

## Lesson LMC Paper Routes

You need to run through the set of instructions below on your paper computer. Make sure that each person has a clear role within your group.

### **Suggested Roles**

- **Memory and Trace table** (Job to make sure memory has correct instructions and fill in trace table as going along)
- **Input and Output** (Ensure that Input and Output registers are filled in when needed)
- **ALU(Arithmetic Logic Unit)** - (Ensure that calculations in ALU are correct and that each time instruction is **EXECUTED** data is in correct places)
- **Program counter**(Ensures program counter is set correctly and oversees everything else and coordinates)

## Green Route

### Program 1

```
INP
STA numOne
INP
ADD numOne
OUT
```

```
HLT
```

### Program 2

```
INP
STA numOne
INP
STA numTwo
SUB numOne
OUT
```

```
HLT
```

## Amber

### Program 1

INP

STA numOne

INP

STA numTwo

INP

STA numThree

ADD numOne

SUB numTwo

OUT

HLT

### Program 2

INP

STA numOne

INP

LDA numOne

INP

ADD numOne

HLT

## Red

INP

STA numOne

INP

STA numTwo

INP

STA numThree

ADD numOne

ADD numTwo

ADD numOne

OUT

HLT