

Play Before Pixels

Rapid V/AR Concept Prototyping

Saara Kamppari-Miller @DesignerGeeking

V/AR



VIRTUAL / AUGMENTED REALITY

Why You're At This Digital Summit Session

- YOU WANT TO USE V/AR TO MARKET PRODUCTS IN WAYS THAT CAPTURE PEOPLE'S IMAGINATION
- YOU NEED HELP TO GET YOUR AMAZING V/AR IDEA OUT OF YOUR HEAD AND SHARE IT WITH YOUR PARTNERS TO MAKE IT A REALITY

What You'll Learn

- ☐ WHY PLAY BEFORE PIXELS?
- ☐ RAPID V/AR CONCEPT PROTOTYPING TUTORIAL
- ☐ HANDS ON! EMERGENCY BUSINESS CARD V/AR PROTOTYPING



@DESIGNERGECKING

DESINGERGEEKING.COM

Saara Kamppari-Miller

CHANGE AGENT

USER EXPERIENCE DESIGNER @ INTEL

ECLIPSE CHASER



In most things, less than 100%
is more than enough.

Total solar eclipses are an
exception to the rule.



NEXT TOTAL SOLAR ECLIPSE IN NORTH AMERICA IS APRIL 8TH, 2024



Clay, bricks, and paper are more than enough to **explore** and **communicate** V/AR ideas and get **feedback** to start **iterating** on your concept today.

Goodbye Flatland

Hello V/AR!

- EXPERIENCES THAT HAPPEN IN SPACE AND TIME.
- BEYOND VIEWING AND TAPPING: EMBODIED INTERACTION
- VIRTUAL REALITY IS REALITY, IT CAN HAVE REAL WORLD CONSEQUENCES

Pencils Before Pixels

A Primer in Hand-Generated Sketching

Mark Baskinger

Carnegie Mellon University | mbaskinger@andrew.cmu.edu

Drawings and sketches can be powerful and persuasive representations of ideas, events, sequences, systems, and objects. As part of a larger collaborative design process, hand drawing can serve as a key method for thinking, reasoning, and exploring opportunities, yet it inherently differs from wire frames and conceptual models. *Instantly*, interaction designers employ a variety of methods for representing ideas and information, both internally in a cognitive sense, and externally in the devices we employ to record, share, and reflect. However, competency in sketching and drawing by hand seems to be diminishing across design disciplines, making it a more highly desired skill in contemporary design practice. In addition, there seems to be an apparent phenomenon of fear when it comes to drawing ideas. For many practicing designers, they have convinced themselves that they can't draw and thus

position themselves on the periphery of concept generation. The fact is that we all can draw, and there is a misperception that one has to be the Michelangelo of design drawing to be able to communicate visually. At young children, we had no fear of drawing and putting our work out in the public domain, but as adults, we've grown extremely self-conscious of our abilities and insecurities and now fear being judged. Gaining competence in drawing is similar to becoming a marathon runner; it can't happen overnight. But, like running, most of us can already somewhat do it—we just need to devote the time and energy toward building this skill to become truly versed in it. As a drawing instructor in the School of Design at Carnegie Mellon University, my role is to shape students to become better visual communicators and, therefore, better visual thinkers. We always start our creative

processes with hand drawing: pencils before pixels. This article will touch upon some of the methods used in the School of Design to present a primer for practicing interaction designers to become better visual thinkers and communicators by employing hand-generated techniques to enrich their creative design processes.

Envisioning, Recording, Sharing, and Reflecting

As designers, we enjoy the journey of discovery, in making relationships between intangible ideas/data and the formal elements that make an idea accessible. Initiating the creative process with hand-generated sketches to think through abstract or intangible ideas in various permutations can provide a stronger basis to shape these ideas with digital images, words, pixels, and vectors. By starting with hand-generated "analog" media

like pencils and pens, we can express ideas in lower fidelity very quickly. The expediency of this process tends to yield visualizations that communicate best to the author/designer but often fail in communicating to others. To better understand the role that drawing can play in the design process, it's best to have fairly simple expectations and goals for hand-drawn activities. Explicit goals for drawing and sketching are 1. to externalize and convey the process of thinking—to transform intangible ideas to tangible information for others; 2. to reveal ideas/relationships, not results; and 3. to engage discussion around the subject/problem as an inclusive activity. The common link to all of design drawing is in constructing a graphic representation in a coherent format, one that speaks to alternative ideas and the evolution of an idea. The images that result from this process serve as vehicles to bring

others into the designer's mind to better facilitate conversation and collaboration.

Envisioning ideas and transferring the ideas in your head onto paper can be challenging. The style of drawing, the methods of collecting ideas, and the media used can all vary greatly—thumbnails, Post-its, napkin sketches, and doodles are valid when trying to capture an idea. There is only one rule when drawing to capture ideas: Each idea must be explored from many different perspectives. Too often people try to capture an idea with one solitary sketch that edits the amount of information. Drawing ideas in variations, details, and from multiple viewpoints can enhance communication and enable the author to think more critically about the completeness of an idea as well as to provide reference points to more effectively express each thought.

One of the most powerful uses of sketching is to record ideas

► A child's visual interpretation of Alice in Wonderland. Children often will draw with any available implement on any available substrate to explore ideas and tell stories. Is it possible to sustain our interest in the world and develop the ability to tell visual stories beyond childhood? (Sketch by Alex Baskinger, age 6)



V / AR = ?

Play Before Pixels

**“Play lies at the core of
creativity and innovation.”**

Stuart Brown M.D.

Play: How it Shapes the Brain, Opens the Imagination, and Invigorates the Soul

Why Analog Play Matters (vs Digital Tools)

EXPANSIVE THINKING

TAP INTO CREATIVITY FOR INNOVATION

PLAY DOESN'T HAPPEN ALONE: IMPROV AND SAY "YES AND!"

