Game Show Buzzer System (Wireless)

❋ What You Need:

5 x Crazy Circuits Bit Board
5 x micro:bit V2
1 x Crazy Circuits Pushbutton (optional)
1 x 7 Segment Display (optional)
4 x Cardboard Buttons
LEGO Baseplate
Misc LEGO Pieces
1/8" Maker Tape
1/4" Maker Tape

❋ How it Works:

Our Game Show Buzzer System allows up to four players to play a classic trivia-style game where the host asks a question and then the players can smash their button to "buzz in" first and get a chance to answer the question.

But wait! Once you hit your buzzer you've got just 20 seconds to answer the question. If you answer correctly (or incorrectly) before the time is up the game host can reset the system for the next round. If you fail to answer in the alloted time the system will reset itself and (depending on the style of game you've chosen) another team can have the opportunity to steal so they get a chance to answer.

When a team hits their buzzer the built-in LED matrix on each micro:bit will display the number of the team so there's no dispute about who buzzed in first. (No "raising hands" and then arguing about the game host not seeing your hand in the air.)
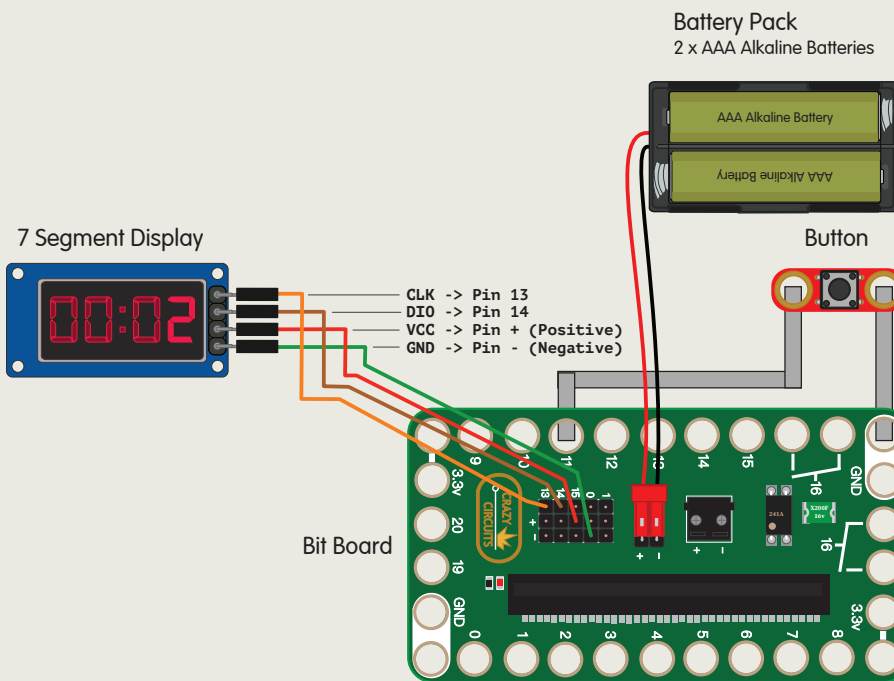
The host micro:bit will start beeping when a button is pressed and continue to beep until time runs out or the host resets the system. (The beeping rate increases as time is running out!)

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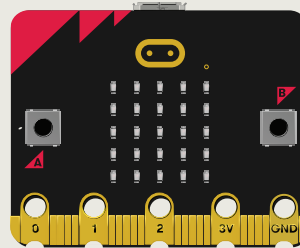
micro:bit V2

A micro:bit V2 should be used for the host unit so the built-in piezo speaker can be utilized for the countdown timer which beeps while a team is answering a question.

(For the team units a micro:bit V1 can be used.)

Battery Pack
2 x AAA Alkaline Batteries

AAA Alkaline Battery
AAA Alkaline Battery

7 Segment Display

Button

```
CLK -> Pin 13
DIO -> Pin 14
VCC -> Pin + (Positive)
GND -> Pin - (Negative)
```

Bit Board

Each micro:bit can send and receive data using the built-in radio found on the board. When a team hits their button it will send their team number to the host unit, which will then start the countdown (ignoring any new number coming in) and then send the number of the team that "buzzed" in first to all of the other micro:bits.

