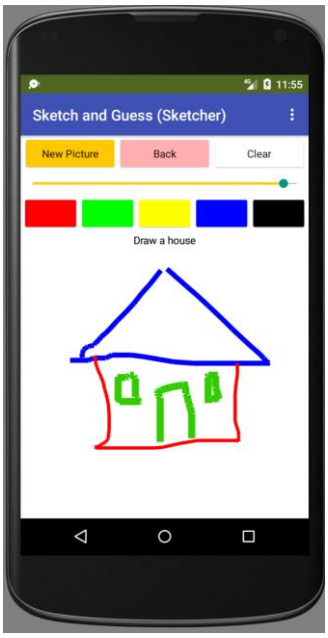
SKETCH AND GUESS: CHALLENGE

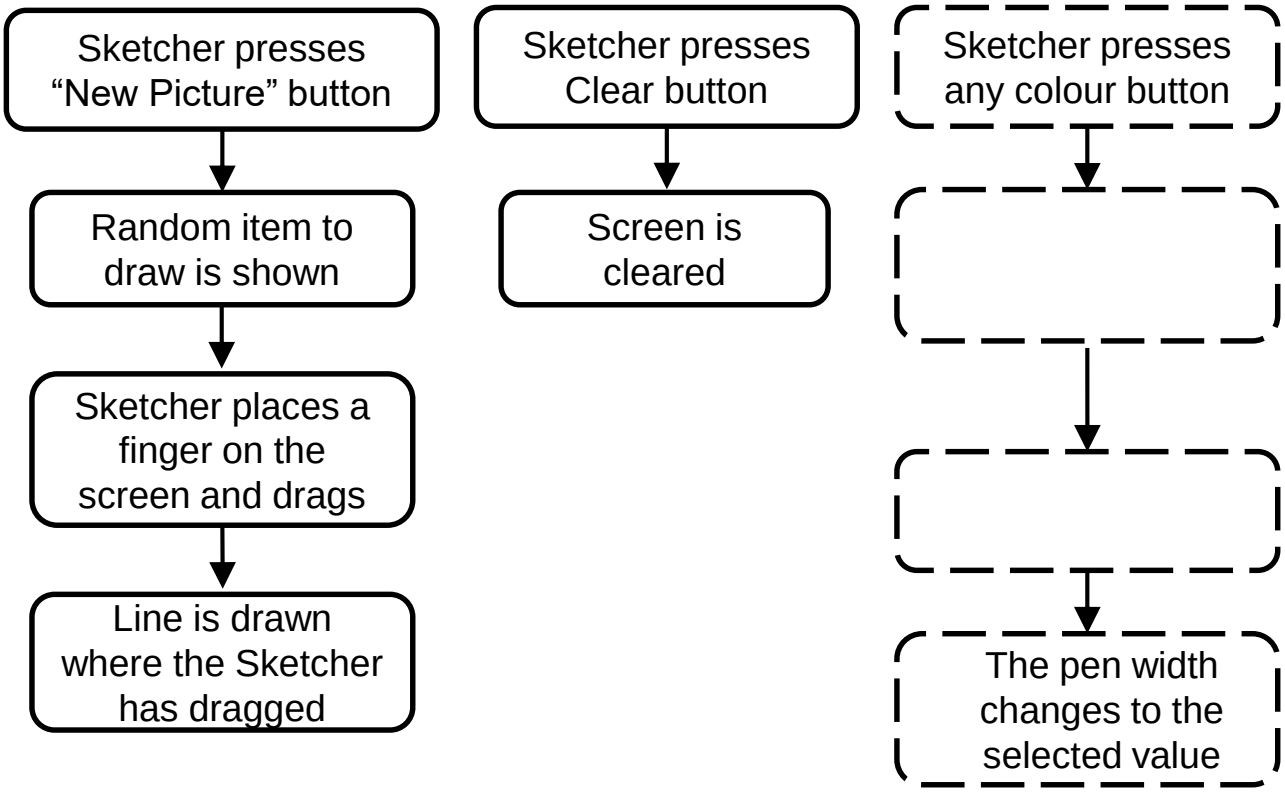
START HERE

In this challenge, you will add the ability to change the paint colour and line width of the drawing.



Review with your partner the diagrams below. Fill in the empty spaces with A or B.

