Activity 5.1

01. Decompose the following problem into simple parts and fill in the blank using mathematical relations in order to solve the problem easily.
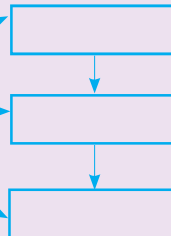
$3 \times 8 = 24$	$5 + 6 = 11$	$24 \div 4 = 6$

Problem

$5 + \dfrac{1}{2} \times 8$ → [ ] → [ ] → [ ] → **11** Solution

$3 \times 2 = 6$	$5 + 6 = 11$	$8 \div 4 = 2$

Problem
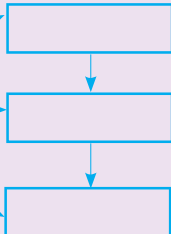
$5 + \dfrac{3}{4} \times 8$ → [ ] → [ ] → [ ] → **11** Solution

$5 \times 6 = 11$	$0.75 + 8 = 6.0$	$3 \div 4 = 0.75$

Problem
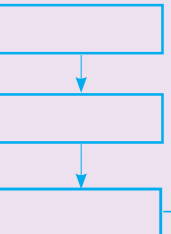
$5 + \dfrac{3}{4} \times 8$ → [ ] → [ ] → [ ] → **11** Solution

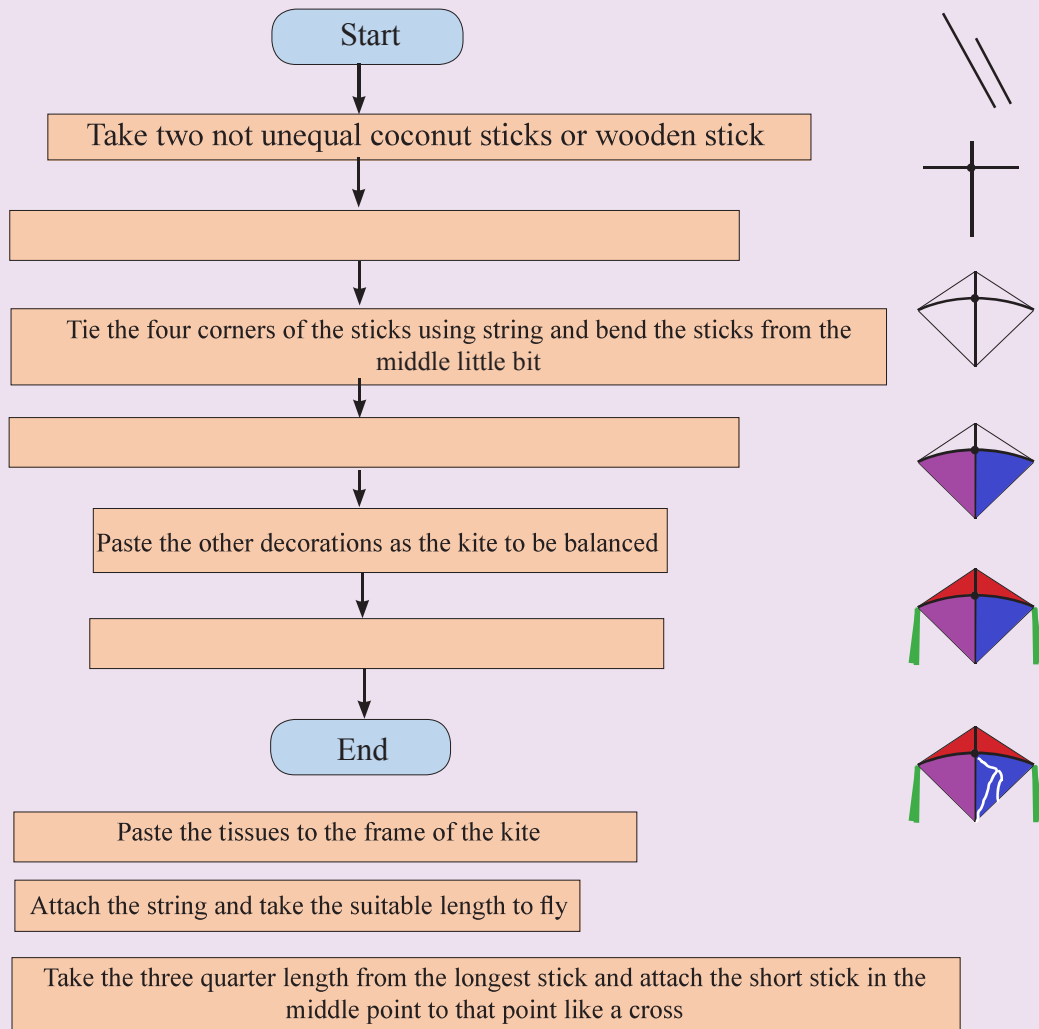**Note : Several solutions for above problem, there may be several solutions for other problem**