COMMUNICATE CONCEPTS FASTER

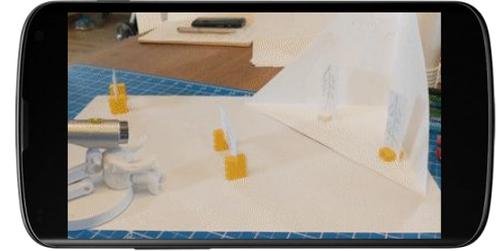
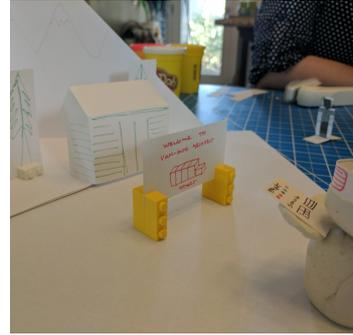
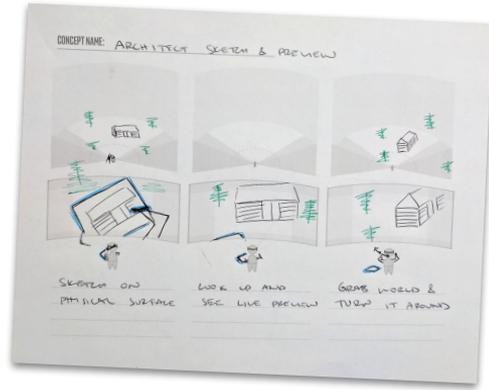
CAPTURE CONCEPTS FASTER

IMAGINATION IS YOUR ONLY LIMITATION

“It really **opened up our minds** from the get-go, and broke down the sometimes overly serious discussions we have about things that should be fun, fluid and valuable.”

Rapid V/AR Concept Prototyping

Rapid V/AR Concept Prototyping in 4 Steps



Sketch

Storyboard

Model

Capture

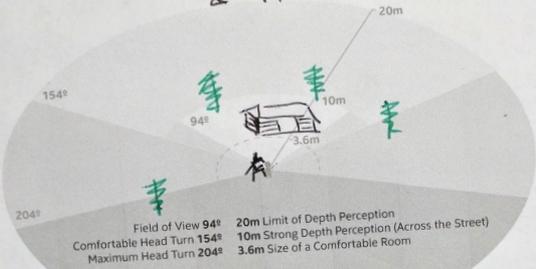
PAPER & PEN

PAPER & PEN

CLAY, BRICKS, PAPER

CAMERA

CONCEPT NAME: ARCHITECT SKETCH
& PREVIEW



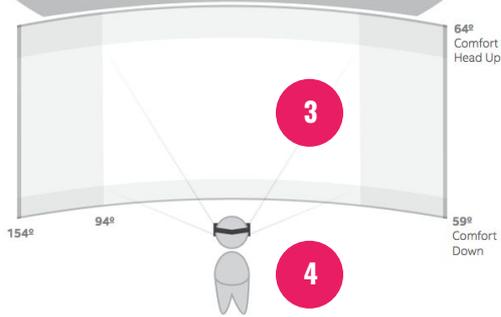
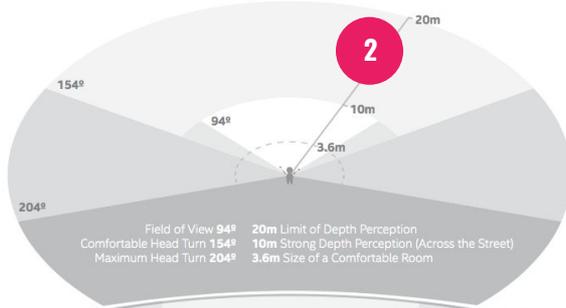
LOOK DOWN, SKETCH ON
PAPER. LOOK UP, SEE YOUR
SKETCH IN PLACE ON
THE PLOT OF LAND

V/AR Concept Sketching

GOAL: GET IT OUT OF YOUR HEAD
& MAKE IT EASIER TO TALK ABOUT

CONCEPT NAME: _____

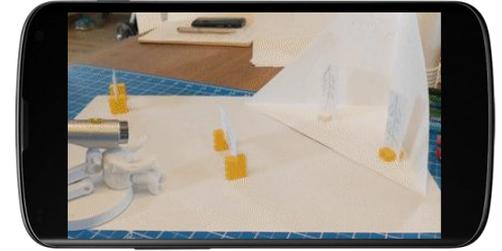
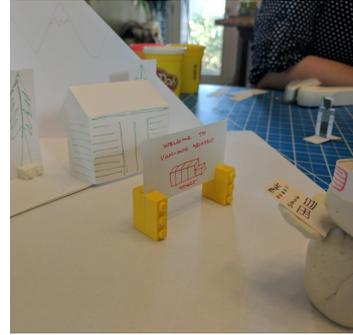
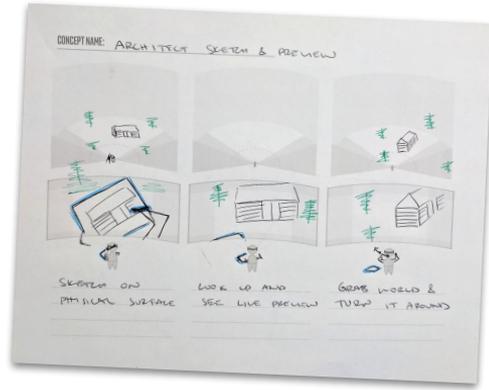
1



