

Making Language Learning Apps with ARIS

June 11, 2016

CERCLL

Jon Reinhardt w/ Kayo Shintaku

Agenda

- Games, Stories, and Language Learning
- ARIS
- Sample Games: 'Analy Nyuwiich, Butterflies, Hiroshima
- Game Building: Ice Cream for Mom (story-based)
- Game Building: What Color is It? (three parts: flashcards, quiz, and ID/fill-in-the-blank)

Why games?

- What kinds of games did you play as a child?
What games do you play now? What did you like or dislike about them?
- What makes a good game or a bad game?
- How does playing a game involve learning?
How does it involve language use?
- What makes a game a game?

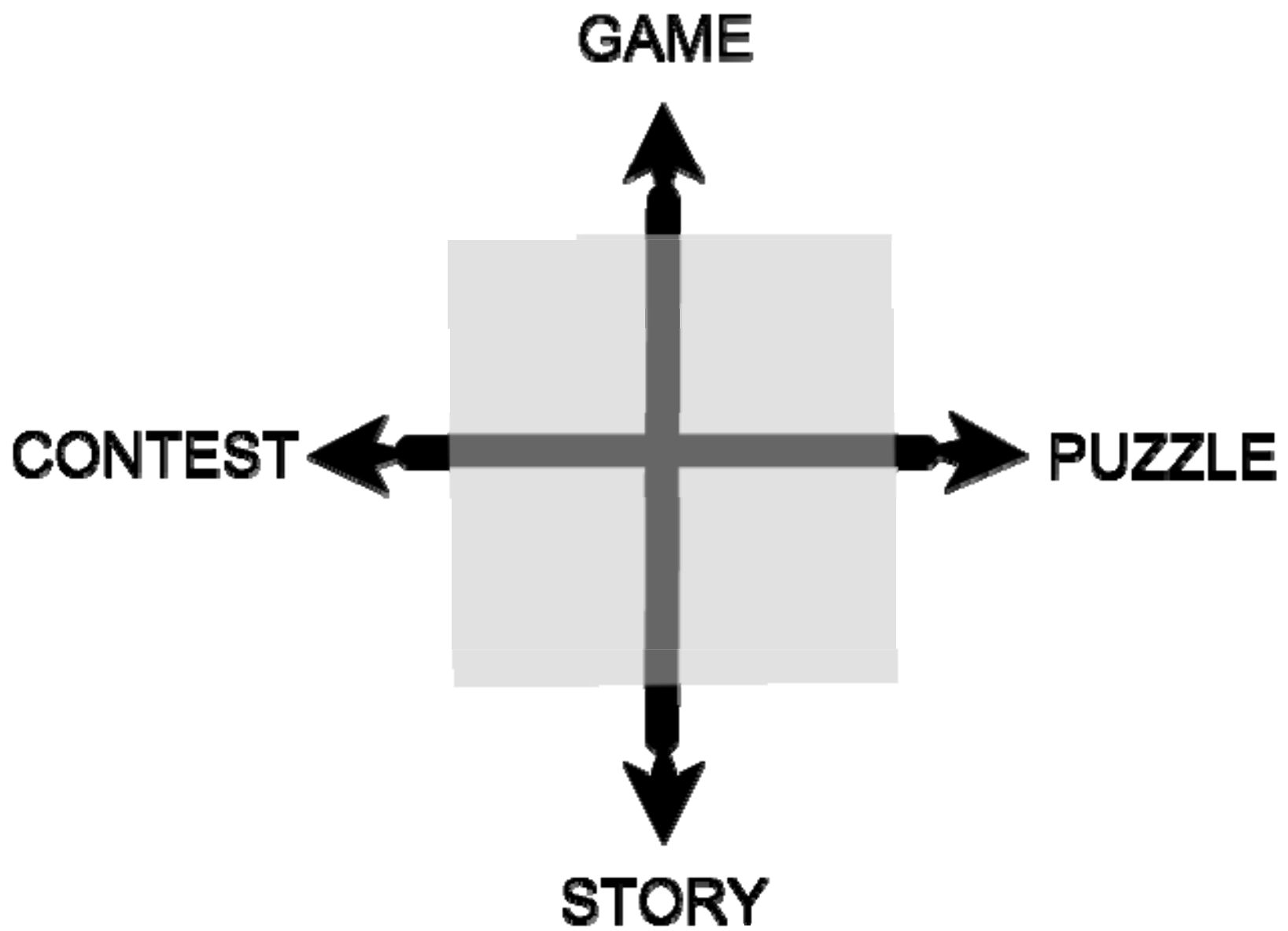
What makes a good game?

