

○ print(“Hello, World!”)

- NCSS Challenge - Beginners  
Week 2 Part 2





## ○ What will we cover?

- More on strings;
- Numbers and strings;
- User input with Turtle;
- Colours with Turtle.

## ○ What does this cover?

- Define simple problems, and describe and follow a **sequence of steps** and decisions (algorithms) needed to solve them (ACTDIP010)
- Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and **user input** (ACTDIP011)
- Recognise **different types of data** and explore how the same data can be represented in different ways (ACTDIK008)



# 1 Manipulating strings

## ○ Pedagogical Philosophy - Revise and expand!

- Here, we're picking up on strings, which we learn about throughout the course. We both revise things they've already learnt, and add a bit more depth.
- This both reminds students of concepts they have already learned, and allows them an opportunity to expand their understanding.

## ○ String Revision

- Strings can be bound by single or double quotes:
  - `print('She said, "hello!" to us.')`
  - `print("Weren't you listening?")`
- Those quotation marks make a big difference!
  - `message = 'hello'`  
`print('message')`  
→ `message`  
`print(message)`  
→ `hello`

## ○ Multiplying Strings

- We've seen that strings can be added together (*concatenated*), but they can also be multiplied!
  - `print('ab' + 'ab')`  
→ `abab`
  - `print('ab' * 5)`  
→ `ababababab`

## ○ Teacher aside! - Think outside the box!

- This is a great time for you to encourage students to think critically about what they expect to happen, and to test out their theories.
  - Can you multiply a string by a number?
  - Can you multiply a string by a string? (Why not?)
  - What about division or subtraction?
- Students will be more engaged by exploring and directing their own learning, and end up understanding more!



# Test it out!

Try the first question now!



2

# Converting Numbers to Strings

## ○ Converting Numbers to Strings: the `str` function

- Just as we can change strings to numbers, we can change numbers to strings!
- This is useful if we want to print out numbers and strings at the same time.

```
answer = 5
print('The answer is ' + answer)
→ TypeError: Can't convert 'int'
object to str implicitly
```

## ○ Converting Numbers to Strings: the `str` function

- The `str` function works just like the `int` function, taking a value as the argument, and turning it into a string!

```
answer = 5
print('The answer is ' + str(answer))
```

## ○ Teacher Aside! Errors aren't scary!

- Students are often worried about writing programs with errors in them. Part of this is confidence. It's helpful to remind students that errors are a normal part of debugging, and that computers are not very smart!
- Of course, the other side of this is that errors are really helpful in debugging code! Students can be put off by the red text, and forget to actually read them!



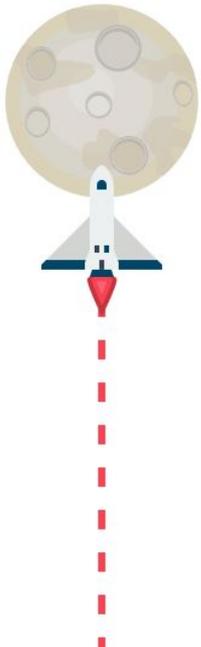
# 3 Turtle with user input!





# Let's get straight to it!

Turtles are better when they move.



# Any Questions?

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