V/AR Concept Sketching

1. NAME IT
2. WHAT IS AROUND YOU? (**SPACE**)
3. WHAT DO YOU **SEE**?
4. WHAT YOU ARE **DOING**?

Rapid V/AR Concept Prototyping in 4 Steps



Sketch

Storyboard

Model

Capture

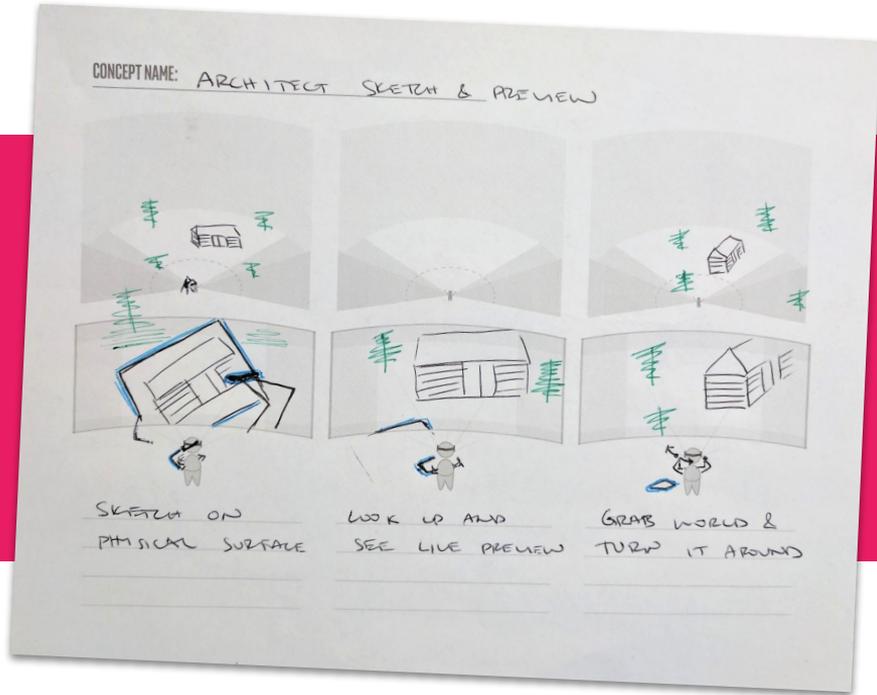
PAPER & PEN

PAPER & PEN

CLAY, BRICKS, PAPER

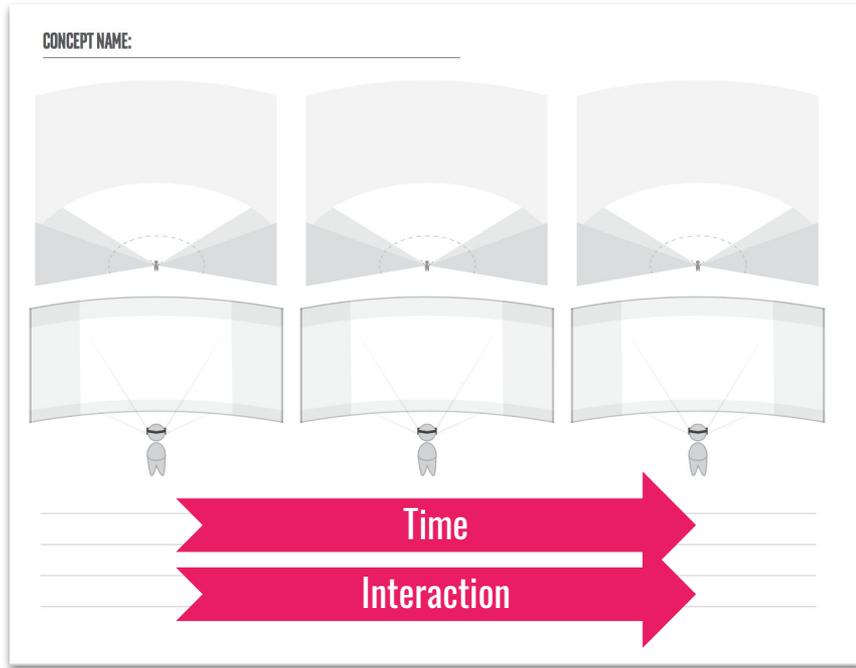
CAMERA

GET IT OUT OF YOUR HEAD



V/AR Storyboard

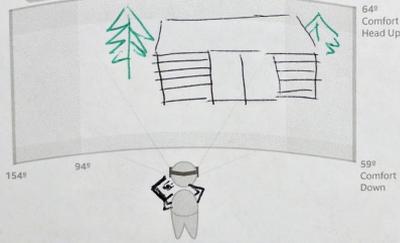
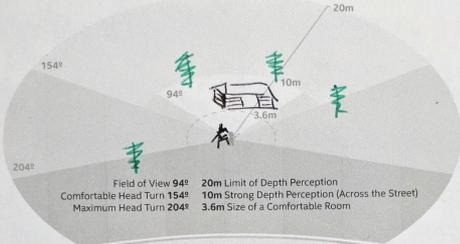
GOAL: MAKE A PLAN & THINK
ABOUT TIME + INTERACTION



V/AR Storyboard

- A) WHAT IS HAPPENING THAT THE **USER IS REACTING TO?**
- B) WHAT IS THE **USER DOING** THAT THE WORLD IS REACTING TO?

