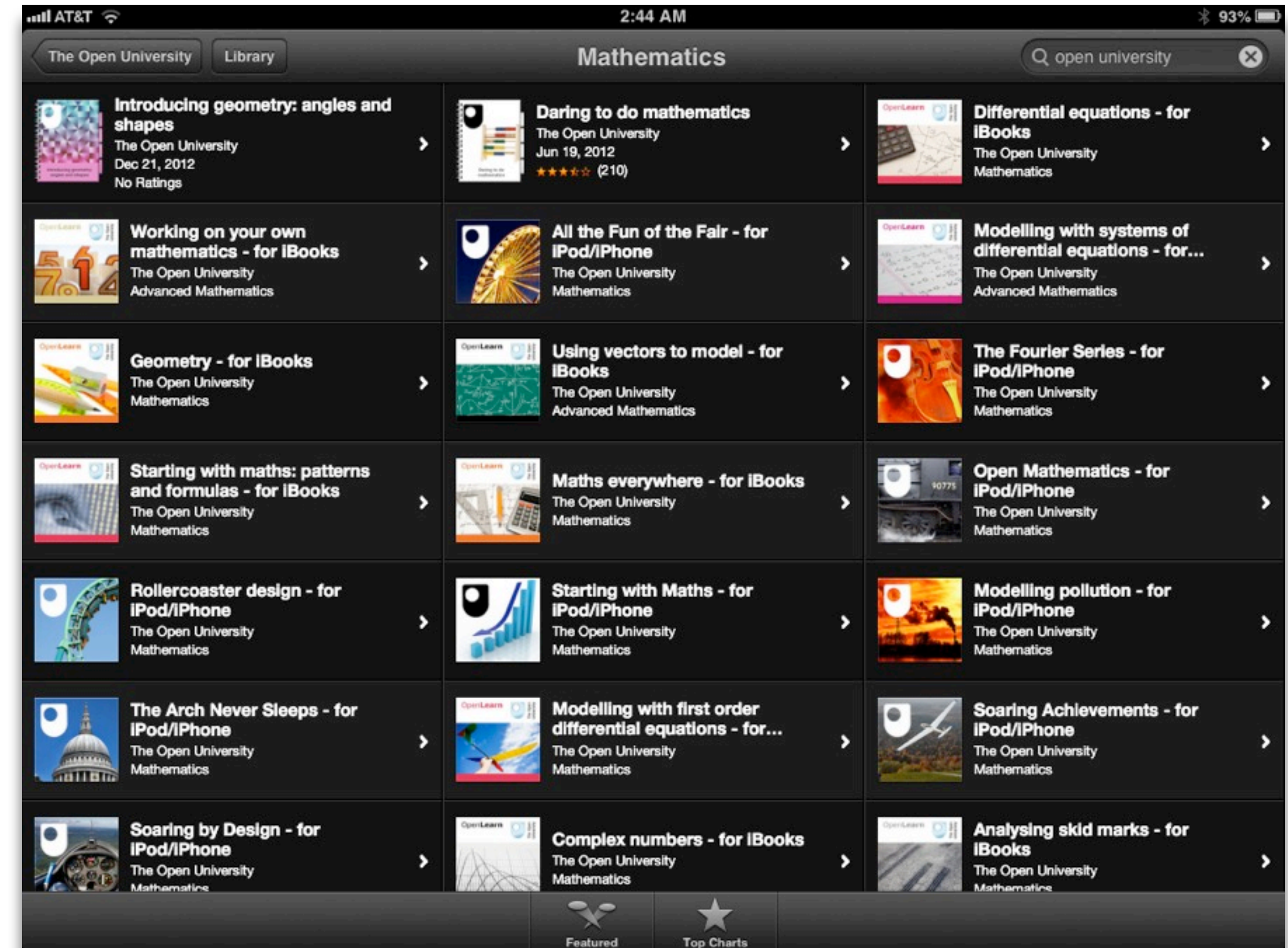
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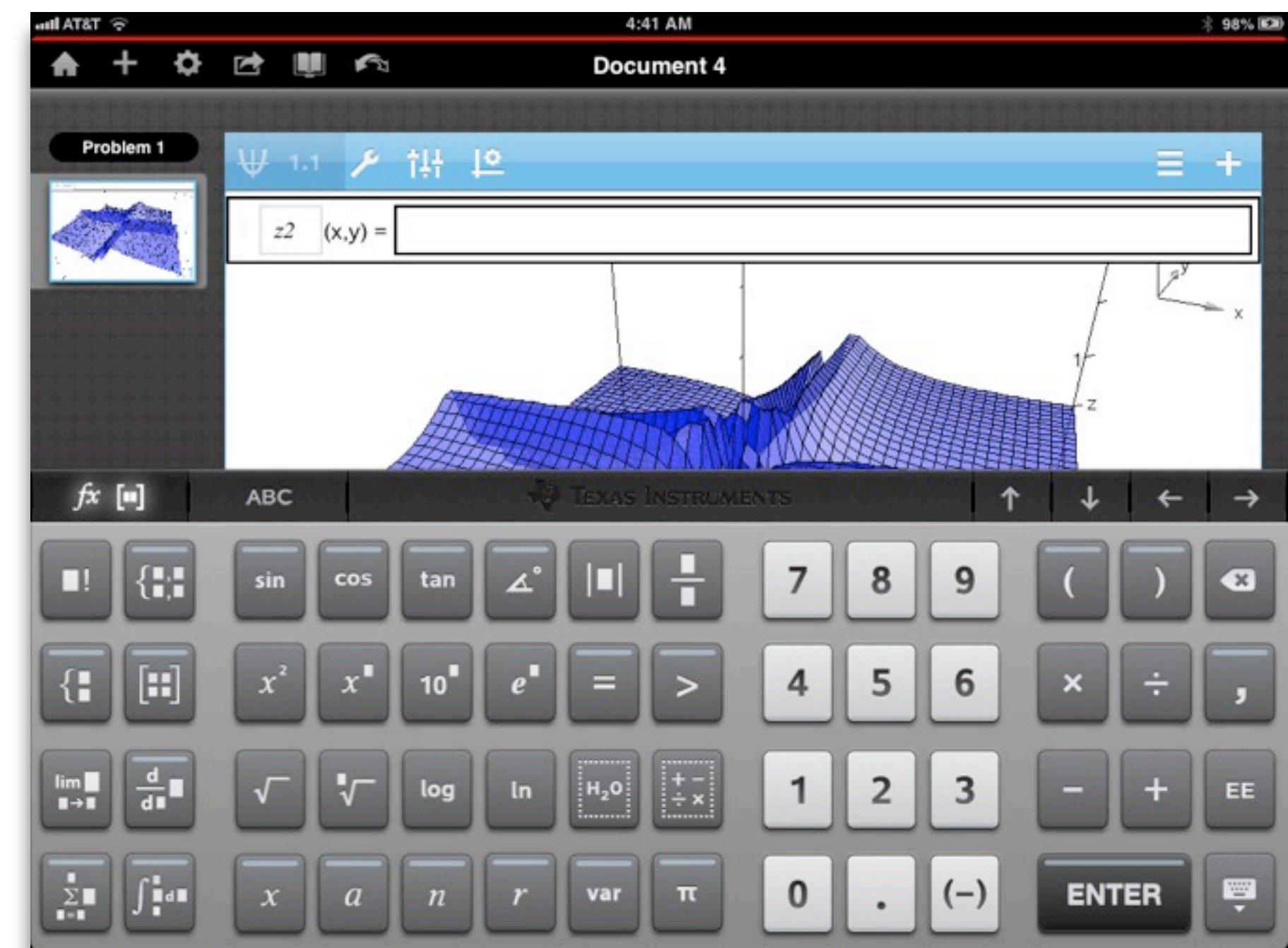
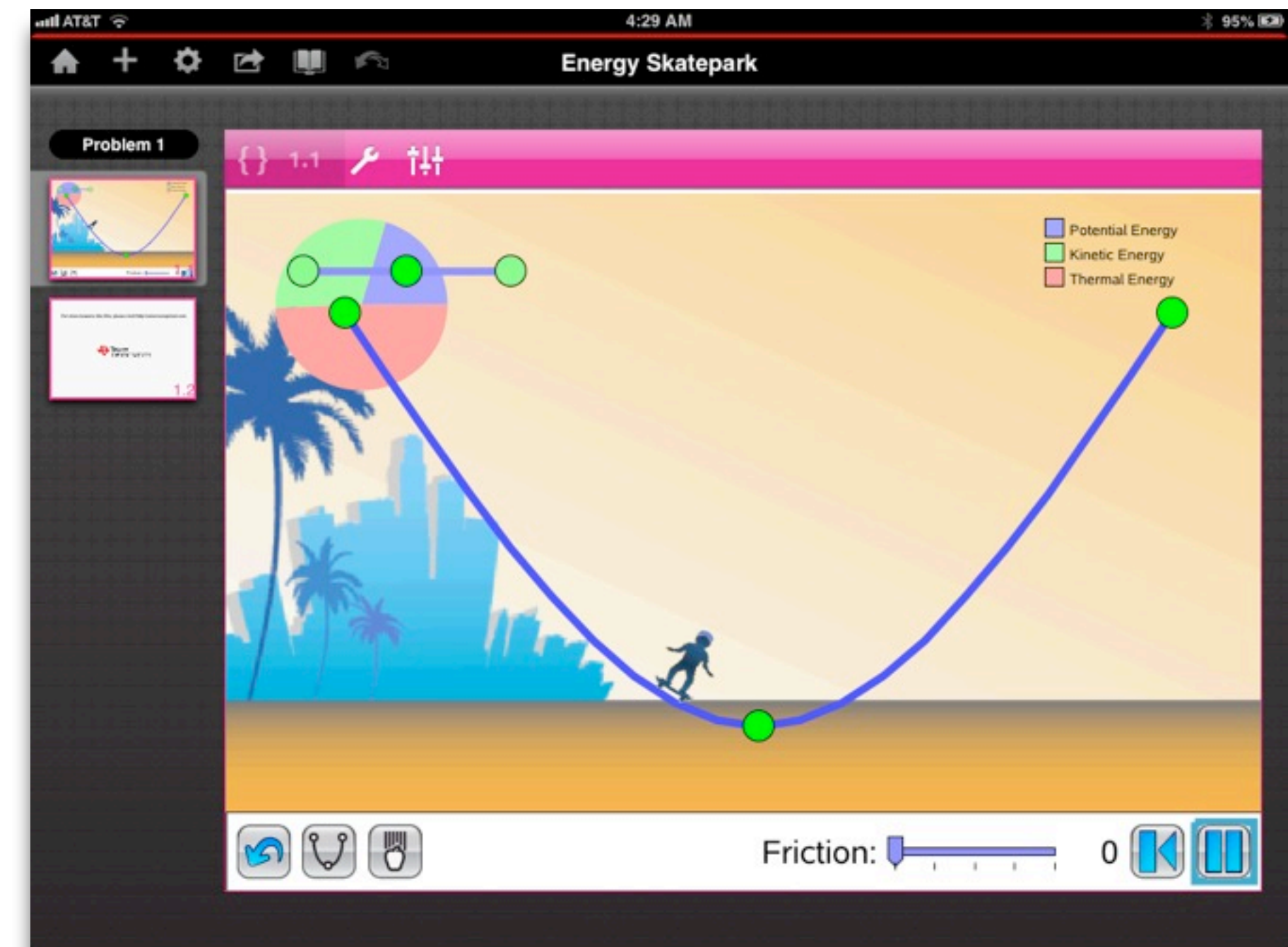
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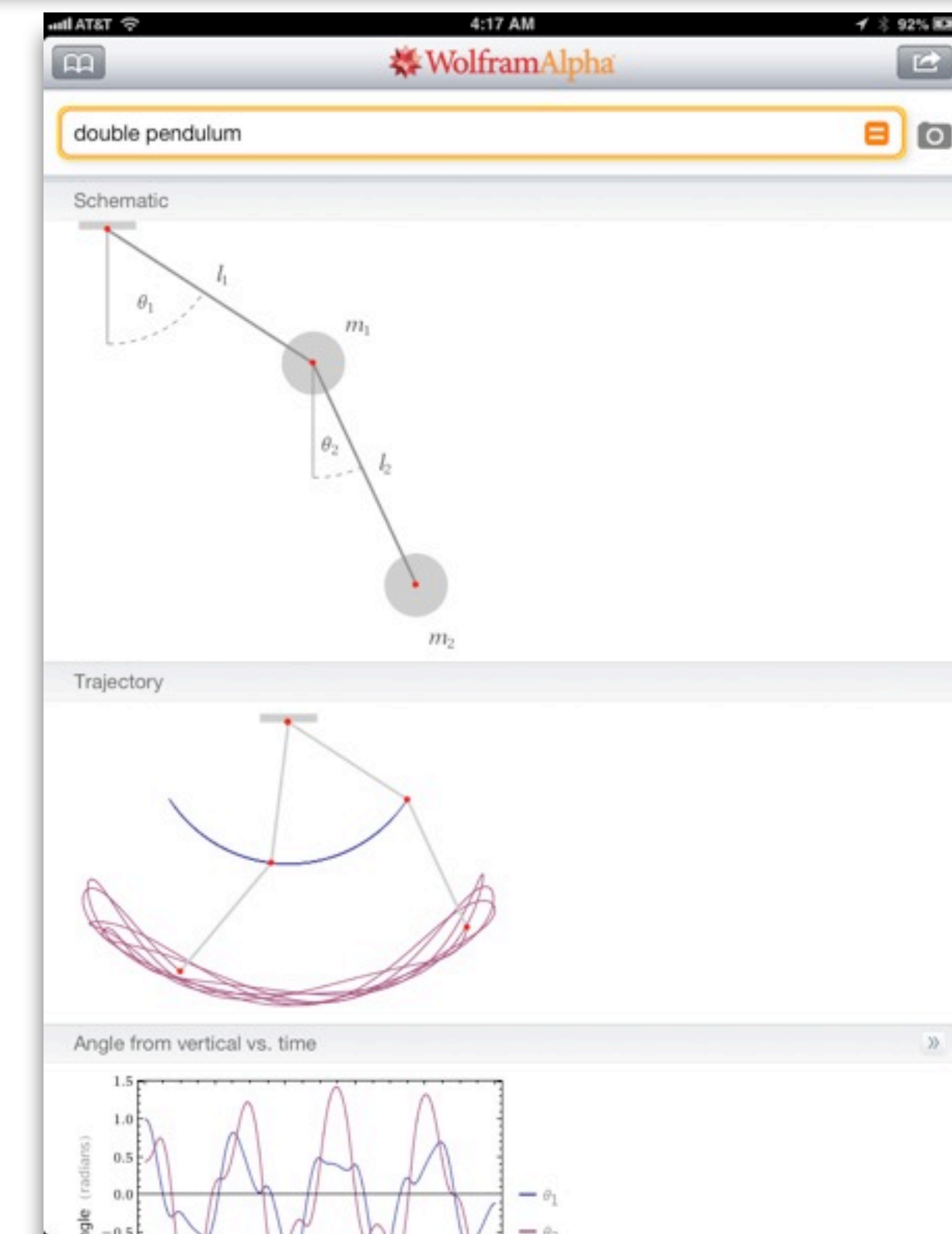
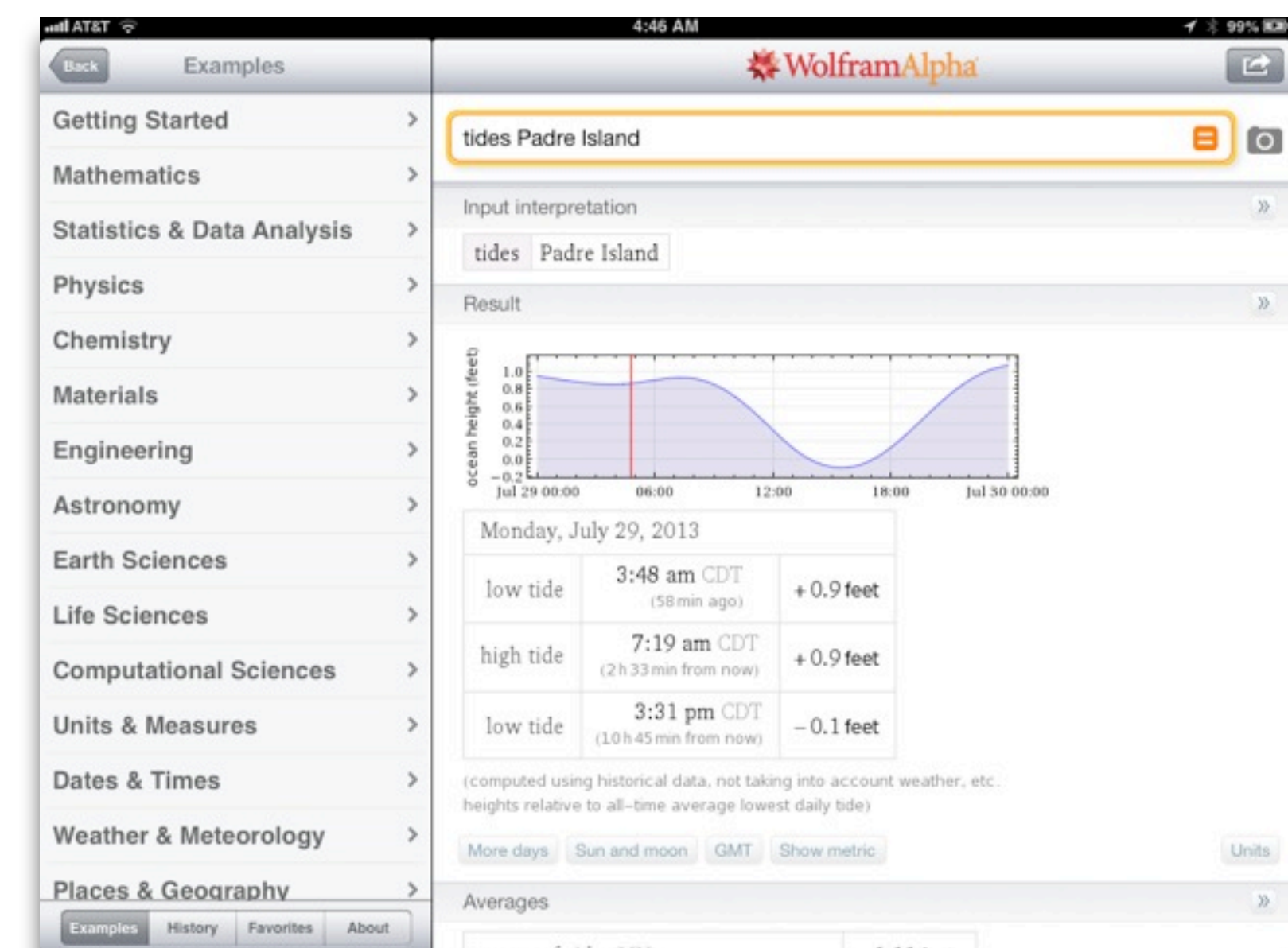
