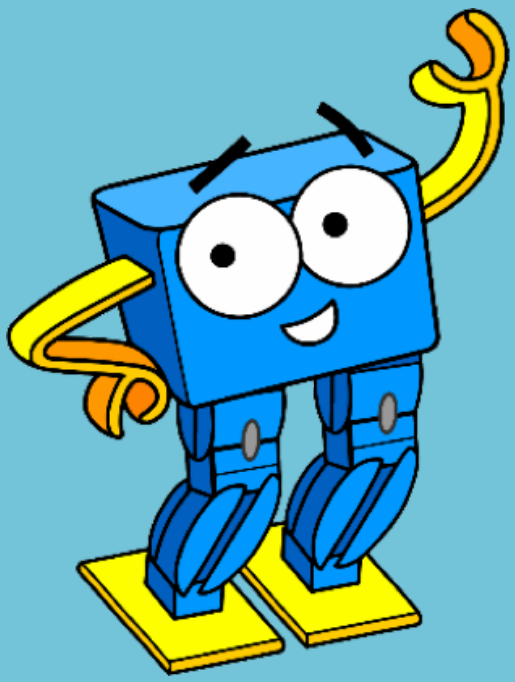
# STUDENT WORKBOOK



## GETTING LOOPY USING PYTHON

STUDENT NAME

# WORD BANK

## WORDS TO REMEMBER!

| WORD | DEFINITION |
| --- | --- |
| Loop | |
| Flowchart | |
| While Loop | |
| Condition | |
| For Loop | |
| User Input | |
| | |
| | |
| | |

# LESSON 1

## A LOOPY INTRODUCTION

### 1 Write instructions for someone to walk in a square

You need to break down your instructions so that a robot could follow them

Highlight the commands that are repeated

Adapt the instructions above to include a loop

## 2 Write out your own definition of a *loop*

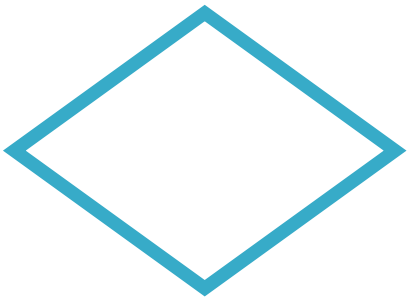
Examples of when you might use a loop

## 3 Breaking down flow charts

Match up the flow chart shape to the name

**DECISION**

**START/STOP**



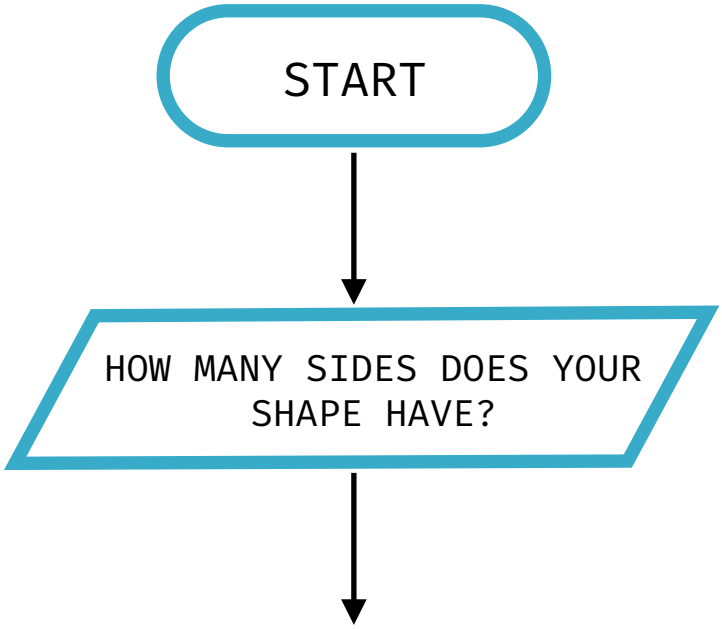
**INPUT/OUTPUT**

**PROCESS**

Describe what a flow chart is used for

## 4 Planning our program

Complete the flow chart below to plan out your shape guessing program



## 5 Complete today's reflection

| One thing I enjoyed | What I found challenging |
| --- | --- |
| | |

# LESSON 2

# REMOTELY OPERATED MARTY

## 1 Remotely Operated Vehicles or Robots

Why might we want to use a remotely operated vehicle or robot?

Reasons for using remotely operated vehicle/robots...

