



11/13/2001 - First Iteration

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A3 - First Iteration

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Product Description

YoG: Oral + Manual Communication Device for the Deaf

- **Oralist:**
Those who communicate by written English and lipreading have used outdated and complicated services such as TTY or replay services, which could be improved with wireless+IM technologies.
- **Manualist:**
For many deaf people their first language is ASL (American Sign Language). Some deaf individuals would prefer to communicate via their native language of ASL.
- YoG attempts to provide universal accessibility by supporting whatever communication channels is most natural given the users' context.
- YoG supports following methods:
 - Video
 - Text (IM)
 - Drawing
 - Voice (optional)
- YoG can aid remote deaf-to-deaf conversations via ASL or via instant messaging and integrates with current products including TTYs, WyndTel, and phone relay services.
- YoG also assists local deaf-to-hearing communication though the use of Mini-YoG. Mini-YoG is a simple detachable device for notetaking and drawings that can also perform speech recognition.



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Scenarios of Use

Remote Deaf-to-deaf

Synopsis

- Susan, a deaf mom talks to her college student daughter Tina using both sign and text.

Demonstrated Features

- Gesture recognition (command, numbers)
- Switching from IM mode to video mode
- ASL communication via video
- Memo during a phone call

Local Deaf-to-hearing

Synopsis

- On a street, Tina asks a hearing person for the direction to Giant Eagle.

Demonstrated Features

- Text-to-speech by main YoG
- Speech-to-text by Mini-YoG
- Mini-YoG as a digital napkin/paper

Remote Deaf-to-deaf Scenario

1. Mom gets YoG's attention by touching YoG (accelorometer)

YoG gives feedback



2. Mom gestures "Call"

YoG gives feedback
(ready to receive speed dial)



Gesture is one-handed

Browse phone book



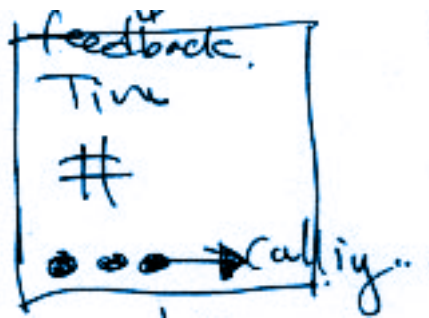
Speed dial



Remote Deaf-to-deaf Scenario

3. Mom signs "T-I-N-A"

YoG gives feedback that the correct number is being dialed



Mom's

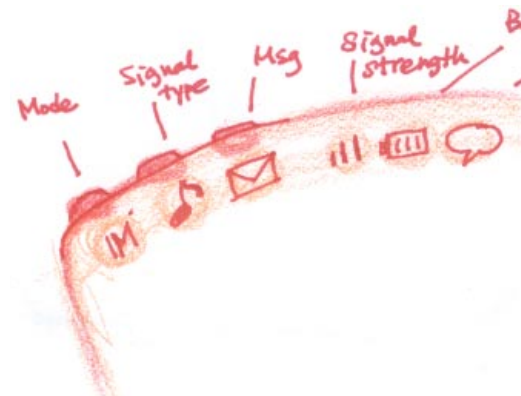
Letter-by-letter ASL recognition

Tina is in IM mode

Tina is in video mode

4. In the meantime...

Tina's default screen



Tina's

Remote Deaf-to-deaf Scenario

5. Incoming call from Mom
- baloon blinks
 - vibration
 - incoming call mode (IM/Video/Voice)
 - caller ID

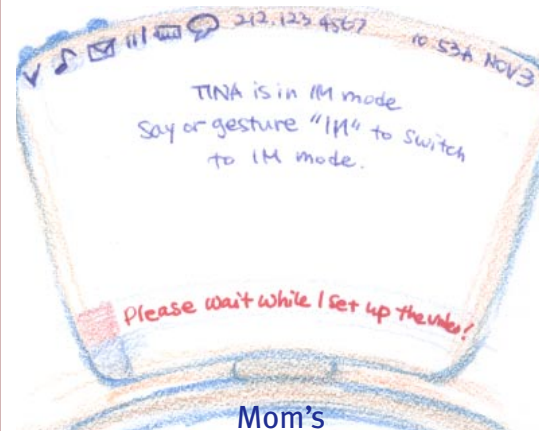


Tina chooses to ignore

Tina chooses to answer: automatic

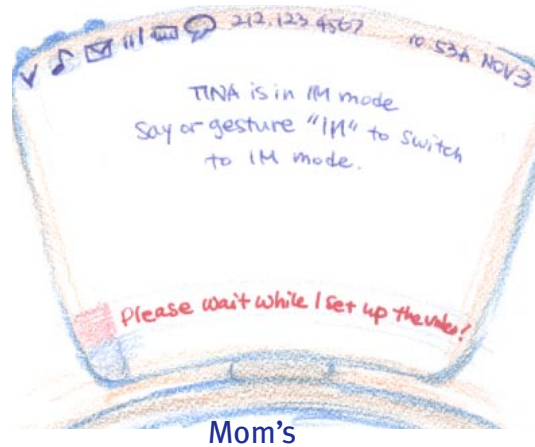
Tina chooses to answer: type in

6. Tina answers by pressing a shortcut for an automated text message. Text fields appear on both YoG's and the message is displayed.