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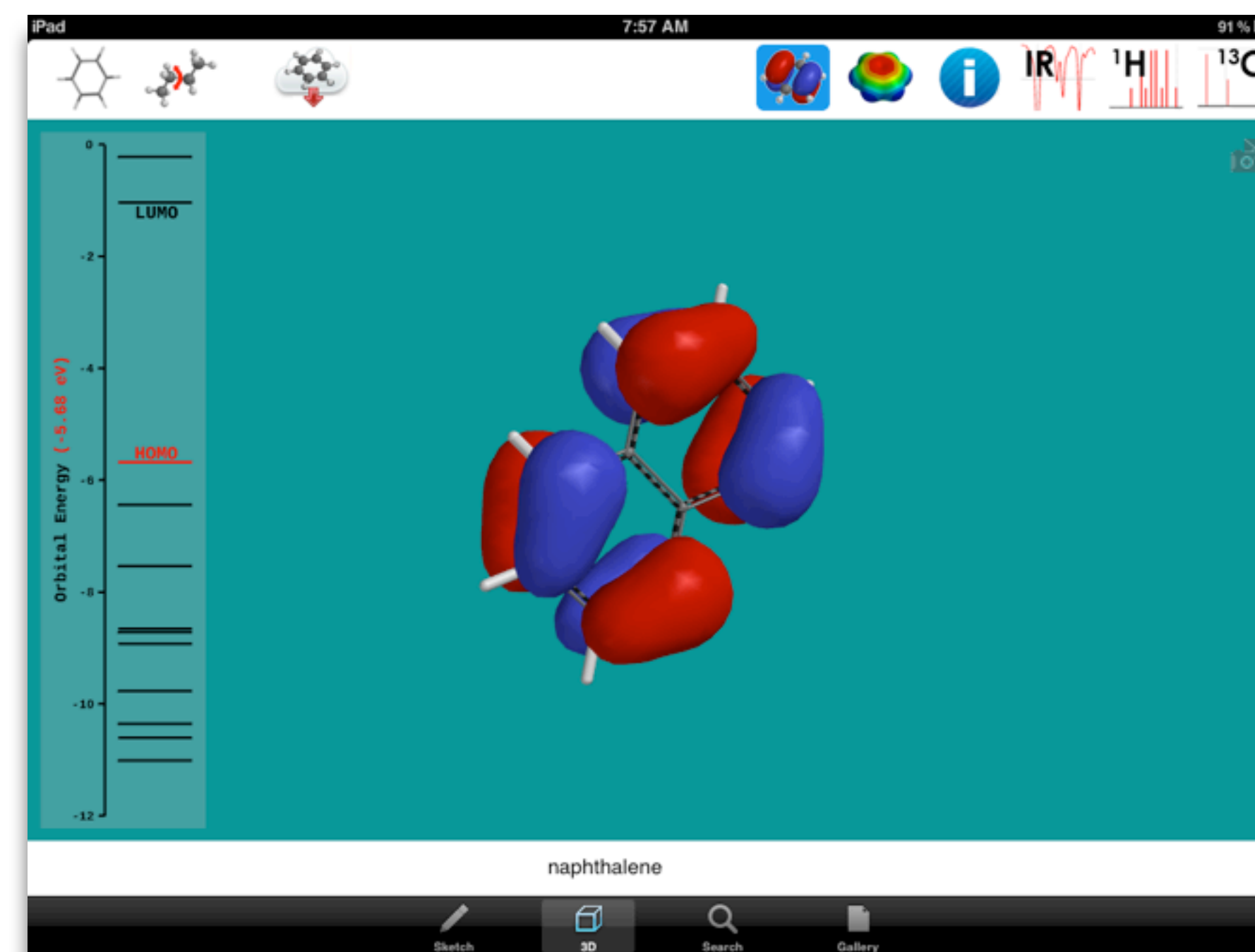
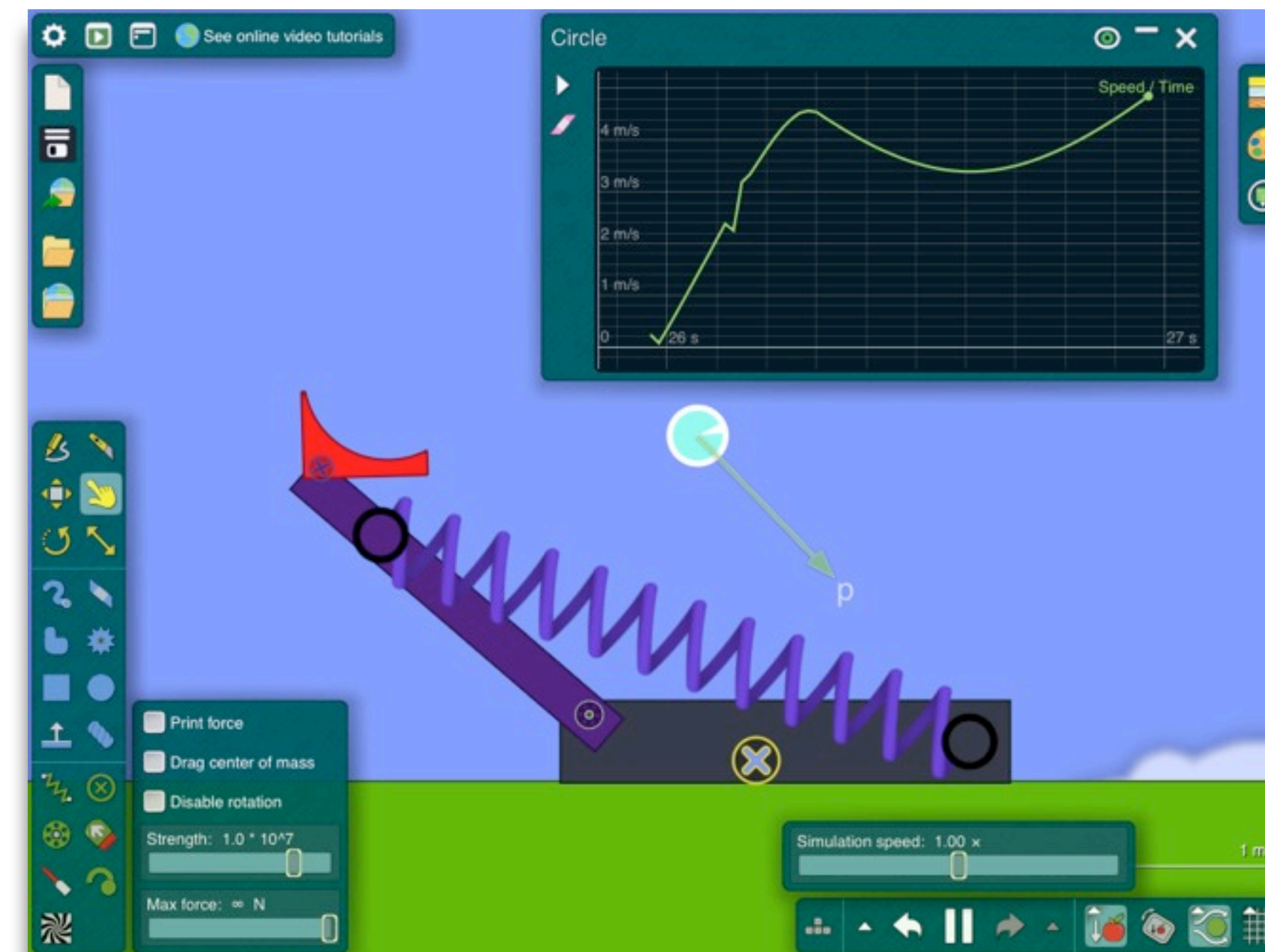
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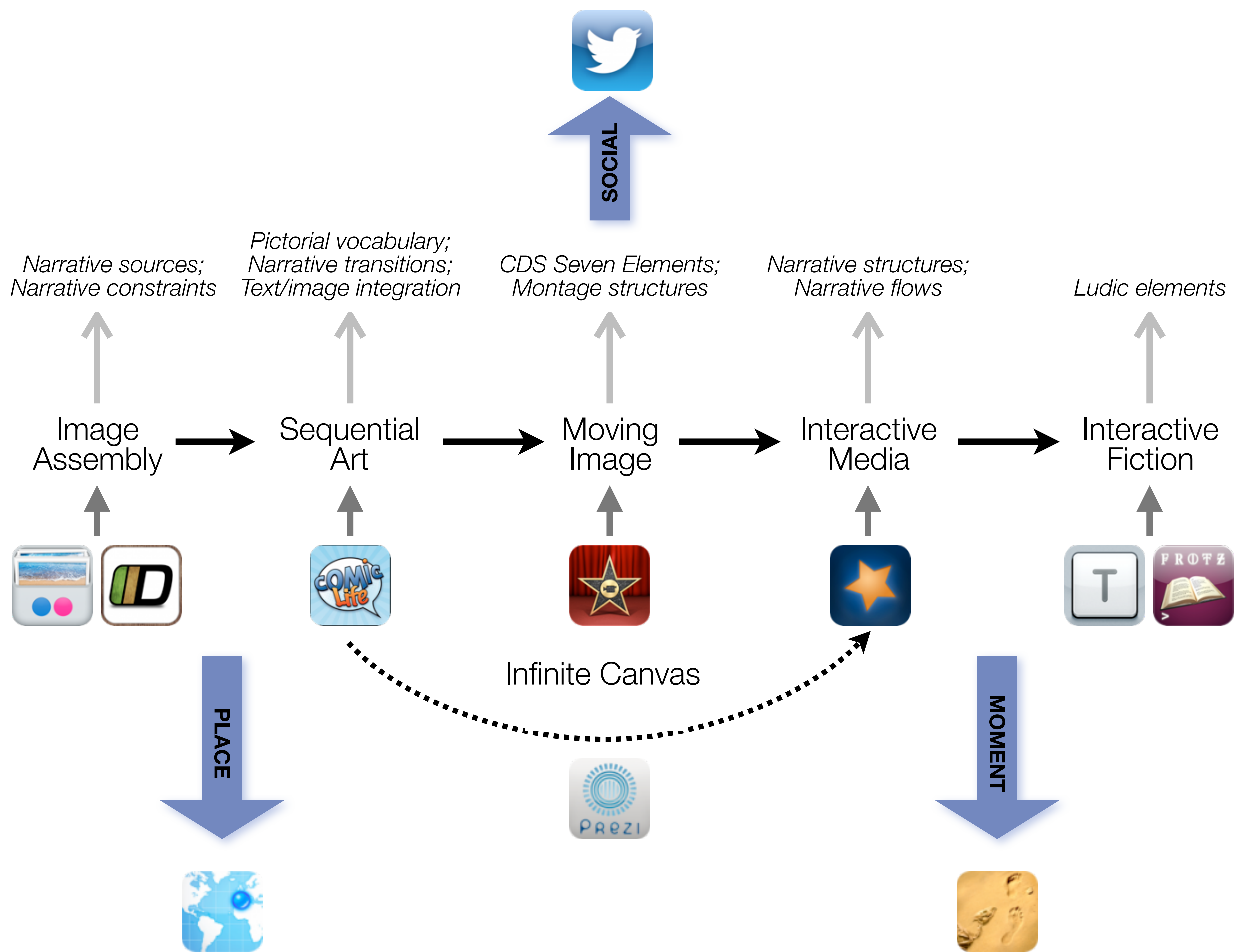
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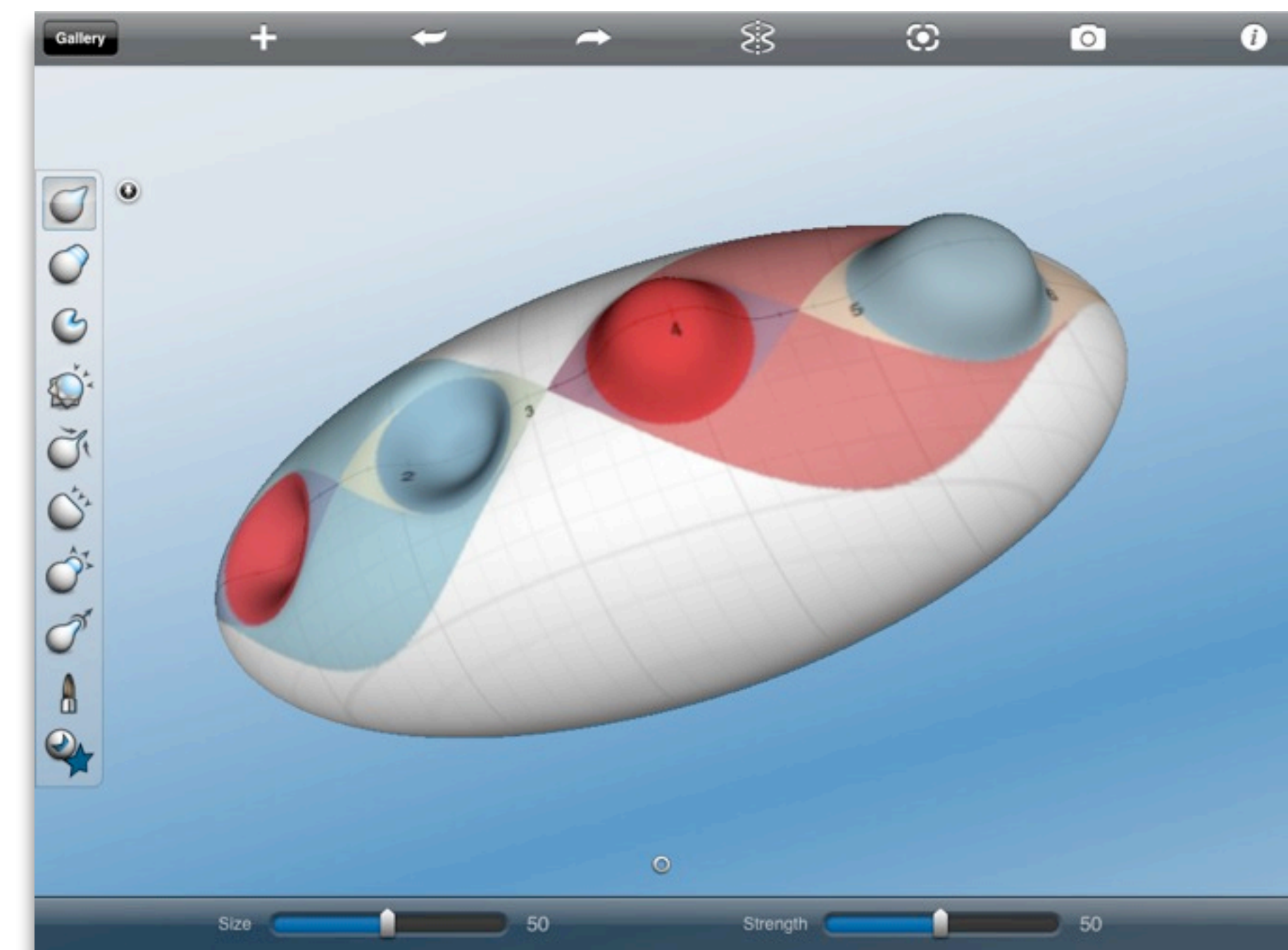
