LESSON 5: November 2

As we move into the last two weeks of the course, I am hoping to make a change of focus. My goal in the first part has been to create a common core of skills and know-how amongst the 10 of you. We have covered 26 of the 33 skills so far and have done projects in four apps to cement those skills.

But the goals in our schools need to be on
• using our growing tech know-how in meaningful educational ways with kids
• helping faculty colleagues at our schools gain skills, enthusiasm and know-how

HW 5.1 Required
Send an email to me about what you are contemplating or have done for 6.2 that is due in 1 week.

> From page 16 of lesson 4 -- HW 6.2 is due the week of May 4 and is to choose one of the apps from this course and to integrate into a curriculum unit with your students. I am not trying to get to use tech for its own sake but I am asking you to "be a pioneer" and add to your pedagogical repertoire. I am quite conscious that "hardware is essential" and some of you teach in schools where your students do not have access.

HW 5.2 Required
Please answer any of these questions that are applicable and added to a new section of our Collaborative Doc called FACTORS THAT MAKE STAGES 2&3 EASIER. You should find this on page 18 of the Collaborative Doc (not this PDF).
-- are you teaching any grades this year for which every single student has an iPad? Or are you teaching any grades where you have access to an iPad cart?
-- if yes, what is the procedure for installing apps on the iPad?
-- does your tech dept help you in your classroom if you need a "second person" to assist?
-- if you have a cart will your tech dept install a new app once you request
-- do you have an individual teacher budget designated for buying apps?
-- does your school make it easy or difficult to add apps?
-- do you use any faculty meetings where 1 or 2 teachers take the stage highlighting some app or technology project that worked in her/his class?
-- do you have a tech person who will meet with you on request to help you with tech questions or help you create a tech project

HW 5.3 Three More Skills onto Our Collaborative Document as We Head to 33
Read or watch the videos as you need to so that you make sure you have these four skills below. Whether you watch the entire video, part of the video or none of it is your choice. Just make sure you have the skill and check it off on the Collaborative Document!

iPad # 27 One Space Between Sentences or http://tinyurl.com/icoreV27
http://youtu.be/FD0a6d7jwRw (1.5 min)
Task: Use the trick that two spaces at end of a sentence makes the iPad auto-type a period followed by one space. If you are a person who still uses two spaces between sentences, it is time to change this habit which was the right way in the 1980s.

iPad # 28 Reader Mode -- 3+ Horizontal Bars
http://youtu.be/bFOAnA3HInE (3 min) or http://tinyurl.com/icoreV28
When using Safari, tap on Reader mode in the website address bar to read a website in full-screen reader mode (text only with adjustable letter size and no ads).
Task: Go to nytimes.com, click an article and when you see READER, try it!

iPad # 29 Using Bookmarks on an iPad with Google Chrome
http://youtu.be/cMaqe5OqZyE (7 min) or http://tinyurl.com/icoreV29
Task: Demonstrate that you can add, delete or edit bookmarks on this web browser which behaves differently from Safari.

Please remember to add a short phrase

or even just "OK" to our collaborative document for each of these iPad skill videos.

I really enjoy what you write!

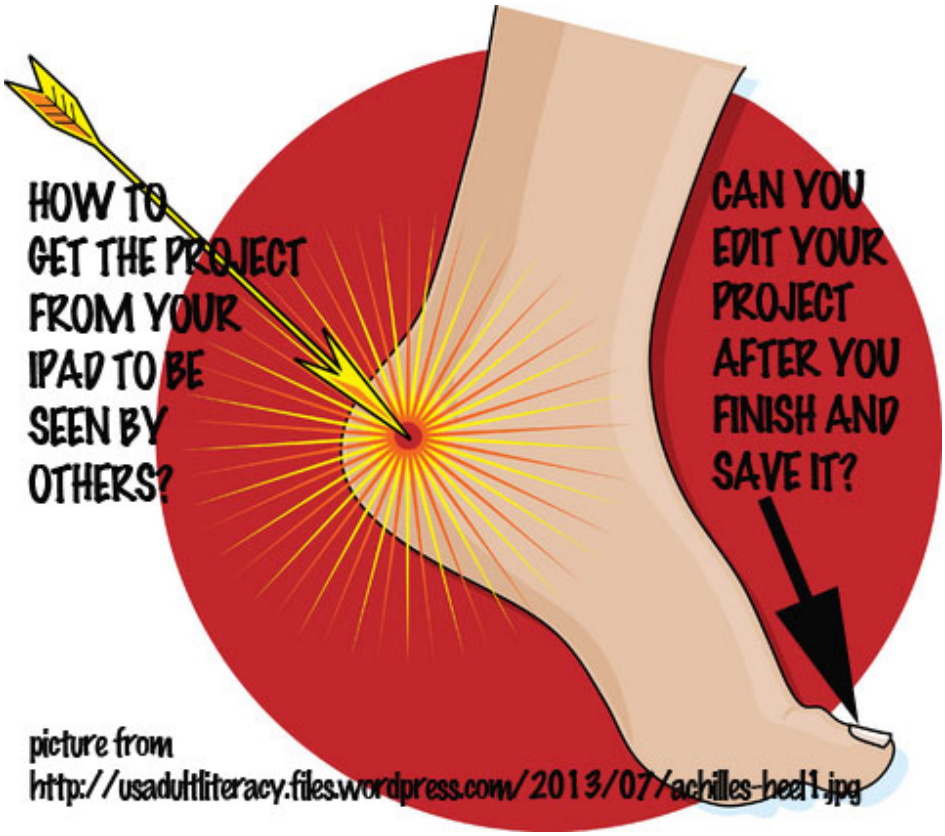
Just look at our collaborative document which you can access easily

