



Lakitu's Hidden Boost Setting



COMPLETE TO COLLECT

Master-Cut Zircon

Level 5 · 8 Glints

On a straight Mario Kart practice track, the checkpoints are numbered 0, 1, 2, 3, and so on. Mario starts at checkpoint 0. Every mini-turbo moves him forward exactly 4 checkpoints.

Every Mushroom moves the same hidden whole-number distance. That distance is more than 4 but less than 11 checkpoints. Mario may reuse either move in any order and may stop after any move. Lakitu says, "Checkpoint 17 is the greatest-numbered checkpoint Mario cannot land on exactly."



Mario lines up another run on Lakitu's practice track.

LAKITU'S PRACTICE TRACK

Known move shown · Mushroom landing stays hidden



TEST THE HIDDEN MUSHROOM SETTING

Setting Can 17 be reached? Evidence

5

6

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10

Mushroom setting: _____

YOUR CHALLENGE

- 1. How many checkpoints does one Mushroom move Mario? Prove that no other allowed setting can make Lakitu's statement true.**
- 2. For your setting, prove that Mario cannot land on checkpoint 17 and that he can land on every checkpoint greater than 17.**



Record settings 5–10 here. Use separate paper for your proof with number-line jumps or multiplication equations. Checking only a few checkpoints is not a proof.

