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Complex Planning: Motion Challenge Method

The usual form is a grid/path puzzle: move an object from a start state to a target while avoiding barriers. Some versions include a shape whose full footprint matters, not only its centre.

Method before the first move

1. Locate start, target and all barriers.
2. Trace the final two or three moves backward from the target.
3. Identify dead ends and narrow corridors.
4. Choose the shortest clear path.
5. Execute deliberately; re-plan only if the state changes.

Why backward planning helps

The last approach to a target is often the restrictive part. Planning it first prevents reaching a location from which the target is blocked.

Fast visual rules

- A straight-line route is not always valid; check every square/barrier.
- If the object has width/shape, its edge must also clear obstacles.
- Prefer a path with fewer turns when both paths are valid.
- Do not make a move merely because it seems to get closer to target; it may create a trap.

Practice without the real interface

Use small maze/grid puzzles. Before moving, point out:

- the goal's only possible entry direction;
- the first unavoidable turn;
- any dead-end corridor.

After a wrong route, state exactly which earlier move caused the dead end. This trains planning rather than trial-and-error.

[[06_Gamified_Assessment/Game_Playbook|Game playbook]]