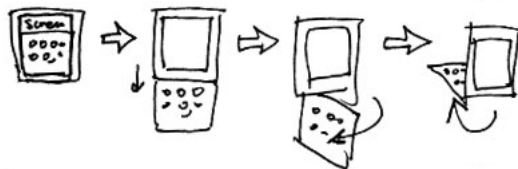


Remote Deaf-to-deaf Scenario

7. Tina slides out her keyboard and set up video.
Mom is still waiting for Tina.

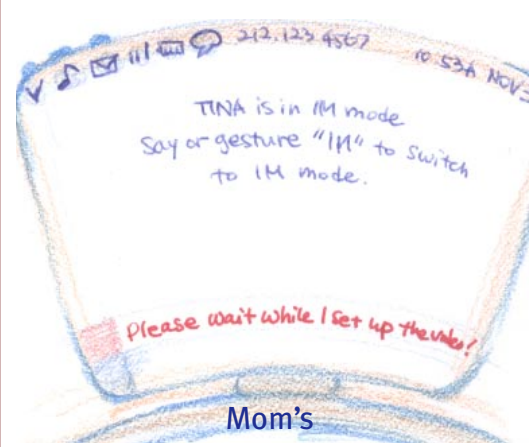


Mom's



Tina's

8. Tina sees herself on a thumbnail. As soon as she is certain on her position, Tina gestures "Now show me to Mom."



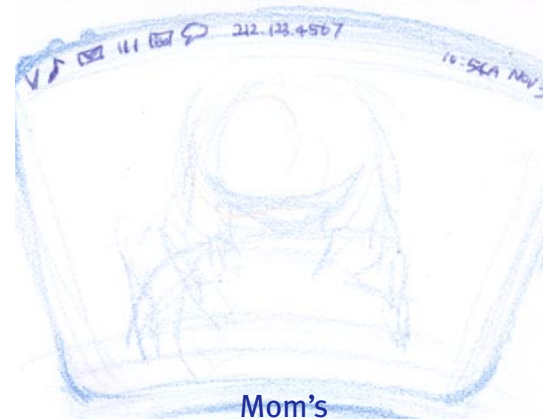
Mom's



Tina's

Remote Deaf-to-deaf Scenario

9. Finally they see each other.
They talk using ASL.



10. Mom wants to send
Uncle Bob's phone number to
Tina. Mom gestures YoG
"Recognize my ASL."
Both YoG's display text fields
and are ready to receive.



Remote Deaf-to-deaf Scenario

11. Mom signs “412-355-6789.”
Mom gestures “clear” one digit during the process to correct it.



Mom's



Tina's

12. Mom gestures
“Stop recognizing.”
The phone number is saved to
both YoGs' memo.



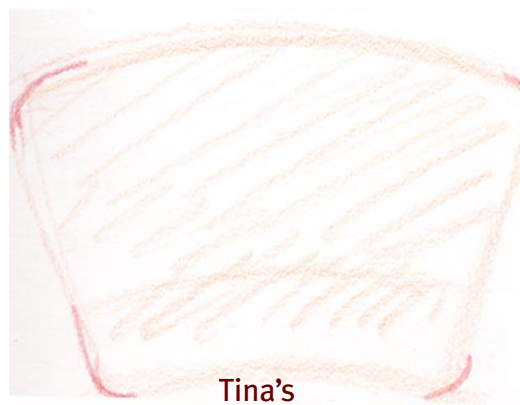
Mom's



Tina's

Remote Deaf-to-deaf Scenario

13. They exchange “bye.”
Mom gestures “hang up.”
Her YoG displays call summary.
Mom disappears from Tina’s
screen.



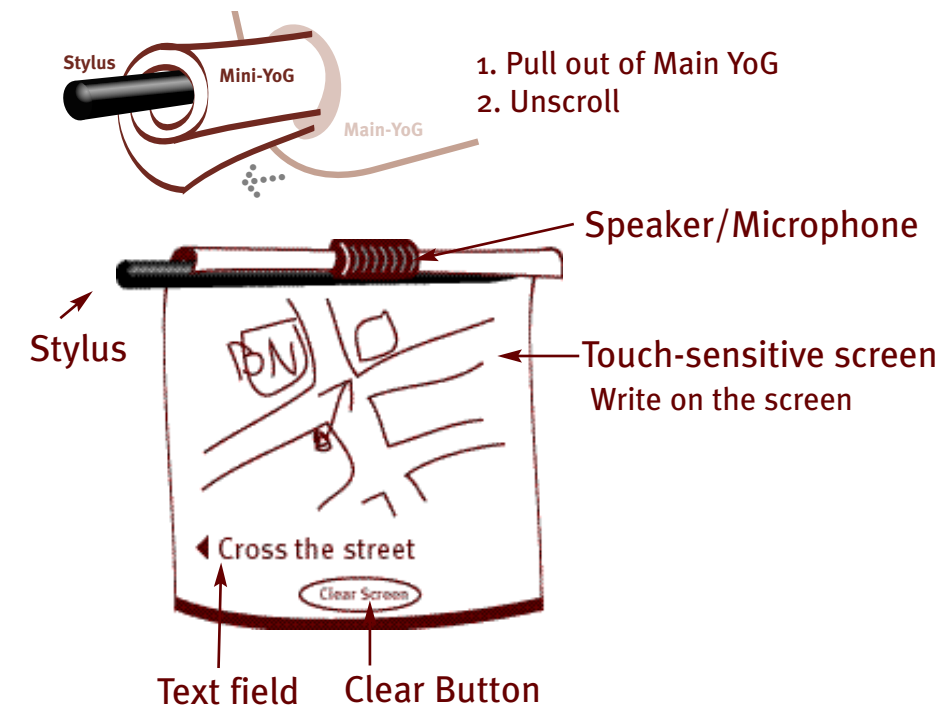
14. Tina gestures “hang up.”
From the call summary, Tina
jumps to the Memo.