01. (i) We can use the following flow chart to show the steps of making a kite

Most of the people like to fly kites in As their hobby leisure. Which sentences in blanks in order to show the process to make a balanced kite, arranging statements in order Fill in the blank and write the methords step up step according to make a kite properly

```
                    ┌──────────────┐
                    │    Start     │
                    └──────────────┘
                           │
                           ▼
      ┌────────────────────────────────────────────────┐
      │ Take two not unequal coconut sticks or wooden   │
      │ stick                                           │
      └────────────────────────────────────────────────┘
                           │
                           ▼
      ┌────────────────────────────────────────────────┐
      │                                                 │
      └────────────────────────────────────────────────┘
                           │
                           ▼
      ┌────────────────────────────────────────────────┐
      │ Tie the four corners of the sticks using string │
      │ and bend the sticks from the middle little bit  │
      └────────────────────────────────────────────────┘
                           │
                           ▼
      ┌────────────────────────────────────────────────┐
      │                                                 │
      └────────────────────────────────────────────────┘
                           │
                           ▼
      ┌────────────────────────────────────────────────┐
      │ Paste the other decorations as the kite to be   │
      │ balanced                                        │
      └────────────────────────────────────────────────┘
                           │
                           ▼
      ┌────────────────────────────────────────────────┐
      │                                                 │
      └────────────────────────────────────────────────┘
                           │
                           ▼
                    ┌──────────────┐
                    │     End      │
                    └──────────────┘
```

┌──┐
│ Paste the tissues to the frame of the kite   │
└──┘

┌──┐
│ Attach the string and take the suitable length to fly │
└──┘

┌──┐
│ Take the three quarter length from the longest   │
│ stick and attach the short stick in the middle   │
│ point to that point like a cross   │
└──┘

(ii)   Write suitable algorithm in order to switch on the computer system according to the diagram given below.
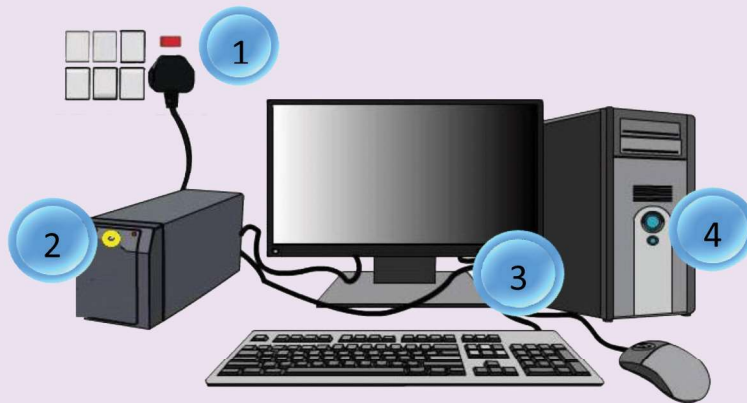
Activity 5.3

Answer the following questions using the flow chart 1

01. Write the input, process and output of flow chart

   (a) Input   = ...
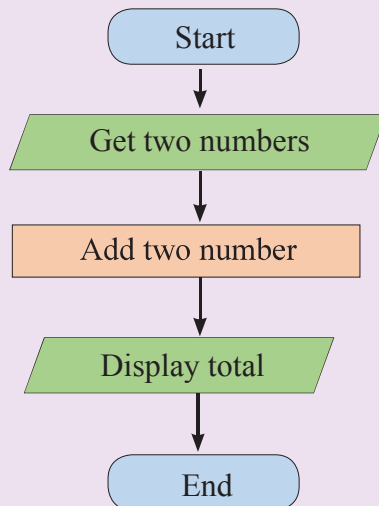
   (b) Process   = ...

   (c) Output   = ...

