Programming Ideas Simplified

Condition
Starts
Action

Revising Loops

A loop is a set of instructions that are repeated

All loops

Can replace a sequence where there is a pattern.

Have a flow of control

Can be used in an algorithm or in programming

A count-controlled-loop

- Is controlled by the number
- Ends after the number of repeats are complete
- Is called a repeat loop in Scratch programming

An indefinite infinite loop

- Is indefinite because we do not know how many times it will repeat or when it will end

stand

loop 4 times

wave

X4

bow

sit

forever

play sound music ▾ until done

wait 1

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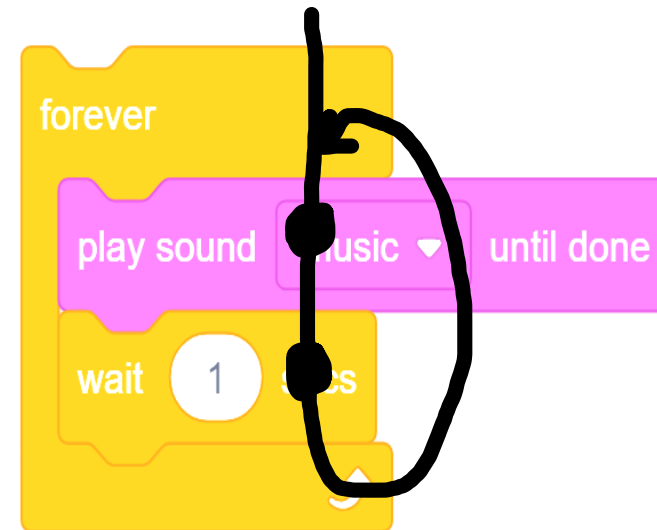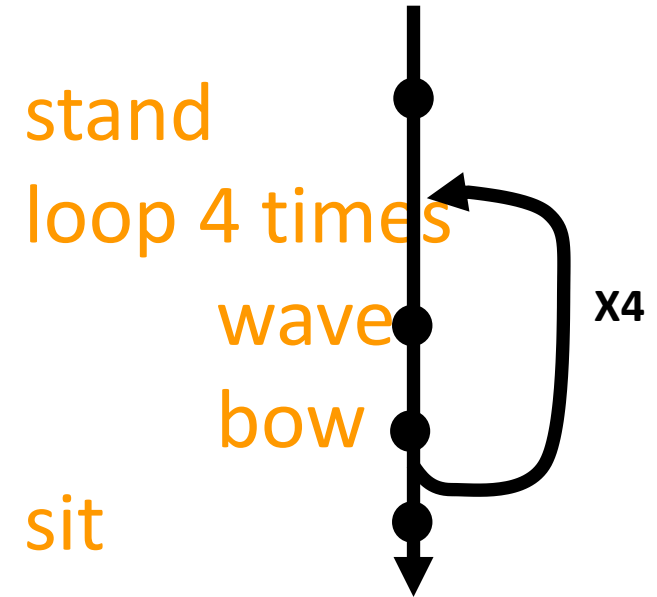
Everyday condition-starts-action

If you are rude again

    I am taking away your Gameboy

If you work hard

    You can have a treat

Have you heard things like this?

©HIAS

Everyday condition-starts-action

If you do that once more

I am telling your mother

If you finish tea

We can watch something on TV

Tell your partner about any you have heard

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Everyday condition-starts-action

If you work hard

You can have a treat

Everyday condition-starts-action

If you are hungry

 rub your tummy

The action is indented to show that the action only happens if the condition is met / true

Everyday condition-starts-action

If you are hungry

rub your tummy

Roleplay this everyday algorithm

Everyday condition-starts-action

Smile
Frown
If you like cooking
    wave your hand once
Tap head once

Roleplay this everyday algorithm

Everyday condition-starts-action

Smile

Frown

If you like cooking

wave your hand once

Tap head once

What actions are affected by the condition

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Everyday condition-starts-action

Smile
Frown
If you like cooking
    wave your hand once
Tap head once

What actions are affected by the condition

Because it is indented

©HIAS

Everyday condition-starts-action

Smile
Frown
If you like cooking
        wave your hand once
Tap head once

What actions are not affected by the condition

Everyday condition-starts-action

Smile
Frown
If you like cooking
        wave your hand once
Tap head once

What actions are not affected by the condition

Because they are NOT indented

©HIAS

Everyday condition-starts-action

Smile
Frown
If you like cooking
          wave your hand once
Tap head once

How many times is the condition checked?

Everyday condition-starts-action

Smile
Frown
If you like cooking
    wave your hand once
Tap head once

How many times is the condition checked?