Local Deaf-to-hearing Communication

Main + Mini-YoG

Mini-YoG Features



Dictated English appears on the bottom of the screen
Scroll arrows appears as needed

The drawing and text on the Mini-YoG isn't erased unless the clear button is pressed. When the clear button is pressed and held the screen and dictation is cleared and the text, "Please speak or write" is placed in the dictation area.

About Mini-YoG

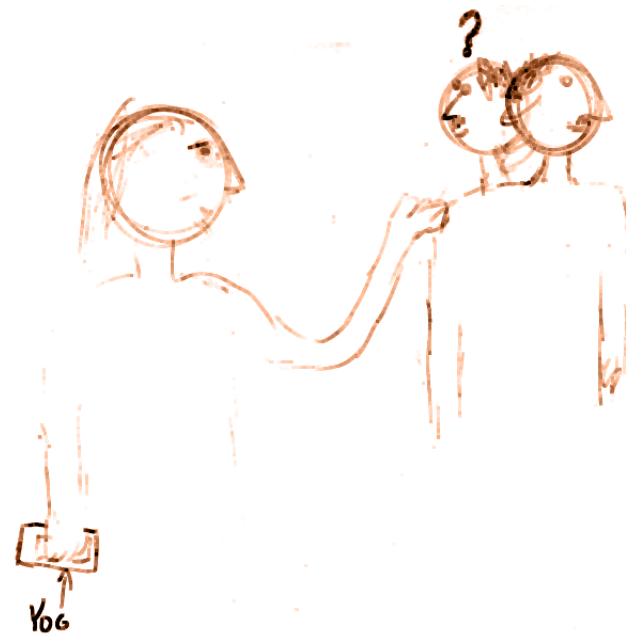
- A small satellite device which detaches from the main unit. It may be used in any local situation where sign language based communication is not possible.
- Designed simple for walk-up-and-use like a simple notepad and stylus
- When someone is done writing the hearing can show or hand back the Mini-YoG to the deaf user.
- If the deaf user needs to ask follow up questions they can use the keyboard on their main YoG device (translated into an audio form by choice).
- When the deaf persons question has been answered they can take the Mini-YoG back and re-connect it to their main device.

