Unit 4 Lesson 1

Analysis of Design

Resources

Name(s)_____ Period _____ Date _____

Activity Guide - Determine the User

Next to each description of a user, write down the letter of each teapot they might use. Be prepared to justify your answers.

1. Someone who wants an individual cup of tea before bed.

2. Someone who often drops things

3. Someone who likes very ornate objects

4. Someone who needs to serve tea at dinner party

5. Someone who likes to see their tea brewing

6. Someone who is often in a rush.

7. Someone who has a kitchen with a lot of black appliances.

8. Someone who likes plain objects

9. Someone who prefers iced tea

10. Someone who can use a stove to heat up water.

11. Someone who owns a pot holder.

12. Someone who wants to serve tea to a friend who came over to chat.

13. Someone who has a modern kitchen.

14. Someone who likes tall thin objects.

15. Someone who collects antiques.
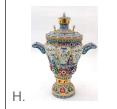
16. Someone who has a very small kitchen.

A.

B.

C.

D.

E.

F.

G.

H.

Critiquing Design:

For each of these teapots, finish the statements on the right that critique the object's design:

I like _____

_____

I wish _____

_____

What if _____

_____

I like _____

_____

I wish _____

_____

What if _____

_____

I like _____

_____

I wish _____

_____

What if _____

_____

I like _____

_____

I wish _____

_____

What if _____

_____

Unit 4 Lesson 2

Understanding Your User

Resources

Name(s)_____ Period _____ Date _____

U4L02 Activity Guide - Reacting as Your User

Product Evaluation

Your teacher will present a series of different products for you to react to. For each product shown, analyze and rate each of the items shown to you, from the point of view of the user described in the user profile.

Misconception Alert

It's easy to think about this in terms of what you like or don't like, but you should be responding based on what your user would like or not like.

Product	Feature Analysis
Product Name: _____ 🙂 🙂 😐 🙁 ☹️ Like Just OK Dislike	My user would like/dislike because
Product Name: _____ 🙂 🙂 😐 🙁 ☹️ Like Just OK Dislike	My user would like/dislike because
Product Name: _____ 🙂 🙂 😐 🙁 ☹️ Like Just OK Dislike	My user would like/dislike because

Product Redesign

Review the 8 chairs as your assigned user and answer the following questions:

1. Which chair would your user prefer? _____

2. Name 2 features of your chair that your user likes. How do you know your user would like them?

3. Given what you've learned about your user, design a better chair in the box below.

Discuss

1. Name two features from your new chair design and describe why they appeal to your user.

2. Name two features from other chairs you chose <u>not</u> to include and explain why.

3. Compare the chairs within your group. What do they have in common? What's different?

Activity Guide - User Profile

Randi : Outdoorsy Professor

User Profile

Randi is a 35 year old woman who lives in Wolf Point, Montana. She is a member of the Sioux Tribe and teaches Native American Studies at Fort Peck Community College. She closely follows the college women's basketball team, the Buffalo Chasers, and she wears the team colors of red, yellow, and black every chance she gets. Randi enjoys winter sports like skiing and ice fishing, and frequently brings her dog Scout with her on her outdoor adventures. She has always wanted to visit the ocean in a warm place like Florida but she generally dislikes hot, muggy weather. When she is not outdoors, she loves to curl up on her couch at home with a good book and a slice of chocolate cake, though she prefers to drink tea with it, since dairy gives her an upset stomach. She dislikes watching TV, high heeled shoes, and punk rock music. In the evenings, she sometimes works online communicating with her students and other professors and doing research. She doesn't have an office space so she does this mainly from her couch. She would love to have a better way to separate her work space from her personal space when she's at home.

Point of view statement
Randi needs a way to more efficiently work from home because she doesn't have an organized office/work space.

Gabriella: Dedicated Mother

User Profile

Gabriella is a 34 year old woman living in Cicero, Illinois. She was born in Indiana and moved to Illinois after meeting her husband Michael in the military. Gabriella now works for a real estate agency and spends much of the rest of her time taking care of her daughter who is in 3rd grade at the local elementary school. She and Michael have early mornings getting to school and then work, and on the weekends they are busy running errands. Gabriella enjoys attending her daughter's soccer games, being involved in community groups in her neighborhood, and attending dance classes. While in the military she would work out more often but in the last few years she's had less and less time. She also wishes she had more time to see her family back in Indiana and worries that her daughter does not get to see her grandparents enough.

Point of View Statement

Gabriella has a jam-packed life in Illinois. She wishes she had a little more time for herself and wants her daughter to be connected to family back in Indiana.

Activity Guide - User Profile

Tony : Insurance Adjuster

User Profile

Tony (full name Antonio) is an insurance adjuster in his late 20's, living outside Los Angeles. He works for a large insurance company in the area, and has to drive a lot for work, which means being stuck in traffic listening to the radio most of the day. Tony really wishes that he had more free time, and could afford to live closer to the city. He would prefer not to keep working in insurance and would rather find a job in health care. He completed high school but never attended college and while he would like to go back to school to change his career, Tony has a hard time saving money.

On the weekends, Tony plays bass in a reggae band with his roommates, but they rarely get to perform or practice. Tony also loves to go to the movies, and he prides himself on knowing the names and history of all the actors. He has found that it's really hard to make friends outside of his roommates and wishes that he had some way to share his knowledge and interest in movies with more people so that he might find new like-minded friends.

Point of view statement

Tony wants a way to share his interest in movies with a wider range of people that could potentially become new friends.

Activity Guide - User Profile

Amelia : Retired Cashier

User Profile

Amelia is a retired grocery store cashier who, after moving around the country with her military husband David, has settled in Atlanta. She loves to cook, and particularly enjoys trying out new recipes from different regions around the world. Amelia and her husband have found that they really enjoy the great food and museums in Atlanta, but the summers have proven to be too hot and humid for their liking and they have started saving up to do a little bit of travelling.

