

Debug the Bot

Ages 9-14 + parents · 2-5 players · about 20 minutes · no screens

OBJECTIVE

Something inside the bot is broken. One player is the Bot and secretly holds the Fault card. Everyone else runs tests – the Bot answers YES or NO straight off the card – and uses the Fault Chart to rule out suspects. Name the broken part correctly and score one point for every test nobody needed. Everyone takes a turn as the Bot; most points wins.

MATERIALS

21 cards: 12 Faults and 9 Tests, plus the one-page Fault Chart. No pencils.

SETUP

- 1 Lay the Fault Chart face-up where everyone can read it. It is public – it's the repair manual.
- 2 Lay the 9 Test cards face-up in a row. Leave room above for a YES row and a NO row.
- 3 Pick the Bot (the oldest player goes first). The Bot shuffles the 12 Fault cards, takes one without showing anyone, and sets the rest aside face-down.
- 4 The bot in the story starts switched on and plugged into USB.

YOUR TURN

- 1 Players go left from the Bot. The Bot never takes a turn in their own round.
- 2 RUN – pick any Test card that hasn't been run. Read it aloud. The Bot answers YES or NO exactly as their Fault card says, then moves the Test into the YES row or the NO row.
- 3 Then you MAY DIAGNOSE – name one fault from the chart. The Bot says RIGHT or NOPE, and nothing else.
- 4 If every Test has been run, skip RUN and just diagnose.

ENDING THE ROUND

- 1 RIGHT – you score 9 minus the number of Tests in the YES and NO rows (at least 1). The Bot shows the Fault card. Round over.
- 2 NOPE – you're out for the rest of this round. That fault is ruled out for everyone.
- 3 If every player is out, the Bot scores 3 and shows the Fault card.
- 4 Next round: return the Tests to one row, pass the Bot role left, shuffle all 12 Faults back together.
- 5 The game ends when everyone has been the Bot once (twice each with 2 players). Most points wins. Ties share the win.

HOW TO SCORE

- 1 Correct diagnosis: 9 minus Tests run, minimum 1. Diagnose after 3 Tests = 6 points.
- 2 Bot: +3 if every other player guesses wrong.
- 3 A guess with two suspects left is a coin flip. A guess with one suspect left is a sure thing. Choose.
- 4 Check it: when the Fault card is shown, every Test in the YES and NO rows must match what the card prints. If one doesn't, the Bot misread – replay the round.

DEBUGGING TIPS

- 1 Test A (Light) only catches one fault. Test H (Repeat) catches five. Big splits first.
- 2 A Power fault breaks many behaviors at once. A Sense fault breaks the one behavior that needs that sense.
- 3 When two suspects are left, look for one Test where their answers differ.

WHAT THE CARDS TEACH

- 1 Test – debugging starts with something you can observe, not a guess.
- 2 Rule out – each answer shrinks the list of suspects.
- 3 Sense / Think / Act / Power – a fault shows up in every behavior that runs through that part.
- 4 Split the suspects – the best test cuts the list in half. That's how engineers (and search algorithms) work fast.

VARIANTS

- 1 2 players – same rules, four rounds: each player is the Bot twice.
- 2 Teacher is the Bot – the grown-up holds the Fault; the class splits into teams that take turns running Tests.
- 3 Solo puzzle – using only the Fault Chart, find 6 Tests whose answers tell all 12 faults apart. There are exactly 2 ways. (Fewer than 6 can't be done.)
- 4 Build it for real – the Card → Bot Build Book projects have the same Sense / Think / Act / Power parts to debug.

PRINT TONIGHT

Instruction sheet and Fault Chart on plain paper, one side, Actual Size / 100%. Cards: Avery 5388 at Actual Size / 100% (never Fit to page). Tear on the perforation.

12 Fault cards + 9 Test cards = 7 Avery 5388 sheets. Fault Chart: 1 page, landscape.