Next Topic --- Achilles' Heel & Toe ;-)

For each app, there are two common and very important characteristics:

1) Achilles' Heel? How can the project be moved or seen from another device or from the web? Example: Book Creator can export to Google Drive or Dropbox or iBooks so it has a good heel

2) Achilles' Toe? Is the app "one and done" or can it be edited/changed after it is finished? Example: Puppet Pals is "one and done" so if you make a mistake you need to redo; accordingly, we would say Puppet Pals has a poor toe



Please keep the heel and toe metaphors in mind as you look at apps over the next few years.

Here is a chart of the four apps we encountered in the first four lessons

	Achilles Heel • *Can the project be moved to another iPad or possibly a computer?*	Achilles Toe • *Can the project be altered once finished?*
Skitch	You can easily save your picture into the camera roll (photo library). You can then email your picture to someone or upload it to a GD or Dropbox folder.	If the picture is in the camera roll (photo library) you cannot change it. But there is also a Skitch library and if you take a picture out of THAT location, you can change it!
Book Creator	You can turn your book into a video which then goes into your camera roll (photo library). This video can then be easily posted on YouTube or moved into a GD/Dropbox folder. Alternatively, you can export your book to iBooks where it can be viewed but not modified. You can also export your book into your GD account and then move it to a folder.	100% changeable
Puppet Pals	Exports a video that goes into your camera roll (photo library). This video can then be easily moved into a GD/Dropbox folder or uploaded to YouTube	0% changeable -- Puppet Pals is "one and done"
Inspiration or Kidspiration	Can be emailed to another iPad or computer that can run it if it has Inspiration or Kidspiration. Or can you take snapshots of the screen.	100% changeable as long as you use the document (and not the screen snapshot)

Our next app is called TinyTap and it is so incredibly flexible and interesting that I believe it is an essential app for you to look at. I really love this app and hope that you will find it exciting and useful! Like the four previous apps, TinyTap can be used by any teacher of any subject in grades K-12. Please do not be put off by the fact that it was originally designed with tiny kids in mind. It is our first app in this course that lets us make our own game. I could easily use it to make a game about Calculus, Physics or US History.

Next Topic --- Creating your Own Game

TinyTap lets you create your own "touch and tap" games where you ask questions with your voice and the student answers by tapping on a spot on the screen.

First, take a look at this game I created last Halloween using TinyTap. It is posted on the web at

http://tinytap.it/games/g3br/play/

and so you know right away that this app has a good heel (easy to share with others). The web address above is NOT the instructional video that shows you how to use TINYTAP. Instead it is the GAME that I made last Halloween.

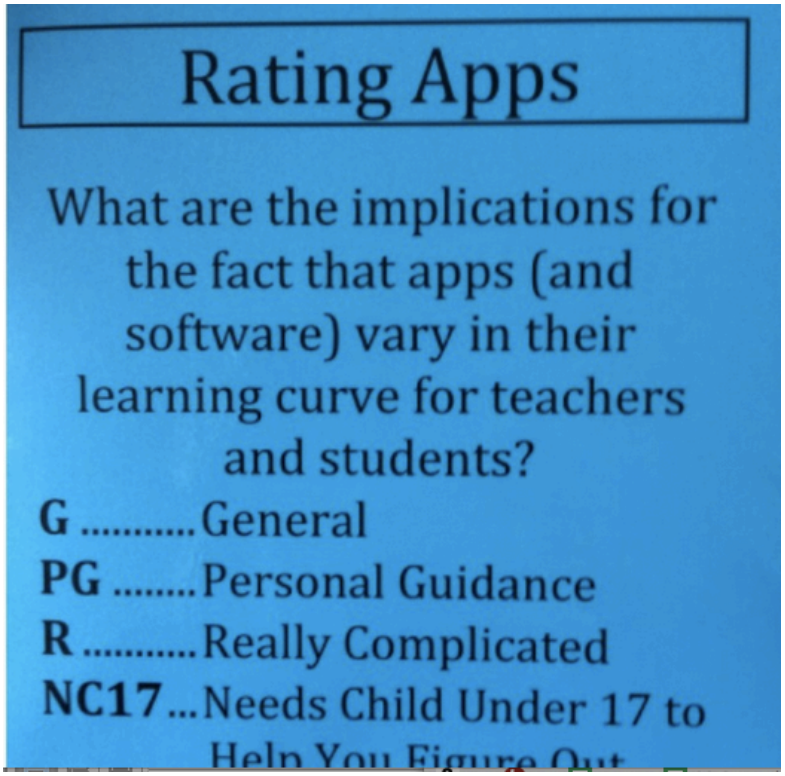
After you create your game, you are given a web link that is usable on Mac or PC laptop/desktop or iPad. I made mine into an easier tinyurl.com which you may choose to do so as well with yours -- http://tinyurl.com/tinytap34 -- since my brain can remember the one in green easier than the one in yellow.