Amelia has 4 grown children and 7 grandchildren. She finds it really hard to live so far away from all of her grandchildren, so she tries really hard to find fun and exciting activities to do with them when they come to visit. Being new to the area, and having grandkids that range in age from 4 - 15, Amelia sometimes has difficulty finding activities that the whole group can enjoy but are still affordable on her budget.

Point of view statement

Amelia wants to find interesting activities in her area that are appropriate for a wide variety of ages, and she'd like to know before leaving the house how much the activity is likely to cost.

Unit 4 Lesson 3

User-Centered Design Micro Activity

Resources

Activity Guide - User Centered Design

Overview

Designing a product requires you to think about the needs of your users, even if those needs are very different from your own. In this activity you will be designing a product from the ground up for the specific needs of a user.

The product you will be designing is a piece of **smart clothing**. For this activity consider smart clothing to be any piece of clothing that also integrates computing technology. It might have sensors that record data, change colors or display information, or even connect to the internet. Push the boundaries of what's possible. So long as your design **meets the needs of your user** it is appropriate for today's activity.

Define

Brainstorm Users

In the space below brainstorm as many different kinds of people as you can who might benefit from smart clothing.

Categorize Users

Create scraps of paper for each of your users. As a group or as a class **create categories of users** by grouping together similar types of users.

Choose Specific User

Choose a specific category of user to design for and write it here: _____

Brainstorm Needs

In the space below brainstorm the **needs, interests, and concerns** of your user.

Categorize Needs

Create scraps of paper for each of your user's needs, interests, and concerns. As a group or as a class **create categories of needs** by grouping together similar needs.

Choose Specific Need

Write the specific need your group selected: _____

Prepare

Brainstorm Solutions

In the space below brainstorm ways **smart clothing** could be used to help address the need your group chose.

Discuss Pros and Cons

With your group discuss the pros and cons of the ideas you brainstormed. In each case keep in mind **the specific need of your user**.

Try

Describe Your Product

In the space below write a short description of your product and **how it meets the needs of your user.**

_____
_____

_____
_____

_____
_____

_____
_____

Draw Your Product

In the space below **draw a picture of the piece of smart clothing** you want to create. Label the different components you will be adding to the clothing.

Reflect

Present Your Product

Be prepared to share your user, need, and smart clothing idea with your classmates.

Unit 4 Lesson 4

User Interfaces

Resources

User Interface (UI): These images represent the visual elements of this app. Cut out each screen card.

Txt Ur Grndkdz

Suzette
Next birthday in: 3 months, 5 days
Age: 13
Grade: 8th

Chat

Suzette
Next birthday in: 3 months, 5 days
Age: 13
Grade: 8th

Hi granny, how are you?

Just keepin' it real!

LOL, you're a goof

You know me :)

send

LOL

Definition:
Laughing Out Loud

Grandkid Use:
"[Laughing Out Loud], you're a goof"

Help

Txt Ur Grndkdz is an app designed to help you connect better with the younger generation.

Add a grandkid, select their face on the home screen and start chatting. Whenever your grandkid uses a slang word it will show up with a red outline. Click on the outlined word to learn the definition and see a translation of your grandkid's message.

Settings

Grandkid 1 Name:
Grandkid 1 Bday:
Grandkid 1 Phone:

Grandkid 2 Name:
Grandkid 2 Bday:
Grandkid 2 Phone:

Grandkid 3 Name:
Grandkid 3 Bday:
Grandkid Phone:

Grandkid 4 Name:
Grandkid 4 Bday:
Grandkid 4 Phone:

Allow Notifications: ☑

Settings

Home

Navigation Diagram
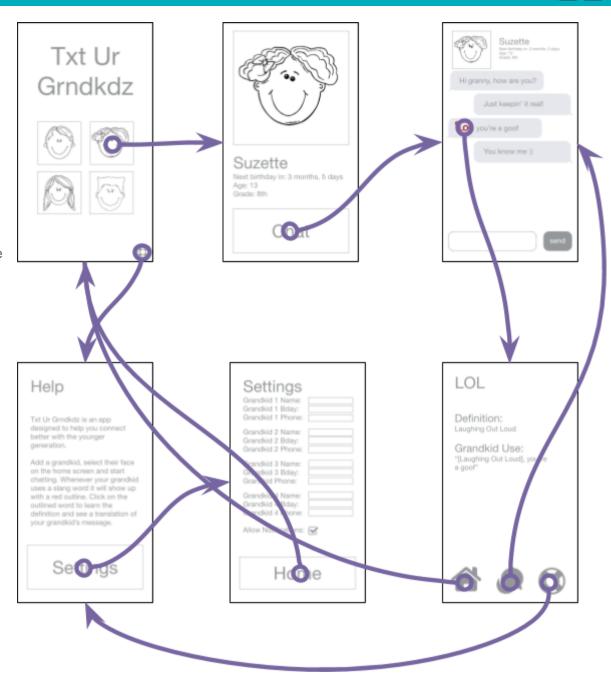
The Navigation Diagram to the right describes how each screen of this prototype is connected to other screens. Each arrow connects an element (such as a button, image, or icon) to another screen of the app. Combined with the UI screens this diagram allows you to "use" the paper prototype as if it were a real app.

Prototype Testing

You're going to test out this prototype with a partner. Your role is to be the *computer*, taking input from the *user* and responding accordingly.

