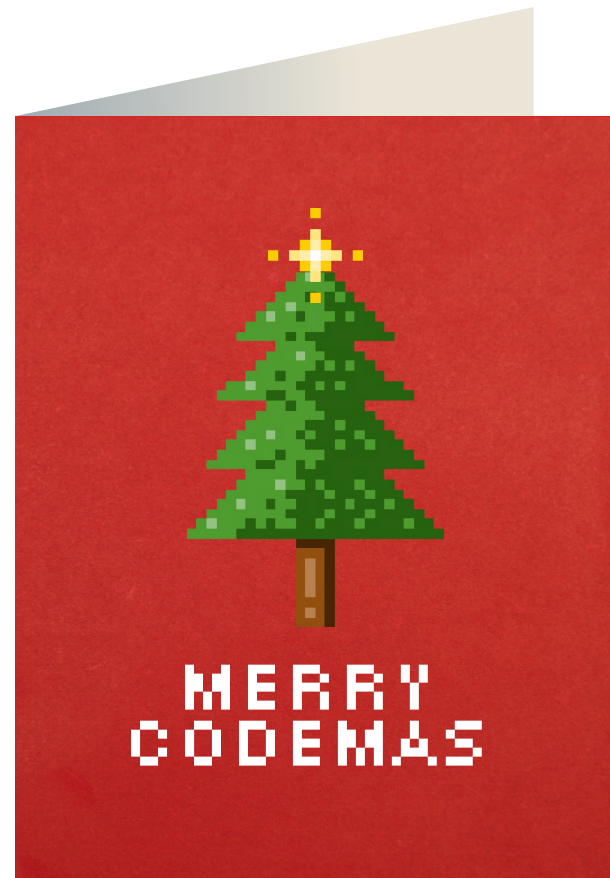
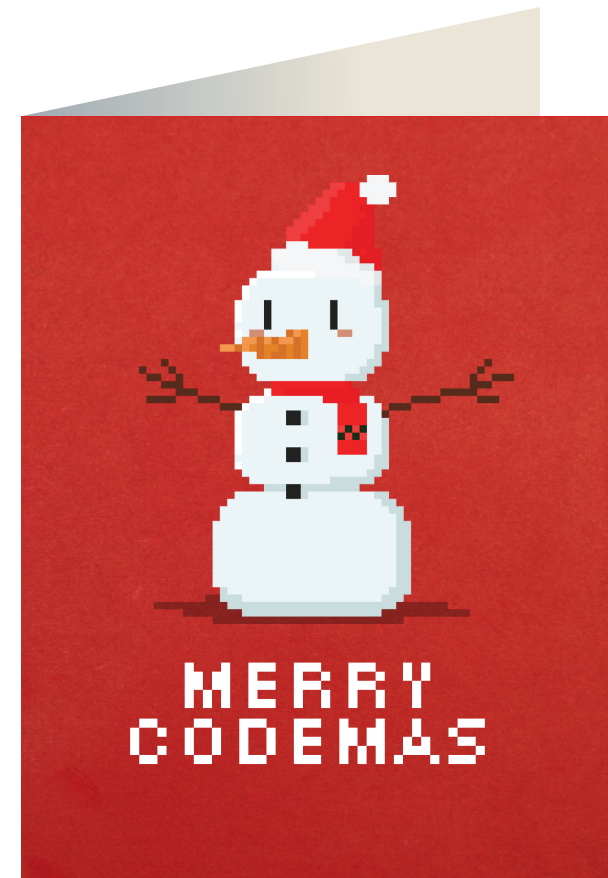