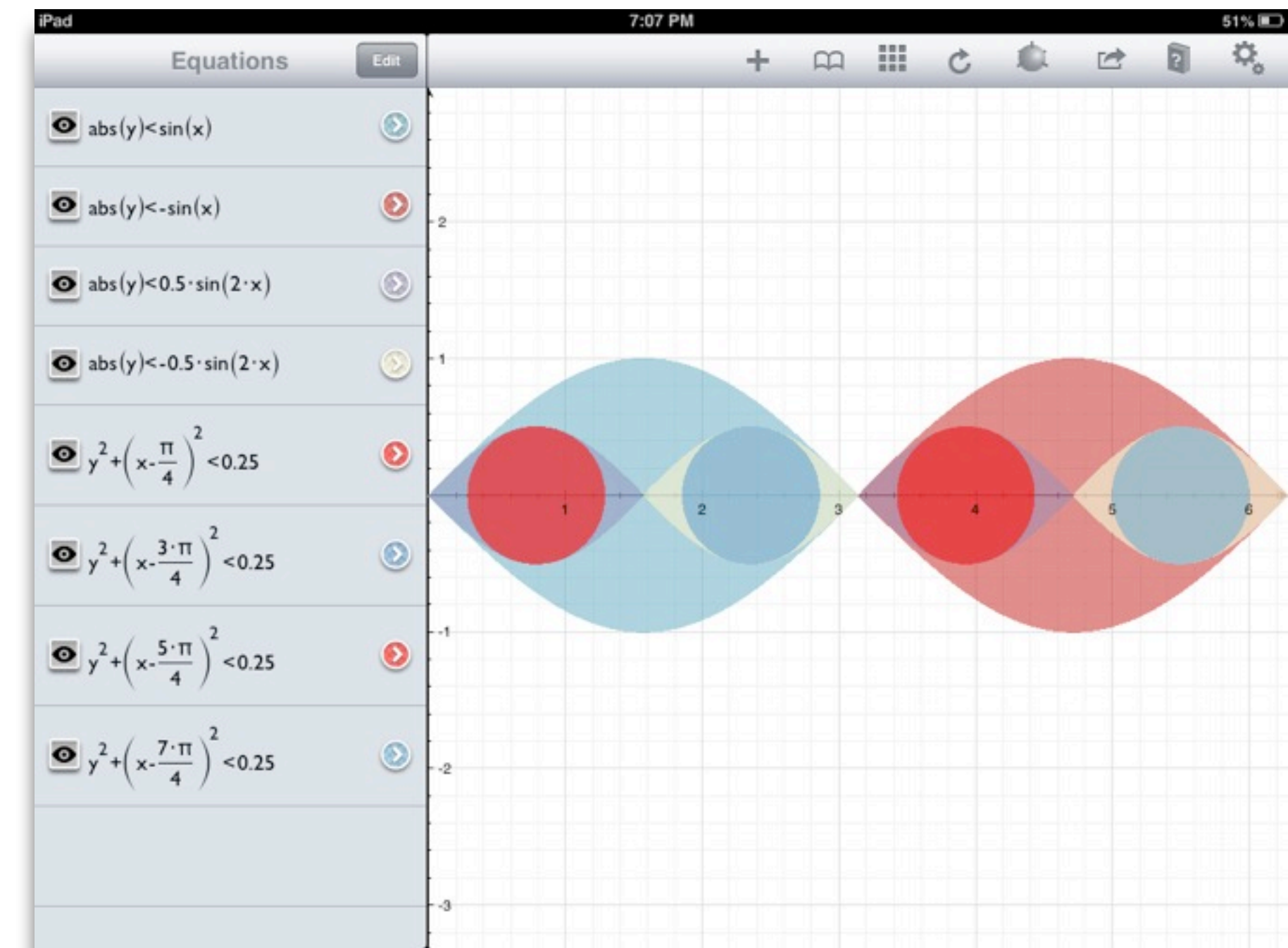
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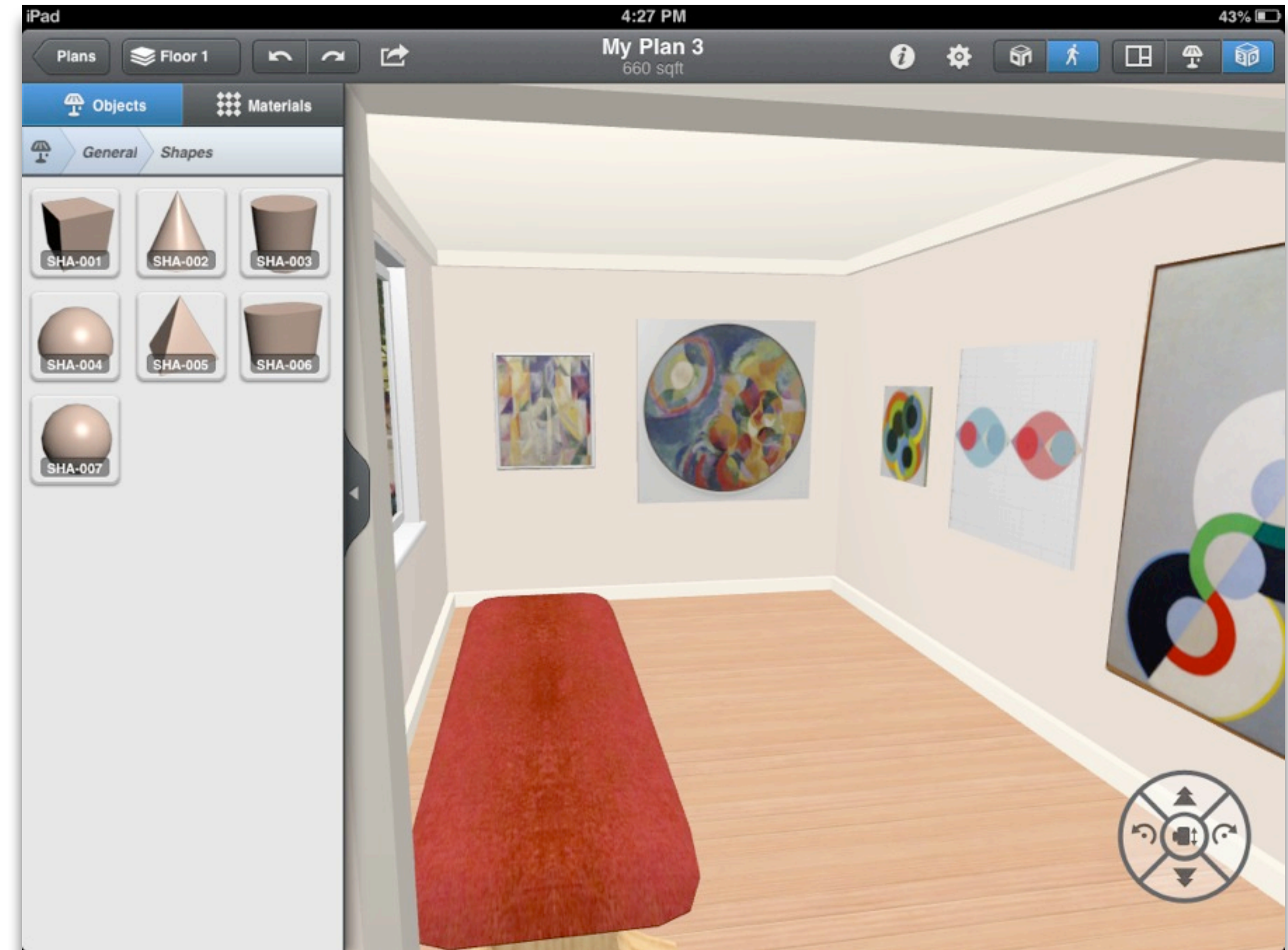
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Formal Definition of **Game** (Salen & Zimmerman)