Rules for the Computer

- Place the first screen in front of the User

- Place the rest of the screens off to the side

- When the user clicks on a card, refer to the diagram:

   - If the clicked element has a line, switch to the screen that the line links to

   - If the clicked element doesn't have a line, don't do anything

Name(s)_____ Date _____

Activity Guide - User Testing (User)

Test Cases

A *test case* is a specific user interaction that the developer of an app wants to test for. Choosing good test cases can ensure that when you test an app with a user, you hit all of the important functionality. In the table below, each row is a test case made up of a specific Task that you are trying to perform, a space for you to document what you tried, and a space to record your reaction.

Prototype Testing

You're going to test out this prototype with a partner. Your role is to be the *User*, interacting with the User Interface screens as if it's an actual app. Your partner (the *Computer*) will take care of making sure the prototype responds as it was designed. Use the table below to try out different test cases and record the results. The last few rows are left blank to allow you to explore other areas of the app that interest you. The first row is completed as an example

Task	What I Tried	My Reaction
View Suzette's information	*Clicked on each of the of the faces until I found one that changed to Suzette's screen.*	*It wasn't really clear who was who on the home screen. It would be nice if it showed each kid's name below their picture*
Get help on how to use the app		
Find out when Suzette's birthday is		
Send Suzette a message		
Get the definition of an unknown acronym		

Table continues on the back

Task	What I Tried	My Reaction
Change Suzette's Age		
Change Suzette's Picture		
Enable Notifications		

Unit 4 Lesson 5

Feedback and Testing

Resources

1. I'm having a hard time figuring out how to add my grandkids to this app. Seems like it'll be really useful but I've been clicking around and can't seem to find it.

2. Is there any way to zoom in on this app?

3. How do I add grandkids to this app?

4. I just downloaded Txt Ur Grndkdz. I know that lots of apps have names that spell words incorrectly but I feel like it's hard to find this app online because it's spelled incorrectly.

5. Is there a way to make it so that when you click on a grandkid it will open up the chat right away? I like the birthday reminders but usually I'm just using this app to talk with my grandkids and don't need all that extra information.

6. I'm having a hard time with the text being so small in this app. Is there any way to make it bigger?

7. What is a Grndkdz? I don't understand why the app is named this.

8. I want to change my grandkids' information but I can't seem to find anywhere to do it.

9. Whenever I go to the chat page for a grandkid I can't seem to get back to the home screen. Right now I just have to shut the whole app down.

10. I would like a way to talk with more than 4 grandkids. I have 11 and was hoping this app would be a good way to stay in touch will them.

11. I'm wondering if this app needs to be just for people who want to talk to their grandkids. I volunteer at my local elementary school and would love to use this app to keep in touch with my students. Is there any way to make it less grandkids focused?

12. Why do I need to go through the help screen to get to the settings screen? It took me a really long time to figure this out and I don't think it makes a lot of sense.

13. I just realized you need to go all the way through to a word's definition to get back to the home screen. I feel like you should always be able to get to the home screen.

14. How can I add a photo of my grandkids? I found a way to add their information but there's no way to change it from the default image.

15. Is there a way to change the photo for my grandkids?

16. The font on a lot of these pages is really small and difficult to read. Can we make it bigger?

17. I feel like I often want to get back to the home page and there's no way to do it. It feels like sometimes you can and sometimes you can't and there's no pattern.

18. There's no way to add my granddaughter's grade. Is it just being calculated using their age?

19. This says that my kid is in 7th grade but they skipped a grade and are in 8th. How is this grade showing up?

20. Is there a place to enter a student's grade?
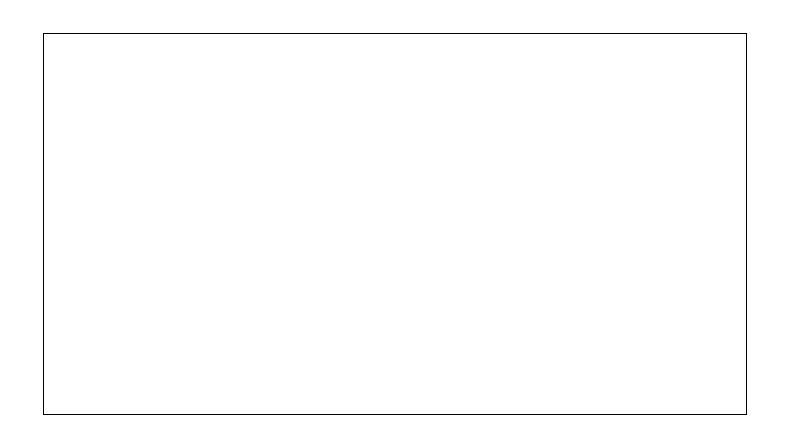
Name(s)_____ Date _____

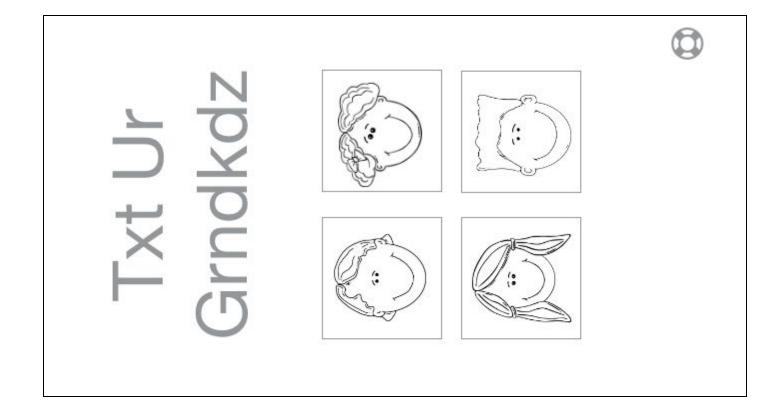# Activity Guide - Improve a Screen

Potential Improvements

Using the feedback you categorized in the last activity, what improvements could your group make to the app? For each improvement, identify which category of feedback you are addressing.