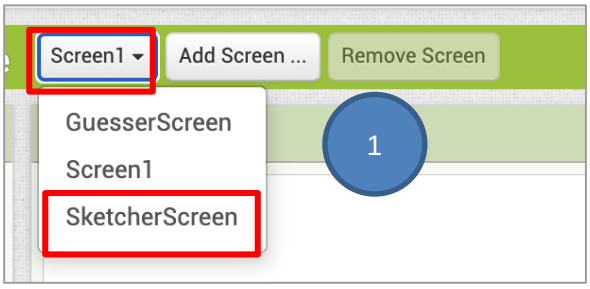
A. The pen colour changes to the colour selected	B. Sketcher adjusts the slider

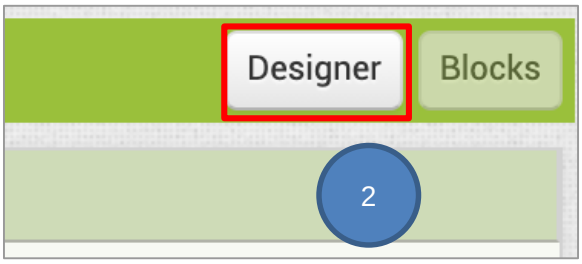


SKETCH AND GUESS: CHALLENGE

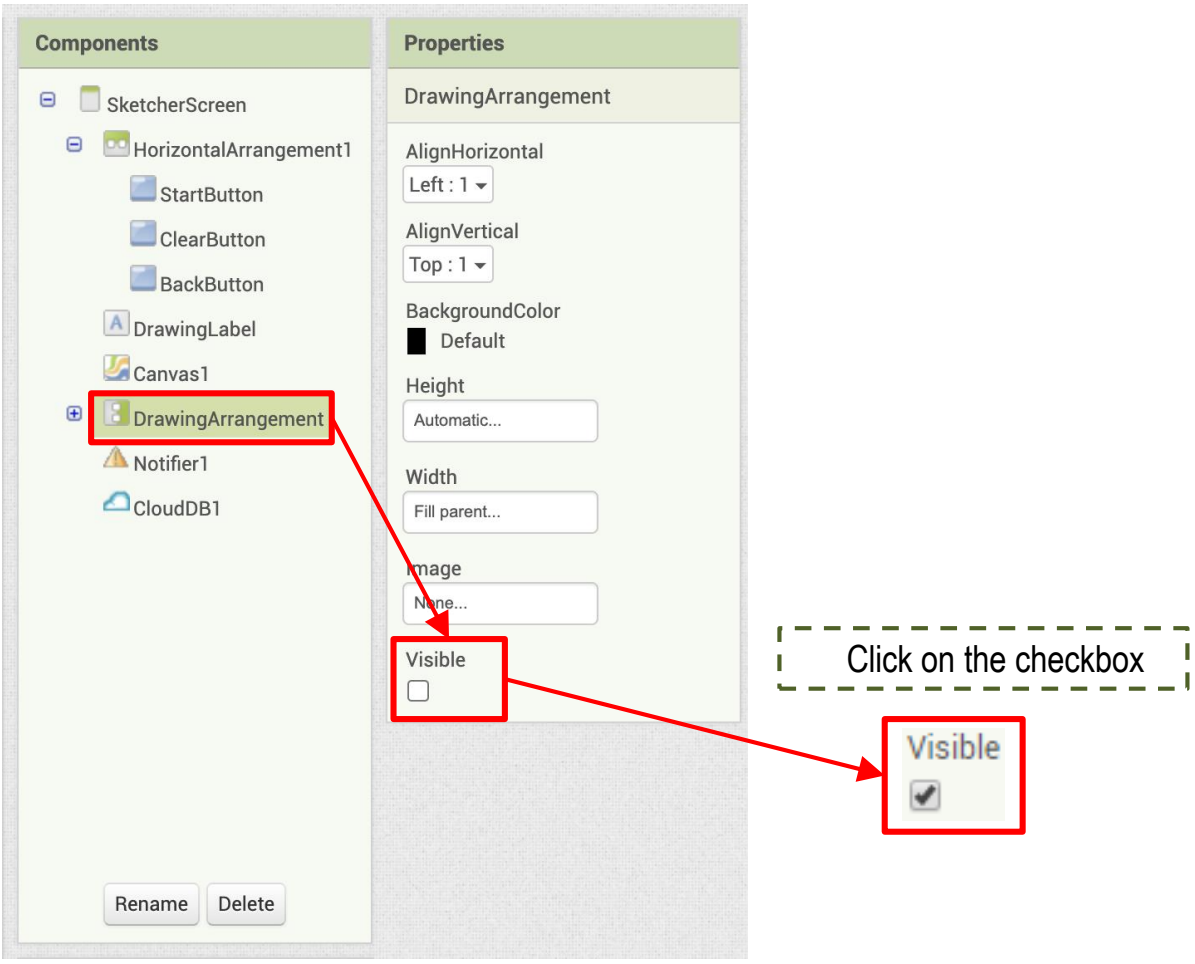
OBSERVE CHANGES IN DESIGNER VIEW

❑ Switch to the SketcherScreen and the Designer view.