Here are some samples from TINYTAP samples from people who have been in this class previously. They will work on your iPad or laptop since TINYTAP generates a URL for the web. HW 5.4 Please watch 2 of these 6 games and send an email to me and the other person about what you thought. You choose whatever 2 you want.

This will give you the best sense of what a Tiny Tap game looks like! This is important since Tiny Tap is more complicated than any of our previous apps!

Dutch Direct and Indirect Verbs (Dorien DC) http://www.tinytap.it/games/g5eb/play/
Spanish Verbs (Amanda NC) http://www.tinytap.it/games/g5g8/play/
The Nervous System (Bobbie MD) http://www.tinytap.it/games/g5hk/play/
The String Family (Emily VA) http://www.tinytap.it/games/g5gw/play/
French Clothing (Lucy MD) http://www.tinytap.it/games/g5fj/play/
Geometry Review (Morgan LA) http://www.tinytap.it/games/g5fn/play/

Beware and be aware that Tiny Tap is not as simple and straight-forward as our previous apps. In our iCore blue poster below, there are 4 ratings for apps written with a bit of a sense of humor. Tiny Tap is the first app in our course so far that is approaching the R RATING. So take your time, lean on me and ask for help.



The game you create will consist of these three types of slides. You can have as many of each type that you want or you don't need that type at all.

Type 1 in TinyTap: An Ask a Question Slide
Type 2 in TinyTap: A Create a Sound Board Slide
Type 3 in TinyTap: A Cut a Shape Puzzle Slide
Type 4 in TinyTap: A Play a Video Slide
Type 5 in TinyTap: A Say Something Slide

I chose to have one slide showing 3 of the 5 types above, but your own games can have whatever mixture of types that you want. By the way, TinyTap has a medium Achilles' toe, since some components (but not all) can be changed when done.

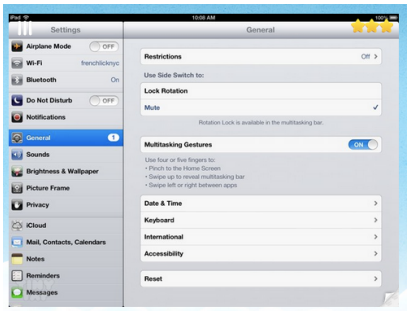
Type 5 in TinyTap: A Say Something Slide

My first TinyTap screen is type 5 -- picture and narration only. After you hear my voice, it goes automatically to the second screen. Notice the icon at the BOTTOM RIGHT that will take you quickly to the next page. This first slide with the computer pumpkin is an example of a SAY SOMETHING slide. It has one voice narration and nothing more.

Type 1 in TinyTap: An Ask a Question Slide

My second screen is type 1 -- it contains three questions in sequence from the narrator (me) that challenges the student to tap or click on the screen. Please try to get the question WRONG by tapping on the incorrect location. This second slide with the picture of the SETTINGS screen is an example of an ASK A QUESTION slide.

One audio question is about "lock the screen."
A second audio question is about "keyboard shortcuts" on the iPad.
A third audio question is about "making text larger" on Notepad.

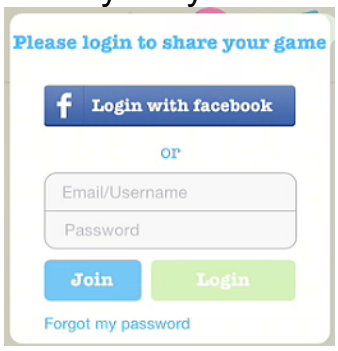


If you get my question wrong, you get a voice message from me with a hint.
When you make your own TinyTap, be sure to add a voice when the student gets it wrong. People too often forget this!
Eventually, you get enough hints so that you get it right!

My second screen has two audio questions, but as I said, you can click the page turner at the bottom right if you want to go to the next page.

Type 2 in TinyTap: A Create Sound Board Slide
My third screen is VERY DIFFERENT from the first two screens. It is not "ask a question and tap to get it right" but rather it is "tap and learn." I have put "something to learn" under the 13 cookies on the right side of the screen. This third slide with the binary cookies is an example of a CREATE A SOUND BOARD slide. It has 13 "hotspots" on the 13 binary cookies on the right hand side.

Yes you will need to CREATE A LOGIN with TINYTAP in order to SAVE your project and generate a URL for the GAME. They have a funny screen (on the left) to prove that you are a grown up. The screen on the right is the SIGN IN screen. Please make sure you record your TinyTap login and password in two places when you JOIN, perhaps on paper and perhaps electronically. Yay for redundancy!