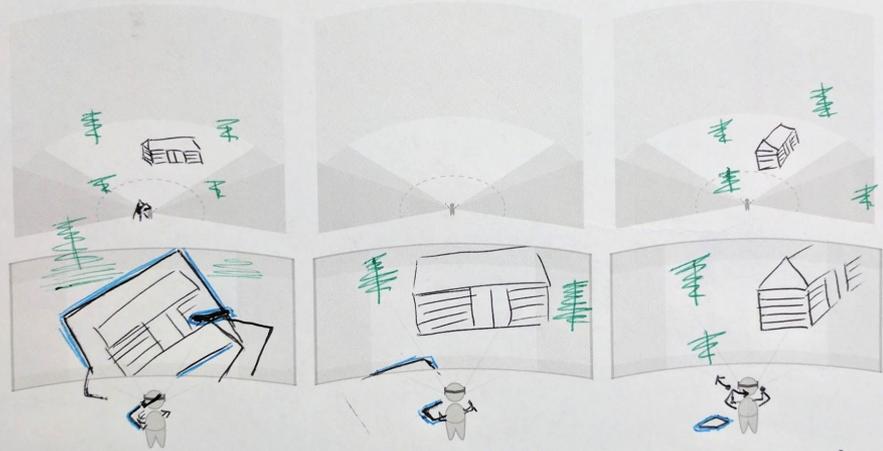
CONCEPT NAME: ARCHITECT SKETCH
& PREVIEW



LOOK DOWN, SKETCH ON
PAPER. LOOK UP, SEE YOUR
SKETCH IN PLACE ON
THE PLOT OF LAND



CONCEPT NAME: ARCHITECT SKETCH & PREVIEW

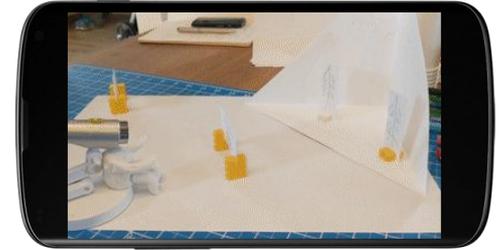
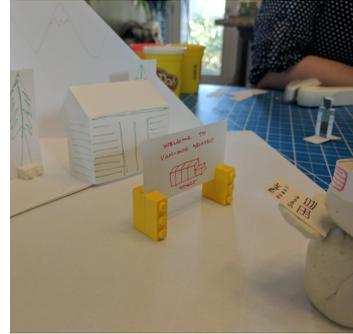
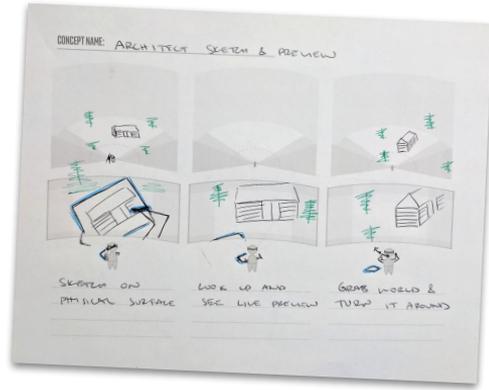


SKETCH ON
PHYSICAL SURFACE

LOOK UP AND
SEE LIVE PREVIEW

GRAB WORLD &
TURN IT AROUND

Rapid V/AR Concept Prototyping in 4 Steps



Sketch

Storyboard

Model

Capture

PAPER & PEN

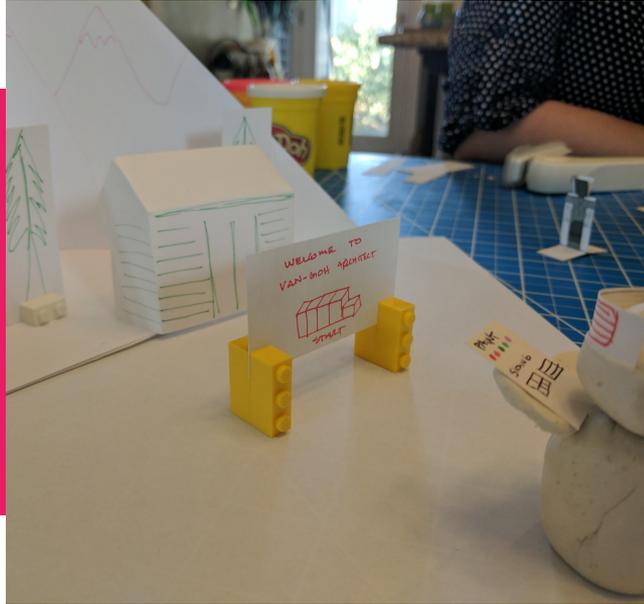
PAPER & PEN

CLAY, BRICKS, PAPER

CAMERA

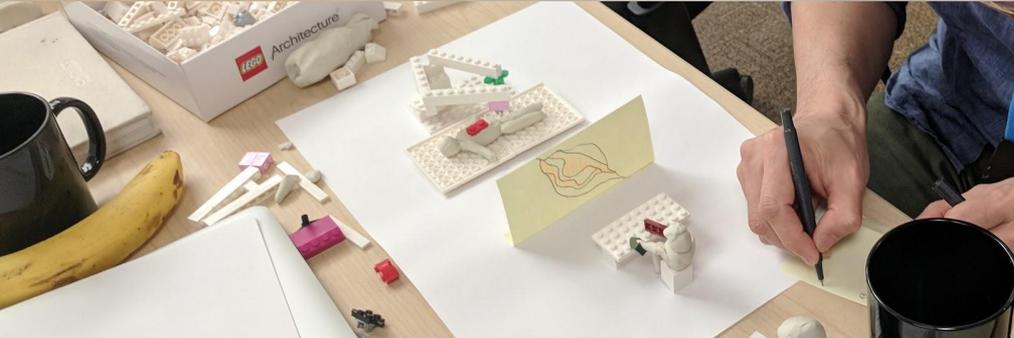
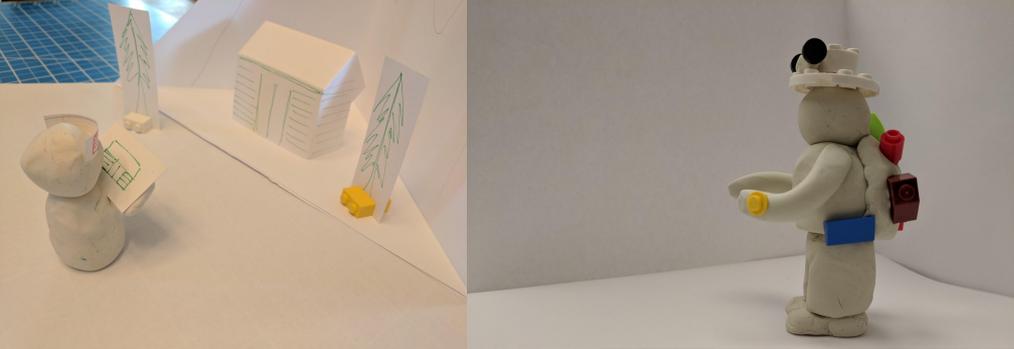
GET IT OUT OF YOUR HEAD