❑ Click on DrawingArrangement and click on the Visible checkbox.

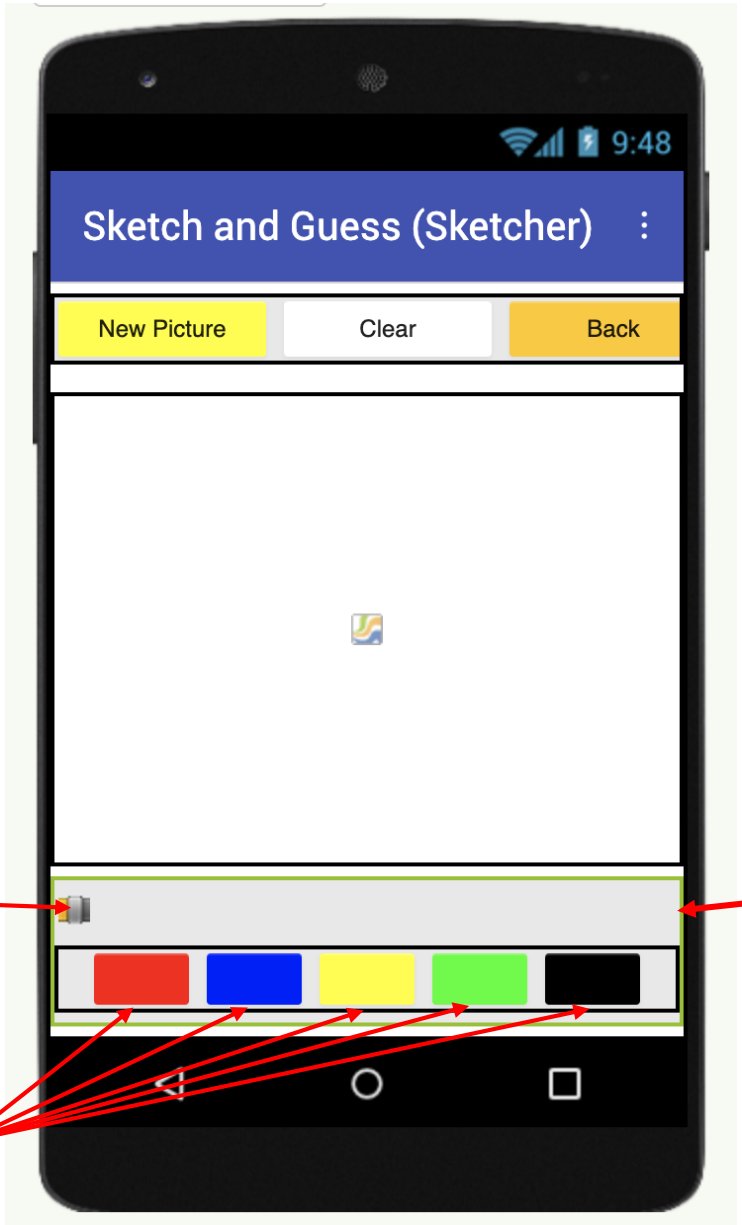


Now can you spot any difference?

SKETCH AND GUESS: CHALLENGE

OBSERVE CHANGES IN DESIGNER VIEW (CONT'D)

