

Unplugged Coding Lab

Grades 2-4 | 48 tasks

Help learners reason through a program one move at a time. They trace routes, unpack simple loops and explain how one command changes a result.

16 sequence + 16 loop + 16 repair tasks

6 worked examples and answer keys

Starter and Stretch tasks in each skill

Use a worked example for a mini-lesson, then select a few cards for partner practice, an independent station or a quick check. Ask learners to explain the route before checking the finish.

The following pages are actual excerpts from the resource.

A4 + US Letter | Version 1.3

Printable PDF with teacher support



P01-01

Starter

Trace the sequence

Trace the program from S. Circle the finish label. Move one square per command.

	1	2	3	4	5	6
A						
B		X				
C			C	B		
D	S	D			A	
E				X		X
F				X	X	

Program

S · E · E · N · E · E

Finish label: _____

N ↑ E → S ↓ W ←

P01-02

Starter

Trace the sequence

Trace the program from S. Circle the finish label. Move one square per command.

	1	2	3	4	5	6
A						
B						
C	S		B			
D			D			
E		X	X		C	X
F		X	X		A	

Program

N · E · E · S

Finish label: _____

N ↑ E → S ↓ W ←

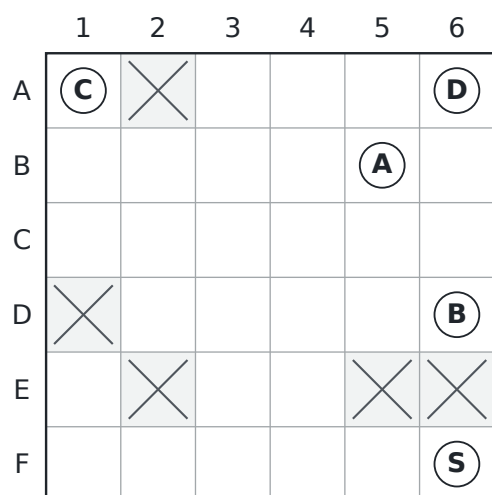


P01-17

Starter

Expand a loop

Expand REPEAT, then trace the program. Circle the finish label.



N ↑ E → S ↓ W ←

Program

W · W · REPEAT(4, [N]) · E

Finish label: _____

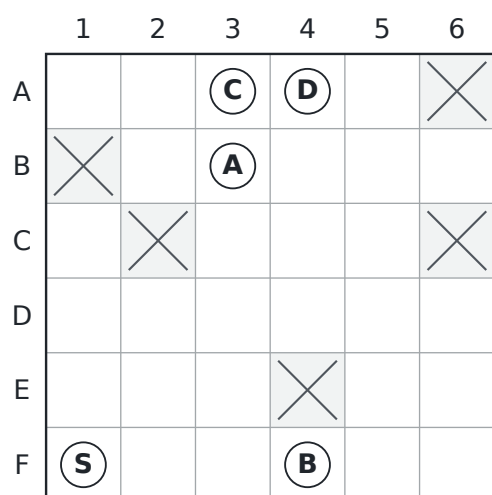
Expanded moves:

P01-18

Starter

Expand a loop

Expand REPEAT, then trace the program. Circle the finish label.



N ↑ E → S ↓ W ←

Program

E · E · REPEAT(4, [N])

Finish label: _____

Expanded moves:

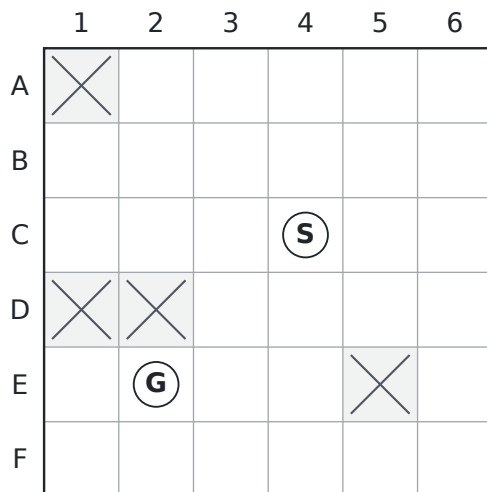


P01-33

Starter

Repair one command

Replace exactly ONE command with N, E, S or W. Keep the program length. Reach G without crossing a blocked cell.



Program

1:S 2:E 3:S 4:W

Change command: _____

New direction: _____

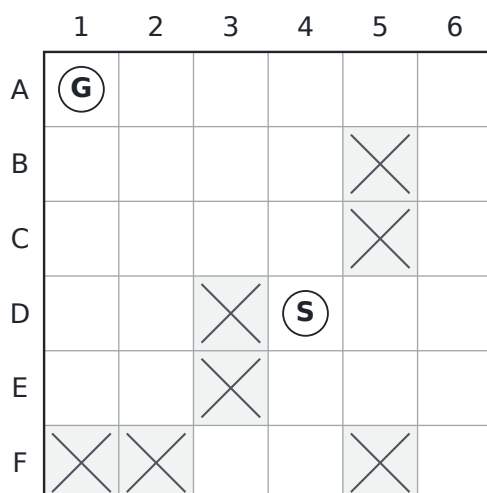
N ↑ E → S ↓ W ←

P01-34

Starter

Repair one command

Replace exactly ONE command with N, E, S or W. Keep the program length. Reach G without crossing a blocked cell.



