



Instructions: No answer bank: write or fix the Lua code. Number the steps in order, answer the case study questions, explain the key terms, then write full-sentence answers and plan the extended answer.

1. Code puzzles

Question	Working and answer
What does for i = 2, 6 do print(i) end print?	
How many times does for i = 1, 10 do run?	
Write a for loop that prints Hi 3 times.	
What is missing? for i = 1, 4 do print(i)	
for i = 10, 1, -1 do print(i) end counts...	

Did you know?

- The third number in a for loop is the step: for i = 0, 10, 2 counts in twos.
- Game engines run a big loop many times a second to draw each frame.
- A loop inside a loop is called a nested loop.
- A forever loop without a wait is called a busy loop and can freeze Roblox Studio.

Background

Imagine telling a sprite to jump 20 times. You could snap 20 jump blocks together, but that is long and boring. A loop repeats code for us. Coders love loops, because they make code shorter and easier to change.

2. Steps in order

Number the steps 1 to 5 (1 = first).

1	Count: Decide how many times
2	Test: Run it and count the repeats
3	Wrap: Put the steps inside a loop
4	Spot: Find steps that repeat
5	Wait: Add a wait in forever loops

4. Key terms

Key term	What does it mean? Give an example.
Loop	
Repeat	
Forever	
Counter	
for loop	

3. Case study

Tayo makes a spinning coin with while true do coin.Orientation += Vector3.new(0,10,0) end. When he presses Play, Roblox Studio stops responding.

Case study: the frozen coin

1. Why did Studio freeze?

2. What line should he add inside the loop?

3. Why does a small wait still look smooth?

5. Think it through

1. Explain the difference between a for loop and a while true loop.

2. Explain what the counter i does.

6. Longer answers (full sentences)

1. Describe how to draw a triangle with a repeat loop.

2. Write a loop that counts in fives to 25.

3. Why is copying code many times a bad idea?

4. Explain in your own words: Why must a forever loop in Lua have a wait inside?

7. Extended answer

Extended answer: 'Loops are the coder's best friend.' How far do you agree?

Plan: introduction · point for (example) · point against (example) · conclusion with your judgement.
