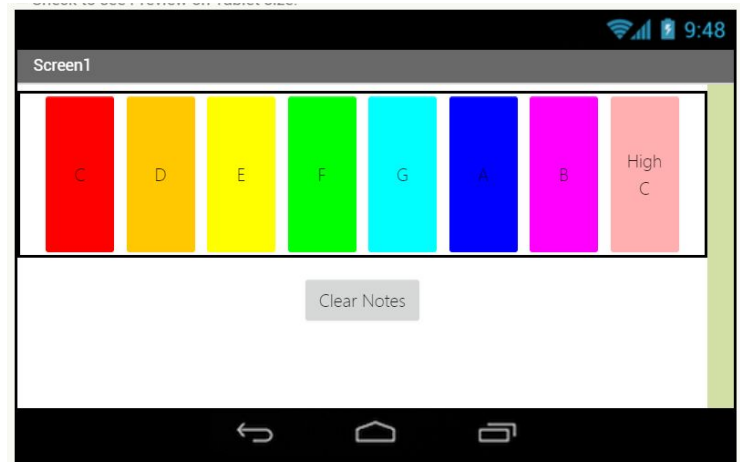
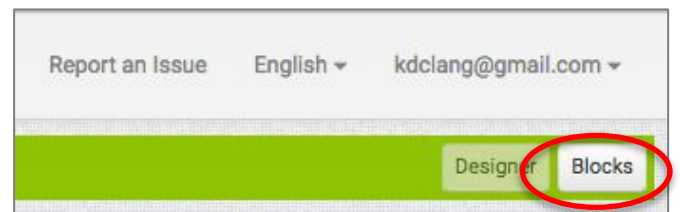


# MY PIANO: PART 3

START HERE

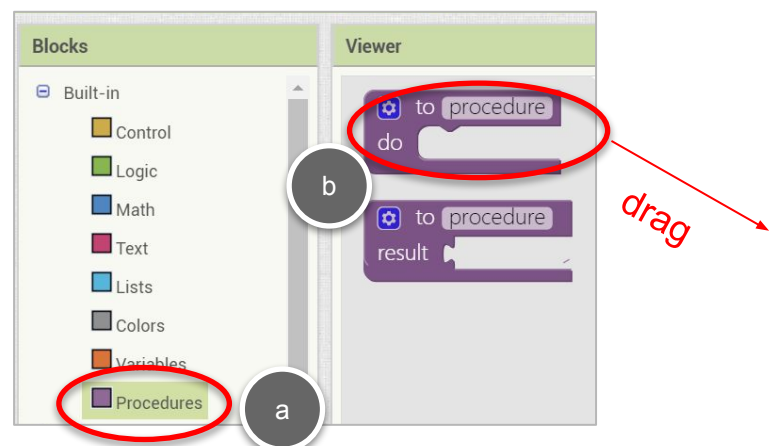


- 1 Go to the MIT App Inventor website (<http://ai2.appinventor.mit.edu>) and click the **Blocks** button to go to the Blocks Editor.

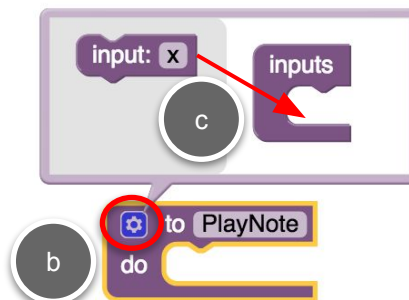


Because the code blocks for **CNote.Click** and **DNote.Click** are so similar, we are going to make a procedure to play the notes.

- 2 Click on **to procedure** in the **Procedures** Drawer, then drag out a **to procedure** block.



- 3 Change the name to **PlayNote**. Add an input by clicking on the blue circle and snapping it into the block.