Local Deaf-to-hearing Scenario

1. Tina enters her question in advance: "How do I get to Giant Eagle?"

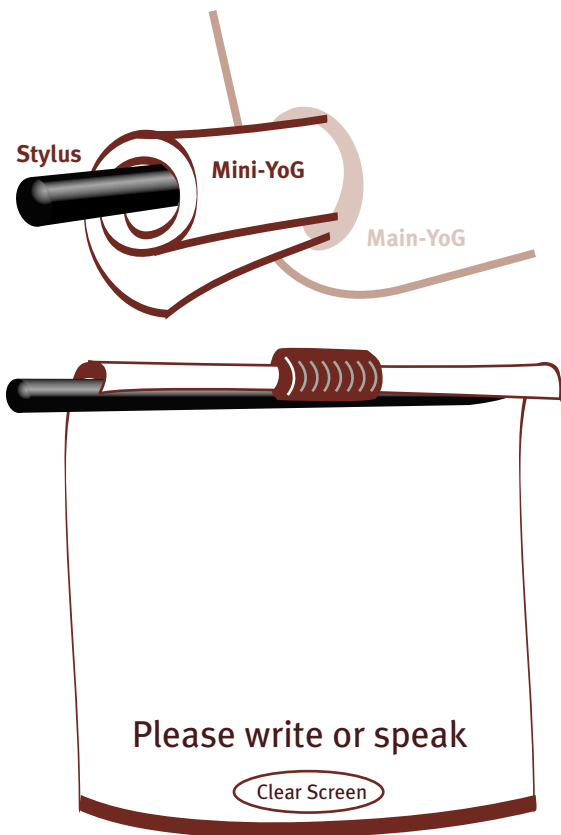


2. Tina approaches a hearing passer-by and gets their attention



Local Deaf-to-hearing Scenario

3. Tina extracts the Mini-YoG from the main unit



4. Main-YoG speaks the pre-entered message



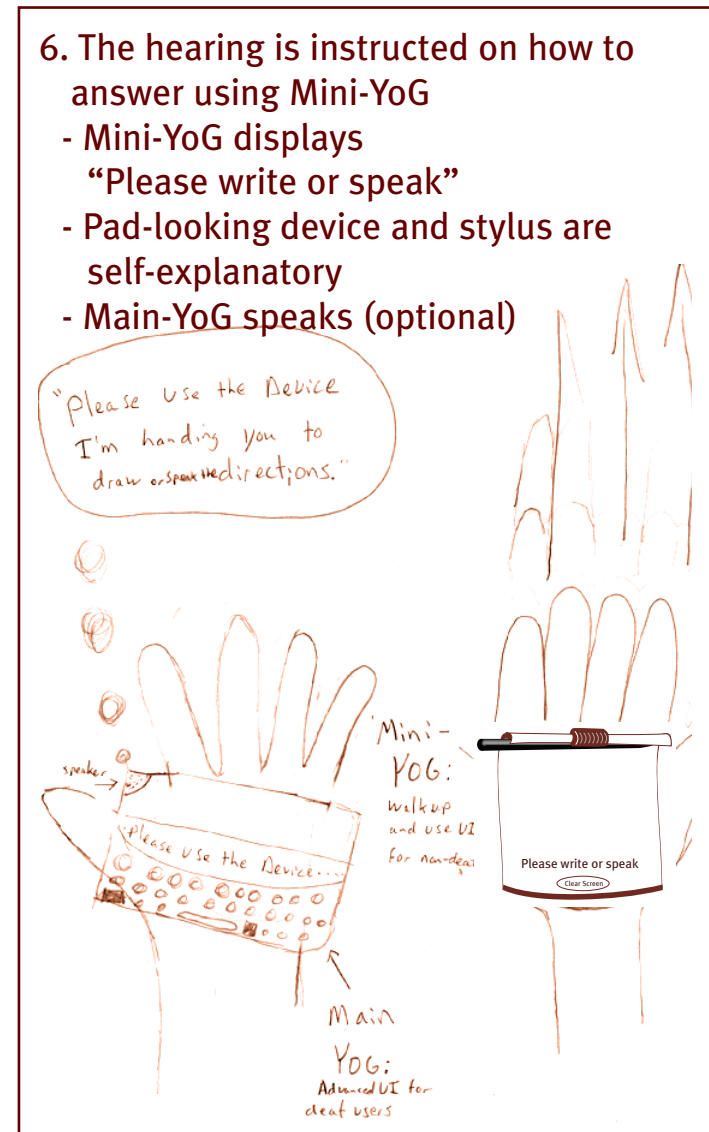
Local Deaf-to-hearing Scenario

5. Tina hands over her Mini-YoG to the hearing person



6. The hearing is instructed on how to answer using Mini-YoG

- Mini-YoG displays "Please write or speak"
- Pad-looking device and stylus are self-explanatory
- Main-YoG speaks (optional)



Local Deaf-to-hearing Scenario

7. Tina uses her Main-YoG keyboard to ask a follow-up question;

The hearing nods;