MAKE A PLAN



V/AR Concept Modeling

GOAL: BUILD, PLAY, LEARN



Rapid Prototyping Concept Modeling

A **SMALL SCALE VERSION** OF YOUR
V/AR EXPERIENCE THAT YOU CAN
ACT OUT AND EXPERIMENT WITH

Build Your Rapid V/AR Prototyping Kit

RECOMMENDED TOOLS

MODELING CLAY

BUILDING BRICKS

INDEX CARDS

3/16" HOLE PUNCH

SCISSORS

PENS

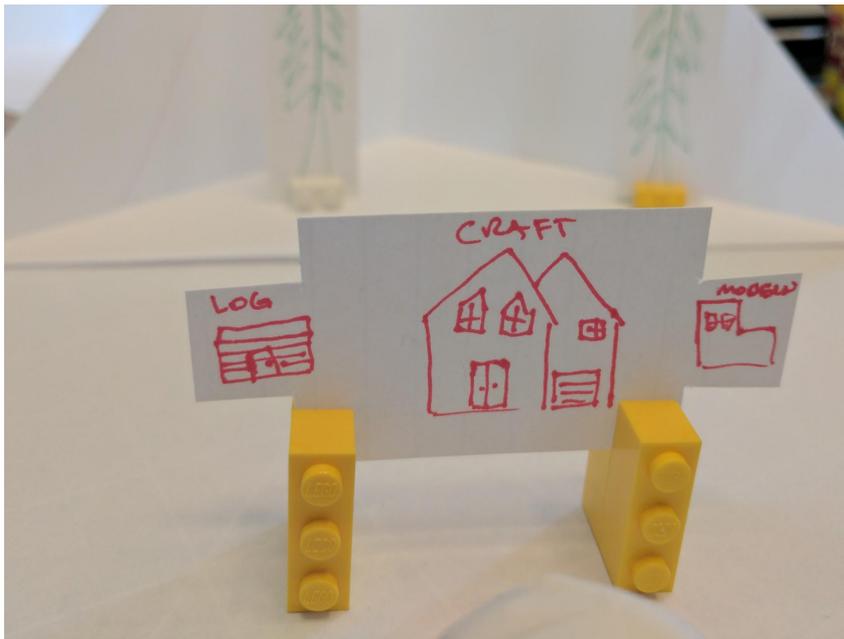
PIPE CLEANERS OR GARDENING WIRE

WASHI/PAPER TAPE

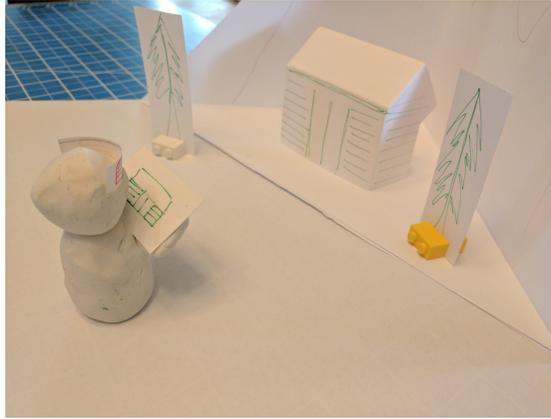
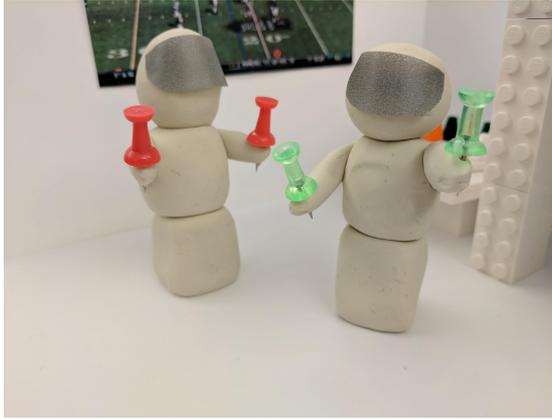
+ RANDOM OFFICE SUPPLIES



BRICKS + PAPER + 3/16" HOLE PUNCH

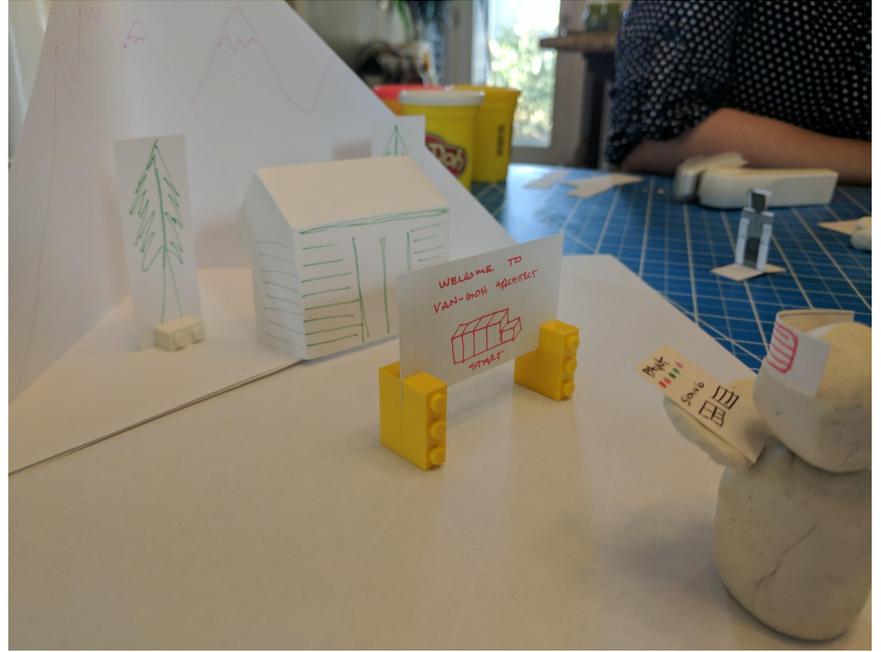
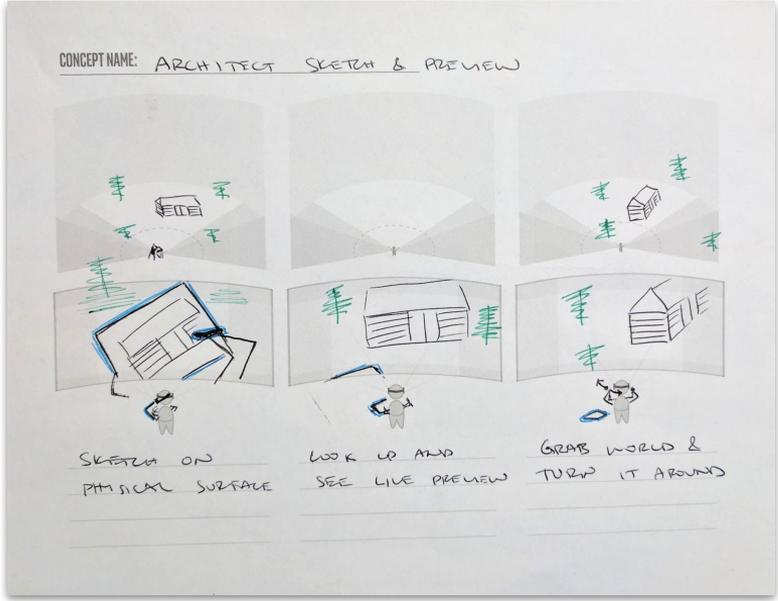