Proposed Improvement	Feedback Addressed

Screen Redesign

Each group member will select one of the screens, and one of the improvements. Using the page for your chosen screen, sketch out what your improved user interface will look like. Describe changes to the user experience by writing descriptions or drawing arrows to the changes you've made in the space below. How will buttons, inputs, etc. work differently on this updated screen?

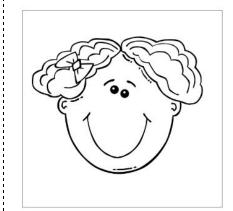# Txt Ur Grndkdz

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Age: 13
Grade: 8th

Chat

Suzette
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LOL

Definition:
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Grandkid Use:
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Settings

Settings

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Grandkid 1 Bday:
Grandkid 1 Phone:

Grandkid 2 Name:
Grandkid 2 Bday:
Grandkid 2 Phone:

Grandkid 3 Name:
Grandkid 3 Bday:
Grandkid Phone:

Grandkid 4 Name:
Grandkid 4 Bday:
Grandkid 4 Phone:

Allow Notifications: ☑

Home

User Interface (UI): These images represent the visual elements of this app. Cut out each screen card.

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Suzette

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Settings

Settings

Grandkid 1 Name:
Grandkid 1 Bday:
Grandkid 1 Phone:

Grandkid 2 Name:
Grandkid 2 Bday:
Grandkid 2 Phone:

Grandkid 3 Name:
Grandkid 3 Bday:
Grandkid Phone:

Grandkid 4 Name:
Grandkid 4 Bday:
Grandkid 4 Phone:

Allow Notifications: ☑

Home

Unit 4 Lesson 6

Identifying User Needs

Resources

Name_____ Date _____

Activity Guide - User Interview

Initial Questions

Using the questions and space below, interview your partner to learn more about their needs and obstacles in regards to learning something new. While there are only two questions provided, you should ask follow-up questions based on your interviewee's responses in order to get more information to help you in later phases. Make sure to note *everything* that your interviewee says or does in response to each question.

Who are you interviewing?_____))))

Question 1: What new thing did you want to learn, and why?

Question 2: What has (or might) get in the way of you learning that?

Developing Follow-up Questions

Read through your notes from the first two interview questions and highlight any statements or responses that you might want to know more about. Your goal in this interview is to learn as much as possible about what your user wants to learn *and* what barriers might get in their way. After reviewing responses to the first two questions, come up with three follow-up questions that could help you learn more or clear up ambiguities.

Follow-up Question 1: _____

Follow-up Question 2: _____

Follow-up Question 3: _____

Identifying Barriers

Using the notes you've taken from all of the interview questions, come up with a list below of all of the barriers to your user learning what they wanted to learn. Try to find both barriers that were explicitly stated by your user as well as some that you found by reading between the lines.

Barriers:

Name(s)_____ Period _____ Date _____

Project Guide - Paper Prototype

CODE

Overview

For this project you will be creating a paper prototype of an app to help a classmate learn something new. You should already have interviewed your classmate and identified a barrier to their learning. You'll need to create an app that helps them overcome this barrier. Feel free to try creative new approaches to the problem you've identified, but whatever you decide to design, make sure you are empathizing with the needs of your user.

You will submit:

- This project guide
- The screens of your app. These will be drawn on notecards. At most you can have 6 screens
- A navigation diagram of your app, showing how your user moves between screens
- A poster showing off your prototype and describing how it works

Define

You should already have interviewed your classmate to identify what they want to learn and a barrier to learning this skill. Record the results of that interview below.

What does your classmate want to learn?

What barrier prevents them from learning it?

What type of app will help address your user's needs?

Prepare

As a class you should have discussed types of apps that can address your user's needs. Now it's time to start thinking about what specifically this app will do.

In the space below list the minimum features your app will need to meet your user's needs.

Sketch Your Screens
On a blank sheet of paper sketch out the outline of your screens and how a user will navigate between them. To keep your app simple you should limit yourself to 6 screens at most. In many cases, however, your app may not even need that many. Some things to keep in mind:

- Focus on structure. What's the purpose of each screen. What features do they need to include
- Start with core features. Only add "extras" once you're sure they're necessary
- Decide what consistent design features you'll use (e.g. a menu that's always at the top)
- Don't worry about drawing things perfectly. This is a sketch to help you design your final draft.

Try

Create Your Screens
You will be given notecards to draw the final version of your screens. Using pencils, markers, colored pencils, or anything else you wish, create the user interface of your app.

Create Your Navigation Diagram
On the next page you will find a navigation diagram you can use to draw how your user will move around inside your app. Any information about how the user interacts with the app should be included on this diagram.

Reflect

User Testing
You will test your app with your user. Use the attached User Testing Guide to organize this process.

Interpreting User Feedback
Using your notes from user testing, list all of your observations of interesting things the user said or did, and attempt to identify what that might mean about how your app works, or should work.

User Said / Did	What it Means
Kept clicking on Suzette's face to try and change her settings.	*Grandkid images should link to settings page.*

Create a Poster
Combine the different pieces of work you completed for this project to create a single poster. In addition to your brainstorm sketch, final user screens, and navigation diagram, make sure to include the following information.

- What is your user trying to learn?
- What is a barrier to their learning?
- What is your app? How does it work?
- How does your app address your users needs?
- Improvements you would make based on your testing

Navigation Diagram

Draw simple sketches of your screens in the space below. Then draw arrows showing how a user would navigate between your screens.

Any information about how the user interacts with the app needs to be included on this page.