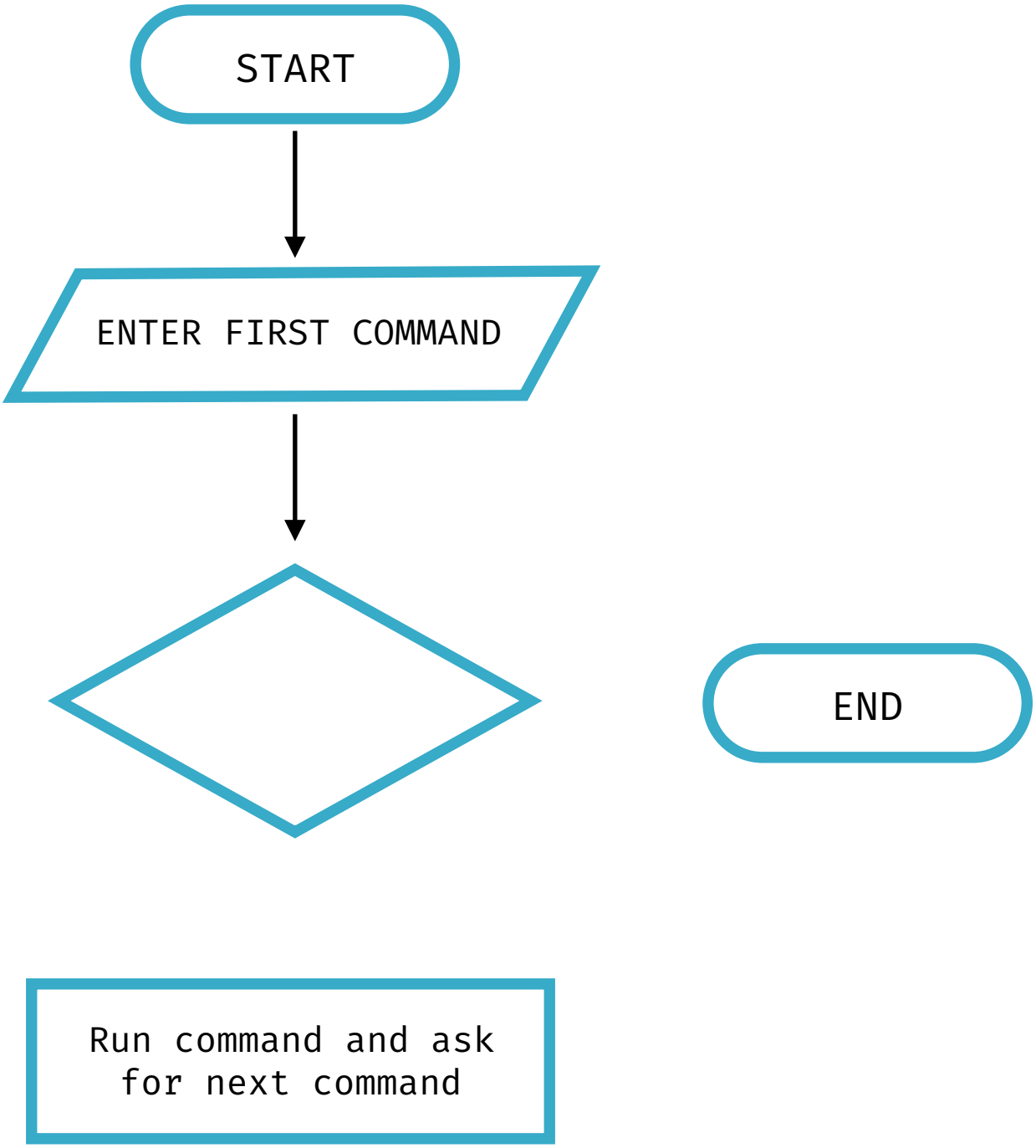
Environments remotely operated vehicles/robots might be used in...

Definition of remotely operated vehicles/robots...

## 2 Text-based remote control flowchart

Complete the flow chart for designing a text-based remote control
**Think about how a while loop works to do this**

Mark on the flowchart where the while loop STARTS and ENDS



## 3 Complete today's reflection

| One thing I learned | Something to ask next time |
| --- | --- |

One thing I want to research about remotely operated vehicles/robots

# LESSON 3

## GUESS THE NUMBER

## 1 For vs While Loops

Based on the description, decide whether a for or while loop is needed

| | |
|---|---|
| Repeatedly asking the user to enter the correct password | Repeating arm movements to create a handshake motion |
| FOR / WHILE | FOR / WHILE |
| Letting the user enter commands a specific number of times | Asking the user for input until they enter **stop** |
| FOR / WHILE | FOR / WHILE |

## 2 Draw a flowchart to design your number guessing game

Remember to use the correct shapes based on the type of action

## 3 Complete today's reflection

| | |
|---|---|
| One thing I didn't understand | One thing I like about my game so far |

# LESSON 4

## GUESS THE NUMBER CONTINUED

### 1 Use this space to plan your game

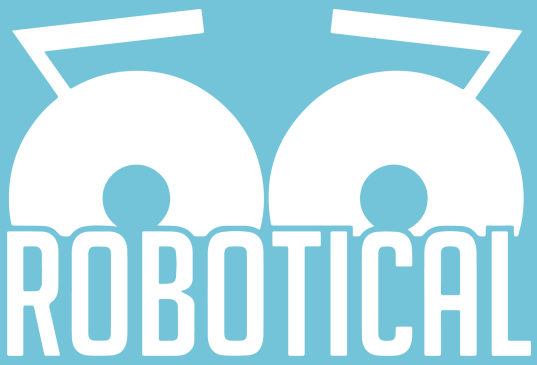
Consider how you can improve your game or make it more difficult

PLANNING SPACE

IDEAS FOR EXTENDING MY GAME

## 2 Complete today's reflection

| One thing I'm proud of in my game | One challenge that I tackled |
| --- | --- |
| | |


ROBOTICAL