BBC Microbit
Objective of the lesson
Use Block Editor to make a coin toss

• All of you will:
  – Create a random number when you shake the Microbit

• Most of you will:
  – Display random message ‘Heads’ or ‘Tails’ when you shake the Microbit

• Some of you will:
  – Display random message ‘Heads’ or ‘Tails’ or ‘On Its Side’ when you shake the Microbit
Using a Random Number to Toss a Coin

We will use the shake to create a random number, either 0 or 1
If the number = 0 then the Microbit will display Heads
If the number = 1 then the Microbit will display Tails
Add an on shake do loop

Because the random number created will change this is called a variable.
Add a variable

At the moment the name of the variable is ‘item’. Change this to ‘CoinToss’
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The CoinToss needs to create two random numbers, 0 or 1.
Add in ‘pick random’ 0 to 1
We need to add an ‘if do’ block so that if the random number = 0 then it will say ‘Heads’

Add in if ‘CoinToss’ = 0
Then add in a ‘show string Heads’

Now add in another if block so that ‘if CoinToss = 1’ do ‘show string Tails’
We can simplify this by clicking on the cog and dragging in an else

Now if CoinToss = 0 it shows ‘Heads’
Otherwise CoinToss must not = 0 and it runs whatever is in ‘else’ i.e. it shows ‘Tails’
on shake
  do
    set CoinToss to pick random 0 to 1
    if CoinToss = 0 then
      show string "Heads"
    else
      show string "Tails"
  end if
end do
Challenge

1. See if you can get it to
   a. create a random number which is either 0, 1 or 2
   b. Add three ‘if’ blocks so that it says either ‘Heads’, ‘Tails’, ‘On It’s Side’
   c. See if you can use do, if, else if, else to simplify the code

2. See if you can get it to
   a. Change the name of the variable to be ‘Joke’
   b. Create a random number which is either 0, 1, 2 or 3
   c. Add four ‘if’ blocks and it tells you one of four random jokes, pauses and then tells you the punchline
   d. See if you can use do, if, else if, else to simplify the code
Answers

- If CoinToss = 0, show string "Heads"
- If CoinToss = 1, show string "Tails"
- If CoinToss = 2, show string "On it's side"