User Testing Guide

Test Cases

Create User Tasks
Fill in the left column of the table with different common tasks your user will want to do with your app.

Test Your Prototype
Give this testing guide to your user. Test the app by starting them on the home screen and allowing them to navigate through it by clicking. Try to complete each task listed in the table. Here's some guidelines

- As the "computer" only use pieces of interaction included on the Navigation Diagram to move around the app
- Don't explain how the app works to your user. You want to observe how they would use it without guidance.
- The user can and should think out loud. This is a way to help you understand their experience
- Keep a scratch piece of paper to record anything else you notice during the test

Record Findings
In the "What I Tried" and "My Reaction" columns include what your user did to complete each task. In the next column include their reactions about how easy or approachable the app was to use.

Task	What I Tried	My Reaction

Unit 4 Lesson 7

Project - Paper Prototype

Resources

Unit 4 Lesson 7 Project Rubric

Key Concept	Extensive Evidence	Convincing Evidence	Limited Evidence	No Evidence
Understanding the User	The purpose of the app is clearly defined in terms of multiple user needs and challenges as identified in the interview.	The purpose of the app is defined in terms of the needs of the specific user as determined by the interview, and at least one related challenge is identified.	The purpose of the app is described in terms of the needs of the user, but the description may not be specific to the user or relate back to the interview.	The purpose of the app is not defined, and user needs are not identified.
Designing to Criteria	Explicit connections between user needs and specific features of the app, and explanations of how multiple features address those needs.	Explicit connections between user needs and features of the app.	User needs are identified, and appear to be related to app features, but may not be explicitly connected	User needs are not mentioned, or do not appear to be addressed in the app.
Prototyping and Testing	Multiple screens and elements, with a clear and distinct purpose for each screen and elements that relate to that purpose.	Multiple screens and elements relevant to the user's task and stated features of the app.	At least one screen with multiple elements that are relevant to the user's task and stated features of the app.	No screens, or screens with elements that are not related to the stated features of the app.
Prototyping and Testing	The poster describes the results of user testing, synthesize feedback, and identifies specific areas for improvement.	The poster describes the results of user testing, including a synthesis of user feedback.	The poster describes the user testing, but there is no clear analysis of test results or synthesis of the feedback.	No user testing is mentioned.
Software Development: Communication and Documentation	Clear how the user would navigate the app and how the steps of the navigation relate to solving the user's problem	Clear how the user would navigate the app and all required screens and elements are described.	The poster describes how the user could navigate the app, but elements may be missing.	No description of how the user could navigate the app.
Software Development: Refining Computational Artifacts	Multiple proposed improvements to the app are clearly related to the results of testing, with an explanation of how feedback is being addressed.	There are proposed improvements to the app that are explicitly related to the results of testing.	There are some proposed improvements to the app, but it is no clear connection to the results of testing.	There are no improvements mentioned to the app.

Name(s)_____ Period _____ Date _____

Practices Reflection

How I've grown	Practice	How I want to grow
	Problem Solving	
	Persistence	
	Creativity	
	Collaboration	
	Communication	

Name(s)_____ Period _____ Date _____

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Navigation Diagram

Draw simple sketches of your screens in the space below. Then draw arrows showing how a user would navigate between your screens.

Any information about how the user interacts with the app needs to be included on this page.

User Testing Guide

Test Cases
Create User Tasks
Fill in the left column of the table with different common tasks your user will want to do with your app.

Test Your Prototype
Give this testing guide to your user. Test the app by starting them on the home screen and allowing them to navigate through it by clicking. Try to complete each task listed in the table. Here's some guidelines

- As the "computer" only use pieces of interaction included on the Navigation Diagram to move around the app
- Don't explain how the app works to your user. You want to observe how they would use it without guidance.
- The user can and should think out loud. This is a way to help you understand their experience
- Keep a scratch piece of paper to record anything else you notice during the test

Record Findings
In the "What I Tried" and "My Reaction" columns include what your user did to complete each task. In the next column include their reactions about how easy or approachable the app was to use.

Task	What I Tried	My Reaction

Unit 4 Lesson 8

Designing Apps for Good

Resources

Team Name : _____ Period _____ Date _____

U4L08 Activity Guide - App Design Kickoff

Team Agreement

Your first decision as a team is to agree on how you'll work together. You'll follow upon classroom norms for communication, decision-making, and participation. There is space for additional agreements as well.

Read through this agreement, discuss it as a team, then sign in the box below saying you agree.

Communication

When working together in the classroom, we agree that we'll treat each other with respect. That means:
- our written and verbal communication will be considerate (no calling each other names)
- we'll take turns when sharing ideas, and listen politely when others are speaking
-
-
-

Decision Making

When making decisions as a team, we'll first listen to everyone's point of view. We'll then try to make a decision that respects everyone's ideas, and that everyone can agree on.

If that isn't possible after several tries, then we'll _____

_____.

If we still can't decide, then we'll ask the teacher to help.

Once a decision is made, we all agree to work on it with our best effort, even if it wasn't our personal choice.

Participation

We agree that this project will only succeed if we are all participating and working on it. We promise to:
- try our best on every activity, and ask for help if we need it
- turn in our work on time
- check in with other team members or the teacher if we miss class, so the project can stay on track
-
-

First and Last Name	Today's Date
1.	
2.	
3.	
4.	
5.	

Brainstorming

Team Name

Choose a team name and write it below:

Topic

What general topic will your app focus on? Don't worry about what specifically the app will do at this point, just consider what type of problem you are interested in. For example, you may consider issues in your school community, encouraging civic service, promoting the arts, improving the environment, or improving the health and wellbeing of others.

User Groups

What kinds of people could you develop this app for? Consider all of the different groups of users impacted by your chosen topic.