Here are some screen snapshots for the steps when working with TinyTap.

The tools at the bottom of each page

Sample using the tools on the left

You can move text around, change its size by pinching and undo one or more moves with the icon at the bottom left. The color you choose is located in the black semicircle located at the exact middle of the palette.
When you click the camera, you get these choices and if you choose CREATION PACKS you get hundreds of clip art items categorized by theme.

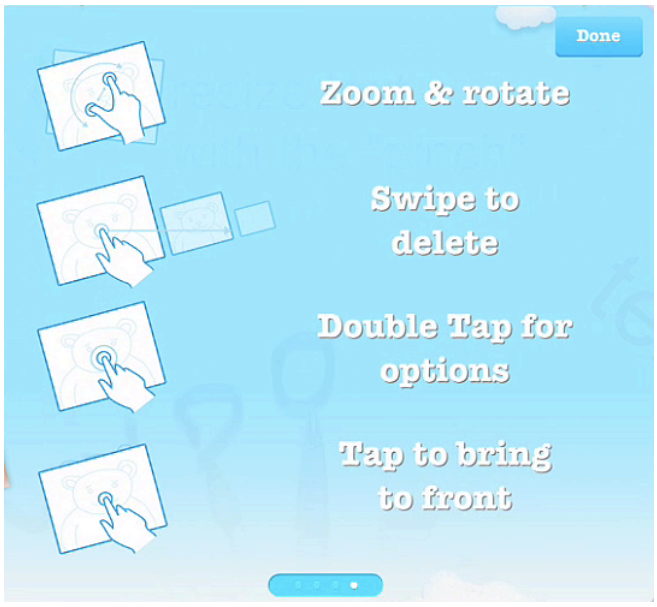
Here is the 15 minute teaching video by me about TINYTAP.
HW 5.5 Please watch this either before or after you read through this PDF, whatever works better for you:

http://youtu.be/rbASwRfA_-Y same as http://tinyurl.com/tinytap33

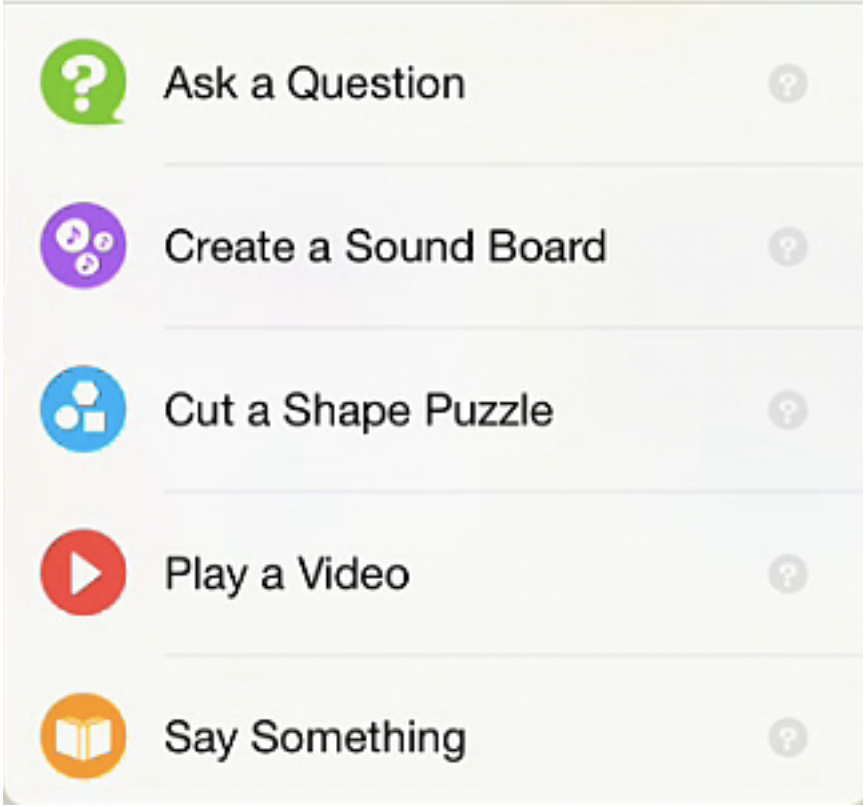
Here you see the important UNDO symbol at the bottom left

The green arrow at the upper right means NEXT SCREEN where you can record your voice. At the upper left, the arrow in the open box lets you SAVE or email your drawing. But you will need to have or created a TinyTap account!

When you use the clip art from the Creation Packs, each item you get is an OBJECT and you can do the following 4 things to any of these objects. When you double tap on an object, you get this screen:



Once you have the graphics page that you want and you proceed to the next screen, it is time to record audio onto that page. Each page can be 1 of 5 types:



The ASK A QUESTION type means you ask questions with your voice and the student answers by tapping on the graphic

The CREATE A SOUND BOARD type means that you are putting "hot spots" onto the screen so that the student will hear something different based on where he/she clicks.