“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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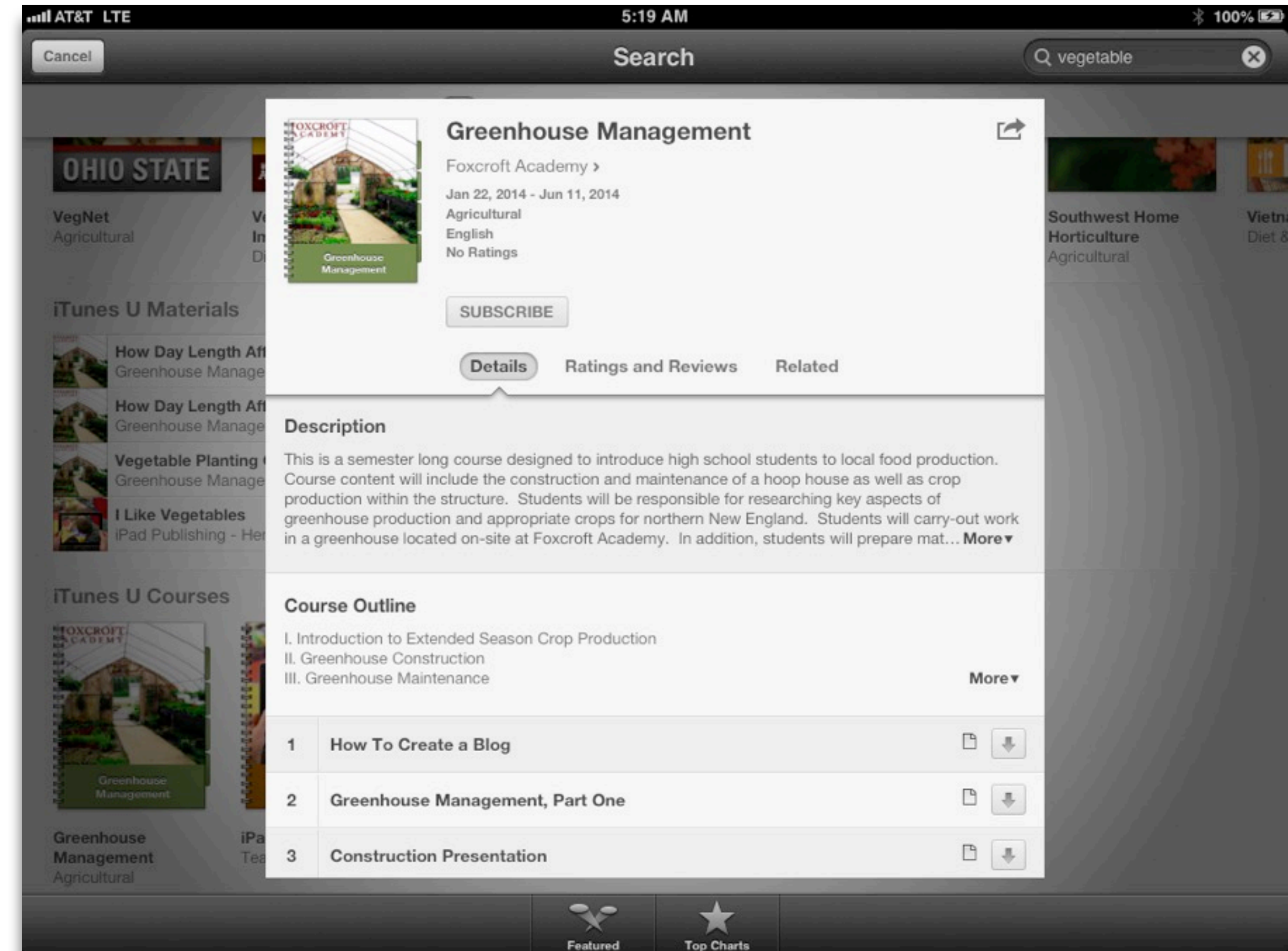
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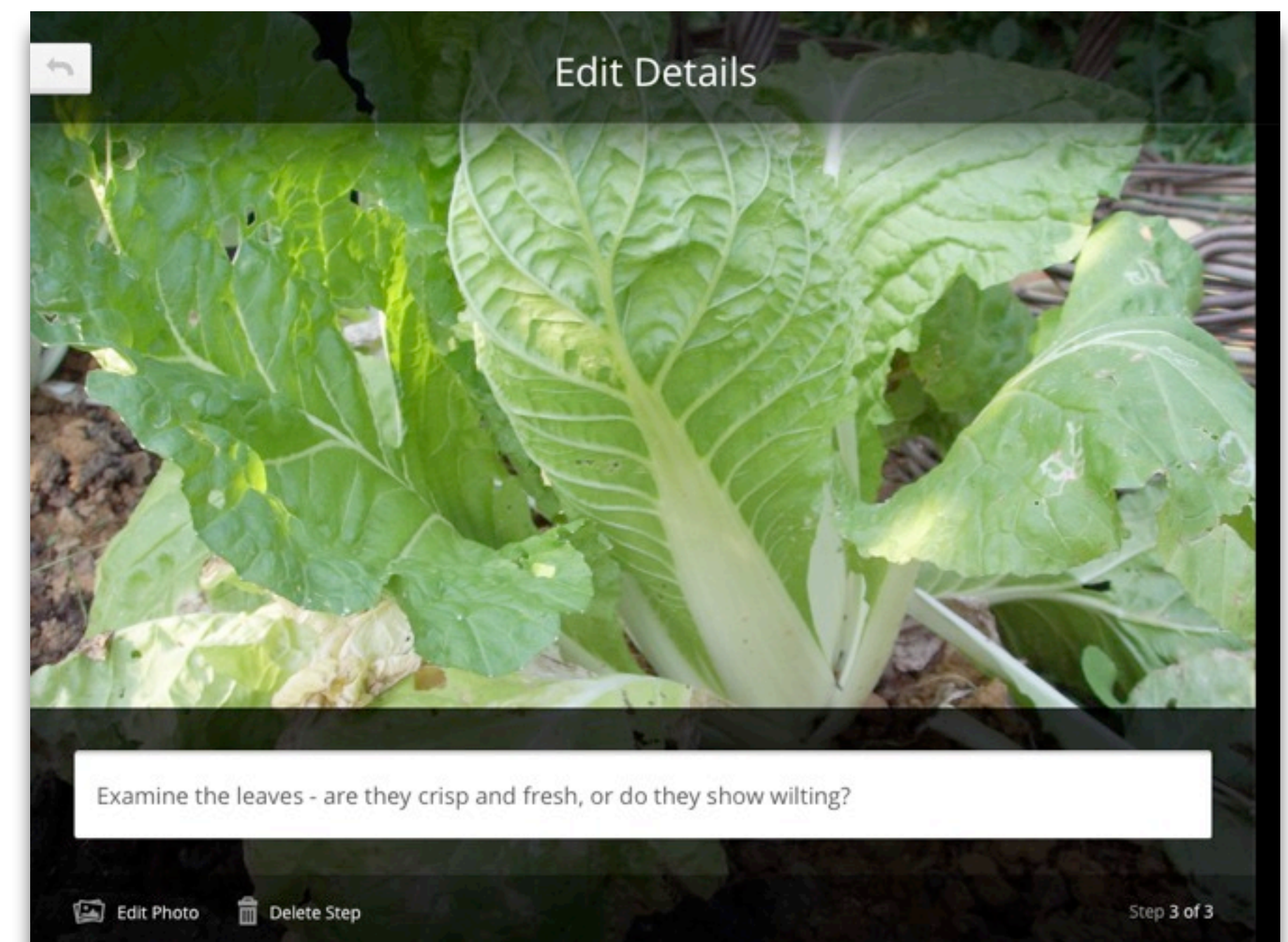
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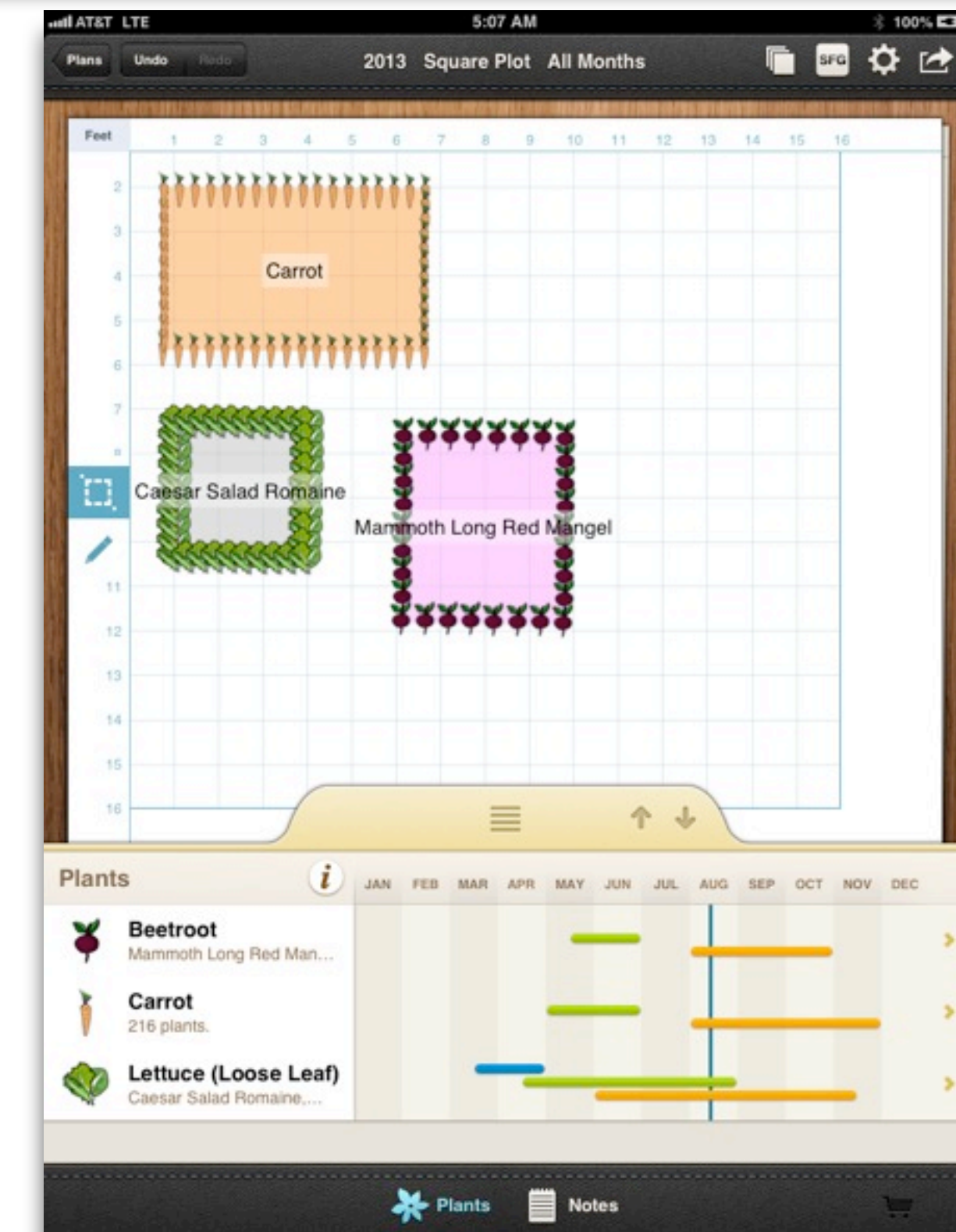