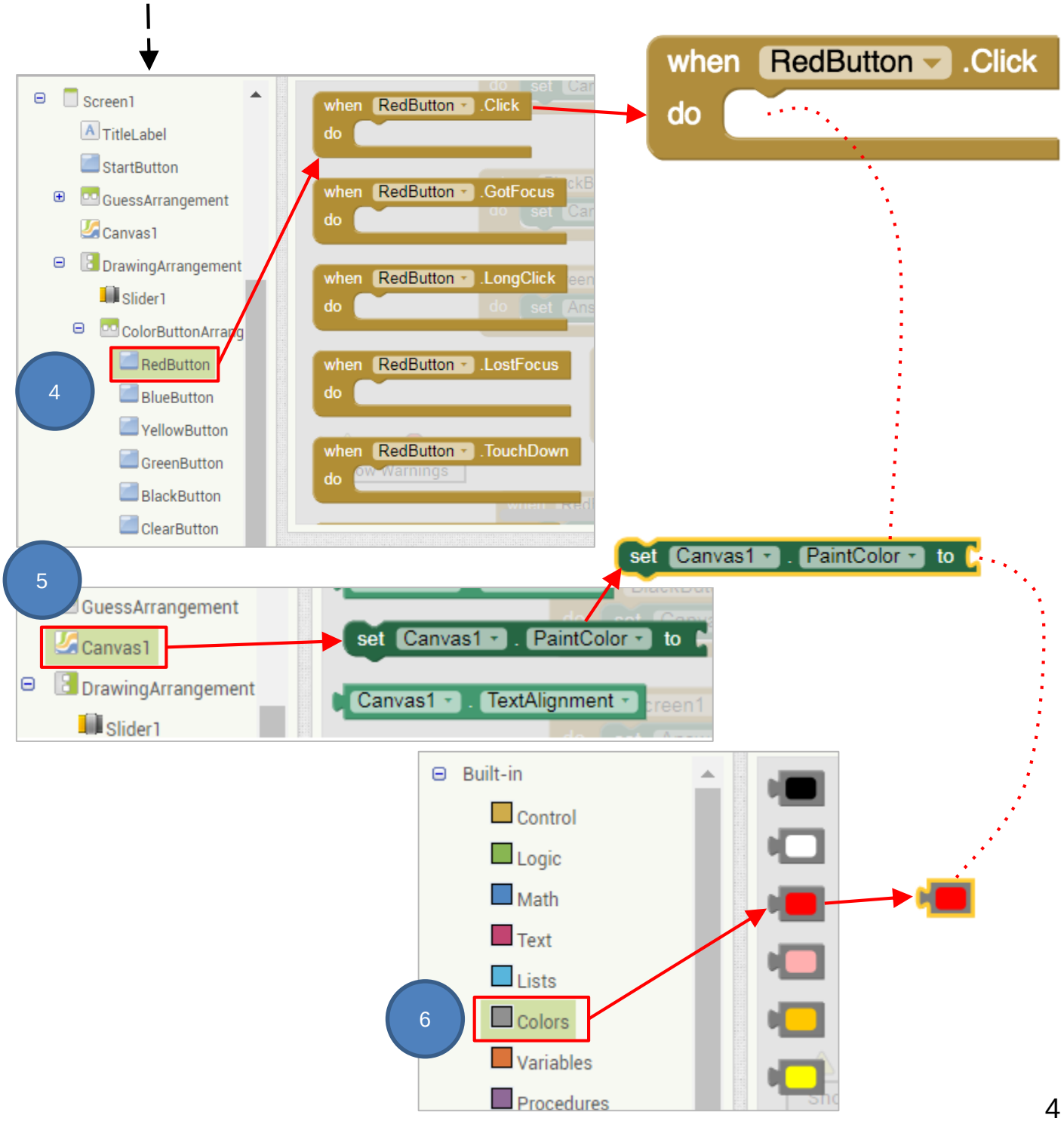
Bingo! Now the DrawingArrangement appears, including a slider and 5 colour buttons. They are red, blue, yellow, green, and black. These components enable the Sketcher to change the line width and colours in the drawing.



SKETCH AND GUESS: CHALLENGE

ADD COLOUR

❑ When the Sketcher clicks on one of the colour buttons, you need to set the **Canvas1.PaintColor** to that colour.



SKETCH AND GUESS: CHALLENGE

ADD COLOUR (CONT'D)

❑ Duplicate the **when RedButton.Click** block and change RedButton to BlueButton.

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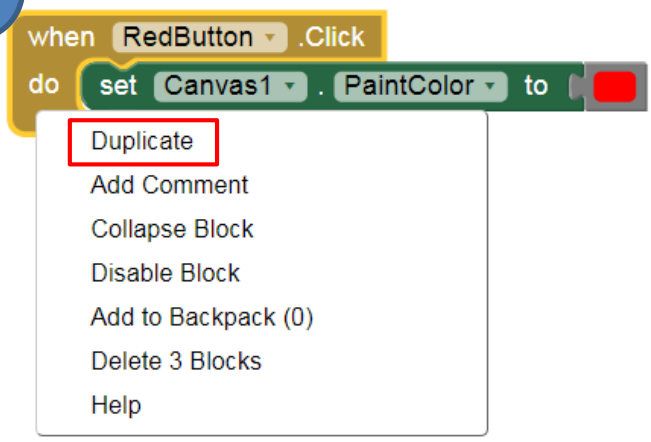

