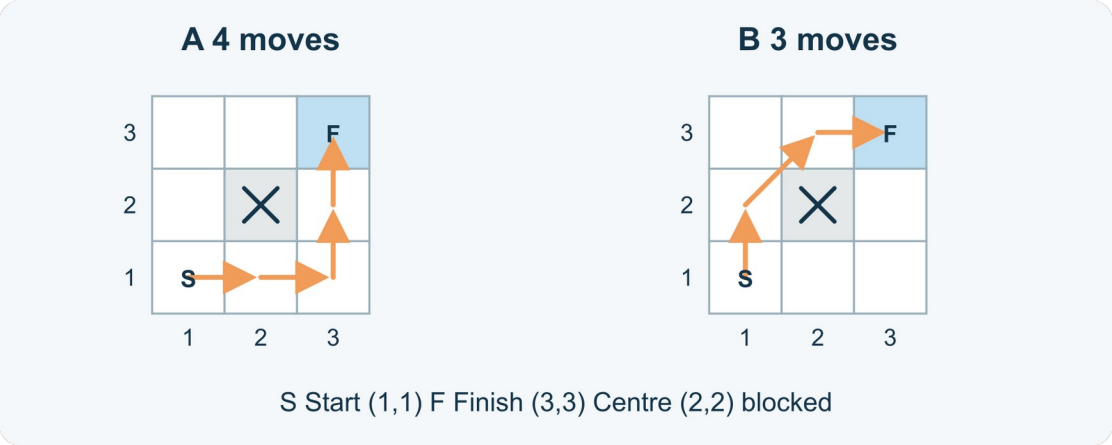
Change one movement rule

What changes when a puzzle allows diagonal moves?

Compare two versions of a complete paper puzzle. Keep the board and goal the same while changing the allowed movement.

Investigate | 10-20 minutes, or one route | Paper and a pen or pencil, A finger or small paper marker

Start here Draw a 3-by-3 grid. Number columns 1 to 3 from left to right and rows 1 to 3 from bottom to top. Mark Start at (1,1), Finish at (3,3) and block (2,2).



Same board, different routes

1 Agree the first rule

Begin at Start. One move goes one square up, down, left or right. Stay inside the grid and never land on the blocked square. The goal is to reach Finish; there is no timer.

2 Record a route

Trace a route and count moves between squares, not the number of squares visited. The supplied four-move route works if you prefer to examine a complete example.

3 Change only movement

Now also allow a move to a diagonally adjacent square. Passing a corner is allowed in this version; landing on (2,2) remains forbidden. Keep the same Start, Finish and board. Find or trace a route again.

4 Explain a consequence

Compare your routes. Name what the new rule permits. A shorter route may be interesting, but you can also discuss which choices change or whether you would prefer another rule.

Worked puzzle four moves or three

This is a constructed puzzle with exact rules, not a study of player preferences. Coordinates identify squares as (column,row).

• Up/down/left/right: (1,1) → (2,1) → (3,1) → (3,2) → (3,3). Four moves.

• With diagonals: (1,1) → (1,2) → (2,3) → (3,3). Three moves; no landing on the centre.

• Two diagonal moves would pass through (2,2), so they do not solve this board under the stated rule.

What this example can show These paths demonstrate the stated puzzle. They do not show that diagonal movement makes every game easier, fairer or more enjoyable.

A different way

Trace the two supplied paths with a finger, have the coordinates read aloud, or compare just the first move. No game account or digital game is needed.

If you want to go further

Move one blocked square and test both rules again. Keep the original board as a reference. Can you explain whether your conclusion still holds?

Something to notice

Which difference came from the rule, and which came from the route I chose?