02. The control structure of flow chart 1 is   ....
    (Selection, Sequence, Interation)

03. Insert the following statements into the appropriate places in the flow
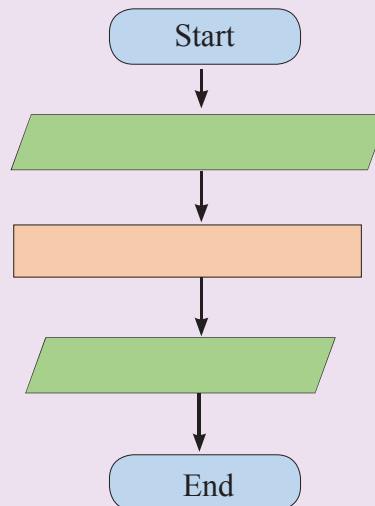   chart 2 in order to calculate the total of two numbers

| Total = A+B | Display total | Input A,B |

Flow chart 1

Start
↓
Get two numbers
↓
Add two number
↓
Display total
↓
End

Flow chart 2

Start
↓
(blank)
↓
(blank)
↓
(blank)
↓
End

Flow chart 1   **Flow chart 2**

04. Draw a flow chart to calculate the multiplication of two numbers and display the output.
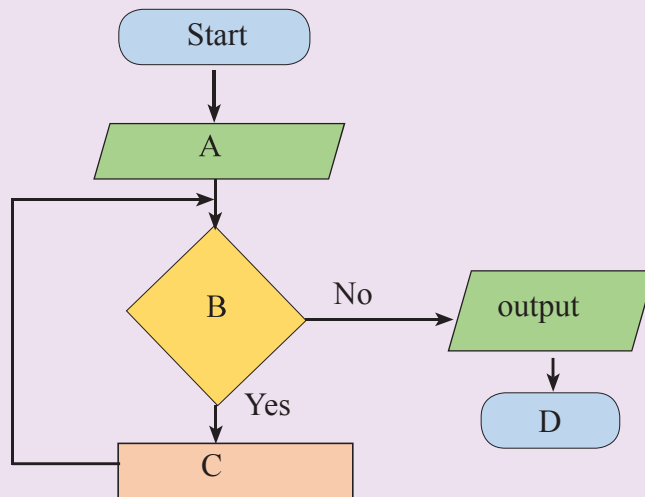
....

....

....

....

....

05. Fill in the blank using flow chart 3

Start

A

B

No → output

Yes

C

D

Flow chart 3

Identify the statements denoted in the symbols A,B and C in the above flow chart D

End   = ...

Input   = ...

Process = ...

Decision = ...

Activity 5.4

01. Fill in the circle using the statements given from A to J according to the related instruction given below.

Block	Circle		Statement
set pen color to ■	(H)	A	Play the sound for 0.25 seconds
say Good	○	B	Move to 0.0 position in the stage
move 10 steps	○	C	Reduce the volume by 10
play drum 1▾ for 0.25 beats	○	D	Display the word "good" for 2 seconds
go to x: 0 y: 0	○	E	Rotate the angle to 15 degree in clock wise
pen down	○	F	Change the pen size to 3
think Good for 2 secs	○	G	walk 10 steps
turn ↻ 15 degrees	○	H	Change pen color to red
change volume by -10	○	I	Express the word "good"
set pen size to 3	○	J	Start to draw using the pen

02. Fill in the blank using only the given words in the brackets.

(i)   Instruction are ……………..………. to develop a scratch programme (used/ not used)

(ii) Instructions ……………..………. be connected to each other in order to develop a programme (can/ cannot)

(iii) Variables are ……………..………. to store a values in a programme (used/ not used)

(iv) Scratch programme ……………..………. be downloaded from internet for free of charge (can/ cannot)

(v)   ……………..………. control structure decides the flow direction according to the decision (Sequence/ Selection)

(vi) Sequence control structure programme instructions are executed ……………..………. given order (in / not in)