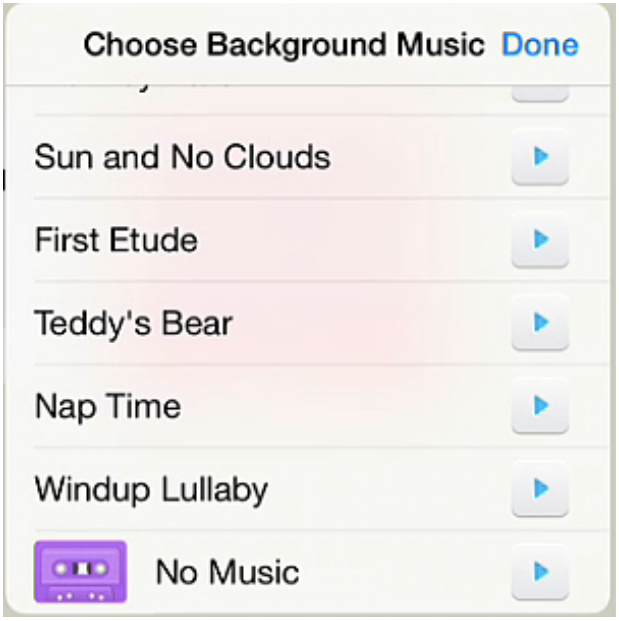
The CUT A SHAPE PUZZLE type means that you have a puzzle (like a USA map) with some states cut out. The student has to put the states back.

The PLAY A VIDEO type means you can add a slide that contains a video. The video can be trimmed easily so that the student watches just a designated portion.

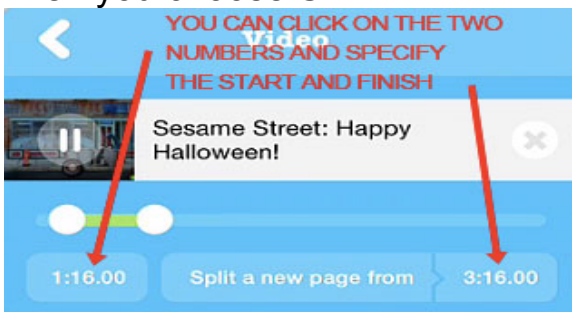
The SAY SOMETHING type means the student is listening to your voice while looking passively at the picture. This is best for the opening slide.

Yes you can add music (but not your own). It is very funny that the icon is a tape cassette, something most people under age 20 have never heard of!

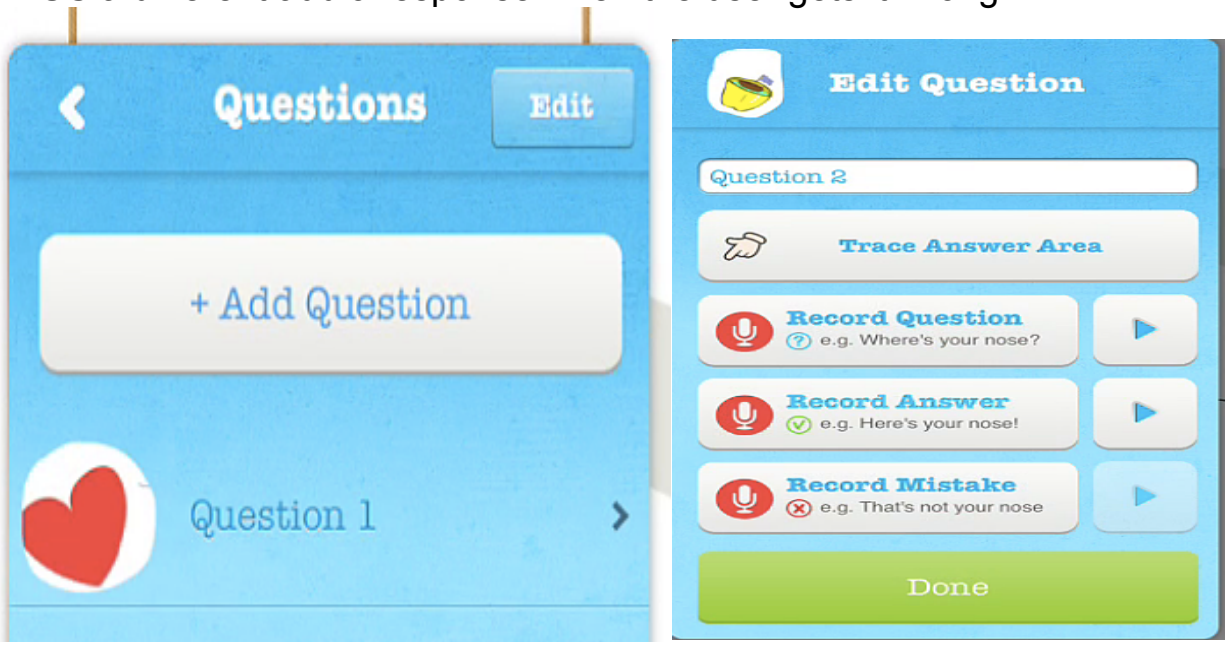
The music is BACKGROUND MUSIC that goes on continuously for the entire game. You do not play music for separate slides. Note that the last song is NO MUSIC so you can turn it off if you want.