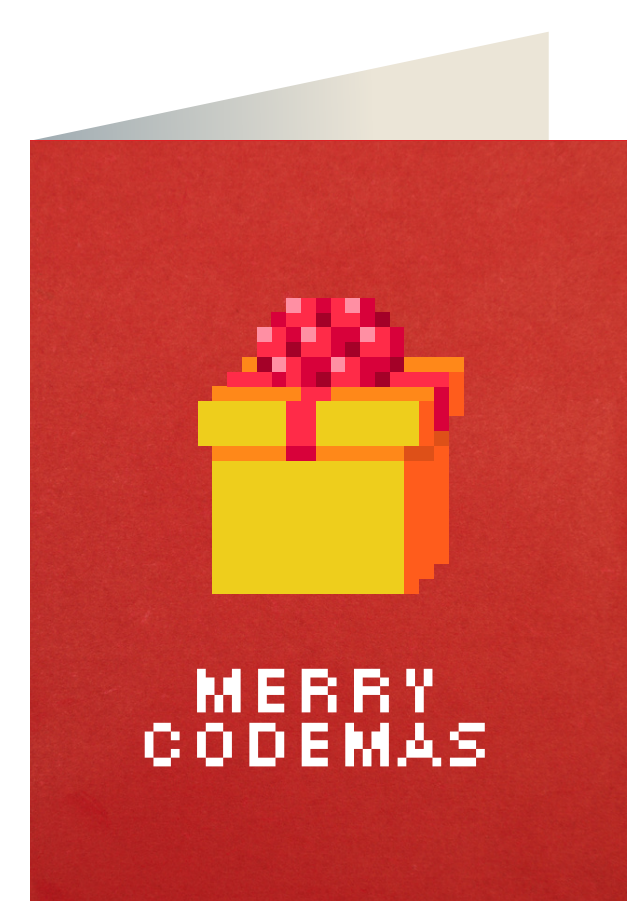
C O D E M A S C H A L L E N G E S



CHALLENGE 1



CHALLENGE 2



CHALLENGE 3



Click or tap each card to see the challenge and instructions.

Share your creations or processes with [@ConnectedFalk](#) and [@DigiLearnFalk!](#)



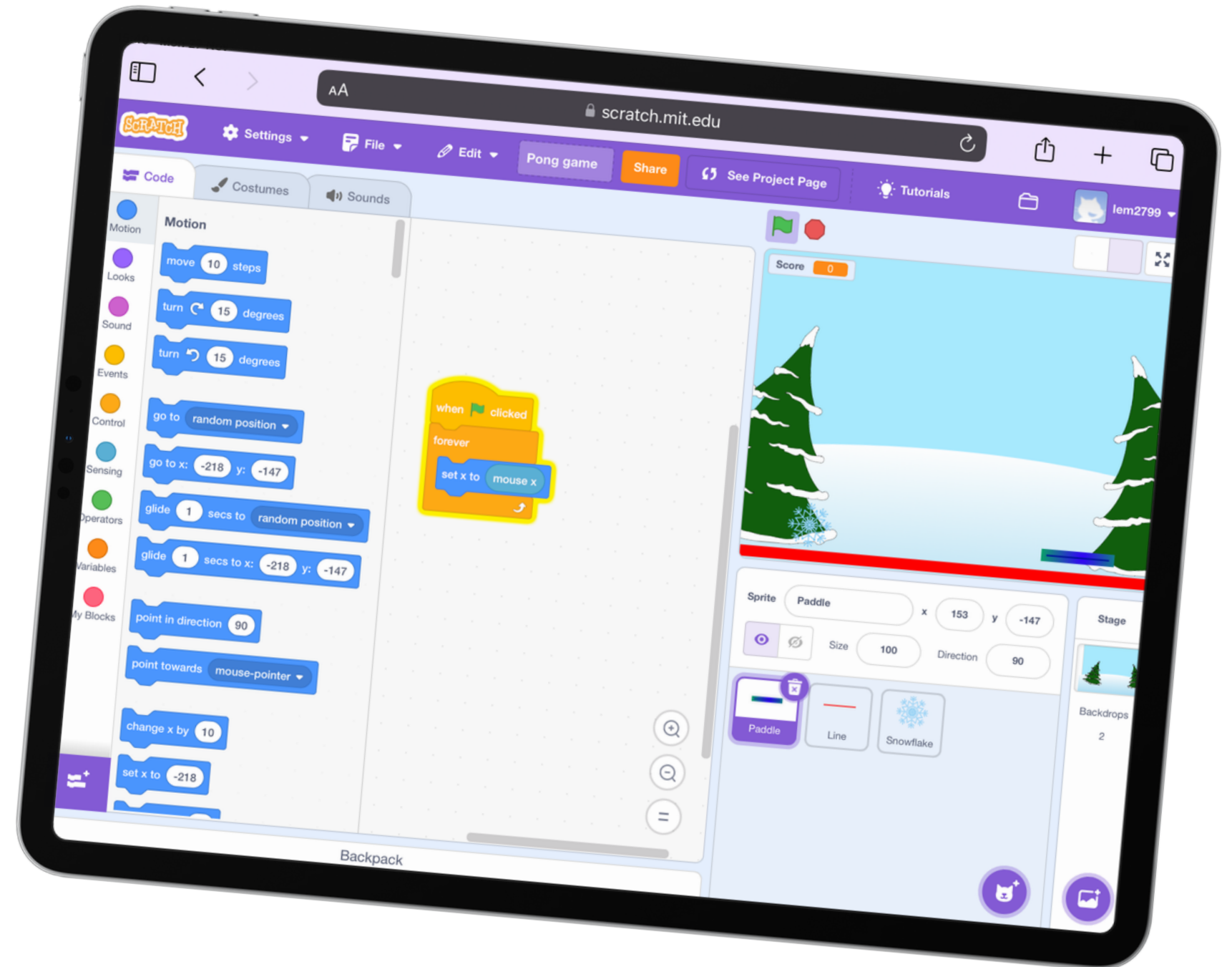
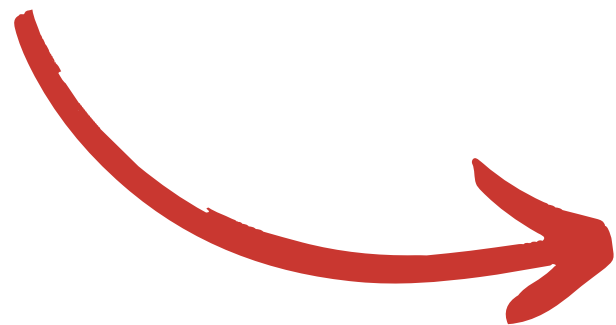


