Charta | LESSON NOTES

Plan questions: will it work?

Verbal Reasoning

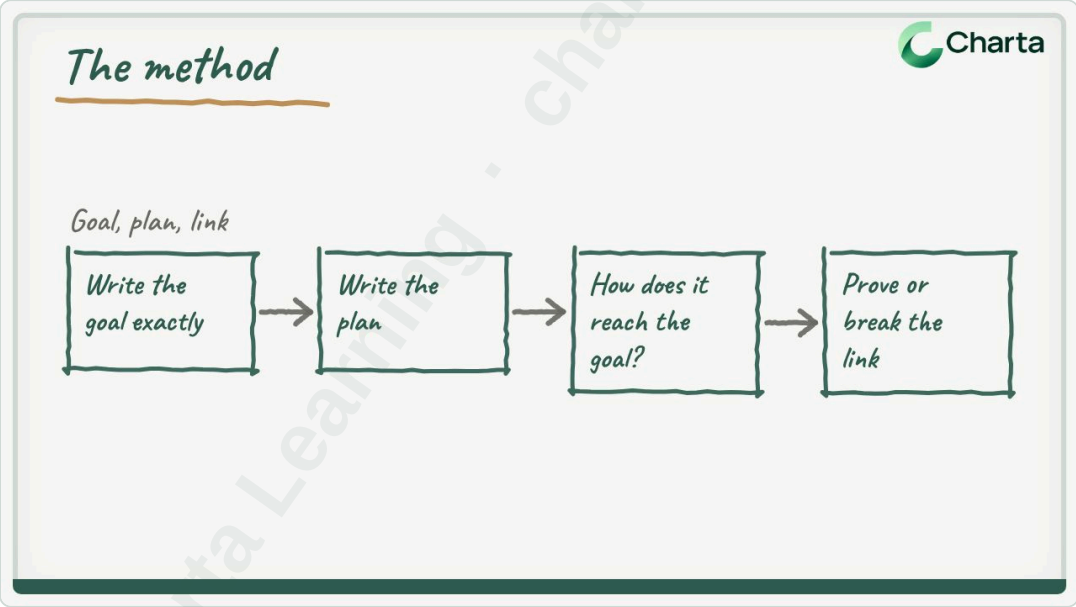
1 What the question asks

- Succeed? Fail? Best plan? Useful to know?
- Strengthen, weaken and evaluate, for a plan
- Separate the plan from the goal
- Read the goal word for word

IN THE LESSON

- Plan questions have several question lines.
- Which of the following most strongly suggests that the plan will succeed?
- Which most seriously weakens the case that it will achieve its aim?
- Which plan is most likely to achieve the goal?
- Which would be most useful to know in evaluating the plan?
- These are strengthen, weaken, best choice and evaluate questions, but about a plan instead of a conclusion.
- So the tools you already know still work.
- The one extra habit is to separate the plan from the goal, and to read the goal word for word.
- A plan can do something useful and still miss the goal as it is stated.

2 The method



IN THE LESSON

- Here is the method.
- Step one, write down the goal exactly, including any condition, such as without reducing the number of crossings.
- Step two, write down the plan: the action.
- Step three, ask how the action is supposed to lead to the goal.
- That link is the plan's assumption, just like the gap in an argument.
- Step four, predict what would prove the link true, which helps the plan, or false, which hurts it, and also any side effect that could undo the gain.
- Then test the choices against the goal as written.
- Why read the goal so carefully?
- Because many wrong choices help a different goal, such as profit instead of revenue.

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3 Three ways a plan fails

- 1. The link is missing: action, but no result
- 2. A side effect cancels the gain
- 3. It misses part of the goal
- Strengthen: the link holds; weaken: it breaks

IN THE LESSON

- A plan usually fails in one of three ways.
- One, the link is missing: the action does not cause the result.
- Doubling the bins does nothing if people litter for reasons that have nothing to do with bins.
- Two, a side effect undoes the gain: the action works, but it also causes something that cancels it out.
- A bonus for short calls might produce quick calls that do not solve the problem.
- Three, it misses part of the goal: the plan meets one condition but breaks another, such as easing the rush hour but losing crossings.
- To strengthen a plan, show the link holds and no side effect cancels it.
- To weaken it, show the opposite.

4 The traps in the wrong choices

- Background that misses the link
- A different goal: profit, not revenue
- Half the goal
- Opposite direction, or too vague to settle it

IN THE LESSON

- Now the traps.
- The first is background: a true fact about the situation, such as when the park is busiest, that does not touch the link.
- The second is a different goal: it helps profit when the goal is revenue, or courtesy when the goal is problems solved.
- The third is half the goal: it works for the evening but not the morning, or cuts congestion but loses crossings.
- The fourth is the opposite direction: in a weaken question, a choice that actually supports the plan.
- And the fifth, in evaluate questions, is a vague question: one whose answer does not settle whether the plan reaches its target, such as, will people travel more often, when the plan needs a specific amount more.

5 Question 1: more litter bins

- To reduce the amount of litter in Fenwick Park, the city's parks department plans to double the number of litter bins along the park's walking paths.
- Which of the following, if true, most strongly suggests that the plan will succeed?

IN THE LESSON

- Question one is an easy one.
- It is short, so read it with me slowly, and separate the goal from the plan.
- To reduce the amount of litter in Fenwick Park, the city's parks department plans to double the number of litter bins along the park's walking paths.
- The question: Which of the following, if true, most strongly suggests that the plan will succeed?
- How are more bins supposed to cut litter?