Which feature is most important for a good game? Rank the following from most to least important.

- It is challenging, but not too challenging
- It is easy to learn
- It evokes stories and fictional worlds
- It is fun and exciting
- It has a social element
- It is relaxing
- It immerses and engrosses you
- It is relatable to your life
- It teaches you something
- Other feature: _____

What is a game?

- It requires 'suspension of disbelief'
- There must be rules, but outcomes must be unknown
- It can involve elements of competition, chance, simulation, or vertigo
- It can involve role playing (taking on another perspective)
- It can be emergent or progressive



Why stories?

- How is a game like a story? How is it different?
- What is the cultural value of stories and storytelling? How do we learn through stories?
- What different kinds of narrative are there (i.e. story perspective)? What perspective does a game impose on a player?

What makes a good story?

Which feature is most important for a good story? Rank the following from most to least important.

- The story has a good plot that progresses
- It is sometimes predictable, but sometimes unpredictable
- It has interesting and relatable characters
- It evokes emotion
- It teaches something: a moral or something about the world
- It is believable and relatable
- It has some deeper meanings
- Other feature: _____

Language Learning

- How do we learn language?
- In your opinion, how important are the following activities?
Rate these as 5: very important, 1: not so important
 - Learning it along with culture
 - Using it functionally, for pragmatic purposes
 - Pronouncing it accurately
 - Listening to or reading stories
 - Writing stories
 - Memorizing vocabulary
 - Using grammar accurately
 - Playing with it
 - Other ways?

What is ARIS?

Augmented Reality Integrated Storytelling

- Developed at the U of Wisconsin-Madison, ARIS is an open-source, easy to use platform for creating and playing augmented reality experiences on iOS devices. These experiences include:
 - Interactive Stories
 - Scavenger Hunts
 - Tours
 - Data Collection Activities
 - etc. - *ARIS exists as an experimental platform to expand what is possible.*
- These experiences can include interaction based on
 - player location (GPS)
 - QR codes
 - navigation of the on-screen map
 - entering alphanumeric codes
 - social interaction around media collection

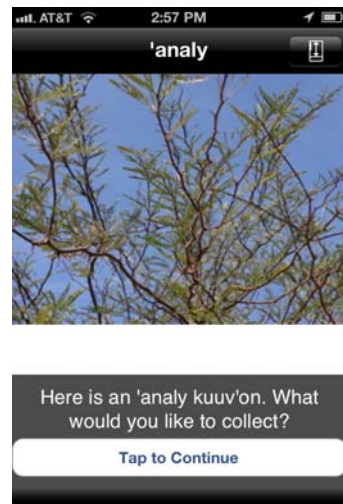
<http://www.arisgames.org>

- ARIS consists of three pieces of software:
 - Client (app) - to play games and collect data
 - Editor - to make ARIS experiences.
 - Server - Games live on a database in the cloud.
- The client and editor read from and write to it. Upside - No need to install games or go through the app store. Downside - you need an internet connection to play.
- People all around the world use ARIS for variety of purposes. Most are involved with learning somehow, from classrooms to museums, after school clubs and community action. Middle schoolers make ARIS games, and so do education researchers, artists, and moms.
- Go to the ARIS website!

