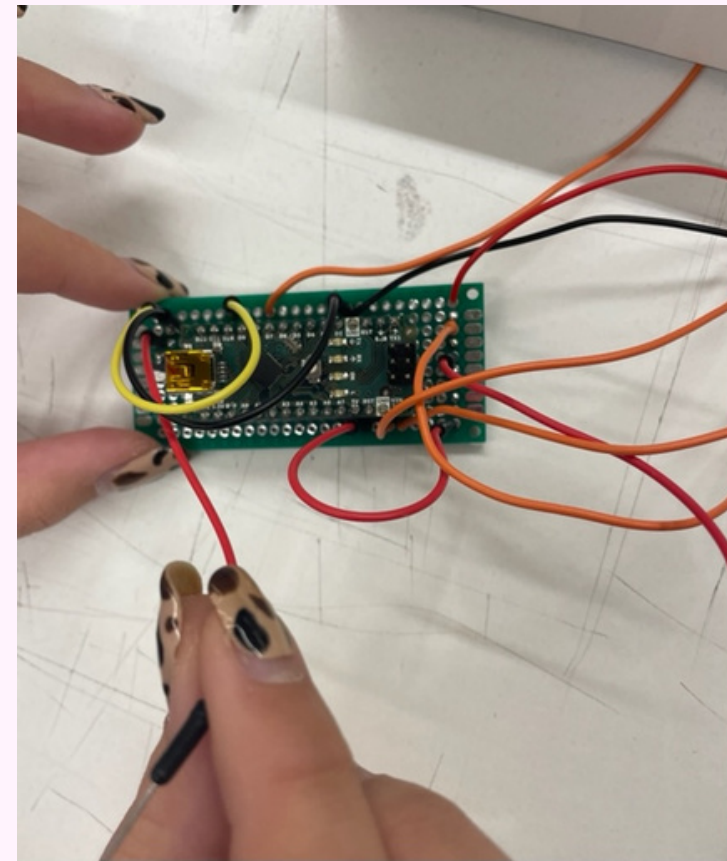


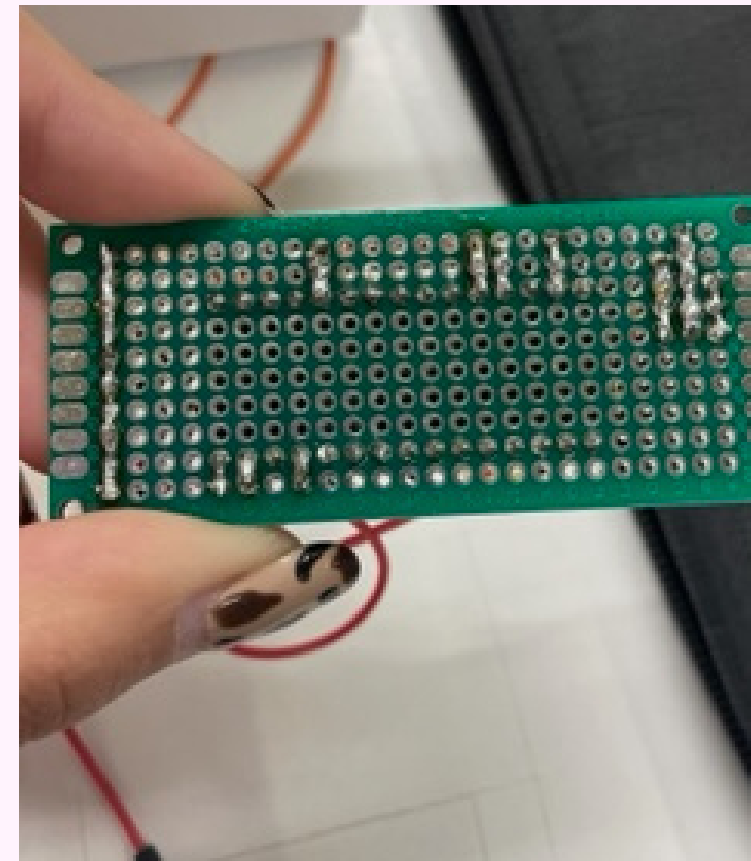
PROCESS



STEP 1



STEP 2



STEP 3



STEP 4

//BABY CRIB MOBILE - program to make a baby crib mobile work that includes an speaker, a button (to switch it on and off) and a motor. This program is set to make all of this items work together and at the same time.