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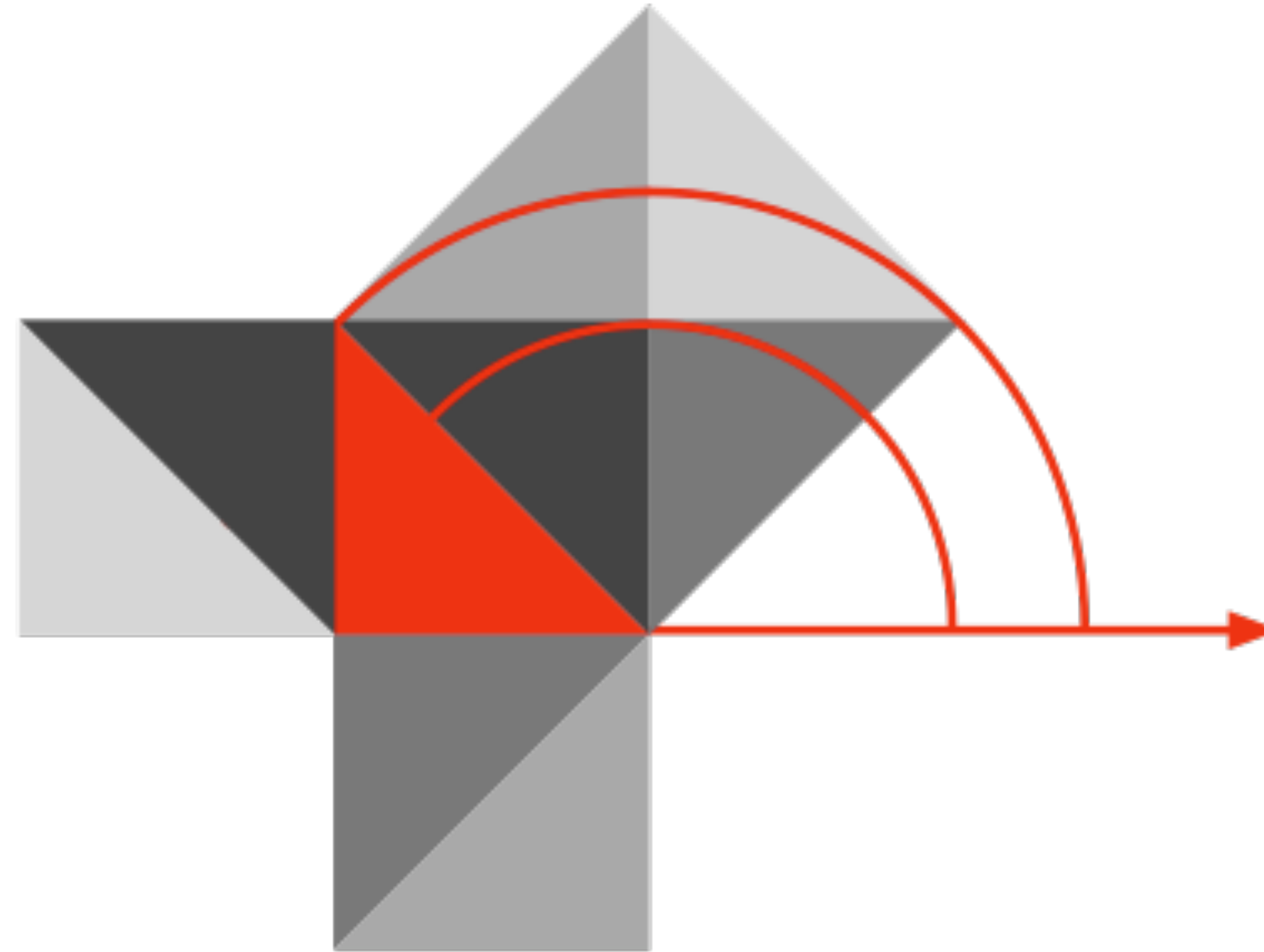
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Resources

- 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>
- Punya Mishra & Matthew J. Koehler, “Technological pedagogical content knowledge: A framework for teacher knowledge”. *Teachers College Record*, 108(6). (2006) Online at:
http://mkoehler.educ.msu.edu/OtherPages/Koehler_Pubs/TECH_BY_DESIGN/TCRecord/mishra_koehler_tcr2006.pdf
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- AACTE (Eds.) *The Handbook of Technological Pedagogical Content Knowledge for Educators*. Routledge. (2008)
- Punya Mishra and Kristen Kereluik, “What is 21st Century Learning? A review and synthesis.” Paper submitted to the SITE2011 Conference. (2011) Online at:
http://punya.educ.msu.edu/publications/21stCenturyKnowledge_PM_KK.pdf
- Punya Mishra and Kristen Kereluik, “What is 21st Century Learning? A review and synthesis.” SITE2011 Conference Presentation. (2011) Online at:
http://punya.educ.msu.edu/presentations/site2011/SITE_2011_21st_Century.pdf

Hippasus



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