Tina's Main-YoG says (or Tina shows)
"Thank you" to the hearing



8. The hearing returns Mini-YoG to Tina



Local Deaf-to-hearing Scenario

7. The hearing takes Min-YoG, writes and speaks directions

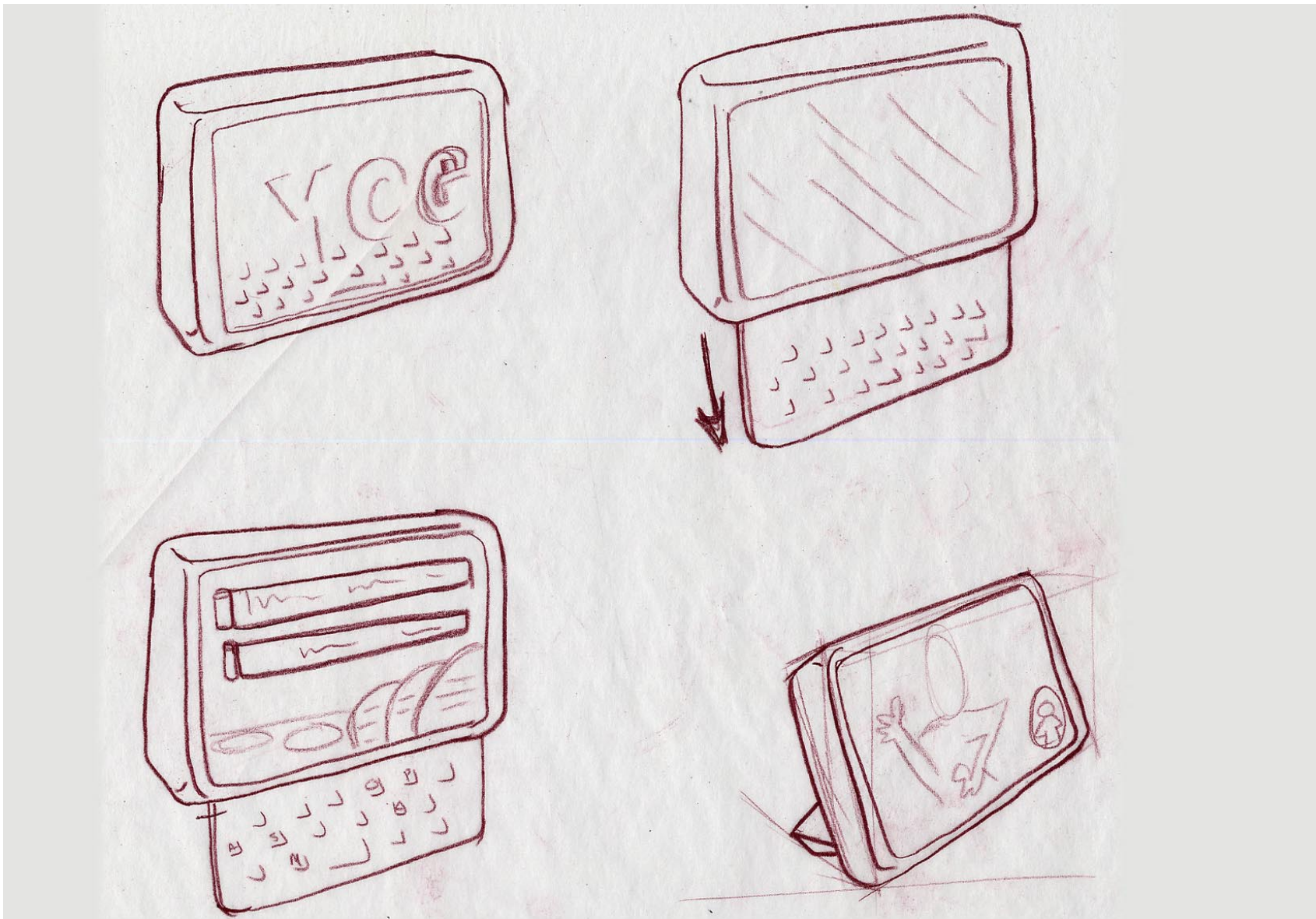
Tina watches him giving directions



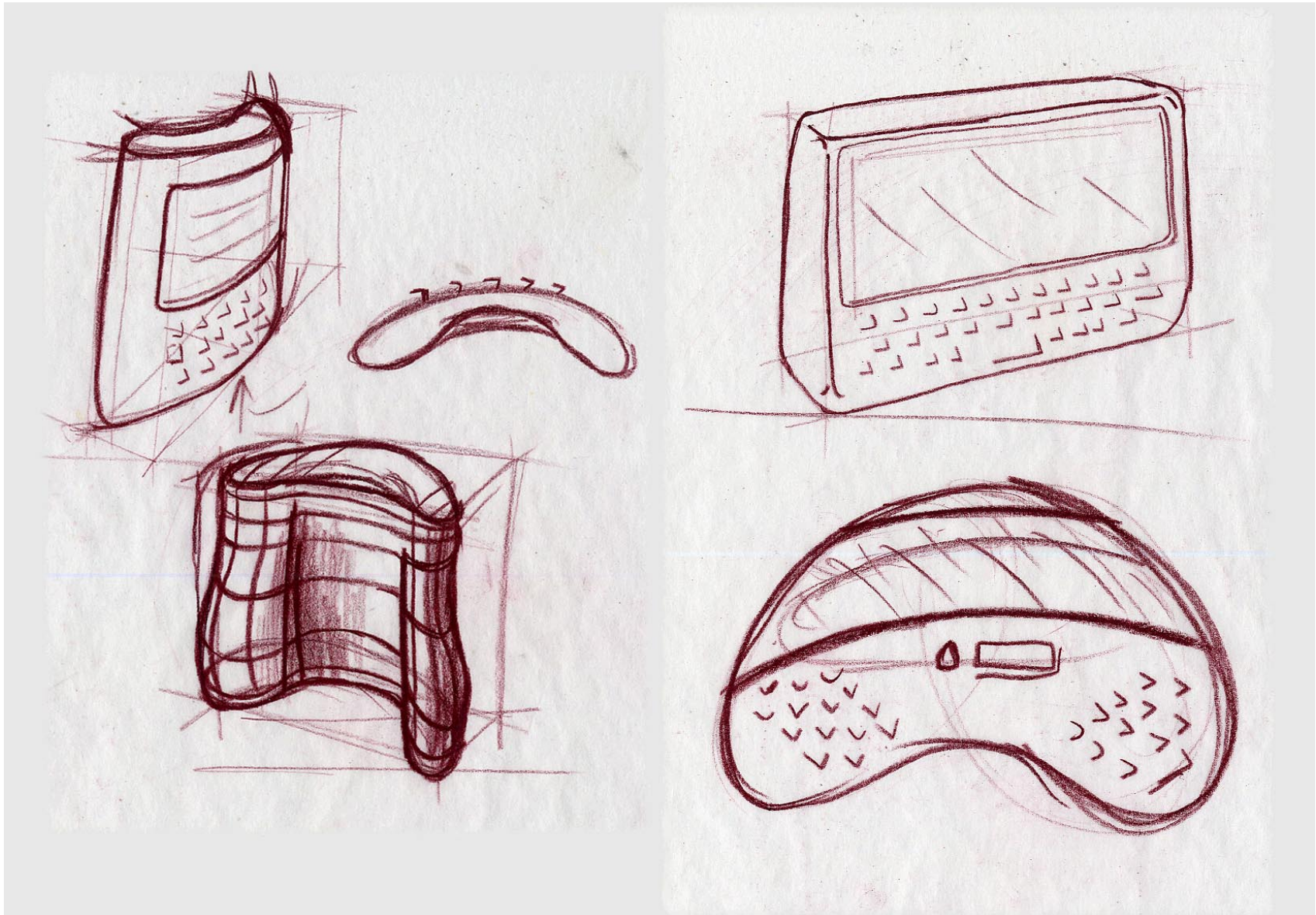
8. Tina can see him drawing a map and she can also read what he says at the same time