## WRITE A PROCEDURE

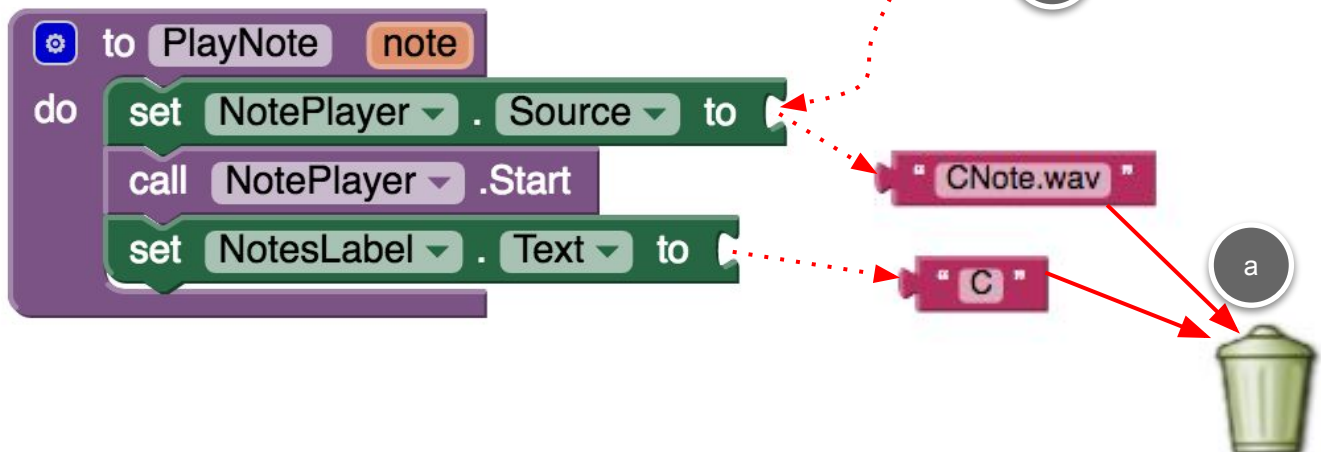
4 Then, rename the input “**note**”.

5 Drag the code inside the **CNote.Click** block to the new **PlayNote** procedure Block.

6 We want to be able to have different .wav filenames, based on the note, so drag out a **join** block from the **Text** drawer.



7 Delete the original text blocks and snap in the **join** block.



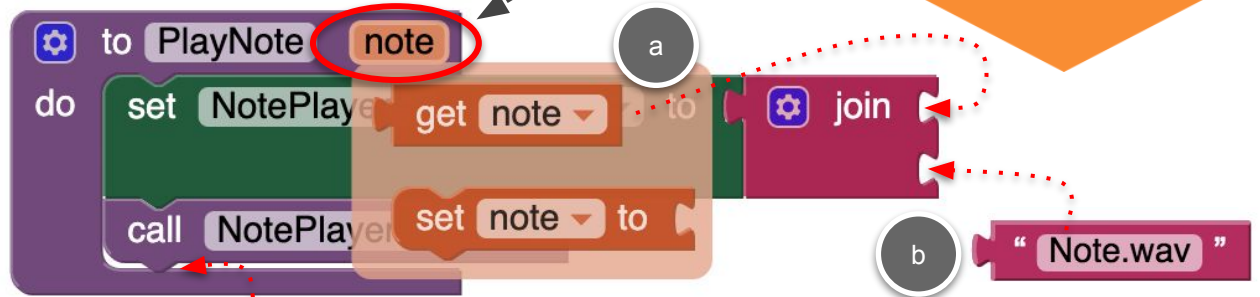
## PLAYNOTE PROCEDURE

- 8 The only thing that changes is the **note**, so join **note** and "Note.wav".

