inclusive programming pedagogy
Keywords

What: • Clearly define all of the key vocab that students need to understand

Why: • Students may need to identify and recall keywords in an exam
  • Discussion and questioning is much more effective if students can understand and use the right terminology
  • Build students’ confidence and technical vocab

Example: 

https://tools.withcode.uk/keywords/subject/python_for_gcse/1/1.1
**Predict**

**What:**
- Give students short sections of code and get them to estimate what it will do before they run it

**Why:**
- Encourages logical reasoning
- Great opportunity for discussion and paired work
- Allows common mistakes and misconceptions to be identified and avoided

**Example:**

https://create.withcode.uk/python/85g
Run

What:
- Ask students to compare their predictions with what actually happens when they run the code.

Why:
- Encourages reflection and greater depth of engagement.
- Allows common mistakes and misconceptions to be identified and avoided.
- Students can refer back to examples and re-use them later.

Example:

https://create.withcode.uk/python/85g
Investigate

What:
- Share a short but working section of code with students
- Give them clear instructions on how to change the code

Why:
- Adapting existing code is less intimidating than starting from a blank canvas
- Encourages curiosity and problem solving
- Greater sense of pride and ownership discovering solutions than being presented with answers

Example:

```python
print(10 + 0)
print(10 - 0)
print(10 / 0)
print(10 ** 0)
print(10 % 0)
```

Change one of the numbers on each line to make the output 100

https://create.withcode.uk/python/8Si
Debug

What: • Share some code with student that has been deliberately sabotaged with some common mistakes (syntax, runtime and / or logic errors)

Why: • Builds resilience so students can cope with their own errors
• Allows students to become more independent
• Helps students understand and cope with error messages
• Helps students avoid making common mistakes

Example:

```
my name = input("What is your name?")
food = input("What's your favourite food?")
address = input("Where do you live?")
job = input("What's your job?")
music = input("What music do you like?")
```
Extend

What: • Give students a choice of challenges to add features to code you provide or to create their own project

Why: • Allows students to be creative
• Students take pride in what they’ve created themselves
• Ideal opportunity to assess level of understanding

Example:

Create a program that:
1) asks five questions about a sport of your choice
2) displays each line of a nursery rhyme
3) find all the operators in https://create.withcode.uk/python/8K2 and try replacing them with a different operator

https://create.withcode.uk/python/8K2