Once only

Everyday condition-starts-action

Smile

Frown

If you like cooking

     wave your hand once

Tap head once

Now write your own everyday algorithm that uses condition-starts-action

One mark if it makes sense
One mark if each section is on a new line
One mark if you indent the actions

Can your neighbour act it out?

©HIAS

Flow of control

Smile
Frown
If you like cooking
    wave your hand once
Tap head once
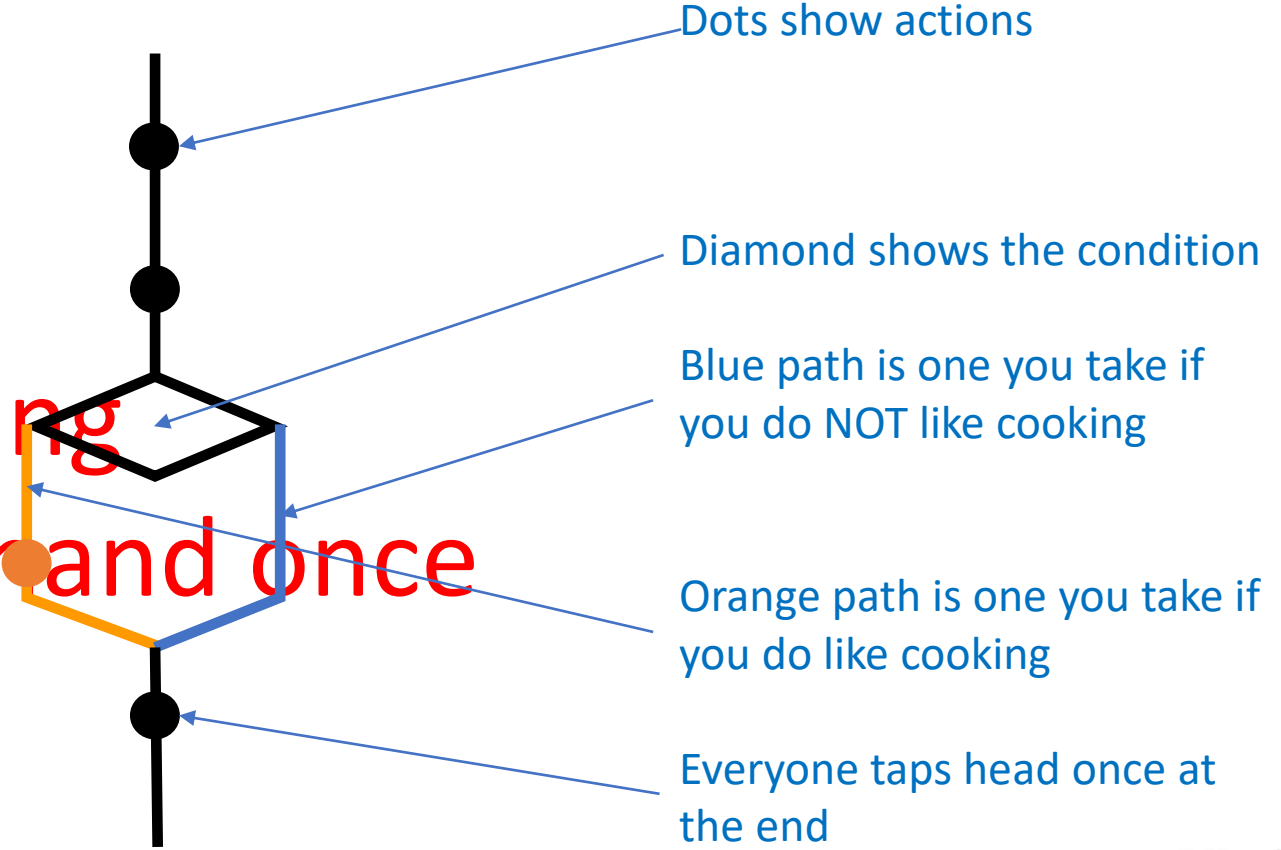
Dots show actions

Diamond shows the condition

Blue path is one you take if you do NOT like cooking

Orange path is one you take if you do like cooking
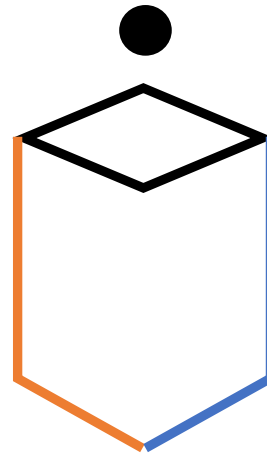
Everyone taps head once at the end

