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# Team Venture Design



An Augmentative Communication  
Board for the Chartwell Center's  
Preschool Classroom

## Our client



The Chartwell Center is a non-profit organization that serves children with autism and autism spectrum disorders and:

- offers best-practice training and support to teachers and professionals in the greater New Orleans community
- directly serves children from age three to eighteen on their uptown New Orleans campus
- our team will be working with Chartwell's preschool classroom

## Our problem:

Autism frequently causes sensory processing and integration difficulties as well as communication difficulties. One common assistive technology solution is a communicator board, which typically has 8-64 buttons on its face and plays a pre-recorded message upon a button press.

Chartwell requested a commicator that could be used in the classroom's play area that would allow their students to communicate their choice of toy with the following specifications:

- 6 buttons with a minimum size of 5" x 5"
- minimal required activation force with tolerance for larger forces
- an interface that would catch and hold the student's attention for the length of his or her interaction with the board
- system to prevent repeated playback of same message
- ability to record and store multiple levels of messages so classroom reprogramming would be limited
- ability to replace picture on button

## Commercially available devices:

Communicator boards are available from companies specializing in assistive technology. However, these devices generally:

- have buttons with a maximum size of 2.5" x 2.5"
- have a minimum of eight buttons
- inability to replace a single picture, all must be replaced at once
- no mechanism to prevent multiple activation of same button

## Our solution:

- Our communicator board uses existing device, the Tech/Talk 6x8 BG from AMDi



The AMDi  
Tech/Talk 6x8 BG

- A custom-built case allows for 5" x 5" buttons, as well as vertical wall-mounting
- A layer of logic between our buttons and the AMDi board will allow for the additional features Chartwell requested

## Our design:

- An 24" x 16" case will house 6 5" x 5" buttons, the AMDi communicator and our logic circuit.
- Each button will be surrounded by 4 bright LEDs, indicating the state of the buttons
- The buttons rest on springs and slide along guides made of PVC, which also function as a stop
- PVC stops limit play in button to 1/4", with a minimum of force transmitted to pushbutton switch
- Makrolon sleeves on button faces allows individual pictures to be replaced quickly
- Corner brackets will allow for horizontal wall mounting of communicator
- Controls will be located on the top surface of the communicator

## Device functionality:

- When turned on, all buttons will be in the "on" state with LEDs turned on
- When a button is activated, our logic will turn off the LEDs and playback the corresponding message on the AMDi board
- Once a button's LEDs go dark, additional presses will have no effect
- A master reset button will reset the device, turning all buttons back to the "on" state

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