STUDENT DESIGNED, GLOBALLY CONNECTED:

STEAM IN ACTION

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SESSION GOALS

- Classroom workflow using iTunes U
- Student voice and choice
  - Visual thinking
  - Menu options
  - Student designed curriculum/projects
- Publishing for an authentic audience via portfolios

All resources at tackk.com/boston16
iTUNES U

- Distribution of materials via iTunes U courses
- Differentiation
- Ease of use

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LESSON OVERVIEW

- LEARN: E.O. Wilson's Life on Earth
- INVESTIGATE: Cell Lab
- CREATE: Show What You Know
- SHARE: On Your Portfolio

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EXPLORE: Cell Transport
Sep 19, 2015, 4:35 PM

How can something that is so good for you potentially kill you? Can people actually overdose from water? Learn how the cell membrane filters what enters and leaves the cell and how sometimes things don’t go according to plan.

6 Assignments

REVIEW: Cells and Cell Transport
Sep 19, 2015, 9:58 PM

Review the vocabulary associated with this section by completing the Quizlet. Take the vocabulary words assigned to your group and create an infopics. On the slide, include the vocabulary word, a picture that represents the word, and a 5 word definition.

4 Assignments

CREATE: Show What You Know
Oct 22, 2015, 7:16 PM

Use the choice menu below to show what you have learned about cells and transport. Choose one option from the choices provided and demonstrate how much you have learned in this unit on cells.

2 Assignments
SKETCHNOTING

LEARN: How plant cells structures work together to maintain homeostasis.

- Multiple resources provided
- Student to create a visual that shows connection
- Sketchbook Express, Paper 53, Notability
**Cells Final Assessment - Show What you Know**

Use these choices to demonstrate your understanding and knowledge of cells and the processes of cellular organelles. You will select one option from below. The options in grey are the ones you can have a partner on, the others are individual. Check iTunes U - Cells - Show What You Know - for links to apps.

<table>
<thead>
<tr>
<th>Option</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create an original digital drawing of a prokaryotic and a eukaryotic cell with the organelles labeled. Put the drawing in <a href="http://thinglink.com">ThingLink</a> and add functions to each label.</td>
<td>Use Spark Video or iMovie to create a video slideshow of 3 plant cells and 3 animal cells. You must capture the images on your own and describe how you can tell if they are plant or animal. Video cannot exceed one minute.</td>
</tr>
<tr>
<td>Develop a new invention that would allow scientists to instantly learn more about cells. Use PicCollage or Canva to create a press release and build a 3-D prototype of your invention. Add a picture of your prototype to your press release.</td>
<td>Use iMovie Trailers to create a horror film trailer about cells. Be sure to show knowledge of structure and function in the trailer. You must include 5 or more organelles and functions as a part of your plot or storyline.</td>
</tr>
<tr>
<td>Use Comic Maker HD to create a digital comic that demonstrates a concept associated with cell membrane movement such as osmosis and diffusion. Concepts must be explained accurately and in your own words. Comic must have a minimum of 4 frames.</td>
<td>Build a single celled-microbe to solve an environmental or world problem. Use iMovie to film an infomercial that shows your model and explain how the organelles look different and how they are specialized to do their job. How does it reproduce? How does it obtain nutrients? Video cannot exceed one minute.</td>
</tr>
<tr>
<td>Use Minecraft to build a eukaryotic cell and show the function and structure of each organelle. Include 5-6 organelles discussed in Cell Survivor. Video a voice over tour of the cell using iMovie. Video cannot exceed one minute.</td>
<td>Use iMovie or Garageband to create a song parody over cells and cell transport. Discuss structure and function of cell parts and include science processes to show your understanding. Create a music video of you performing your song. Video cannot exceed one minute.</td>
</tr>
<tr>
<td>Use Book Creator Free to write a cell story around the template provided. Information and links in iTunes U: Cells: Show What You Know</td>
<td></td>
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</tbody>
</table>