Use **Scratch** to code your own festive game.



1. Go to scratch.mit.edu on your internet browser.

2. This challenge was accompanied by a live lesson on 1st December 2023. Click or tap on the iPad for the video instructions where you can follow along step by step.



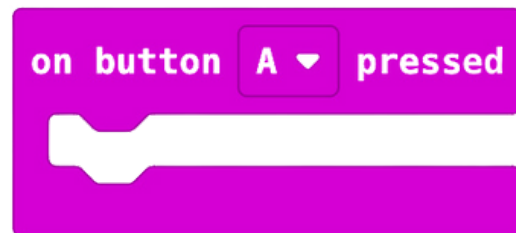


Code your **micro:bit** to make a festive song guessing game.

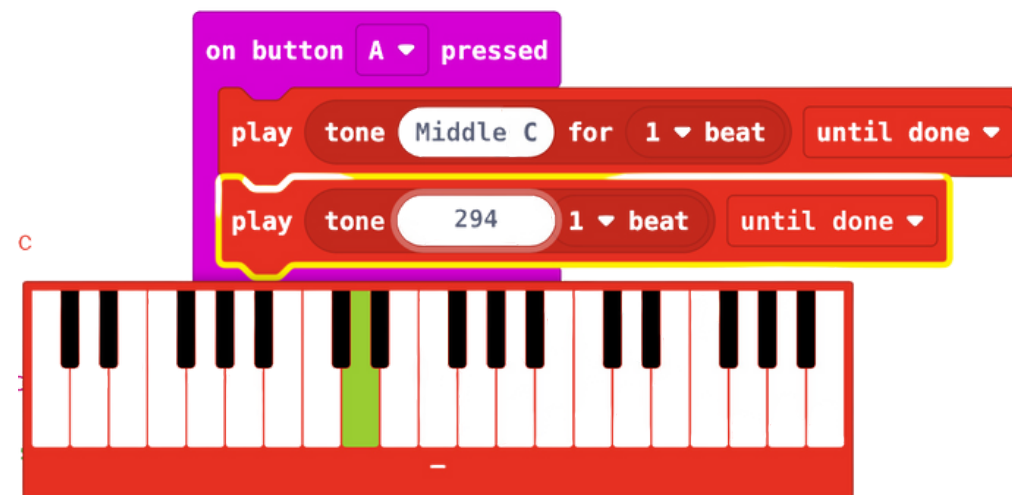


1. Use your micro:bit app or the makecode.microbit.org website to start a new coding project.

You can have up to three songs in your festive guessing game. To start add a purple 'Input' block to say which button will start the code. You can choose A, B or A+B. Add a new 'Input' for each song.



2. Now we add the musical notes! Add play tone 'Music' blocks inside the purple 'Input' block. Tap on the note name to change the note. Add a new block for each note and include 'rest' blocks wherever you need them.



You can find the notes for some festive songs on the [next page](#) or research the notes for your favourite songs.