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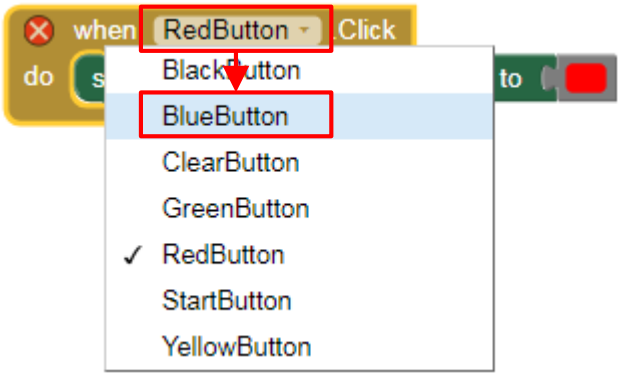

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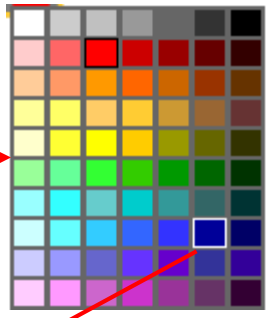

Click on the **colour** block to popup the color grid

❑ Are you able to get all five colours *(red, blue, yellow, green, and black)* buttons coded correctly?

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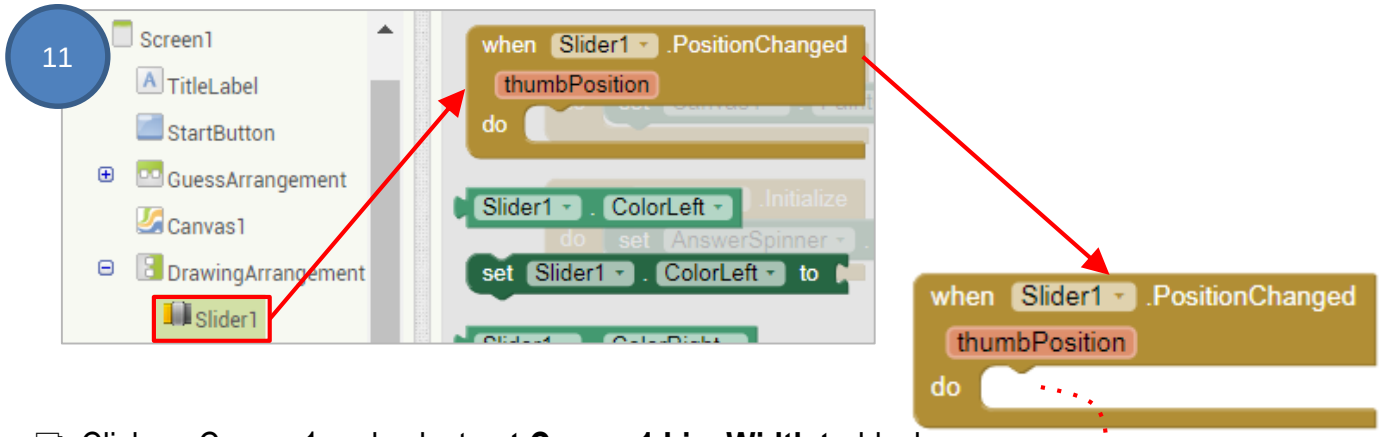
SKETCH AND GUESS: CHALLENGE

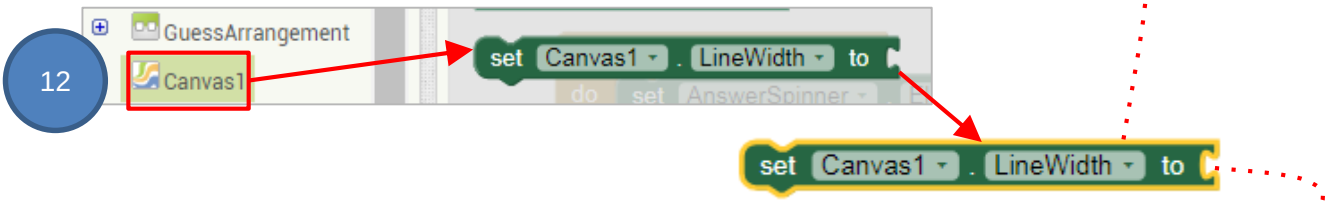
CODE THE SLIDER

You will add code so when the Sketcher moves the slider to the left, the line drawn will be thinner, and when the slider is moved to the right, the line will be thicker.