Program

1:W 2:N 3:W 4:W 5:S 6:W 7:N 8:N

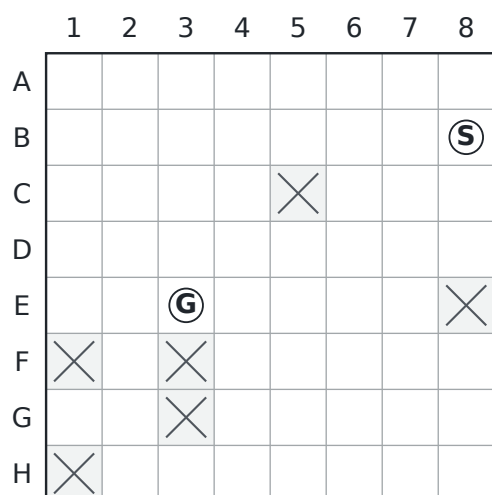
Change command: _____

New direction: _____

N ↑ E → S ↓ W ←

**P01-41****Stretch****Repair one command**

Replace exactly ONE command with N, E, S or W. Keep the program length. Reach G without crossing a blocked cell.



N ↑ E → S ↓ W ←

Program

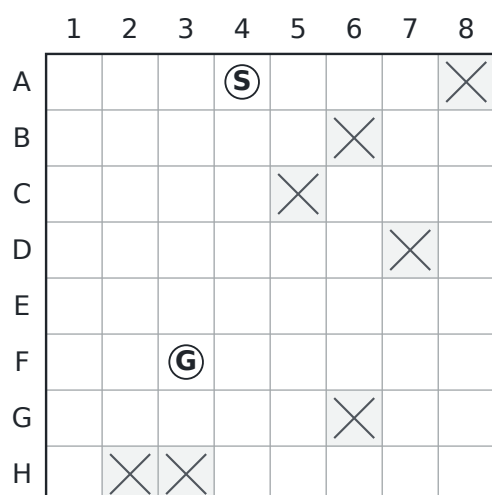
1:N 2:E 3:W 4:W 5:S 6:W 7:N 8:W 9:W 10:S
11:W 12:S 13:S 14:S 15:E 16:E

Change command: _____

New direction: _____

P01-42**Stretch****Repair one command**

Replace exactly ONE command with N, E, S or W. Keep the program length. Reach G without crossing a blocked cell.



N ↑ E → S ↓ W ←

Program

1:N 2:S 3:W 4:S 5:E 6:E 7:S 8:S 9:W 10:N
11:W 12:S 13:S 14:E

Change command: _____

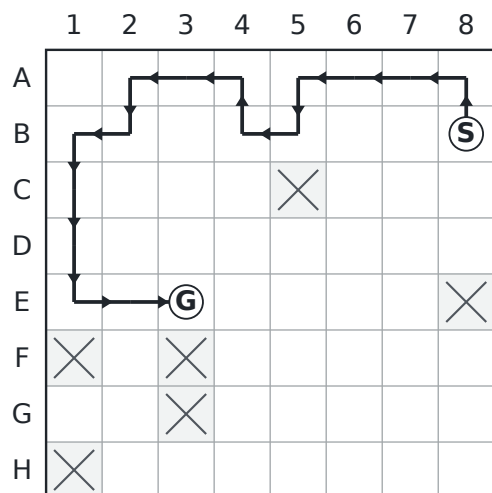
New direction: _____



P01-41

Stretch

Repair one command



Corrected program

1:N 2:W 3:W 4:W 5:S 6:W 7:N 8:W 9:W 10:S
11:W 12:S 13:S 14:S 15:E 16:E

Command 2 → W

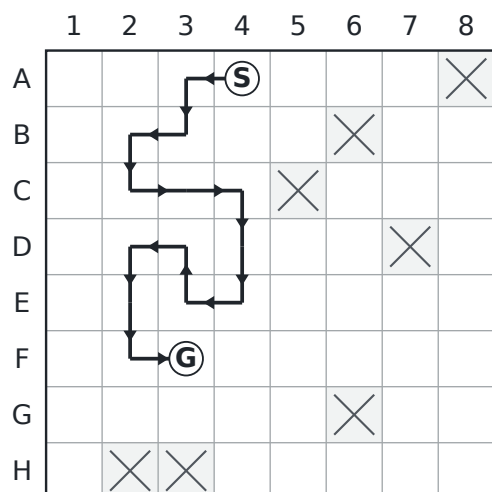
Replace command 2 with W. Follow the corrected program to G; every move stays on a clear cell.

Visited cells: B8 → A8 → A7 → A6 → A5 → B5 → B4 → A4 → A3 → A2 → B2 → B1 → C1 → D1 → E1 → E2 → E3

P01-42

Stretch

Repair one command



Corrected program

1:W 2:S 3:W 4:S 5:E 6:E 7:S 8:S 9:W 10:N
11:W 12:S 13:S 14:E

Command 1 → W

Replace command 1 with W. Follow the corrected program to G; every move stays on a clear cell.

Visited cells: A4 → A3 → B3 → B2 → C2 → C3 → C4 → D4 → E4 → E3 → D3 → D2 → E2 → F2 → F3