Other Notes:

U4L08 Activity Guide - App Resource List

This is a resource list of the apps referenced in this lesson:

1. Verizon App Challenge winner created "Hello Navi". Helps blind students navigate school and other locations.
   ○ (2:57 min) Pitch video: https://www.youtube.com/watch?v=vT-sOUZ_g4Q
2. Trisha Prabhu created "ReThink". Helps prevent cyberbullying by making users think before sending a mean text.
   ○ (2:38 min) ReThink YouTube video: https://www.youtube.com/watch?v=oGuvpB4r_tU
   ○ ReThink website: http://www.rethinkwords.com/
3. Technovation 2016 MS winning team California Coders: "Loc8Don8". Finds donation sites and tracks several types of charitable donations.
   ○ (3:51 min) Loc8Don8 pitch video: https://www.youtube.com/watch?v=evOgwXoi7oU
   ○ (1:27 min) Loc8Don8 demo video: https://www.youtube.com/watch?v=HYLvaojZ0Q0
   ○ (6:30 min) Loc8Don8 PP Presentation: https://www.youtube.com/watch?v=sKFIxquRj2Y
4. The Techi Crew from Winchester, MA created "SpeechReach". Helps users improve public speaking skills.
   ○ (3:23 min) SpeechReach pitch video: https://www.youtube.com/watch?v=K4vdf7O4ckM
   ○ (1:53 min) SpeechReach demo video: https://www.youtube.com/watch?v=klL2AMmVUf0
5. Verizon App Challenge 2014 winning team from Kennewick, WA created "Safe and Sound". Helps teens cope with depression.
   ○ Youtube video: https://www.youtube.com/watch?v=4nis8VmJHKc
   ○ Huffington Post article:
     http://www.huffingtonpost.com/2015/02/20/safe-and-sound-app_n_6723386.html

Unit 4 Lesson 9

Market Research

Resources

Team Name _____ Period _____ Date _____

U4L09 Activity Guide - Market Research

Misconception Alert

The goal of this research is to help you decide the topic, the target user group, and the type of app you want to create. You are not yet making decisions about what the individual screens of your app will look like.

Finding Similar Apps

Fill in the information below on the apps that you find during your research. For each app you find, you'll need to identify who the target users might be, what you liked about the app (and therefore might use for inspiration in your own) and what you didn't like.

Name of App What it does	Who is the target user? How are their needs met?	I liked...	I didn't like...

Brainstorming App Ideas

Brainstorm with your team potential ideas for your app. When you've found an idea that the team can agree on, document it here. **Focus on the minimum set of features** that will allow you to prototype and test your core idea.

Team App Idea:

Apps used for Inspiration:

App Name and URL	Features

Unit 4 Lesson 10

Paper Prototypes

Resources

Name(s)_____ Period _____ Date _____

Activity Guide - Prototype Brainstorming
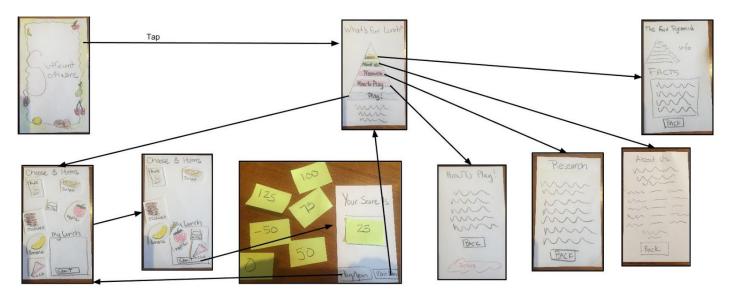
UI Elements:

The following is a table of some of the UI elements that are available in App Lab. For each element, discuss with as a team what you think it does and how you might use it in your app. Write it down in the Intended Use column.

UI Element	Intended Use
Button	
Text Input	
abc Label	
Dropdown	
Radio Button	
Checkbox	
Image	
Text Area	
Slider	

Example "What's for Lunch?" wireframe:

Suggested Screens:

Reminder: There must be at least one screen per student in the team.

App Type	Example	Suggested Screens
Decision Making	Can I recycle this?	● Home/about us ● Questions / answers ● Answer page
List Management	Homework reminder	● Home/about us ● List of items ● Add item ● Remove item ● See all items that have been done
Quiz	Spanish Helper	● Home/about us ● Questions / answers (sequential) ● Tracking results ● Compare results with others
Crowdsourcing	Which recycling bins are full?	● List of locations ● For each location you can do something - Reporting, checking in ● Personal Summary page ● Global summary page did everyone do

Our App's Screens

Based on the app you plan to develop, and the suggested screens on the first page of this guide, identify all of the screens that you'll need to design. For each screen, write a brief description and include a list of all of the other screens that it will need to link to.

Screen	Description	Links to

Unit 4 Lesson 11

Prototype Testing

Resources

Activity Guide - Paper Prototype User Testing

Overview
Your group will be testing the paper prototype of your app on other members of your class and potentially users outside of the class. In order to get the best feedback possible you will be assigning different roles in the process so that while some team members run the simulation the others just focus on writing feedback.

Assign Roles for Testing
Decide who on your team will have each of the following roles for the test. You will switch roles between tests.

- **Narrator:** the person running the test. They explain what is happening to the user, answer any questions (though do not help the user) and assign users new tasks.
- **Computer:** manipulate the low fidelity prototype based on what the user is doing.
- **Observers:** watch the interaction and write down in their notes what they see the user do in response to the computer

Identify Users
Decide who in your class will be your user of your app. If you like you can also run this test with people outside of the class who might be part of the target audience of the app.

Create and Run Test Cases
On the next sheet you'll find the test cases sheet you'll use to run and record your test.