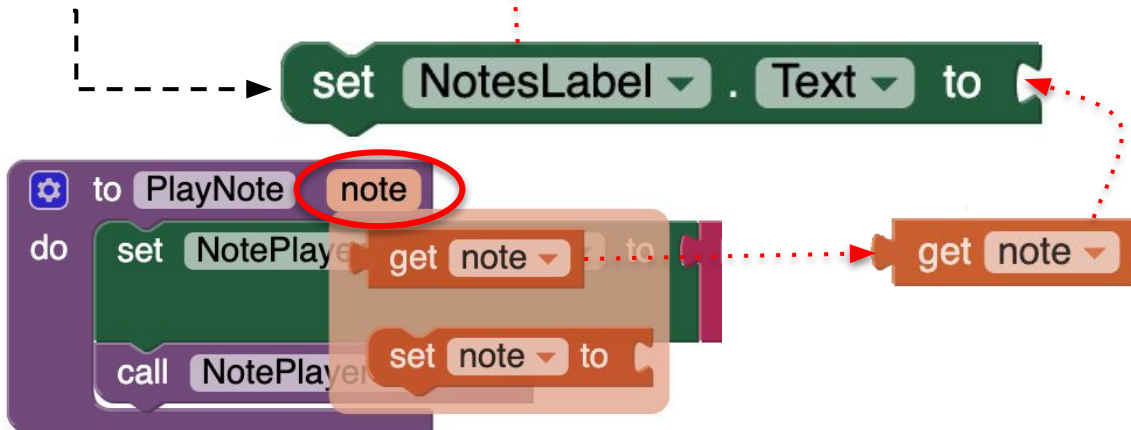
Hover over **note** for  
get note to pop-up.



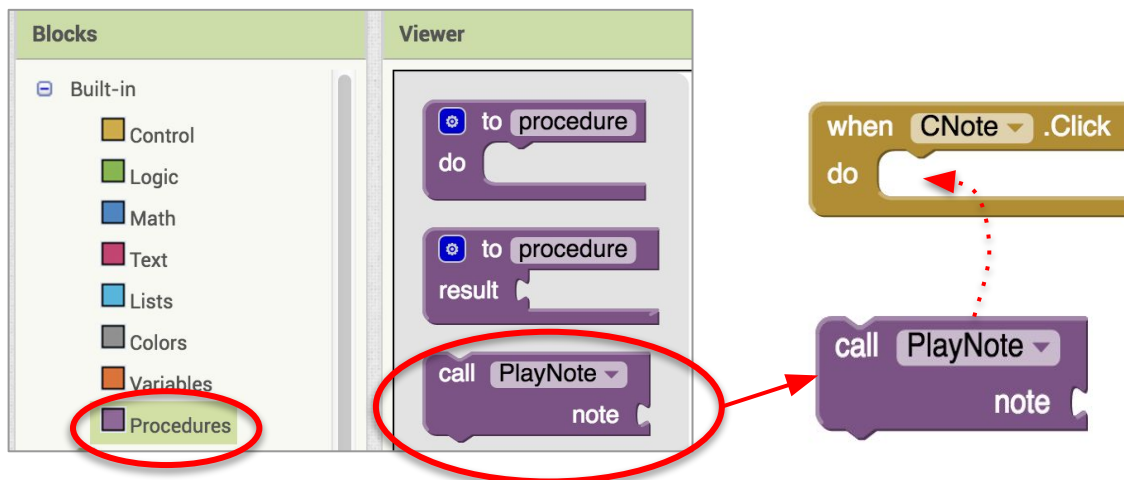
If **note** is "C", joining it with "Note.wav" makes "C"+"Note.wav", or "CNote.wav", the name of the sound file.



- 9 And set **NotesLabel.Text** to **note**.



- 10 Drag out a **call PlayNote** block from the **Procedures** drawer and add to **CNote.Click** so that the PlayNote code runs when the C note is pressed.

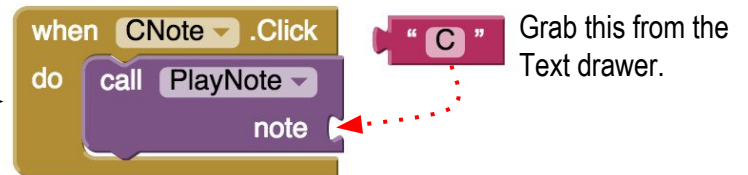


## CALL THE PROCEDURE

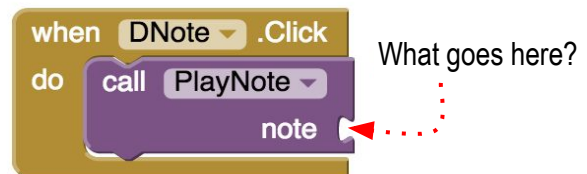


Input parameters are “passed” to the procedure.