Other features of TinyTap:
• You can change the order of the slides.
• You can modify slides even after the game is done.
• You CANNOT alter the graphic on any slide. If you don't like the graphic, you can delete the slide but you cannot alter the graphic.
• When you include a video, you can CROP IT so only a portion plays. TinyTap calls this SPLIT A VIDEO and the screen lets you click on the digital numbers on the left or right and adjust them. Then you choose SPLIT.



If you choose to make an ADD A QUESTION slide then you get these options below. You can have multiple questions on each slide. For each question, you can record your voice for the question PLUS you can record a message when the user gets it right PLUS a different audio response when the user gets it wrong.



Specs for this assignment that I will call HW 5.6A: **Create a review quiz for your students on something that you teach coming up in the future.** Since TinyTap creates a URL that contains your finished product, it will be easy to give this URL to others. Your finished product must contain 3 or more slides with at least 1 of each type: Ask a Question + Sound Board + Say Something.

If you have a different, creative idea for using TinyTap, please go for it!
This app is very open-end and maybe you can do something more creative than a review quiz.

HW 5.6B: Send me the URL of your TinyTap creation.

By the way, I made the observation that TinyTap has an A+ Achilles' Heel since it publishes to the web with a URL you can share with anyone. In terms of the Achilles' Toe (my metaphor of course), it is B+. You can add questions or modify questions but you cannot alter the background graphic. You may have to delete a slide you have created and redo it if you want to change. You can however, re-arrange the order, so it is a pretty good (but not perfect) Achilles' toe.

Everything below is Optional

Here are a number of Drill and Practice apps that I have identified for you. Think of these pages as a smörgåsbord where you are looking for something new to love.

Please let me know if you have others to recommend.

A+ Spelling
Duolingo
Fractions Mathboard
Futaba -- I love Futaba and the way you can create your own quiz game
IXL -- I love the range of math problems from K to high school
Khan Academy -- I love the fact that can learn independent if they work at it
Math Bingo
MathBoard
Peek by Evernote
Quizlet -- I love the ease of making up questions and its use on laptops/iPads.
SpellBoard
StudyBlue
Vocabulary Builder 1

Here are a few comments and links on each of the above (alphabetical order).

• A+ Spelling

Company allows you to purchase 1 copy and install on multiple iPads. Students can hear spelling words or the app will scramble the letters. Setup your own spelling tests in minutes. You decide which words to add and practice. You track your kids progress and quickly see how they are doing for each test they took as well as which words if any they are struggling with. Multiple play modes keep kids engaged.
My optional video: http://youtu.be/ukU3Cwm74Ak
And another by someone else: http://www.youtube.com/watch?v=ut-UemMG7pk

• Duolingo

Interesting free app for practicing translation from one language to another with many thoughtful options. Fascinating to learn about the origin of this by the creator of CAPTCHA.

From their website 1/14/14:
As of a few minutes ago, the course for learning English from Dutch is now available in beta on our website. In all, it took the team 52 days to complete, which constitutes a new speed record! (I should mention that the Russian team, which finished in 58 days, did have to bear with some parts of the Incubator not yet being done at the time.)

Esmeralda Bon (Lavinae), Tycho Luyken (kirlll), Kai Engle (kaiengle), and Nathalie van Basten Batenburg (Rhynn), or "The Amazing Dutch" as we refer to them internally, did a great job from the beginning and actually exceeded our estimates of when they'd be done -- we had estimated a completion date of December 28th, so we had to get some people out of vacation to be able to release their course without delay today, one day before Christmas Eve.

Soon after the new year, we will let them start building the course to learn Dutch from English, which they've been asking us about frequently.

Fascinating video about the creator: http://www.youtube.com/watch?v=cQl6jUjFjp4

About the app: http://www.youtube.com/watch?v=XGsxZPW0pI8

• **Fractions MathBoard, MathBoard, and SpellBoard** are all made by the company and are very high quality. No free versions however, cost for each is $4.99.

From their website:
Made by Pala Software, they also make MathBoard Fractions. Both MathBoard and SpellBoard are available for Mac OSX as well. The app gives you a chalkboard on the right to solve the problem. Additionally, you can ask for help with the "Problem Solver" and you will see the steps. You can have multiple users and the app keeps track of scores. You can customize level of difficulty, number range, use of negative numbers or not and multiple choice vs fill in the blank style. Excellent interface.

From the creators of MathBoard comes MathBoard Fractions. MathBoard Fractions is a comprehensive fractions app that will help all students master fractions easily. MathBoard Fractions consists of activities that will teach terms, provide interactive examples, quiz knowledge, as well as walk through solutions.