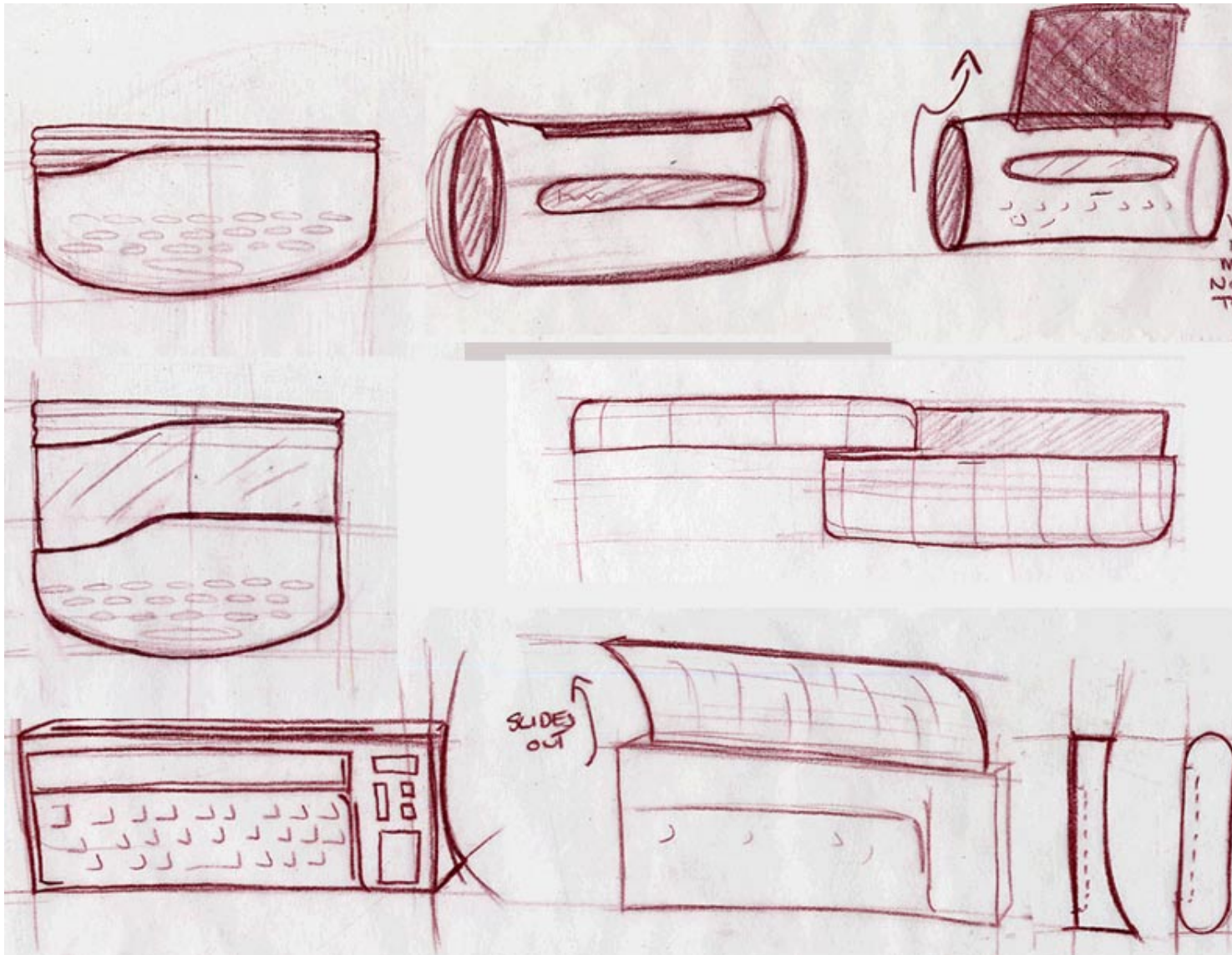
Form Sketches - 1



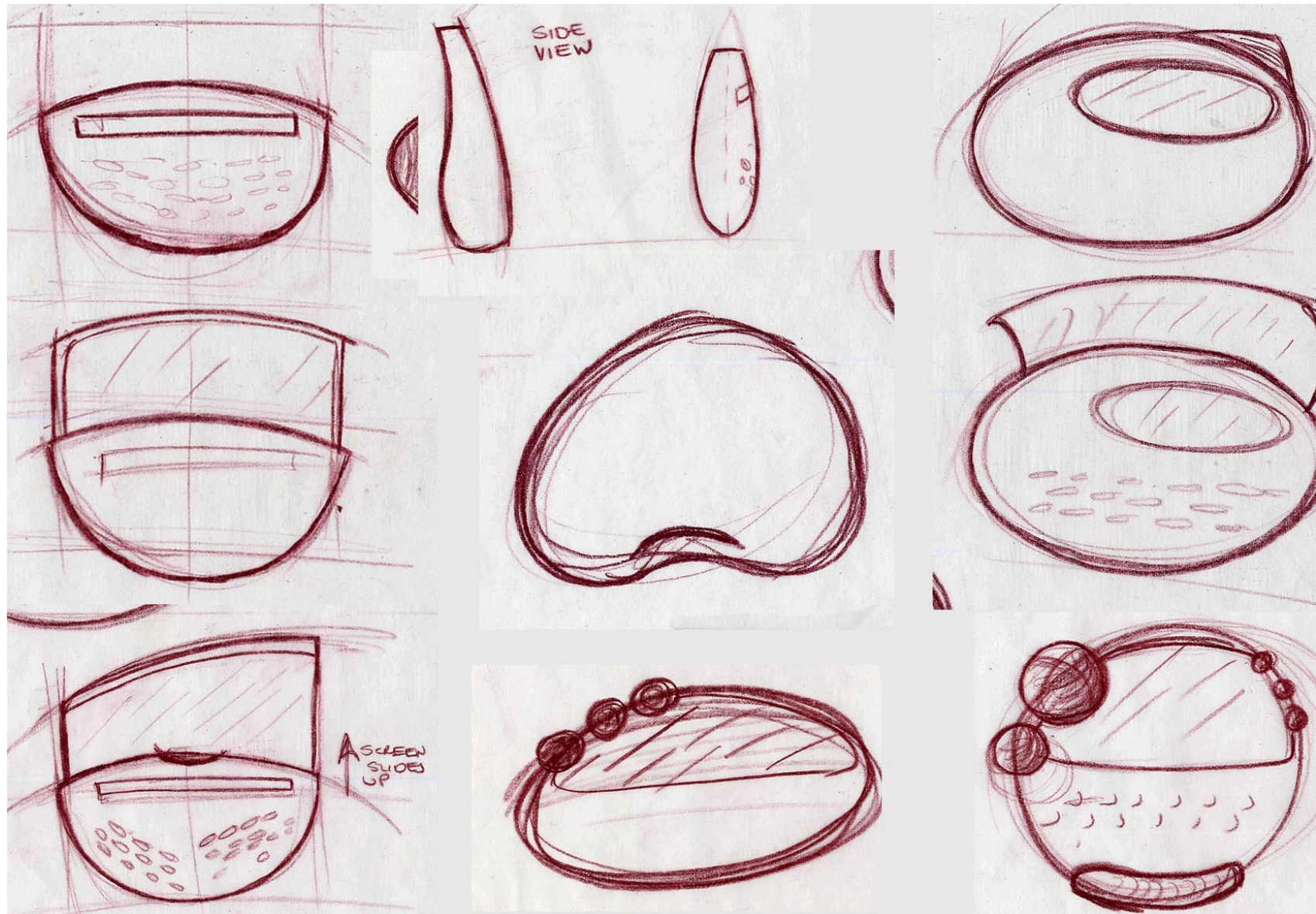