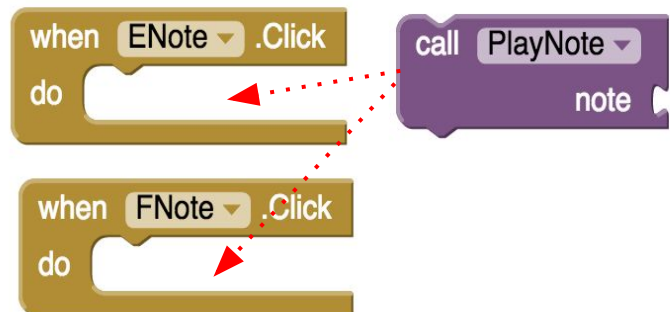
- 11 Complete the puzzle piece and pass “C” as the note to **PlayNote**.



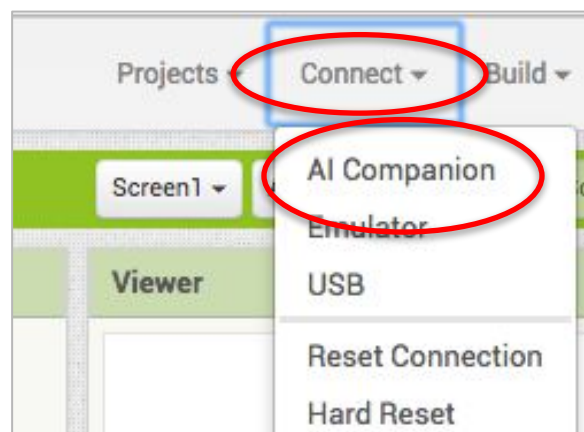
- 12 Do the same for **DNote.Click**.  
Delete the code blocks that were in **DNote.Click**, and replace them with a call to **PlayNote**.



- 13 Add **.Click** event blocks for all the other note buttons, and call **PlayNote** with the correct note for each button.



- 14 Test your app with the MIT AI2 Companion to make sure you can play all eight notes and see the correct notes displayed.



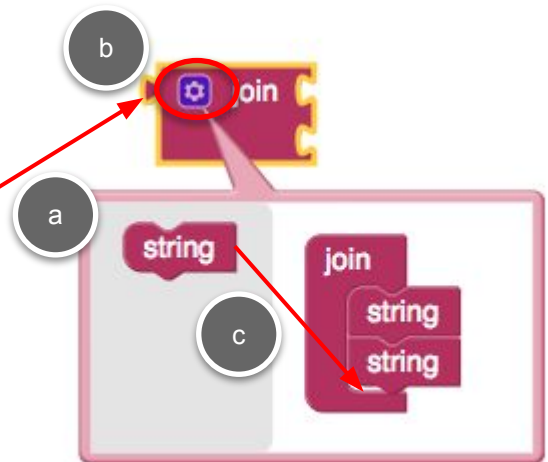
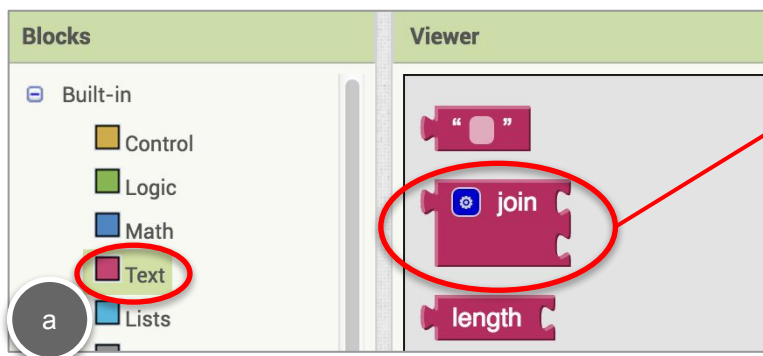
## CHANGING THE APP

Let's make a change to our app.  
Instead of just displaying the current note, let's display **all** the notes pressed in sequence, like "A C C C D E F" etc.