Activities in MathBoard Fractions include -

• Exploring proper and improper fractions

- Learning to match a fraction to a quantity
- Simplifying fractions
- Comparing fractions
- Ordering fractions
- Adding, Subtracting, Multiplying and Dividing Fractions

My optional video about Fractions Mathboard: http://youtu.be/fwkoIej-TxU

MathBoard is an app for teaching addition, subtraction, multiplication and division. Customizing the problems will make MathBoard appropriate for all ages from kindergarten, with simple addition and subtraction problems, to elementary school, with multiplication and division. You can control the range of numbers and the amount of questions. You can even assign a time limit per quiz. Students have a workspace to complete and show their work and then answer the multiple choice questions or see step-by-step problem solving to help them generate the correct answers.

My optional video about Mathboard: http://youtu.be/UBETipbhPVE

From their website:
SpellBoard can now add fun activities to your custom spelling lists. Including Word Search, Word Scramble, Alphabetize, and Missing Letter puzzles.

Whether you are a student, teacher or parent, we all know the weekly spelling drill. Monday, we get our weekly words. Wednesday, we have our pre-quiz and Friday is the spelling test. Of course, during the week there are endless impromptu spelling quizzes, -- at home, in the car, at dinner, before bed -- you get the idea. Well, all that may have just changed -- say hello to SpellBoard!

My optional video about Spellboard: http://youtu.be/ETsZmGdp0rc

SpellBoard allows you to create any spelling quiz in any language. That's right, you could even use this for your Spanish class! SpellBoard provides a fast and intuitive way for you to enter your list of spelling words. All you need to do is enter the word (correctly spelled), the grade level (1-12) and the spoken word. Optionally, you can add a written and/or spoken phrase. That's it! Now you are ready to study your word list and be quizzed on it. And possibly best of all, you can share your quiz with other SpellBoard users (via email, iCloud, Dropbox, AirDrop, Bluetooth or iTunes File Sharing) that means only one person needs to enter the weeks spelling words and

then share it with other SpellBoard users or iPhone/iPod touch SpellBoard Buddy users.

• **Futaba** is different from most other apps and allows you to have 2 students (free version) or 4 students (paid version) play a competitive game with each other. Imagine a visual recognition game with 4 students sitting around 1 iPad. In the middle of the iPad, there is a visual of a triangle and then each player taps A,B,C, or D with four names of triangles. Or in the middle of the iPad screen, there is a vocab word and the 4 choices represent 4 definitions or 4 translations. The game is a competitive game amongst the players. With the free version, it is just 2 player not 4 player. With commercial version (and possibly free version) you can make up your own game.

I may have a FUTABA CODE for you generously given to us by the company. This code is for the commercial version of Futaba. If this interests you, start with the free version and see if you like the program. Then let me know and I will try to get you the coupon code.

My videos on Futaba: http://youtu.be/CqiQ9NpHiVk and http://youtu.be/PUf5CZAWmNM

Delightful Kindergarten video about Futaba made by a Tampa teacher who took this course:

http://www.youtube.com/watch?v=Mu3IPTbSWwg (used with permission of course)

• **IXL**

The free version lets you do 20 questions per day in any category or grade level.

math and drill practice, grade by grade, uses common core standards, excellent reinforcement

This also exists on Mac/PC and is a well done drill and practice program. Kids love earning points and there is no "fluff" so the student time on task is high quality.

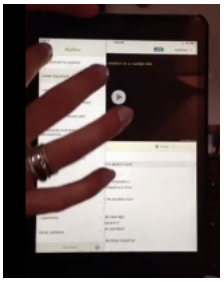
From their website:
Make math tangible with IXL Math Practice! Over 2,000 standards-aligned skills provide comprehensive coverage of K-12 math content, while hundreds of colorful awards celebrate important milestones. From skip-counting with pictures to multi-step story problems, IXL's interactive practice formats bring the joy of learning right

to students' fingertips.

- Comprehensive coverage of K-12 math curriculum
- Wide variety of question types to engage students

My optional video on IXL: http://youtu.be/wxRdoSLKNy0

• Khan Academy is originally for math, but now branching out into Humanities and Science. It is incredibly well funded and has "intelligent drill and practice" that moves you up or down a level based on how you do on problems. All math teachers absolutely must check out Khan Academy which goes all the way down to Grade 3 Math.



My video on Khan Academy: http://youtu.be/_KkUUt0sjBA

And here is one from a person named Rebecca in this Online course -- shared with her permission -- last semester: http://youtu.be/QQHpib0ZuEA

• Math Bingo

4 operations -- timed responses and not much frill to distract -- 3 levels for each operation --Good for what it does in drilling kids on math facts.

Math BINGO is a fun way for children to practice math facts. Choose from addition, subtraction, multiplication, or division BINGO. Select a level of difficulty (Easy, Medium, and Hard), track your score and time, and have fun.