SERIOUS PLAY, FLOATING UI, MOVIE SET FACADES

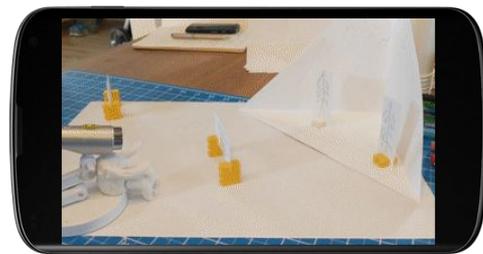
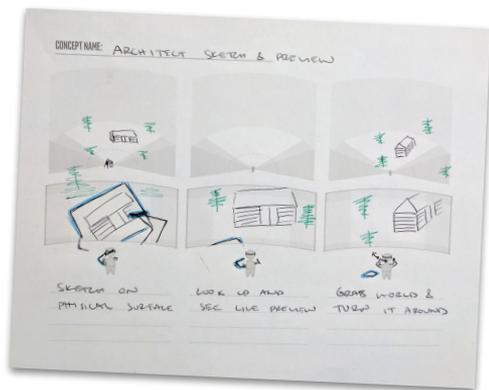


MODELING CLAY (PLASTILINA)

- DOESN'T DRY OUT
- USE AND RE-USE
- MIX & MATCH
- UNIQUE OBJECTS



Rapid V/AR Concept Prototyping in 4 Steps



Sketch

Storyboard

Model

Capture

PAPER & PEN

GET IT OUT OF YOUR HEAD