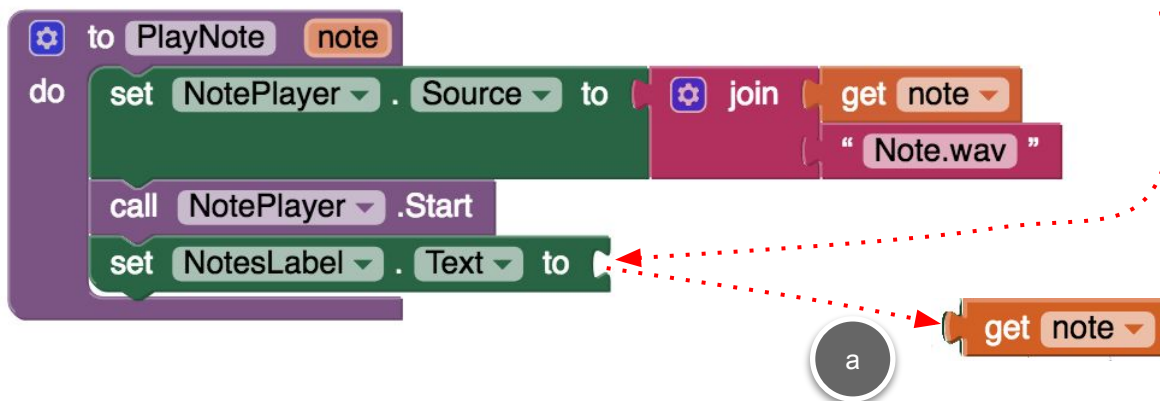
- 15 In the **PlayNote** procedure, let's update **set NotesLabel.text** so it uses a **join** block. Add a third string to the **join** block.



By using a procedure, we can update our app in one place, instead of having to update all the Click event blocks!



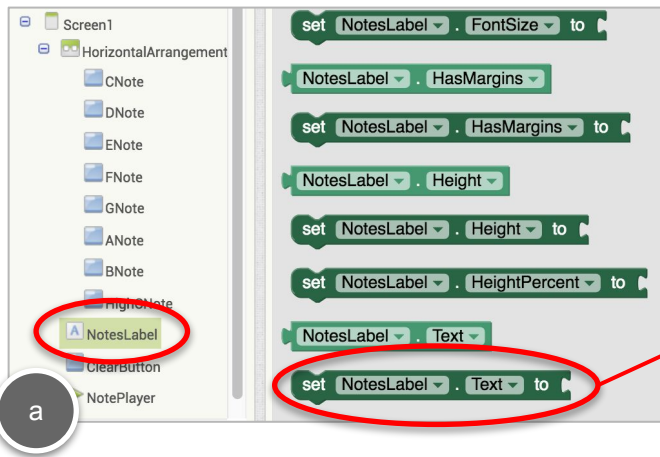
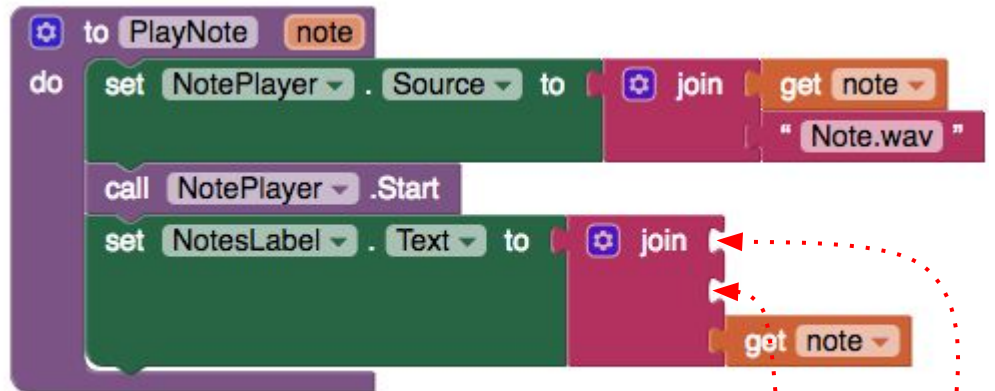
- 16 Move **get note** out and replace it with the **join** block.





## COMPLETE THE JOIN

- 17 Add **NotesLabel.Text** and a Text space block as the other two strings in the **join** block.