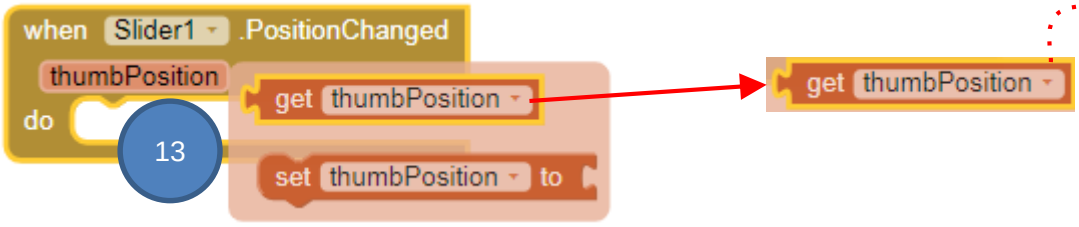
❑ Click on Slider1 and drag out the **when Slider1.PositionChanged** block.



❑ Click on Canvas1 and select **set Canvas1.LineWidth to** block.



❑ Mouse over thumbPosition and select the **get thumbPosition** block.

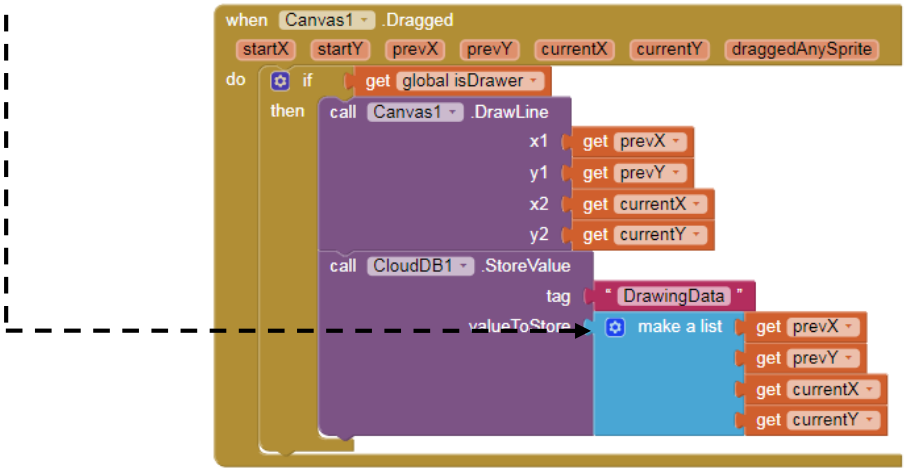


Do you understand what is going to change if the slider position is changed?

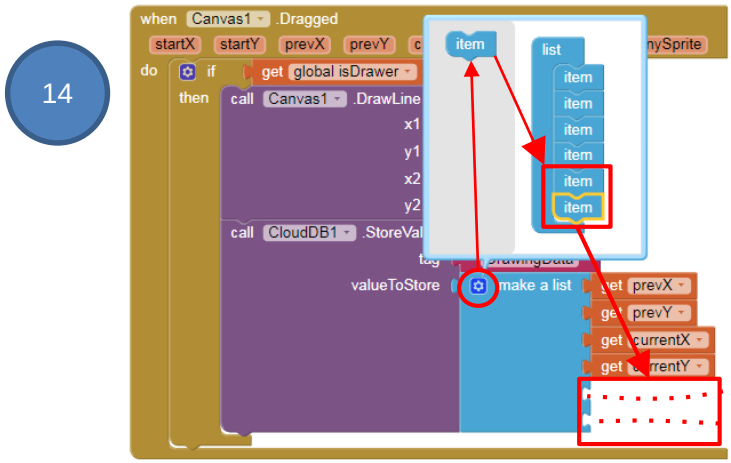
SKETCH AND GUESS: CHALLENGE

SAVE THE PAINT COLOUR AND LINE WIDTH PROPERTIES TO CLOUDDB

In the **Canvas1.Dragged** event, we will expand the DrawingData list from 4 elements to 6 elements for PaintColor and LineWidth.



❑ Click on the blue icon on the **make a list** block, then drag two more items to add to the list.

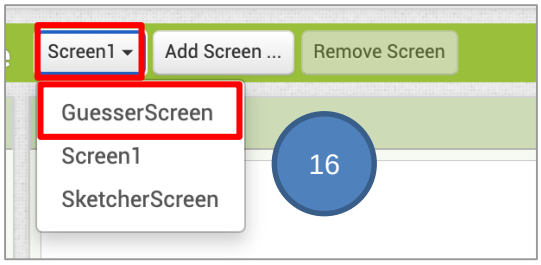


❑ Add **Canvas1.LineWidth** and **Canvas1.PaintColor** as the two items newly added.