Form Sketches - 2



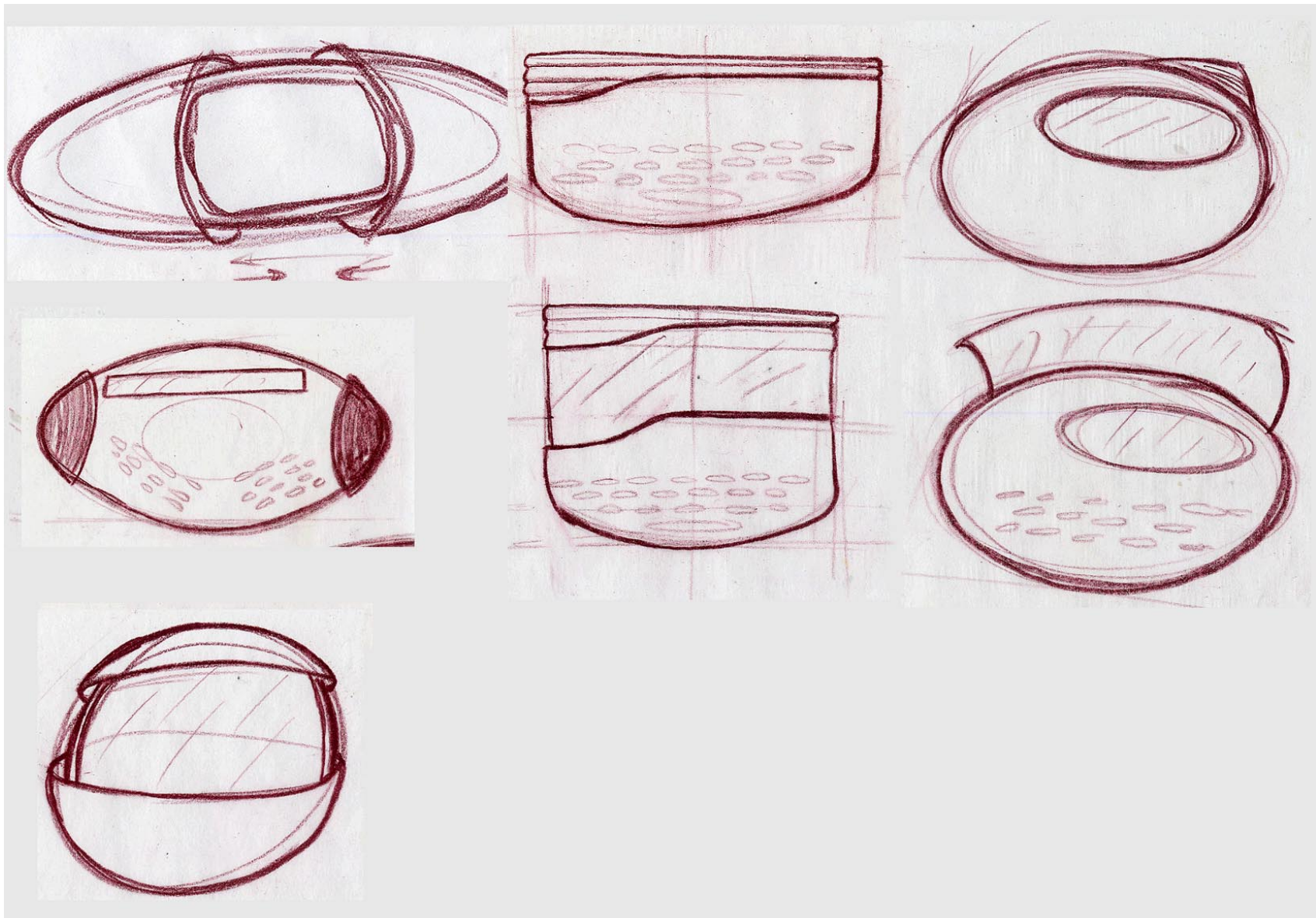
Form Sketches - 3