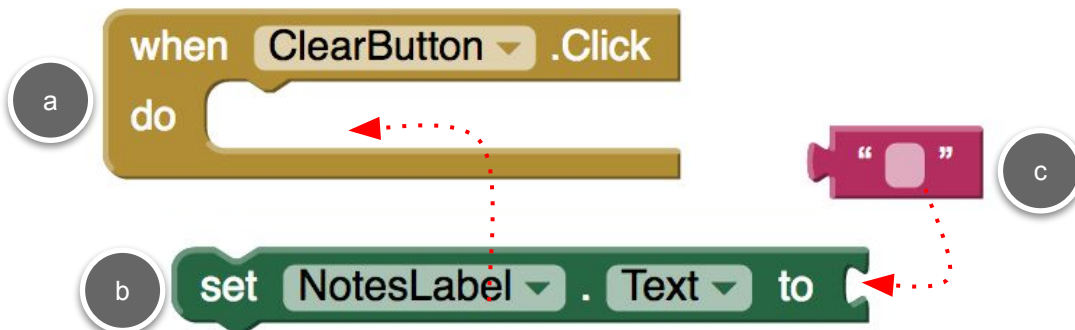


this is a  
space, not  
blank!

## CLEAR BUTTON

Sometimes the string of notes can get too long, so let's code the Clear button to reset the string.

- 18 Drag out the **ClearButton.Click** block and clear the **NotesLabel**.

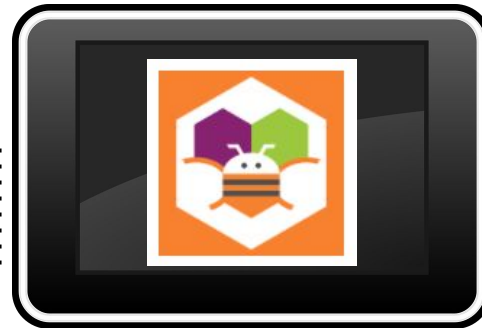


TESTING!

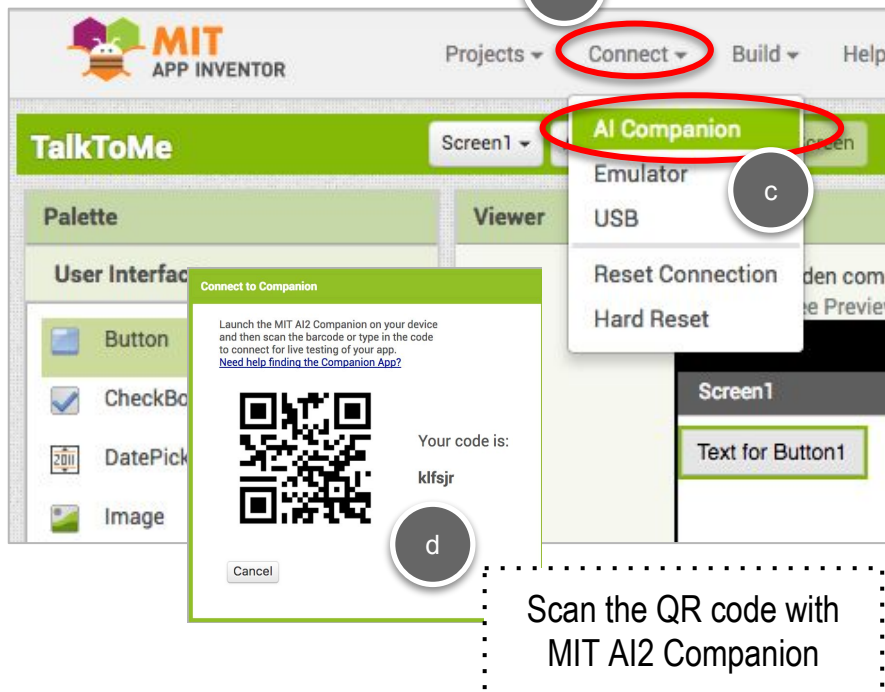
19

Now test your app on your tablet!