ARIS for language learning

- [Mentira](#) (Sykes & Holden) – Spanish learning in ABQ
- [Paris Occupé](#) (Nelson) French learning in German-occupied 1938 Paris
- [Ecopod](#) ([CASLS](#)) – Language for negotiation and survival—with print materials!
- [Mobile Games for Indigenous Languages](#):
<http://indigenoustdigit.wordpress.com>

'Analy nyuwiich



'Analy Nyuwiich

Key Game Features

1. The game is relatively simple and is not difficult to learn.
2. The story is realistic and believable. It is invented, although it is based on cultural knowledge.
3. The game is interactive—it is based on 'collecting' items and giving them to game characters as needed.
4. You cannot 'win' or 'lose' the game. You cannot 'beat' other players. Succeeding in the game involves getting to the end.
5. The one real choice in the game, giving (or not giving) beans to the coyote, is central to the game outcome. The other activities in the game, collecting things and giving them to family members, are not optional.
6. The game is situated in a specific location, to be played by students at a certain school.
7. The main place, the mesquite tree, is real (it is an actual tree). The items and characters are imagined, but they are geo-located in specific locations, so that the player has to be in a physical place to trigger them.
8. The game is designed to supplement a particular lesson of instruction on Mojave culture and language.
9. The language use in the game is realistic—directions are in English, but the names of the items and family members are in Mojave.
10. The game reflects the cultural practice of visiting family members and learning from them.
11. The player is given a 'voice' in Mojave by the game creator.
12. The story was invented by the creators.

Why Butterflies are Silent

2:35 PM

WK: Why Butterflies Are Silent



A game to review the basics of Tohono O'odham grammar

New Game

2:35 PM

cicwi 'a'al




One day the Creator was resting, sitting, watching some children at play in a village. The children laughed and sang, yet as he watched them, the Creator's heart was sad. He was thinking:

next

2:35 PM

cicwi cehia 2



Cicwi 'o hegai cehia.

I understand

I don't understand

2:35 PM

Happy Grammar Gopher




Yes! "Hegai cehia 'o cicwi" and "Cicwi 'o hegai cehia" mean the same thing. You can start a sentence with a verb like cicwi, but an auxiliary like "o" must always be second. Plus three points!

I got it

2:36 PM

ko:š gogs 1



Which sentence about this dog is correct?


Hegai gogs pi 'o cicwi

Pi 'o cicwi hegai gogs

'O ko:š hegai gogs.

2:39 PM

Narrator




Suddenly he smiled. "All those colors, they ought to be preserved. I'll make something to gladden my heart, something for these children to look at and enjoy."

next

2:37 PM

s-wegi bahidaj



Bahidaj 'o s-wegi

I understand

I don't understand

11:31 AM


s-wegi



Continue

2:47 PM

da'a wipismal

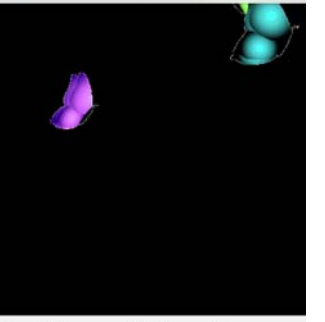


But then a hummingbird came flying, settling on the Creator's shoulder, scolding him, saying: "It's not right to give our songs to these new, pretty things. You told us when you made us that every bird would have his own song."

next

2:46 PM

hohogimelag



The children opened the bag, and at once hundreds and hundreds of colored butterflies flew out, dancing around the children's heads, settling on their hair, fluttering up again to sip from this or that flower.

next

Why Butterflies are Silent

Key Game Features

1. The game supplements an existing language learning syllabus.
2. The language in the story matched the grammar and the vocabulary in the syllabus.
3. The story is an authentic O'odham creation story.
4. The story involves activities like collecting, giving, and taking.
5. The game makes the story interactive, by requiring the player to do activities that are part of the story (in this case, 'collect' things of different colors).
6. The grammar and vocabulary in the game is contextualized in the story. In other words, the story uses the grammar and vocabulary in meaningful, communicative ways.
7. The grammar reviews allow players to check their understanding on their own, at their own pace.
8. The game gives points to players for completing the grammar reviews and getting quiz questions correct.
9. The game subtracts points if a player gets a quiz question wrong.
10. The game gives specific feedback for every choice the player makes in the grammar reviews and quiz sections.
11. The quiz questions require both grammatical and communicative understanding.
12. The quizzes use a variety of formats: multiple choice, simple answer, and yes/no.