SKETCH AND GUESS: CHALLENGE

GET THE LINE WIDTH AND COLOUR FOR THE GUESSER

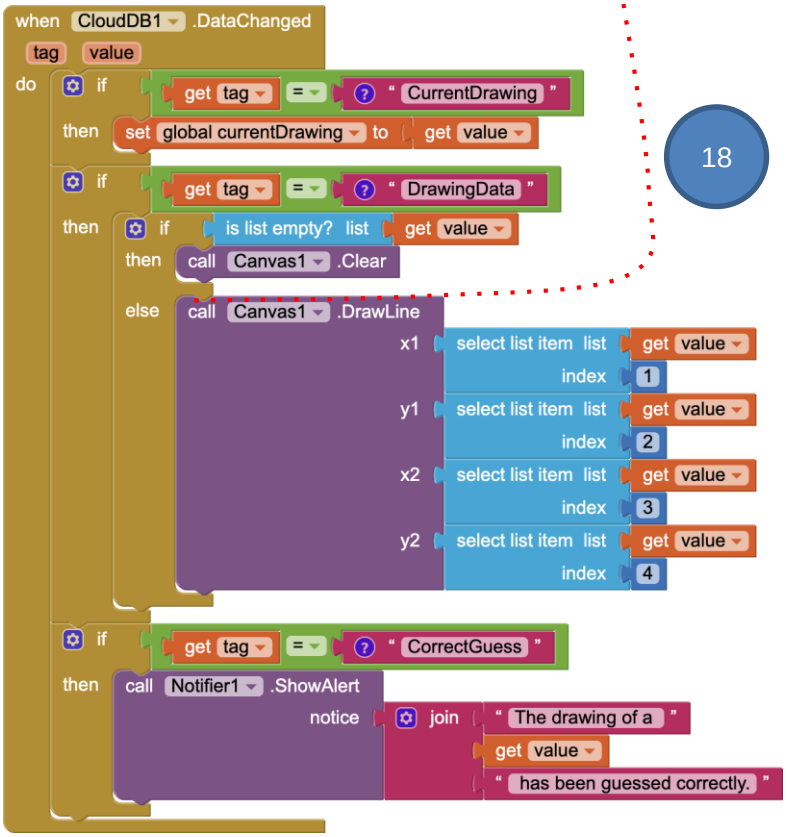
❑ Switch to the GuesserScreen.



The LineWidth and PaintColor should be updated on the GuesserScreen.

❑ Get the **set Canvas1.PaintColor to** block and the **set Canvas1.LineWidth to** blocks from Canvas1 drawer .

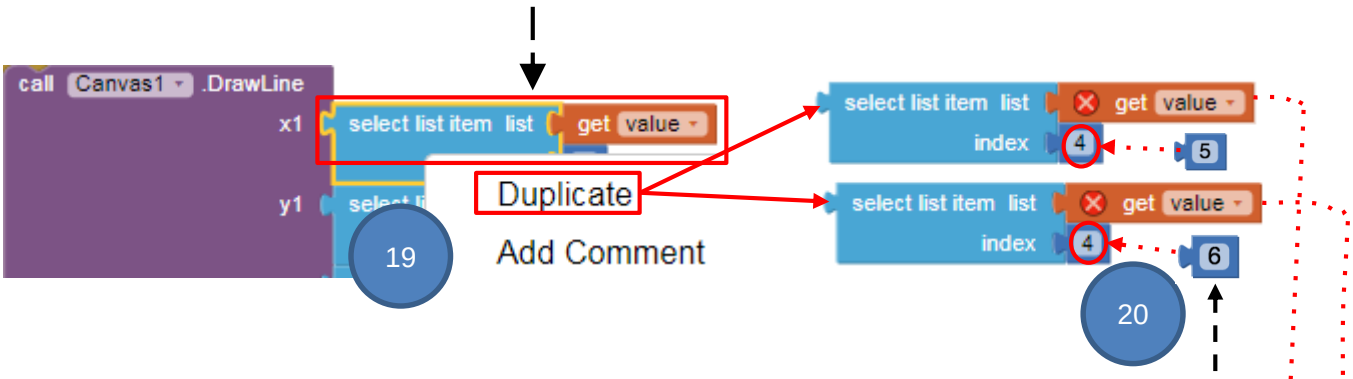
❑ Place them in the **when CloudDB1.DataChanged** event block, before the **Canvas1.DrawLine** block.



SKETCH AND GUESS: CHALLENGE

GET THE LINE WIDTH AND COLOUR FOR THE GUESSER (CONT'D)

❑ Right-click and duplicate the **select list item** block from the **Canvas1.DrawLine** block twice.