a

Start MIT AI2 Companion  
on your tablet

b



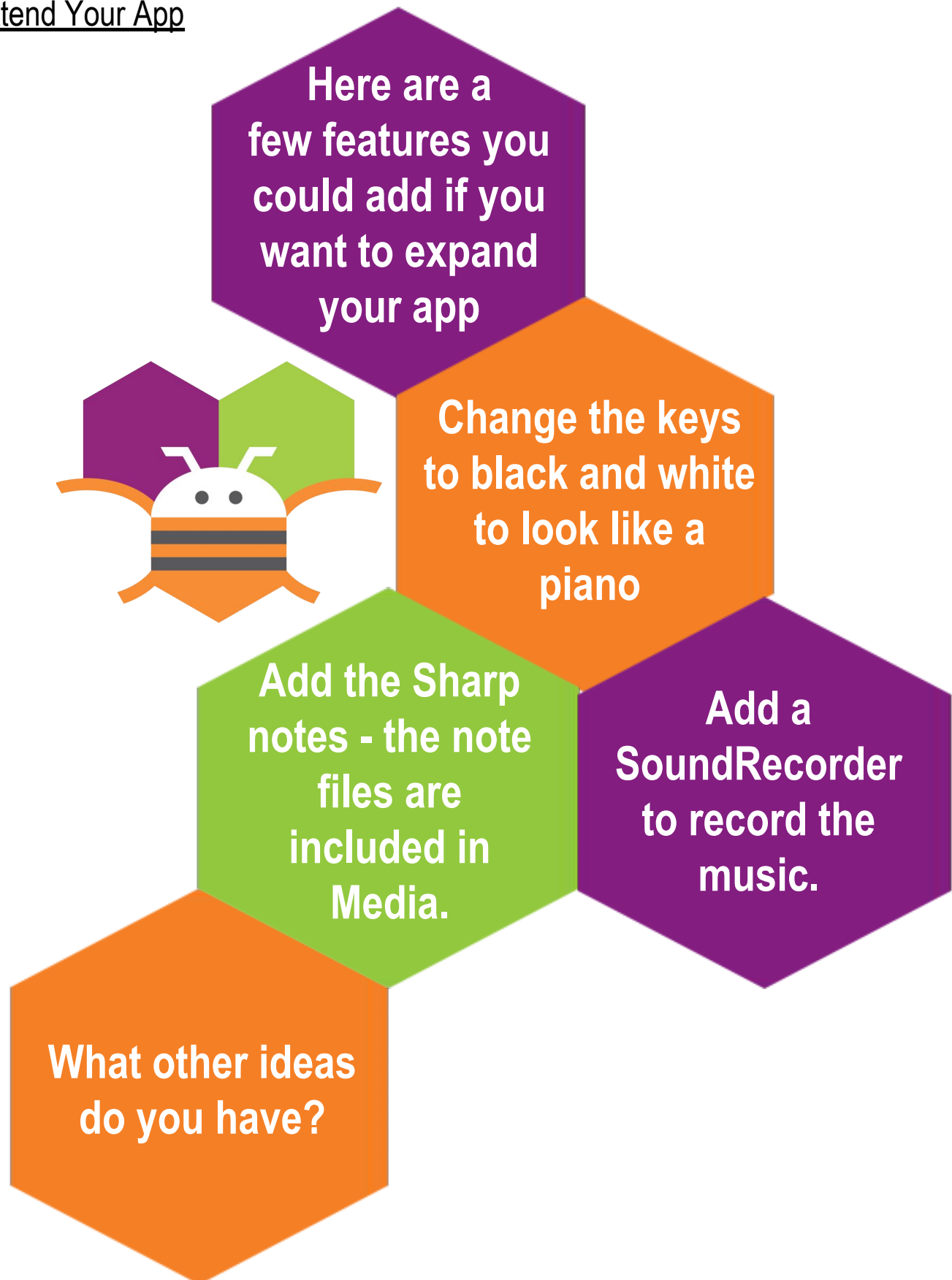
d

Scan the QR code with  
MIT AI2 Companion

20

Play with your piano. Try to play all the “keys”. You should hear the corresponding notes, and they should also appear in **NotesLabel**.


## Extend Your App





## COMPUTATIONAL THINKING CONCEPTS

The following are the Computational Thinking Concepts learned in Part 3.

My Piano			
1. Naming			
2.	Abstraction	and	Modularization (Procedures)