Summarize Findings
Once you've run your tests record the most important findings or changes you found in your testing

User Said / Did	What it Means
Kept clicking on Suzette's face to try and change her settings.	*Grandkid images should link to settings page.*

Test Cases

Create User Tasks
Fill in the left column of the table with different common tasks your user will want to do with your app.

Test Your Prototype
Ask the user to try to complete a task listed in the table. Test the app by starting the user on the home screen and allowing them to navigate through it by clicking. Here are some guidelines:

- As the "computer", only use pieces of interaction included on the Navigation Diagram to move around the app
- Don't explain how the app works to your user. You want to observe how they would use it without guidance.
- The user can and should think out loud. This is a way to help you understand their experience
- Record anything you notice the user try or say during the test

Record Findings
In the "What the User Tried" and "The User's Reaction" columns include what your user did to complete each task. In the next column include their reactions about how easy or approachable the app was to use.

Switch Roles
Once the user is done with a task, switch narrator, computer, and observer roles within your group, and try the next task. The user does not switch.

Task	What the User Tried	The User's Reaction

Unit 4 Lesson 12

Digital Design

Resources

Name_____ Period _____ Date _____

Activity Guide - Screen Ownership

Assigning Screens

Using your paper prototypes as a guide, divide the screens up evenly among your group members. Each student should be assigned at least one screen. If there are additional screens left, consider grouping similar screens together to assign to a single member.

Give each screen a name that will be used in the app. Screen names can contain only letters and numbers - no spaces, punctuation, or other special characters.

Screen Name	Team Member

Name_____ Period _____ Date _____

Activity Guide - Screen Design

Choose a Screen Name

Each screen needs to have a unique (within the app) and descriptive name. The screen name can only contain letters and numbers - no spaces, punctuation ,or other special characters.
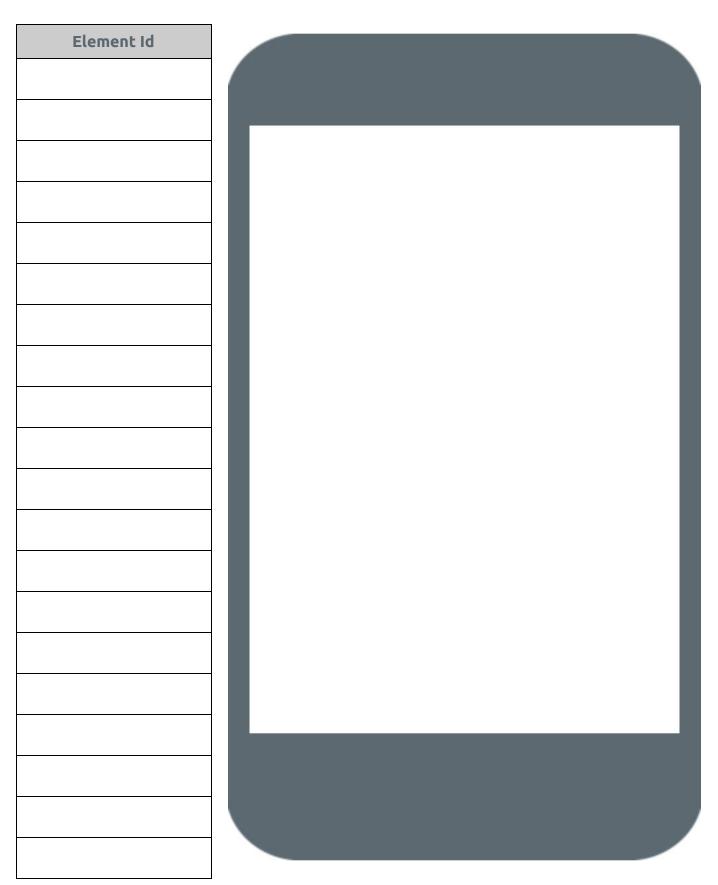
Screen Name: _____

Setting the Namespace

A namespace is a unique string of text that you will add to all of your element IDs. This way to make sure that the elements *you* create don't conflict with those created by your teammates. As long as everyone on your team uses a different namespace, when it comes time to combine all of your screens into one app you won't have to worry about conflicting IDs

One good way to come up with a namespace is to combine the name of your screen with an underscore (_). For example, if your screen name is **account** and you have an input box for the user's first name, your ID for that input box would be **account_firstName**.

Tracking IDs

As you design your screen, sketch each element in the frame on the right, write its ID in the table on the left, and connect the two with a line.
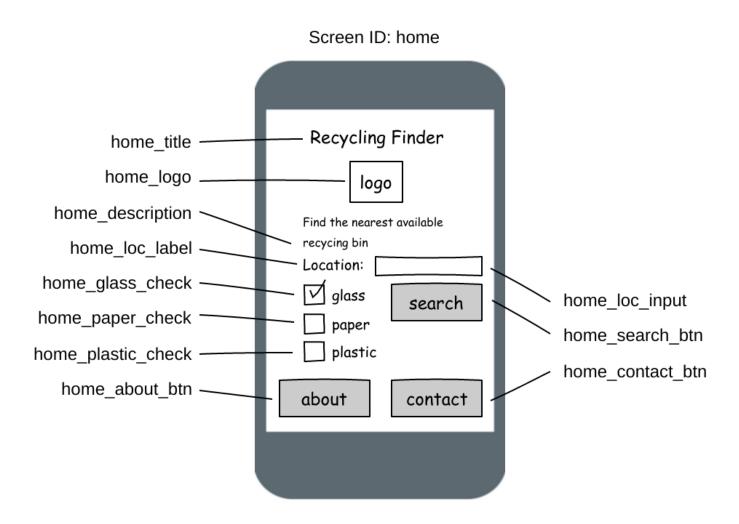
Element Id

Name_____ Period _____ Date _____

Activity Guide - Model Screen Design

Translate from paper to digital

Using Design Mode in App Lab, create a digital version of this paper prototype. Make sure that the IDs you use match the IDs on the right. If an element on the screen isn't labelled with an id, create one of your own.