Each option must include at least three concepts and three vocabulary words. Scientific information must be incorporated into your product, not an add on at the end. Work will be published to your portfolio in the PROJECTS folder. Videos cannot exceed 1 minute.
SHOW WHAT YOU KNOW

• Green screen yourself into a cell using TouchCast and tell a story about being lost

• Build a cell that solves world problems and film an infomercial about it - use Prisma to add a filter

• Build a cell in Minecraft and narrate using iMovie or Adobe Spark Video
STUDENT DESIGNED PROJECTS

• What do you want to learn?
• How can you contribute?
• Who is our audience?
• How can our work make a difference?
HEALTH WITHOUT BORDERS

• How can we improve the health of children around the world?

• Student designed course in iTunes U

• 56,000 subscribers

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Muscles aren't the only thing you need to think about. When being active, bones are also very important to take care of!

Drinks like milk are full of calcium which helps you get and keep strong and healthy bones!

If you sprain, twist, or break your bone, get help immediately.

Bok Choy is also good for your bones!

And allow your bone to fully heal before you use it again.

Foods with protein, like fish, help build muscles so you can get stronger!

Eggs are fun and easy to cook!
Hello, I'm your student on iTunes. I'm 11 years old. Can you speak Turkish in less than 20 minutes? I haven't understood you. Because I don't know English.

Thank you

My name is Zaffar and I am Principal of an Independent school in South Africa.

We are currently exploring the option of using iPads at our school. It has been a long journey and most of our teachers are finding it difficult to develop courses.

I came across you Anatomy and Physiology course on iTunes U. I shared it with my teacher who was very impressed with your work. 80% of the material is applicable for the South African Syllabus.

Can I appeal to your good and generous nature and ask you to allow us to use your course at our school? We will need to adapt it slightly to the South African curriculum.

I'm Sofi. I'm 11 and live in Ukraine. I'm you are very clever. With all famous. Sofi.

Estoy muy interesada en tu curso pero soy colombiana y puedo manejar en inglés. ¿Puedo participar en tu curso?

Hola buenos días soy Yein. Hace varios años estuve en Tianjin y me encantó la ciudad. Tengo un amigo que vive allí y me habla mucho sobre el lugar. ¿Podría teirnos a conocerla? Sería genial poder visitarla algún día.
HEALTH INSIDE OUT

• How can we improve Health Without Borders?
• Student authored multi-touch book
• 12,000 downloads

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Oxygen Transportation

When you breathe in, the diaphragm helps the oxygen travel down the trachea to the bronchi. The bronchi then branch out to form bronchioles. At the ends of the bronchioles, there are structures called alveoli that help in gas exchange. The oxygen, once in the alveoli, travels through the walls of the capillaries and enters the blood, traveling with it to the heart. At the same time, the carbon dioxide that was already in the blood travels through the walls of the capillaries into the alveoli. Once the carbon dioxide and oxygen switch places, the carbon dioxide travels back through the bronchioles, through the bronchi, and the trachea to be exhaled out the mouth or nose.
THROUGH THEIR EYES

• How can we protect endangered animals?
• Students authored multi-touch book
• Collaboration with the Dallas Zoo
• 1200 downloads so far
STUDENT PHOTOGRAPHERS

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STUDENT ILLUSTRATORS

Image by Natalie G.
INTERDISCIPLINARY WORK

Figure 3.1 Giraffe Daily Diet at the Dallas Zoo

Image 3.1 Habitat of Reticulated Giraffe

Created by China, Jasmine, and Abby

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GLOBAL PROBLEM SOLVERS

• Student choose topic from UN Global Goals
• Develop a plan to make a difference
• Present at semester
• Voting to decide which project to implement this year
GLOBAL COLLABORATION

- FlipGrid App
- Asynchronous collaboration

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PUBLISHED PORTFOLIOS

• Students use BulbApp.com
• Year long portfolios
reflect and share

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