Read or explore more

Horizon topic Games

https://launchhorizonhq.com/learn/games/

Horizon topic Rules Mechanics

https://launchhorizonhq.com/learn/rules-mechanics/

Horizon topic Spatial Puzzles

https://launchhorizonhq.com/learn/spatial-puzzles/

ACMI Game Builder

https://www.acmi.net.au/education/game-builder/

ACMI Game Lessons

https://www.acmi.net.au/education/school-program-and-resources/game-lessons/

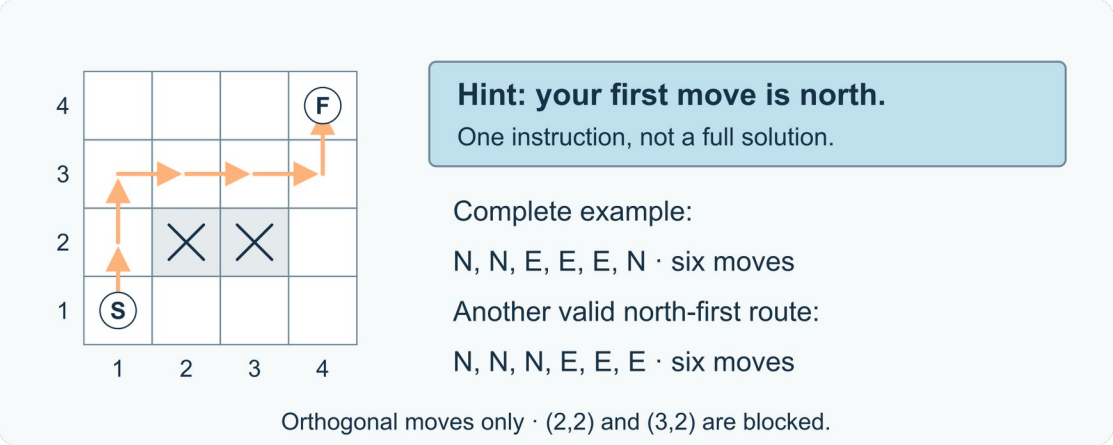
A maze with a readable clue

How can a clue help a player without silently solving the puzzle?

Create a small grid puzzle and choose a clue that leaves room to explore.

Make | 10–20 minutes, or one small comparison | Scrap paper and a pencil or pen, The supplied original model; no account, purchase or online search needed

Start here Draw a 4 by 4 grid. Mark start (1,1), finish (4,4), and blocked squares (2,2) and (3,2).



A clue is not the whole route

1 State movement

Move one square north, south, east or west. Do not enter a blocked square or jump diagonally. The bottom-left cell is (1,1).

2 Find a route

Trace a route before writing a clue. One example is north, north, east, east, east, north: six moves to the finish.

3 Choose a clue

Try ‘Your first move is north.’ This removes the east-first option, but does not list every move. Find two routes that still fit it.

4 Check the information

Compare that clue with the complete route. Decide whether your player should receive a hint, a full solution or neither; label each honestly.

Original model a clue with choices left

The grid and routes are invented paper examples, not records of playtesting.

• Example route: (1,1), (1,2), (1,3), (2,3), (3,3), (4,3), (4,4).

• Another north-first route goes up to (1,4), then across to (4,4). Both take six moves.

• The clue fixes only the first move. It does not select one unique complete route.

What this example can show This grid maze has blocked cells and more than one valid route. A checked example does not establish ideal difficulty for every player.

A different way

Call out directions, point to cells, or use the supplied grid while someone else traces. No timed challenge is needed.

If you want to go further

Block one additional square. Check that at least one route remains before claiming the new version is playable.

Something to notice

Does my hint support a choice, or has it already supplied the whole answer?