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Flow of control

Wave once
If you like programming
    smile
    tap head
Do 3 times
    nod head

Roleplay this everyday algorithm

Flow of control

Wave once
If you like programming
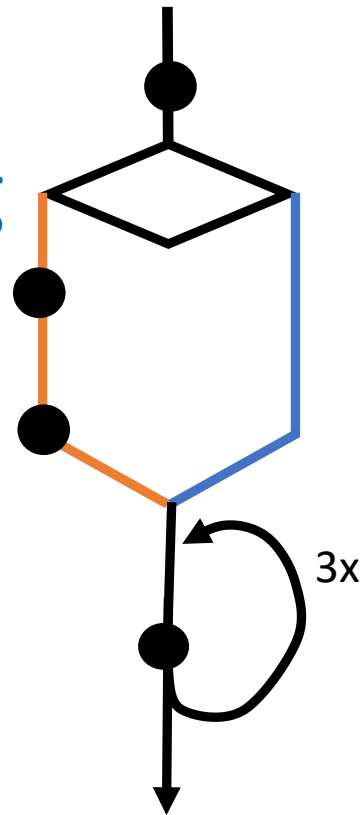   smile
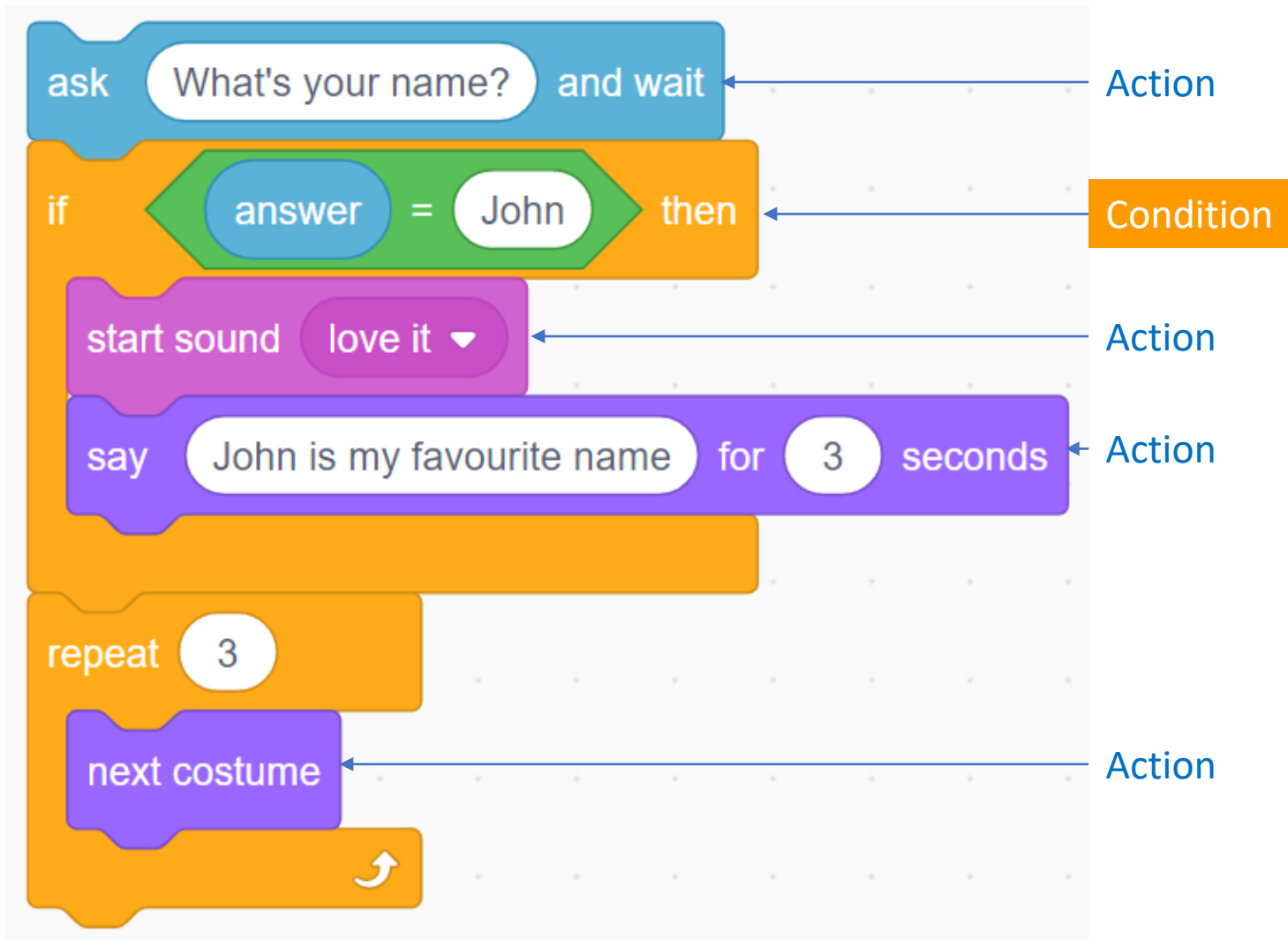   tap head
Do 3 times
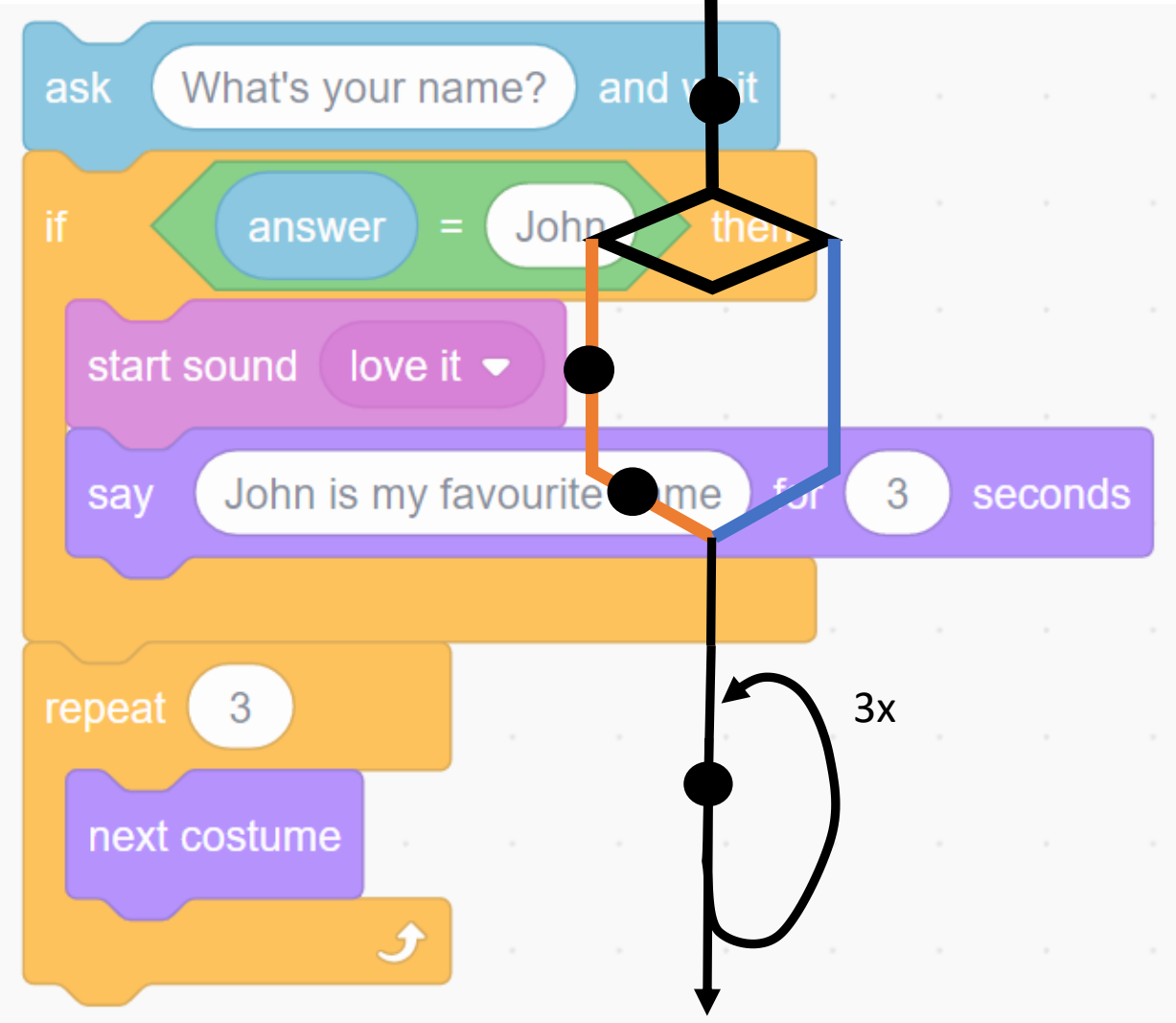   nod head

Line at top (1 mark)

Two dots on one side only (1 mark)

3x

Loop line (1 mark)
3x (1 mark)
Dot in the loop (1 mark)

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Condition-starts-action in code

ask What's your name? and wait ← Action

if answer = John then ← Condition

start sound love it ▼ ← Action

say John is my favourite name for 3 seconds ← Action

repeat 3

next costume ← Action

©HIAS

Flow of control in code

ask What's your name? and wait

if answer = John then

start sound love it ▼

say John is my favourite name for 3 seconds

repeat 3

next costume

3x

Knowledge Summary

A condition is a state we can check to see if it is true or false

Conditions

- Starts with an if

- Only checked once unless they are in a loop

- Two possible pathways True and False

- Are only checked when reached in flow of control

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