We add an extra bit of data when the host communicates with the team buttons so they can ignore data coming from other teams and just respond to data coming from the host unit.
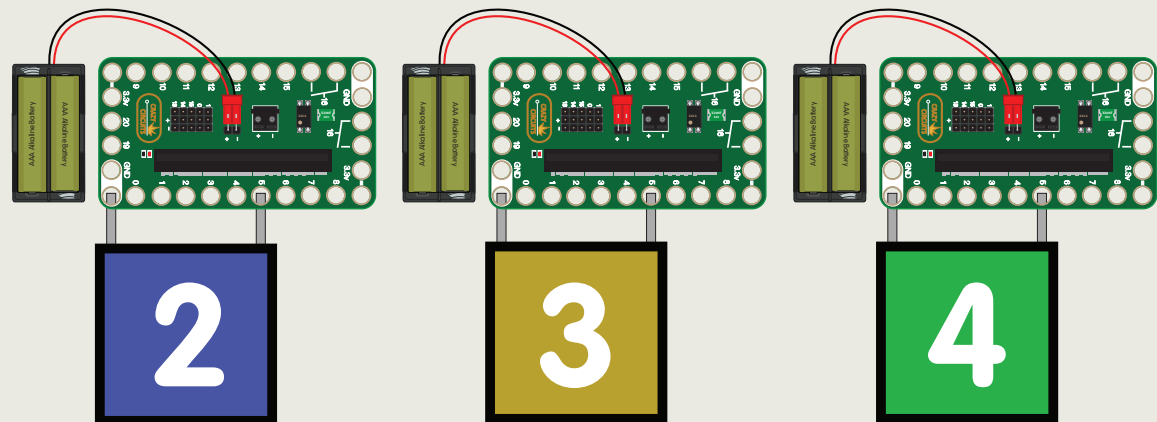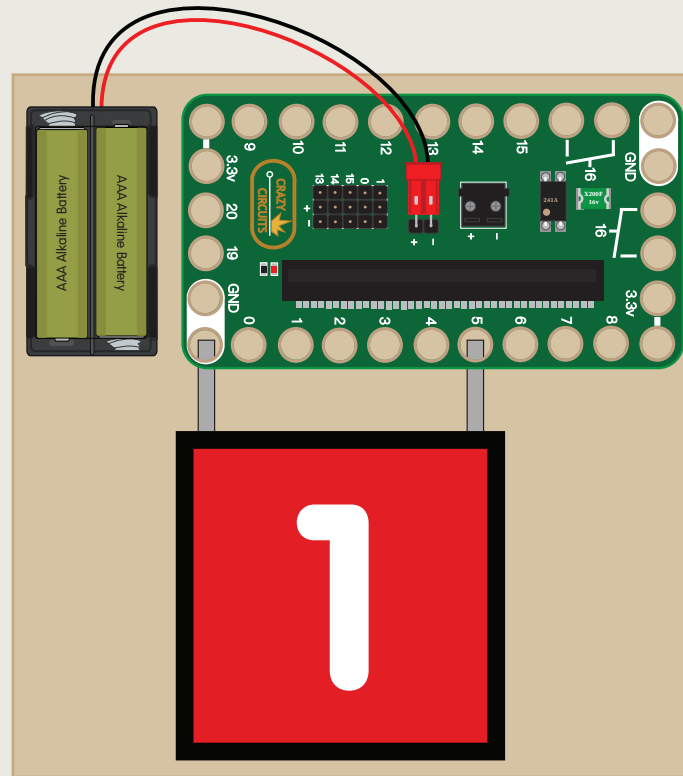
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✱ For each of the team buttons you'll need to connect a button to GND and Pin 5. (You'll also need to power each unit, and a 2 AAA Battery Pack works great for that.)

Each team button will need to be programmed separately so each sends a unique value (the team number) to the host unit. (Besides setting one variable, the code is the same for each team unit.)

We stuck each of our team units down to a piece of cardboard to make them a bit more portable. You could also build the whole thing onto a LEGO baseplate as well.

Just change the teamNumber to match the actual team number for the unit.

```
on start
  set teamNumber ▾ to ( 1 )
  radio set group ( 1 )
  show number ( teamNumber ▾ )
  pause (ms) ( 2000 ▾ )
  show icon ▾
```

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1

2

3

4