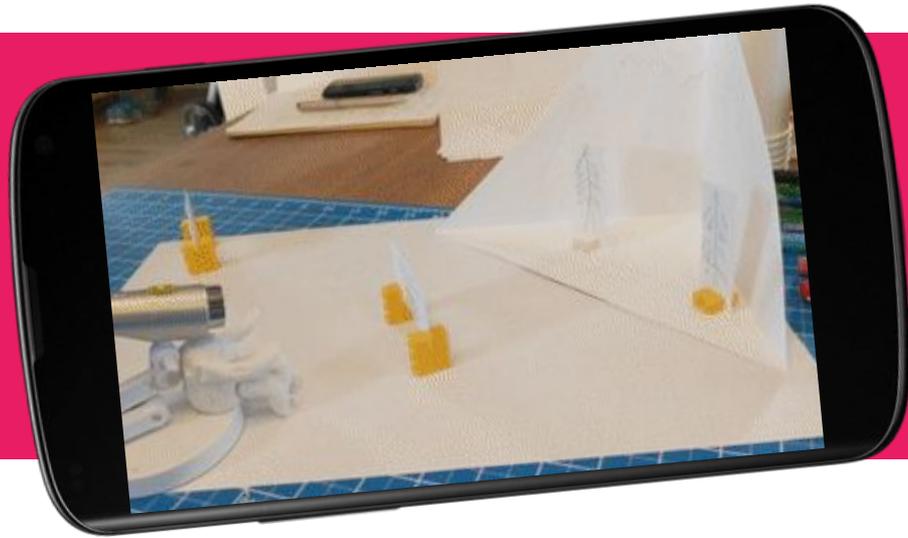
PAPER & PEN

MAKE A PLAN

CLAY, BRICKS, PAPER

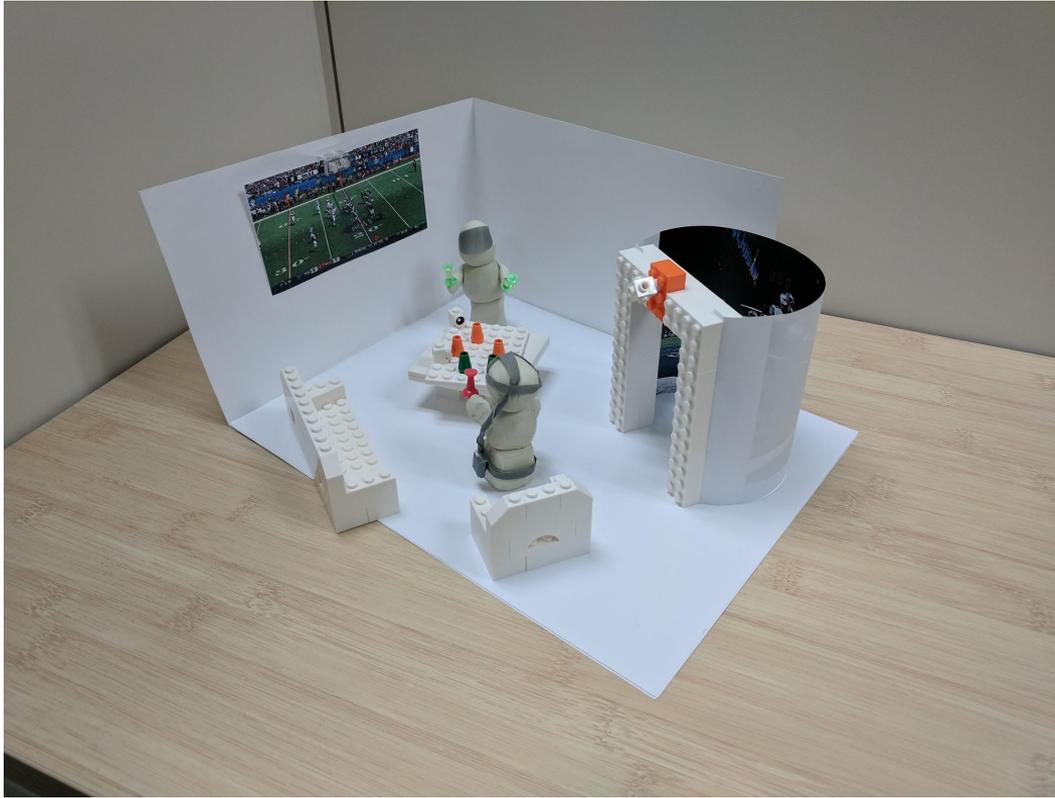
BUILD, PLAY, LEARN

CAMERA

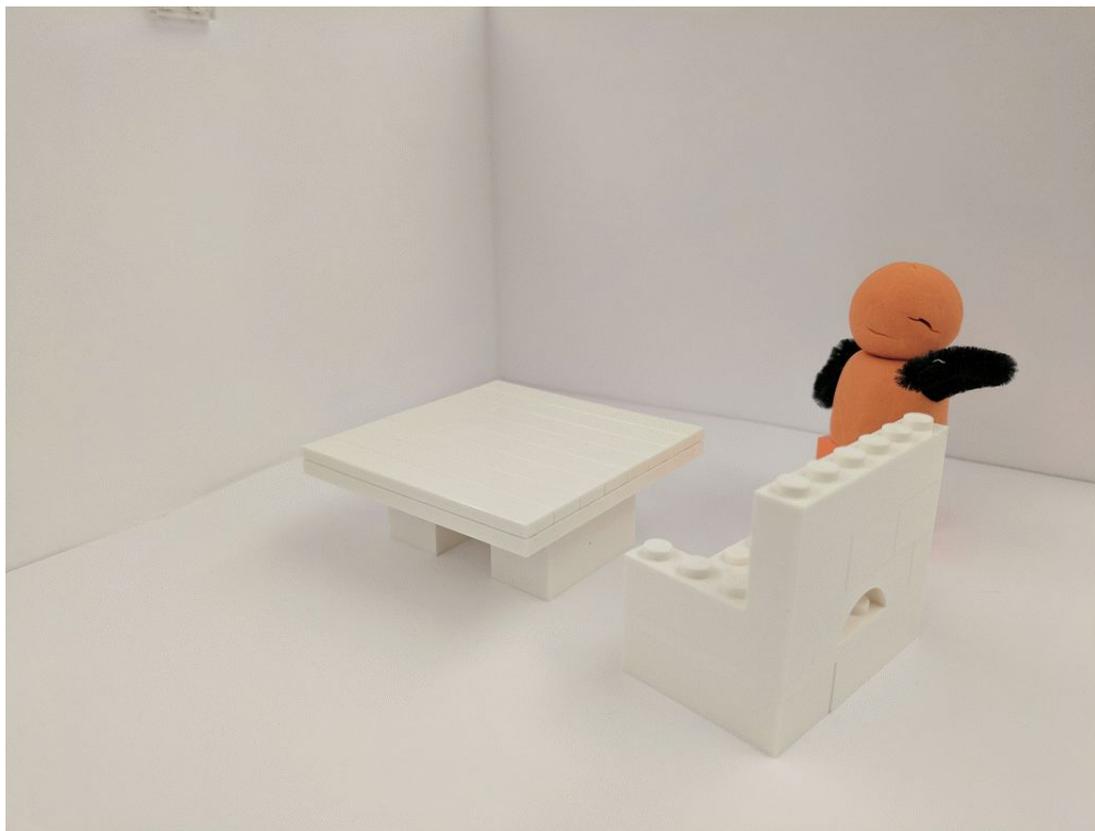


Concept Capturing

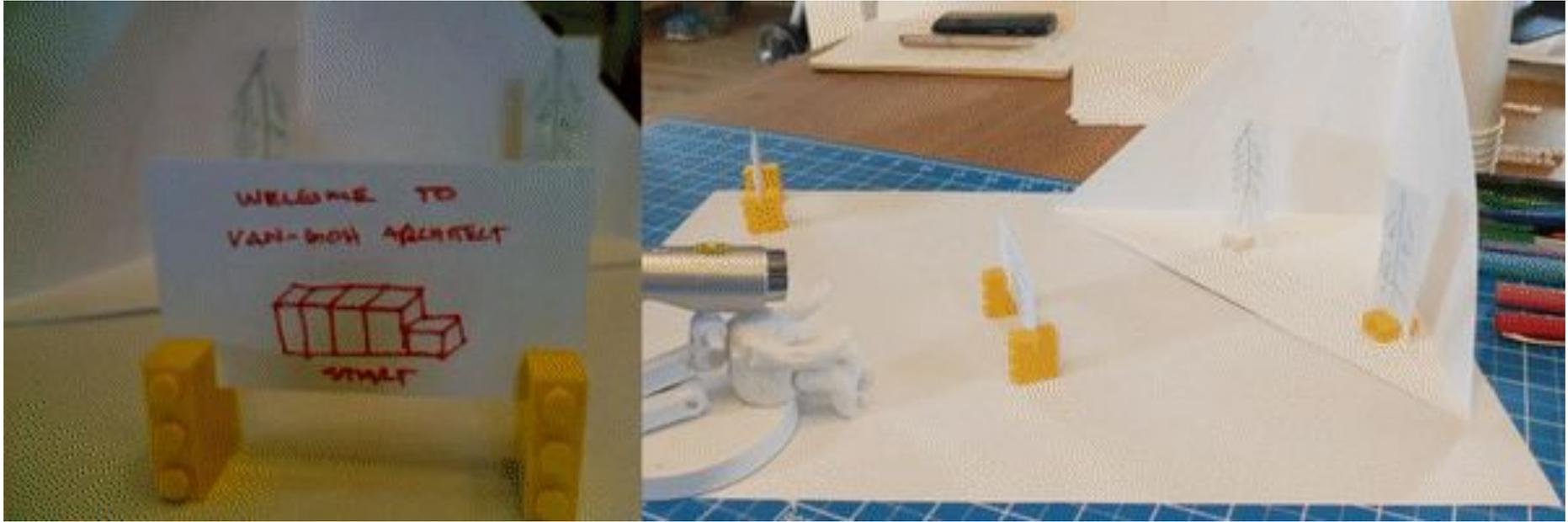
GOAL: DOCUMENT AND SHARE



PAPER BACKDROP TO
REDUCE DISTRACTIONS.