Read or explore more

Horizon topic Maze Design

https://launchhorizonhq.com/learn/maze-design/

Horizon topic Game Worlds

https://launchhorizonhq.com/learn/game-worlds/

Horizon topic Playtesting Balancing

https://launchhorizonhq.com/learn/playtesting-balancing/

NRICH, University of Cambridge Maze 100

https://nrich.maths.org/problems/maze-100

ACMI Game builder: overview for teachers

https://www.acmi.net.au/education/school-program-and-resources/game-builder-overview-teachers/

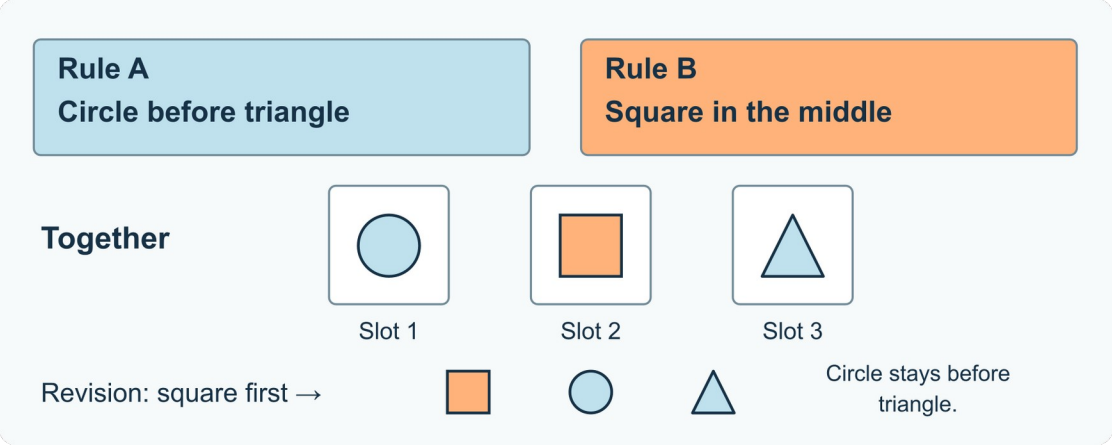
Design a cooperative paper puzzle

Which rule makes two fictional roles useful without requiring competition?

Build a shared-goal puzzle in which two fictional rule cards contribute different information.

Make | 10–20 minutes, or one small comparison | Scrap paper and a pencil or pen, The supplied original model; no account, purchase or online search needed

Start here Draw three tokens: circle, square and triangle, with three empty slots in a row.



Two rules choose an order

1 Set a shared goal

The aim is one arrangement satisfying both rules. Role A's card says circle before triangle; Role B's card says square in the middle.

2 Combine the clues

The square takes slot 2. The circle must be before the triangle, so place the circle in slot 1 and triangle in slot 3.

3 Choose how to play

You can read both role cards yourself, take turns with a mentor, or simply discuss the solution. No hidden information or partner is required.

4 Revise one rule

Change the second card to square first. Keep circle before triangle. Find the new order and explain which placement changed.

Original model two rules one arrangement

These fictional roles organise a paper puzzle. No claims about social-skill improvement or participant responses are made.

• Rule A: circle before triangle. Rule B: square in the middle.

• Both together give circle, square, triangle. With square fixed in the middle, only that order has circle before triangle.

• Changing only B to square first gives square, circle, triangle.

What this example can show A one-solution token puzzle does not establish how all cooperative games work. Information can be shared openly if that suits the learner.

A different way

Point to drawn tokens, speak the order, or direct someone else to number the slots. One person can use both roles.

If you want to go further

Remove the middle-slot rule and count how many arrangements still keep circle before triangle. Check all six orders if you want.

Something to notice

Which part of the solution depends on each rule?

Read or explore more

Horizon topic Cooperative Games

https://launchhorizonhq.com/learn/cooperative-games/

Horizon topic Turn Sequences

https://launchhorizonhq.com/learn/turn-sequences/

Horizon topic Player Choices

https://launchhorizonhq.com/learn/player-choices/

ACMI Choosing the right game for collaborative learning

https://www.acmi.net.au/stories-and-ideas/choosing-the-right-game-for-collaborative-learning/

ACMI Game builder: overview for teachers

https://www.acmi.net.au/education/school-program-and-resources/game-builder-overview-teachers/