Japanese Hiroshima Game



最終駅の「宮島口駅」で降りて下
続ける

-180 日本のお金 : 3900 Left



大人片道180円。切符を買ったら、さん橋へ行って下さい。

続ける

もみじまんじゅう



あんこのはいったもみじの形のおまんじゅうです。

かばん

- 
でんしゃのちず
 広島電鉄のルートちずです
- 
もみじまんじゅう
 あんこのはいったもみじの形のおまん...
- 
宮島いしか堂のメモ
 「れいか堂」は宮島の山「弥山」(み...
- 
平和のともしびのメモ
 平和のともしびは平和記念公園の中に...
- 
日本のお金 x3900
 日本のお金です。
- 
緑色の石
 緑色の石です。ふしぎな石です。「ひ...
- 
赤い石
 赤い石です。とてもきれいな石です。...
- 
青い石
 青い色の石です。ふしぎな石です。「...
- 
黄色い石

Japanese Hiroshima Game

Key Features

1. The game uses the current map of an actual city, and most of the images are taken at the real sites and objects (cultural authenticity).
2. The game integrates historical and cultural facts as well as the real folk tale about the actual places and objects.
3. The language used in the game is realistic and contains various registers. The player has a chance to link linguistic forms and vocabulary that s/he has learned in class through various in-game characters.
4. The game situates the player in Japanese sociocultural practices (e.g. shopping and public transportations).
5. The game is interactive with multiple choices and quests. While the game is linear, the player can still take several routes.
6. The player collects items as the story develops.

Before we play: Create an account

Create an ARIS Account (if you don't already have one)

- Go to the ARIS Editor at: arisgames.org/editor
- Click on “Register” to create an account
- Create a username and password
- Click on ‘Register’

Before we play: Install the App

- Install the latest ARIS app on your iOS device. On the device's browser (Safari, probably), go to <http://www.arisgames.org/get-aris> , and click on the black app store button
- Note that your ARIS app username/password will be the same as the one you just created above for the ARIS Editor.

Ice Cream for Mom

- A simple, non location-dependent story-based game we designed to demonstrate basic ARIS features
- Let's play!
 - Log in to ARIS app on your iPhone
 - Click on Search and find 'Ice Cream for Mom' game
 - Start the game and follow the prompts
- After we play the demo, we'll all make our own copies together

IC4M1 (Ice Cream for Mom)

1. Create a New Game

1. Go to the ARIS Editor at:
arisgames.org/editor
2. Click on “New Game”
3. Add a Title: “Ice Cream for Mom – JR” (use your own initials!).
4. Add a description in the text box: “It’s a hot summer day and mom needs ice cream”
5. Save

IC4M2. Create an Introduction Plaque

1. Click on the “Scenes” tab in the Header.
2. To create a Plaque click the + button next to the Plaques title in the Left Sidebar
3. Fill out the form that appears.
 1. Name: "Introduction"
 2. Text: "It is a hot summer day. You got a phone call from your mom to get ice cream for the family. Find her to get some money."
 3. Skip everything else for now.
 4. Save.

IC4M3. Create a Trigger

1. Click on the “Scenes” tab in the Header.
2. Click on the + next to the “Starting Scene”.
3. Click on “Plaque” and select your “Introduction” Plaque from the list. This will create a *Trigger* for your Plaque. The new Trigger will appear in the Starting Scene.
4. Click on the newly created Trigger (inside the Starting Scene). This will load the Plaque Trigger settings in the Right Sidebar (see image on right) which will allow you to specify when and how players will be able to view it.
5. To make the Plaque appear as soon as a player starts the game, set the Trigger to use "Locks".
6. Do not define any locks.
7. Save.

IC4M4. Create a conversation for Home

1. From the Scenes Tab, click the + on the Left Sidebar next to Conversations to create a new Conversation.
2. Name the Conversation “Home”. No other options are needed.
3. Save
4. Add the Home conversation to the Starting Scene by clicking the + to the right of the “Starting Scene” title and then selecting “Conversation” and choosing the “Home” from the list.
5. In the right sidebar for **Trigger**, choose “Locks” and Save.