3. You can now play your game with friends and family by pressing A, B or A+B and asking them to guess the song.

Up for an extra challenge? Code your micro:bit to reveal the song name after the music plays using a mixture of 'Logic' blocks and 'Show String' blocks. Click or tap below to see the [advanced video](#).



Still need help? Click here for the code!



Here are some festive songs you can use for your guessing game.

1. The notes for **Jingle Bells** are:

EEE
EEE
EGCDE

All notes are 'middle'. Notice there is a repetition in the first two lines. Can you use a repeat 'Loop' block to shorten your code?

2. The notes for **Frosty the Snowman** are:

GEFGC^E
BC^D^C^
BAG

Most notes are 'middle' but notes with a ^ next to them are 'high'.

3. The notes for **Rudolph the Red Nosed Reindeer** are:

GAGE
C^AG
rest for 1/2 beat
GAGAGC^B

Remember to put in the 1/2 beat rest 'Music' block!

HELP!

Still need help? Here is a completed code for a three song guessing game!



```
on button A pressed
  set music to true
  set tempo to (bpm) 200
  repeat 2 times
    do
      play tone Middle E for 1 beat
      play tone Middle E for 1 beat
      play tone Middle E for 1 beat
      rest for 1 beat
  repeat 1 times
    do
      play tone Middle E for 1 beat
      play tone Middle G for 1 beat
      play tone Middle C for 1 beat
      play tone Middle D for 1 beat
      play tone Middle E for 1 beat
  while music = true
    do
      show string "Jingle Bells"
      show icon [snowflake]
      show icon [snowflake]
```

```
on button B pressed
  set music to true
  set tempo to (bpm) 130
  repeat 1 times
    do
      play tone Middle G for 2 beat
      play tone Middle E for 1 beat
      play tone Middle F for 1 beat
      play tone Middle G for 1 beat
      play tone High C for 2 beat
      play tone Middle B for 1/2 beat
      play tone High C for 1/2 beat
      play tone High D for 1 beat
      play tone High C for 1 beat
      play tone Middle B for 1 beat
      play tone Middle A for 1 beat
      play tone Middle G for 2 beat
  while music = true
    do
      show string "Frosty The Snowman"
      show icon [snowflake]
      show icon [snowflake]
```

```
on button A+B pressed
  set music to true
  set tempo to (bpm) 130
  repeat 1 times
    do
      play tone Middle G for 1/2 beat
      play tone Middle A for 1 beat
      play tone Middle G for 1/2 beat
      play tone Middle E for 1 beat
      play tone High C for 1 beat
      play tone Middle A for 1 beat
      play tone Middle G for 1 beat
      rest for 1/2 beat
      play tone Middle G for 1/2 beat
      play tone Middle A for 1/2 beat
      play tone Middle G for 1/2 beat
      play tone Middle A for 1/2 beat
      play tone Middle G for 1 beat
      play tone High C for 1 beat
      play tone Middle B for 2 beat
  while music = true
    do
      show string "Rudolph the Red Nosed Reindeer"
      show icon [snowflake]
      show icon [snowflake]
```



Help the elves find the presents on **Code Lab** in Google Santa Tracker.