❑ Update the index Math block to "5" and "6" on the duplicated blocks.

❑ Snap the two **select list item** blocks to the **set Canvas1.PaintColor** and **set Canvas1.LineWidth** blocks. Make sure use index 5 for PaintColor and index 6 for LineWidth so it matches the indices used when storing in CloudDB in the SketcherScreen.

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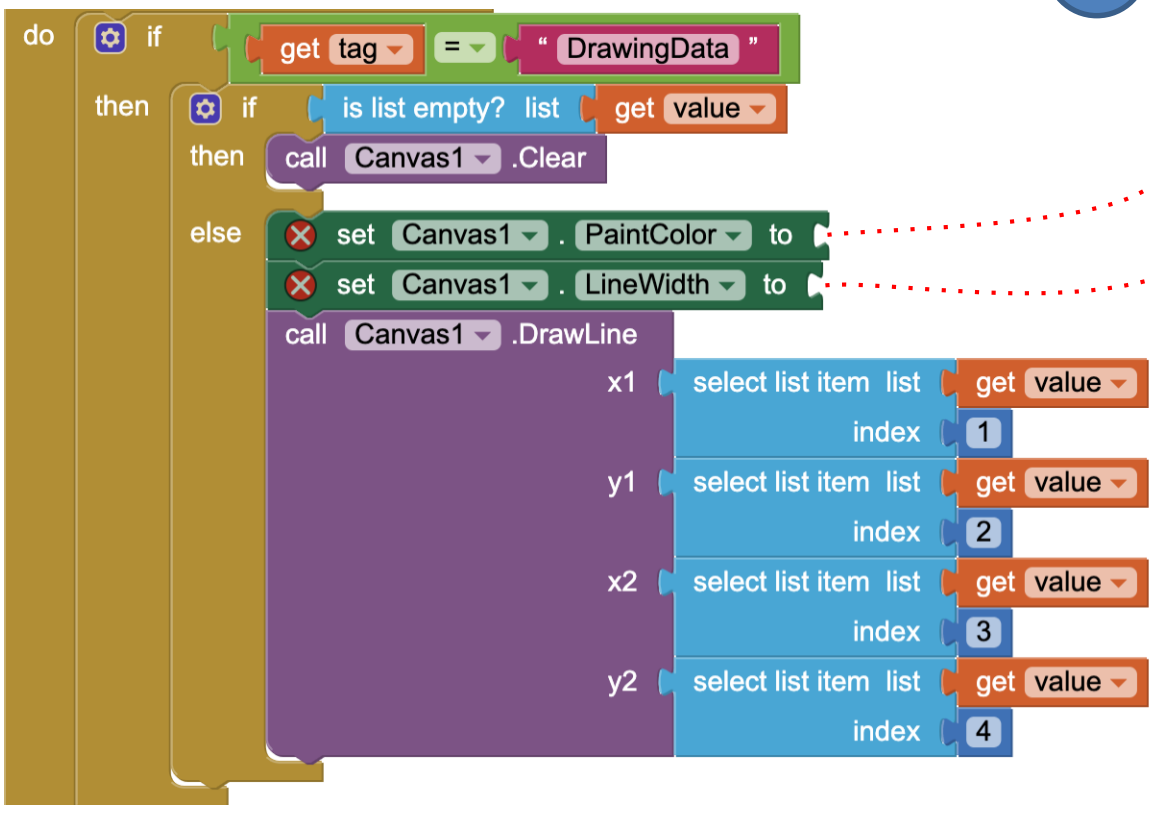

SKETCH AND GUESS: CHALLENGE

TEST THE NEW FEATURES

- ❏ Test with your partner. Build the apk using the QR code option, scan the QR code and download and install the apk on your individual devices.
- ❏ Check that the Sketcher can change the colour and line width of their drawing, and that the Guesser can see same colours and line width.

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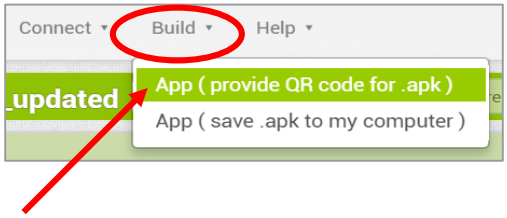

SKETCH AND GUESS: CHALLENGE

COMPUTATIONAL THINKING CONCEPTS

The following is the computational thinking concept learnt in this lesson.

L3U8.6-8.8 Sketch And Guess
1. Data Structures