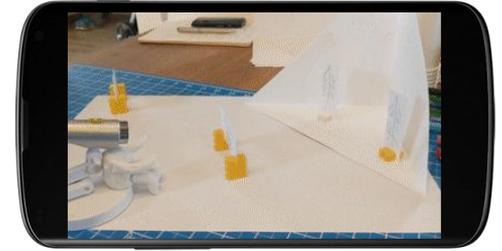
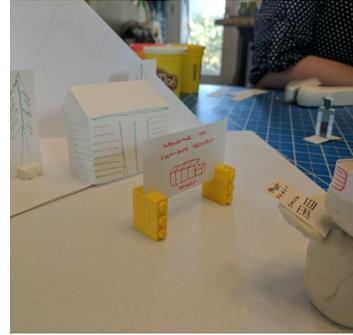
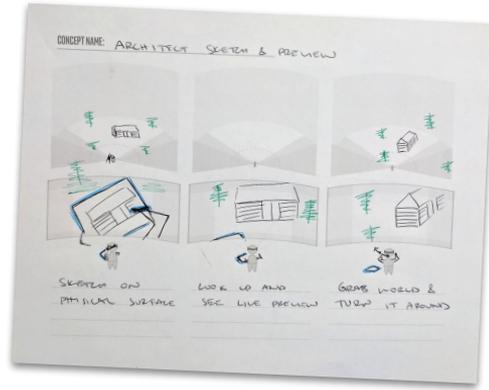


STOP MOTION
ANIMATION GIF



ADVANCED TECHNIQUE: 2 CAMERA POINT OF VIEW (USER & WORLD)

Rapid V/AR Concept Prototyping in 4 Steps



Sketch

Storyboard

Model

Capture

PAPER & PEN

GET IT OUT OF YOUR HEAD

PAPER & PEN

MAKE A PLAN

CLAY, BRICKS, PAPER

BUILD, PLAY, LEARN

CAMERA

DOCUMENT & SHARE

WHAT HAPPENS NEXT?

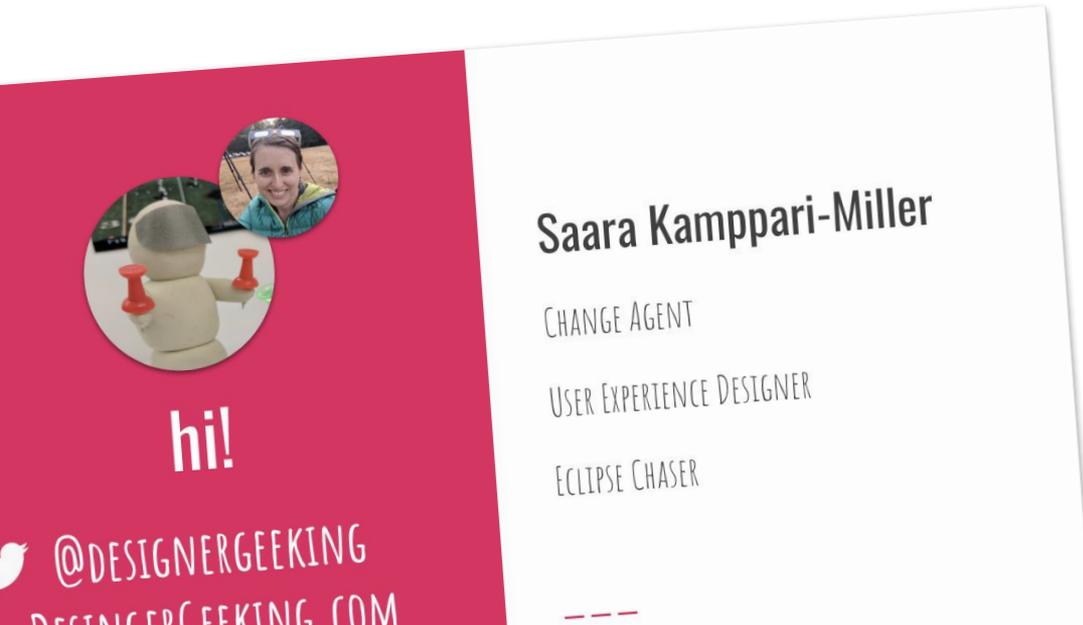
pixels!

“Going from the sketch to the clay model helps you realize all the key objects and interactions you need for your concept. This means **you have a better plan before starting up a digital tool** such as Unity for your first digital prototype.”

Emergency Business Card V/AR Prototyping

Change Agent Motto

DO WHAT YOU CAN WITH WHAT YOU HAVE



A business card for Saara Kamppari-Miller, a Change Agent and User Experience Designer. The card features a red background on the left side with two circular images: one of a white robot head with orange pushpins and another of Saara smiling. Below the images is the text "hi!" and social media handles "@DESIGNERGECKING" and "DESIGNERGECKING.COM". The right side of the card is white and contains the following text:

Saara Kamppari-Miller
CHANGE AGENT
USER EXPERIENCE DESIGNER
ECLIPSE CHASER



V/AR Rapid Prototyping Challenge

WHAT WOULD YOUR **AR BUSINESS CARD** BE LIKE?

IF SOMEONE WERE TO LOOK AT YOUR BUSINESS CARD WITH AN AR HEADSET
(OR THROUGH AN AR PHONE APP), WHAT WOULD THEY SEE & DO?



5 Minute AR Prototype

1. SHAKE BUSINESS CARD
2. OBJECTS FALL OUT

Time to get hands on!

1. MATERIALS: BUSINESS CARDS + PEN
2. PROTOTYPE: DRAW, FOLD, TEAR
3. CAPTURE: VIDEO OR STOP MOTION GIF
4. SHARE: USE THE HASHTAG

#PlayBeforePixels

Emergency Rapid Prototyping Challenge:
What would your **AR Business card** be like?



Thank You!
#PlayBeforePixels

Saara Kamppari-Miller

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