IC4M5. Create characters for the conversation

1. Click on the “Home” conversation in the left sidebar
2. Click on Script Editor
3. Click on the + in the Left Sidebar next to Characters.
4. Create a new character
 1. Name in editor: Mom
 2. Name in game: Mom
 3. Media: Skip for now
 4. Save

You should now have two Characters (or people) associated with this Conversation. One is “You” (which is actually the player) and the other is the “Mom”.

IC4M6. Write the Home Conversation

1. Click the + above “Start Conversation”.
2. Click on the white box that says “Hello”. In the right sidebar (Edit Line), choose ‘Mom’ for Speaker, and in the Text box, write **“I’ve been waiting for you”**. Save.
3. Click on the Black arrow pointing down. Click on the blue ‘Continue’ box. In the right sidebar (Edit choice), write your response: **“Hi Mom, what do you need”**. Save.
4. Click on the next white box, and in the right sidebar, choose ‘Mom’ and write her response: **“I need ice cream. Go to the store and get some for me. Here is some money”**. Save.
5. Click on the green exit box. For the prompt, write your reply **“Okay, I’ll be back soon”**. For Action, choose ‘Exit to Tab’, and then choose ‘Scanner’. Save.

IC4M7. Add media: Money

1. Download and Upload the Media

1. Access the media through the Google Docs folder.
2. Click on the **“Media” tab** in the Header.
3. Click on the + button above “Upload Media”
 - **Name:** Money
 - **Choose File:** Locate and upload money.jpg from the Workshop Media folder
 - **Save**

2. Make Money! **Create an Item:** From the Scenes Tab, click the + on the Left Sidebar next to Player Attributes / Items to create a new item.

- Name: Money
- Description: none
- Weight: 0
- Max Qty in Inventory: 1
- Notify on Change: Checked
- Droppable: Checked
- Destroyable: Checked
- Type: Normal
- Tag: None
- Upload Media: money.jpg
- **Save**

IC4M8. Add media: Home and Mom

1. Download and Upload the Media

1. Access the media through Google Docs.
2. Click on the “Media” tab in the Header.
3. Click on the + button above “Upload Media”
 - Name: Home
 - Choose File: Locate and upload home.jpg from the dropbox folder
 - Save
4. Do the same with ‘Mom’

2. Add media to the Home conversation

1. Click on the “Scenes” tab in the Header
2. Click on “Home” Conversation in the Left Sidebar (under Conversations)
3. Click on “Icon” and select the Home image you just uploaded
4. Save

3. Add media to the Mom character

1. Click on the “Home” Conversation again
2. Click on “Script Editor”
3. Click on “Mom” in the Left Sidebar
4. Click on “Media” and select the image of the mom
5. Save

IC4M9. Have mom give the player the money

1. Click on the Scenes tab.
2. Click on the Mom conversation in the left sidebar.
3. Click on Script Editor
4. Click on the Line starting with “I need ice cream”
5. In the right sidebar, click on Edit Events.
6. In the Player Modifier window, change the Name ‘Event’ to ‘Give Money”
7. Click on Add Row
8. Set Action to ‘Give to Player’, set ‘What’ to ‘Money’, and leave Quantity to ‘1’
9. Save
10. Click Save on the right sidebar under Edit Events.

IC4M10. Upload media and make ice cream!

- Upload media for Ice Cream, Store, and Cashier
- Create new item 'Ice cream' (from Scenes tab, Player Attributes/Items).
- Add ice cream item to starting scene. Set trigger to QR. Change numeric code to word 'ice cream'.
- Don't forget to always Save!

IC4M11. Create Store conversation

- Create a new conversation 'Store'. Add media.
- Create a new character 'Cashier' in the store conversation. Add media.
- Have store conversation and have the cashier take the money.
 - Cashier: Hello can I help you?
 - Prompt: Hi. I would like to buy this ice cream.
 - Cashier: Okay that will be \$3.00 please.– Edit events:
Take from Player: Money
 - Prompt: Thank you. – Set Exit to conversation: Mom

IC4M12. Add store and set locks

- Add Store conversation to starting scene. Set trigger to 'Locks'.
- Click on Locks, and set to 'Player has at least', '# of Item/Attribute', '#1', 'Ice Cream'