//SPEAKER

```
#include "pitches.h"//Include the speaker
```

// notes in the melody defined with their respective frequency:

```
float DO=523.2511;
float SOL=783.9909;
float LA=880;
float FA=698.46;
float MI=659.3551;
float RE=587.3295;
```

//list of notes in order of the melody we want to include, in this case twinkle twinkle little star

```
int melody[] = {
  DO, DO, SOL, SOL, LA, LA, SOL, FA, FA, MI, MI, RE, RE, DO, SOL, SOL, FA, FA, MI, MI, RE,
  SOL, SOL, FA, FA, MI, MI, RE, DO, DO, SOL, SOL, LA, LA, SOL, FA, FA, MI, MI, RE, RE, DO
};
```

// note durations: 4 = quarter note, 8 = eighth note, etc.:

```
int noteDurations[] = {
  4, 4, 4, 4, 4, 4, 2, 4, 4, 4, 4, 4, 4, 2, 4, 4, 4, 4, 4, 4, 2, 4, 4, 4, 4, 4, 2, 4, 4, 4, 4, 4, 2,
  4, 4, 4, 4, 4, 4, 2
};
```

//BUTTTON

```
int pushButton = 2;//Declare the pin you want to use
```

//motor

```
int motor=11; //pin used for the motor
int brightness = 200; // how fast it works
int fadeAmount = 5; // how fast it accelerates
```

void setup() {

```
// put your setup code here, to run once:
pinMode(motor, OUTPUT);
```

```
}
```

void loop() {

```
// put your main code here, to run repeatedly:
```

```
//motor comands to ensure it works, these depend on the items declared before
pinMode(motor, OUTPUT);
```

```
analogWrite(motor, brightness);
```

```
delay(30);
```

```
//so the song plays repeatedly
```

```
for (int thisNote = 0; thisNote < 42; thisNote++) {
```

```
// to calculate the note duration, take one second divided by the note type.
//e.g. quarter note = 1000 / 4, eighth note = 1000/8, etc.
```

```
int noteDuration = 1000 / noteDurations[thisNote];
tone(8, melody[thisNote], noteDuration);
```

```
// to distinguish the notes, set a minimum time between them.
// the note's duration + 30% seems to work well:
```

```
int pauseBetweenNotes = noteDuration * 1.30;
delay(pauseBetweenNotes);
```

```
// stop the tone playing:
```

```
noTone(8);
```

```
}
```

```
}
```

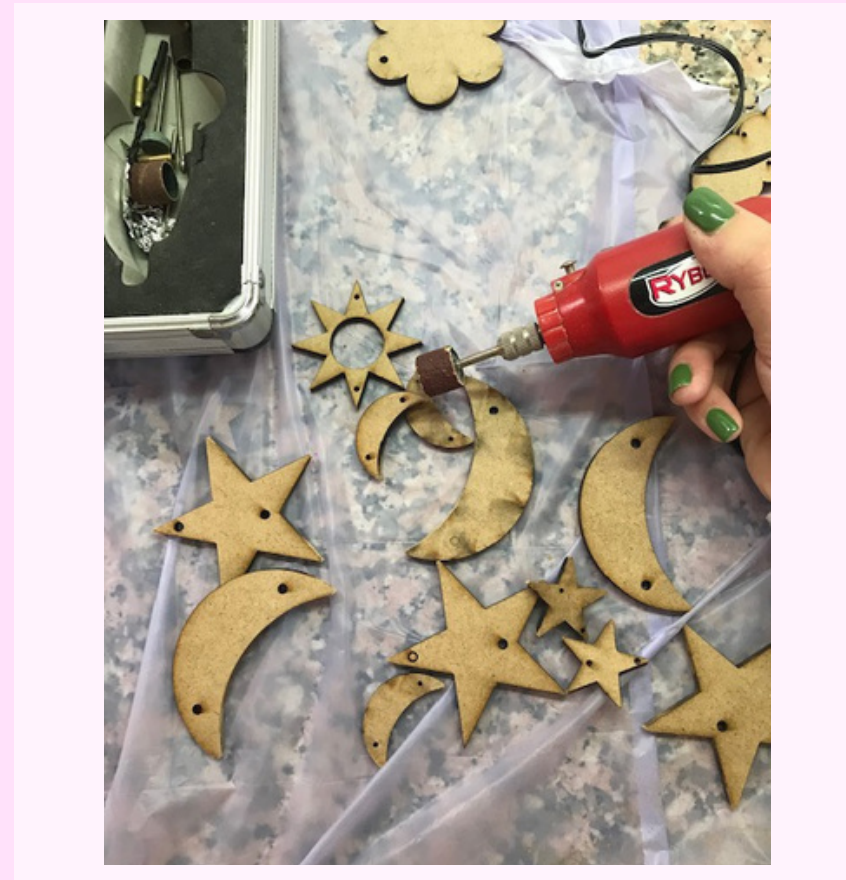
PROCESS



STEP 1



STEP 2



STEP 3



STEP 4

PROCESS



STEP 5



STEP 6



STEP 7



STEP 8