Screen ID: home

home_title

home_logo

home_description

home_loc_label

home_glass_check

home_paper_check

home_plastic_check

home_about_btn

Recycling Finder

logo

Find the nearest available recycing bin

Location:

☑ glass

☐ paper

☐ plastic

search

about

contact

home_loc_input

home_search_btn

home_contact_btn

Unit 4 Lesson 13

Linking Screens

Resources

Unit 4 Lesson 14

Testing the App

Resources

Activity Guide - App User Testing

Overview
Your group will be testing the prototype of your app on other members of your class and potentially users outside of the class. In order to get the best feedback possible you will be assigning different roles in the process so that while some team members run the simulation, the others just focus on writing feedback.

Assign Roles for Testing
Decide who on your team will have each of the following roles for the test. You should switch roles between tests.

- **Narrator:** the person running the test. They explain what is happening to the user, answer any questions (though do not help the user) and assign users new tasks.
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Summarize Findings
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Test Cases

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- The user can and should think out loud. This is a way to help you understand their experience.
- Record anything you notice the user try or say during the test.

Record Findings

In the "What the User Tried" and "The User's Reaction" columns include what your user did to complete each task. In the next column include their reactions about how easy or approachable the app was to use.

Task	What the User Tried	The User's Reaction

Unit 4 Lesson 15

Improving and Iterating

Resources

Name(s)_____ Period _____ Date _____

Activity Guide - User Testing Analysis

C O
D E

Interpreting User Feedback

Review your notes from user testing and write down your team's observations of all of the users' feedback

User Said / Did	What it Means

Brainstorming Session

Using sticky notes and the analysis above, brainstorm the bugs the user identified in the app and features that the user suggested for the app. Record each bug or feature on a separate sticky note. Make sure to write whether this is a BUG or a FEATURE, and give a ballpark estimate of the amount of time the team thinks it would take to implement the fix or new feature. Remember that bugs and features aren't only related to the code! Confusing text, inconsistent color choice, and confusing layouts are all potential bugs as well.

BUG: On the lunch line screen, there is an image of some food that is missing, it looks like a weird broken link
5 minute fix

FEATURE: The users would like to be able to pick lunches with more or less than 3 items in them
45 minute fix

FEATURE: We would like to add more foods to the list of foods on the lunch line screen.
30 minute fix

FEATURE: We would like to add sounds to the results page
20 minute fix

Bug and Feature Analysis

Duplicate the tables below on a piece of poster paper. Discuss amongst your team where you think these bugs and feature requests would go in the table, placing the sticky into the appropriate quadrant. If you are unsure about the difficulty of a feature to implement go with your best guess.

	Easy to Implement	Difficult to implement
Urgent Fix		
Non Urgent Fix		

To Do	Doing	Done

Tracking Progress

Using the **To Do, Doing, Done** chart on the bottom of your poster, start moving sticky notes from the Urgent/Easy quadrant to the **To Do** column. Choose at least two tasks per group member and write on the sticky who the task is assigned to. As you work on improving the app, you will move the stickies through the stages of this chart.

Unit 4 Lesson 16

Project - App Presentation

Resources

Unit 4 Lesson 16 Project Rubric

Key Concept	Extensive Evidence	Convincing Evidence	Limited Evidence	No Evidence
Designing to Criteria	The app requirements are clearly defined in relation to user needs, and functionality and features that address those requirements are described and justified.	The app requirements are defined and functionality and features that address those requirements are listed.	Some app requirements are defined, but may not be linked to aspects of the app design.	The requirements of the app are not defined.
Evaluation and Feedback	Market research includes specific relevant apps and their citations, with evaluation of how they meet user needs, identifying specific features that made them more or less successful.	Market research includes specific relevant apps and their citations, as well as an evaluation of how well they meet user needs.	Market research includes at least one app that is relevant to the defined problem.	There is no market research.
Prototyping and Testing	Paper prototype includes multiple screens and elements, with a clear and distinct purpose for each screen and elements that relate to that purpose.	Paper prototype includes multiple screens and elements relevant to the user's task and stated features of the app.	Paper prototype includes at least one screen with multiple elements that are relevant to the user's task and stated features of the app.	There is no paper prototype, or it includes screens with elements that are not related to the stated features of the app.
Software Development: Communication and Documentation	The demo clearly shows how a user would use core functions of the app and highlights features that address the stated user needs.	The demo covers basic functionality and clearly shows how the app should work.	The demo describes the app with enough information to understand its general purpose, and shows at least one screen.	There is no demo or it does not give sufficient information to understand what the app is.
Software Development: Refining Computational Artifacts	Presentation describes the results of user feedback from both paper and digital prototypes. Feedback is addressed with multiple proposed improvements clearly related to on the results of the user testing.	Presentation describes results of user feedback from both paper and digital prototypes. Feedback is addressed with appropriate changes to the app.	Presentation describes the results of user feedback at least one stage of app development.	No feedback is described.
Software Development: Using Events	The digital prototype makes extensive use of user input and consistently responds to user input in ways that make sense.	The digital prototype responds to some user input in a way that makes sense for the functioning of the app.	The digital prototype responds to input, but it may have significant bugs that prevent it from working properly.	The digital prototype does not respond to user input.

Name(s)_____ Period _____ Date _____

Practices Reflection

How I've grown	Practice	How I want to grow
	Problem Solving	
	Persistence	
	Creativity	
	Collaboration	
	Communication	