IC4M13. Add to Home conversation

1. Open up the Home conversation
2. Click on the blue box “Hi Mom...”
3. In the right sidebar, click ‘Locks’. Set to Player has less than 1 Ice Cream, so that this option only appears if the player hasn’t yet gone to the store. Save.
4. Click on the right facing black arrow under “I’ve been waiting for you”.
5. Click on the new blue box, and in the right sidebar for prompt, write “**Hi Mom, I have the ice cream**”. Save.
6. Click on that line again and set the Locks to Player has at least 1 Ice cream. Save.
7. In the new white box, have Mom say “**Wonderful, thank you!**”. Save.
8. Click on that line again and Edit Events to Take from Player 1 Ice Cream. Save.
9. Click on the new green exit box, and change it to “Wait, can I have some?”. Set the Action to exit item to Ice Cream. Save.

IC4M14. Finish up

- Go to the Game menu
- Use ice cream media image for splash pic
- Change tabs so that unused ones are not available
- Change settings: add media, set to be played with QR codes, and publish
- Open up your IC4M game on the ARIS app on your phone and test it out!

WCII1. What color is it?

- An ARIS demo game for traditional language learning activities: flashcards, multiple choice quiz, and a fill-in-the-blank quiz
- Start a new game and translate it into the language you teach/learn (or stay in English if you like)
- Upload media: objects, colors, and teacher dog. Name them all in your language.
- Make items: objects and 'point'
- Make Introduction plaque: "Welcome! This app will teach you the colors."
- Create and save conversations: "Color flashcards" and "Color Quiz"

WCII2. Complete flashcards conversation

- Open “Colors Flashcards”
- Create characters: teacher, all the objects, and all the colors, and add media
- Start the conversation with: “The cactus fruit is red”, with the cactus fruit as the character, going through all of the objects and colors
- At the end, have the teacher dog ask if the player is ready for a quiz, and have the green exit go to the color quiz conversation.

WCII3. Complete quiz conversation

- Name: “Color Quiz”
- Start with teacher dog, then questions for 3 colors. For each, offer three answers--an option tree with the correct answers leading to the next questions, and the wrong answers leading back to the question. Give the player one point for getting a question correct.

WCII4. Add objects to starting scene

- Add introduction plaque, colors flashcards, and color quiz to the starting scene. Set to “locks” and save. For the flashcards convo, set locks to already viewed introduction plaque. For the quiz convo, set locks to already exited flashcards convo.
- Test your game so far!

WCII5. Color ID questions w/ decoder

- Create/save three plaques: yellow, red, and blue. For each, add media (color blocks). For yellow, set edit events to give player 1 sunflower. For red, 1 cactus fruit. For blue, 1 sky.
- Create/save three new conversations: Q 1 color ID, Q2 color ID, and Q3 color ID
- Complete each conversation: For Q1, have teacher dog ask “What color is a cactus fruit?”, and exit to decoder. For Q2, have him ask about sunflower, and for Q3, sky.

WCII6. Add objects to scene

- Add Q1, Q2, and Q3 conversations to scene. Set to locks and save, and set locks carefully (use already and not yet for Q1, and use at least and less than with Q2 and Q3)
- Add yellow, red, and blue. Set to QR and save, and set QR to the words 'yellow', 'red' and 'blue' accordingly.

WCII7. Finish Up

- Go to the Game menu
- Use rainbow media image for splash pic
- Change tabs so that unused ones are not available
- Change settings: add media, set to be played with QR codes, and publish
- Open up your WCII game on the ARIS app on your phone and test it out!
- Share it with another participant to teach them the colors in your language

Game Brainstorm!

- What kind of ARIS game might you like to create for your learners (or yourself!)?
- Story-based? Vocabulary flashcards and quizzes?
- Location dependent? Integrated to a place?
- Will it use GPS? Scanner? Decoder?
- Come up with an idea with other participants or on your own.

The End

- Feel free to email (or visit) me any time at: jonrein@email.arizona.edu -- ML 473
- Visit <http://www.arisgames.org> for many, many examples, ideas, a manual, and a discussion board
- Consider attending the ARIS summit in Wisconsin one day and sharing your games