Videos by others on Math Bingo: http://www.youtube.com/watch?v=zEj9zZLRc5Q

and by a student at http://www.youtube.com/watch?v=hFrc7Gl0Hc8

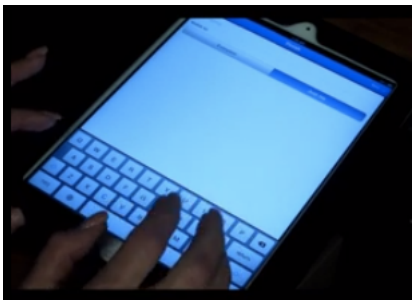
• Peek by Evernote is a cool program that lets lets you make up drill and practice flashcards using Evernote that then result in self-quizzes on your iPad where you use your "real physical cover" or "an imitation digital cover" to practice the flashcards by "peeking" at a portion of the screen. You don't need to have the special iPad cover since there is a neat simulated digital one on screen.

My optional video on Peek: http://youtu.be/J9rnbjLgnVw

• **Quizlet** is a classic flashcard creation program that is high quality. You can make up your flashcards on your Mac or PC and do either "flashcard mode" or "scatter mode" where you are given a grid of questions and answers on rectangular tiles and you have to match the ones that correspond.

The official Quizlet app is here! It's a free, fun, and beautifully simple way to study on your iPhone and iPad.
Seamless syncing means all your Quizlet study sets are ready to use. Or search Quizlet's database of over 21 million flash card sets to find content already created. Pick from 3 mobile-only study modes to suit your learning style and take advantage of audio in 18 languages to reinforce pronunciation and retention. Plus, with full offline support you can study anywhere — even without an internet connection.
* Full integration with your Quizlet.com account
* Audio in 18 languages * Search 21+ million flashcard sets
* 3 distinct study modes - Flash Cards, Learn, and Scatterq* Works offline

My video on Quizlet: http://youtu.be/nn8_VyWSYD8



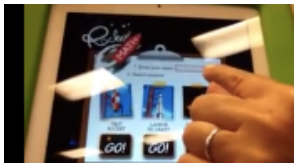
Video by a Houston teacher who took this course:
http://tinyurl.com/quizletF13

You can access quizzes made by others. Here for example is a collection of Dutch quizzes: http://quizlet.com/subject/dutch/

• **Rocket Math Video**

This lower school drill and practice math app is 99 cents and was shared with me by one of the teachers last semester who used it in first grade I think. From their website: "Math can be fun, and building your own rockets and fly them to the stars with Rocket Math. Gain money to build a ship from answering math missions. It covers numbers, telling time, money, 3D shapes, and arithmetic. It has missions that are different every time, over 90 rocket parts, and provides hours of learning fun."

Video on Rocket Math by a teacher in this course last year:
http://youtu.be/JXx3-dxzQCs



Videos by others at

http://www.youtube.com/watch?v=ypy-vX2eHKw
http://www.youtube.com/watch?v=w7-7OtwROhI
http://www.youtube.com/watch?v=HMVOVWH6BO0

• Study Blue

With StudyBlue's app, you can make, study, and share mobile flashcards, study guides, and quizzes. It's mobile, it's social, and it's free!

From their website: "Millions of students have used StudyBlue's powerful, fun and easy-to-use web-based flashcard system to improve their learning and get better grades. Now, with our iOS app, you can have the power of StudyBlue in your hands, any time of the day, no matter where you are.

-- STUDYBLUE MAKES SERIOUS STUDYING FUN! --

● Pick a flashcard deck.
● Flip through the flashcards one at a time.
● Guess the answer.
● See if you got it right!
● At the end, check your score, then go back and re-study the whole deck again, or focus only on the flashcards you got wrong.
● Track your progress over time."

My optional video on Study Blue: http://youtu.be/rCWKxUoQjXs

• Vocabulary Builder

Speaks words out loud -- Body Part and Animal Parts --Child has to move the word into the correct slot -- Seems very limited -- Not sure if this is valuable for young kids or not.

From their website: Vocabulary Builder' series is a great game for helping children become independent vocabulary learners. The vocabulary items are categorized and put in context. With the beautiful and attractive graphics, children can learn vocabulary simply by dragging the correct word to the corresponding pictures. Children can tap the word to hear the word spoken if they are not able to read or recognize the word. 'OK' button allows children to do self-checking on their own.

Vocabulary Builder 1:
With 2 different types of vocabulary in contexts including human body parts and animal body parts.

My optional video on Vocab Builder: http://youtu.be/vu_57IfGH6w

By the way (and some of you know this already), when I want to learn more about an APP, I generally go to YouTube and type something like this into the SEARCH box like this. The results are so frequently very satisfying!

INDEX of HIGHLIGHTS can be found on the last page

☑HW 5.1 Send an email to me regarding 6.2 due in 1 week. (p1)
☑HW 5.2: Answer questions on our collaborative doc about FACTORS THAT MAKE STAGES 2&3 EASIER (p1)
☑HW 5.3: Skills 27,28,29 (p2)
☑HW 5.4: Watch 2 out of the 6 sample projects done w/ TinyTap (p6) and email the other person in our course (Leehee or Sarah)
☑HW 5.5: Watch the 15 min teaching video on TinyTap (p9)
☑HW 5.6A: Create a TinyTap review quiz for your students on something that you teach coming up in the future (p13)
☑HW 5.6B: Send me the URL of your TinyTap (p13)