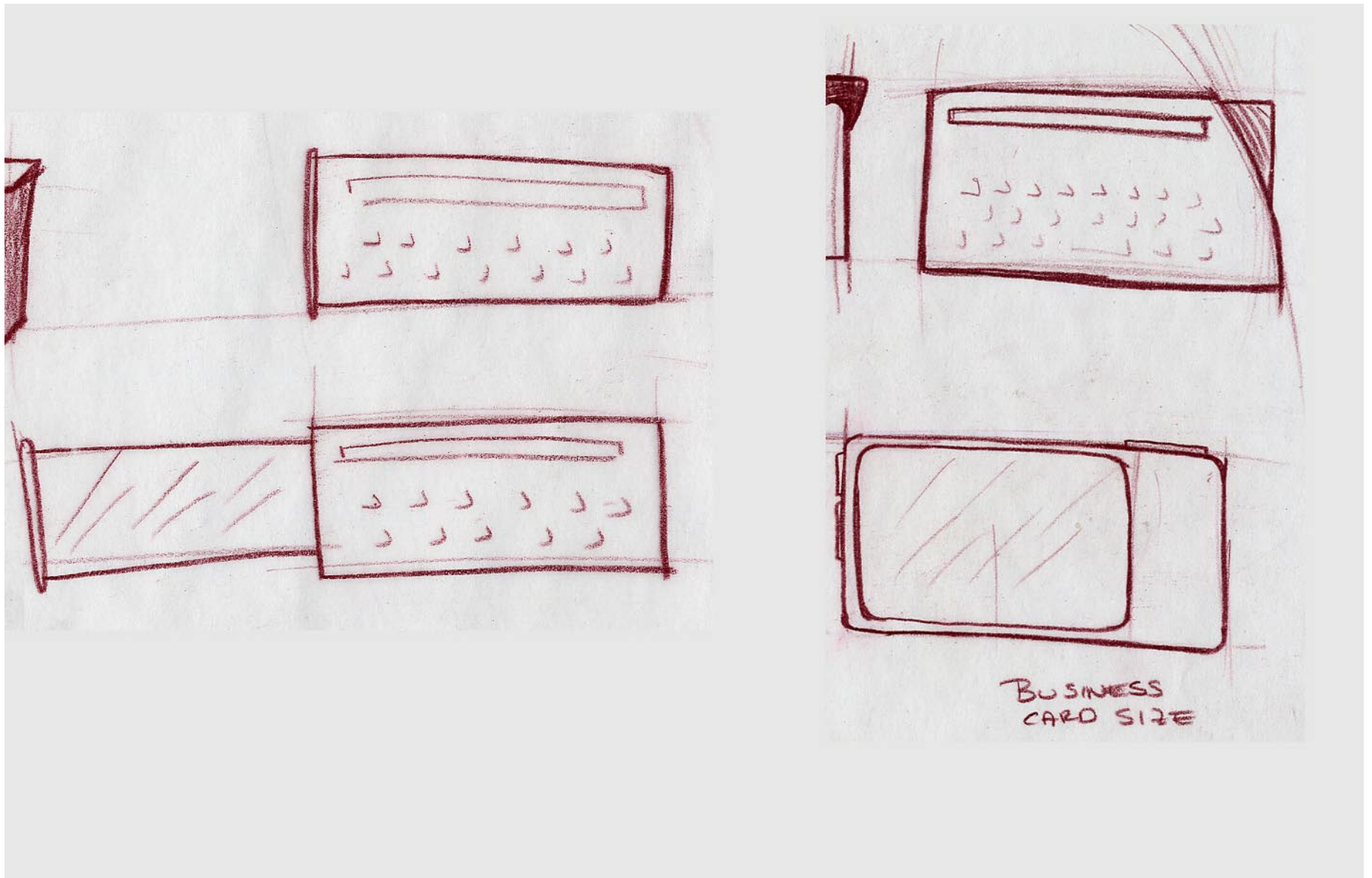
Form Sketches - 4



Form Sketches - 5



Form Sketches - 6



Form Sketches - 7