01. Following programme is developed to play the first two lines of the national anthem

ශ්‍රී ලංකා මාතා
අප ශ්‍රී ලංකා, නමෝ නමෝ නමෝ නමෝ මාතා

Here three instruction are used
To select the instrument (2nd instrument)

set instrument to 2▼

To change tempo (change to 120)

set tempo to 120 bpm

To select the tone

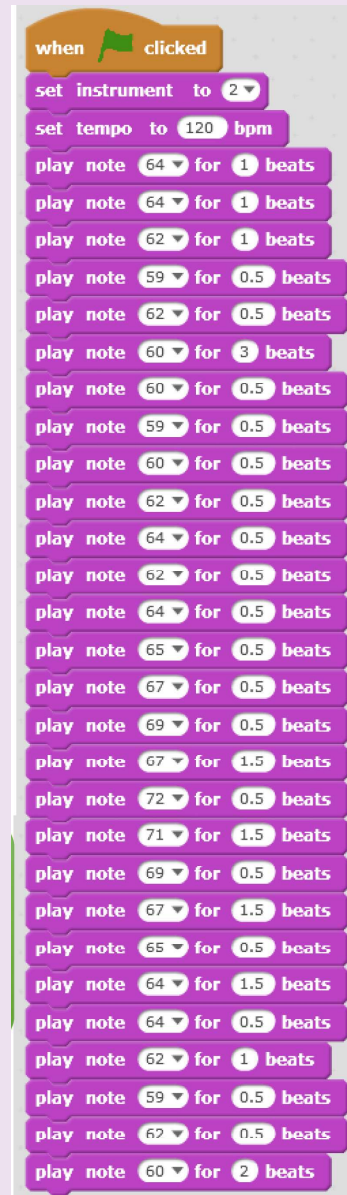play note 64▼ for 1 beats

To change tone and time

play note 60▼ for 0.5 beats

Middle C (60)

E E D B D C

Sri Lanka Matha

C B C D E D E F G AG CB AG FE ED BDC

Apa Sri Lanka Namo Namo Namo Namo Matha

You can develop this programme further if you can obtain the tone of national anthem completely.

when 🚩 clicked
set instrument to 2▼
set tempo to 120 bpm
play note 64▼ for 1 beats
play note 64▼ for 1 beats
play note 62▼ for 1 beats
play note 59▼ for 0.5 beats
play note 62▼ for 0.5 beats
play note 60▼ for 3 beats
play note 60▼ for 0.5 beats
play note 59▼ for 0.5 beats
play note 60▼ for 0.5 beats
play note 62▼ for 0.5 beats
play note 64▼ for 0.5 beats
play note 62▼ for 0.5 beats
play note 64▼ for 0.5 beats
play note 65▼ for 0.5 beats
play note 67▼ for 0.5 beats
play note 69▼ for 0.5 beats
play note 67▼ for 1.5 beats
play note 72▼ for 0.5 beats
play note 71▼ for 1.5 beats
play note 69▼ for 0.5 beats
play note 67▼ for 1.5 beats
play note 65▼ for 0.5 beats
play note 64▼ for 1.5 beats
play note 64▼ for 0.5 beats
play note 62▼ for 1 beats
play note 59▼ for 0.5 beats
play note 62▼ for 0.5 beats
play note 60▼ for 2 beats

01. Complete the following set of instructions and connect three variables (Num1, Num2, Sum) to each other using the arrows in order to calculate the total of two numbers
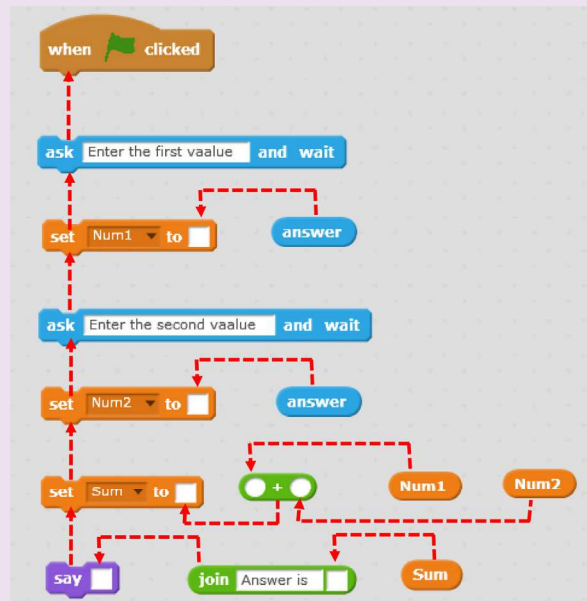
02. Similar to the above, develop a programme to divide one number from the other.