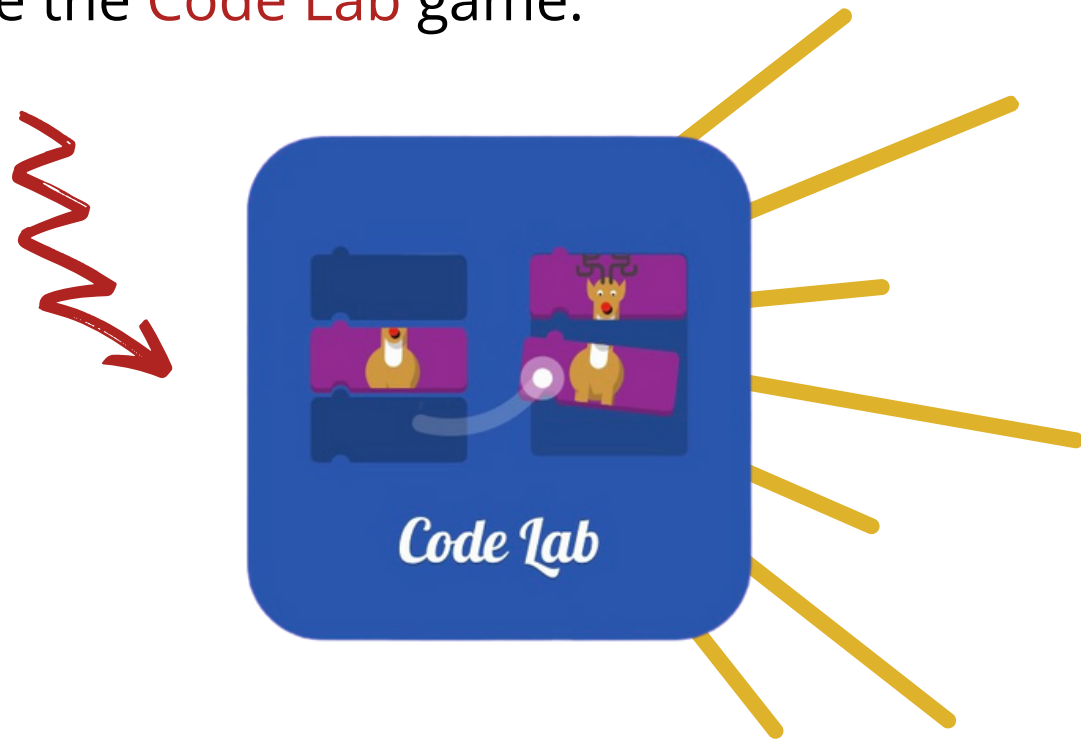


1. Use your internet browser to go to santatracker.google.com.

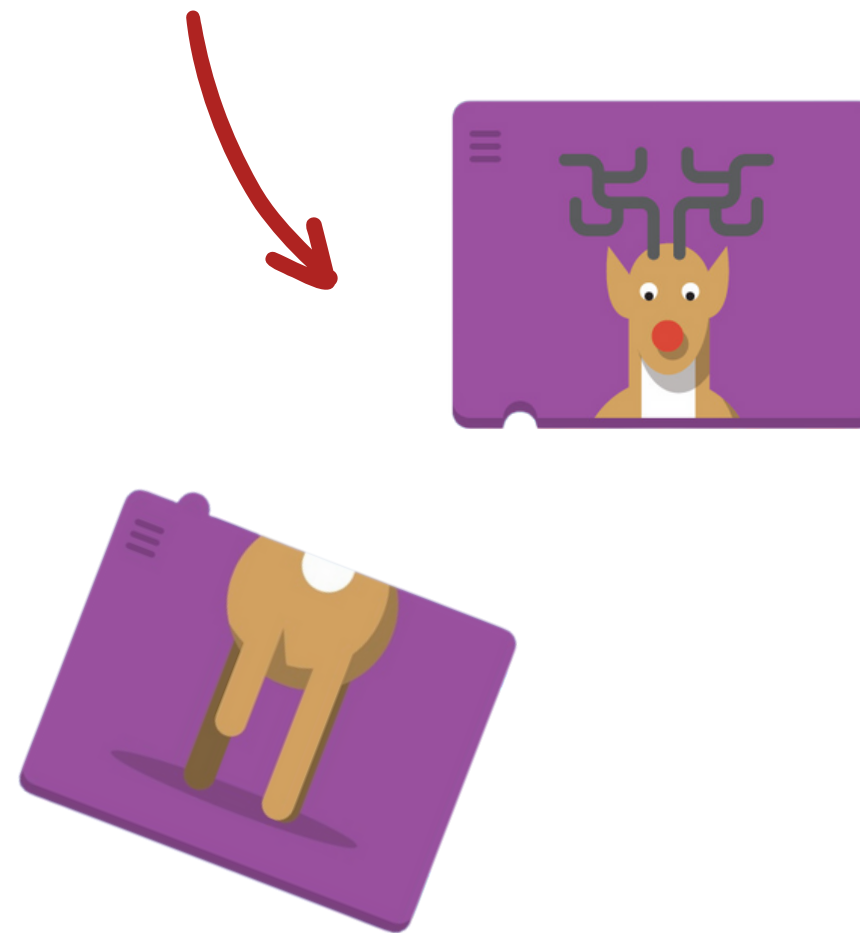
Tap the hamburger menu in the top left hand corner.



Choose the **Code Lab** game.



2. Solve the first two jigsaw style puzzles using your finger to drag the blocks into place.



3. Use the block coder to move your elf to the square the present is on.

To add more blocks tap and hold the direction arrow to bring a new block into the block coder.