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6 Question 1: goal, plan, link

Fenwick Park: double the litter bins to cut litter

Goal	less litter in the park	**goal**
Plan	twice as many bins	**action**
Link	no bin nearby causes litter	**assumption**
Prediction	litterers say: no bin near	**link holds**

IN THE LESSON

- The goal: less litter in Fenwick Park.
- The plan: double the number of bins along the walking paths.
- The link: people drop litter because there is no bin nearby, so more bins mean fewer people dropping litter.
- Is that link certain?
- No.
- People might litter out of laziness, or because the wind blows rubbish out of bags, or because the bins are already overflowing.
- If the reason has nothing to do with how far away a bin is, more bins will not help.
- So to show the plan will succeed, we want evidence that the link is real: that people litter because no bin is close.
- Predict that.

7 Question 1: the five choices

- A. Fenwick Park attracts far more visitors on weekends than on weekdays.
- B. Most of the litter found in Fenwick Park consists of food packaging.
- C. Several other parks in the city have more litter than Fenwick Park does, despite having fewer visitors each year.
- D. The new litter bins will be painted the same colour as the existing ones.
- E. In a survey of park visitors who admitted to littering, most said they did so because no litter bin was nearby.

IN THE LESSON

- Here are the five choices.
- Choice A.
- Fenwick Park attracts far more visitors on weekends than on weekdays.
- Choice B.
- Most of the litter found in Fenwick Park consists of food packaging.
- Choice C.
- Several other parks in the city have more litter than Fenwick Park does, despite having fewer visitors each year.
- Choice D.
- The new litter bins will be painted the same colour as the existing ones.
- Choice E.
- In a survey of park visitors who admitted to littering, most said they did so because no litter bin was nearby.
- Which one proves the link?

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8 Question 1: test each choice

Prediction: people litter because no bin is near

A: busier at weekends	when, not why they litter	**background**
B: mostly food packaging	what, not why	**background**
C: other parks have more litter	says nothing about bins here	**comparison**
D: same colour as the old bins	no reason to change behaviour	**background**
E: no bin nearby, they say	the link is real	**link holds**

IN THE LESSON

- Choice A tells us when visitors come, not why some of them drop litter.
- Background.
- Choice B tells us what the litter is, food packaging, not whether more bins would reduce it.
- Choice C compares Fenwick with other parks, but says nothing about whether bins make a difference here.
- Choice D, the colour of the new bins, gives no reason to expect people to behave differently.
- Choice E matches our prediction.
- Visitors who admitted to littering said they did it because no bin was nearby.
- That is direct evidence for the link: more bins, closer to people, should mean less litter.
- The answer is E.

9 Question 2: the congested bridge

- The only bridge across the River Lenn is badly congested in the morning and evening rush hours. The town council wants to reduce rush-hour congestion on the bridge without reducing the total number of crossings made each day.
- Which of the following plans is most likely to achieve the council's goal?

IN THE LESSON

- Question two is a medium one, and it asks you to choose the best plan.
- Read the goal very carefully.
- The only bridge across the River Lenn is badly congested in the morning and evening rush hours.
- The town council wants to reduce rush-hour congestion on the bridge without reducing the total number of crossings made each day.
- The question: Which of the following plans is most likely to achieve the council's goal?
- The goal has two parts.
- Write them both down.

10 Question 2: a goal in two parts

River Lenn bridge: less rush-hour congestion, same crossings

Goal, part one	less congestion at both peaks	**spread**
Goal, part two	no fewer crossings a day	**keep**
Link	move journeys, not lose them	**assumption**
Prediction	dearer peaks, cheaper rest	**both parts**

IN THE LESSON

- The goal has two parts.
- Part one: reduce congestion in the rush hours, and notice there are two rush hours, morning and evening.
- Part two: do not reduce the total number of crossings each day.
- So we want the same number of journeys, spread more evenly through the day.
- How do you persuade a driver to cross at a different time, rather than not at all?
- Give a reason to avoid the peaks, and a reason to come at other times instead.
- A toll that is higher at both peaks and lower at other times does both.
- Predict: dearer at both peaks, cheaper the rest of the day.
- Now we check each plan against both parts of the goal.

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11 Question 2: the five choices

- A. Reduce the toll by the same amount at all hours of the day, so that no time of day is favoured.
- B. Close the bridge's outside lane to cars during the rush hours and reserve it for cyclists, with the toll unchanged all day.
- C. Charge a higher toll for crossing during the morning and evening peaks and a lower toll at other times.
- D. Charge a higher toll for crossing during the evening peak and a lower toll at other times, including the morning peak.
- E. Charge a higher toll for crossing during the morning and evening peaks and leave the toll unchanged at other times.

IN THE LESSON

- Here are the five choices.
- Choice A.
- Reduce the toll by the same amount at all hours of the day, so that no time of day is favoured.
- Choice B.
- Close the bridge's outside lane to cars during the rush hours and reserve it for cyclists, with the toll unchanged all day.
- Choice C.
- Charge a higher toll for crossing during the morning and evening peaks and a lower toll at other times.
- Choice D.
- Charge a higher toll for crossing during the evening peak and a lower toll at other times, including the morning peak.
- Choice E.
- Charge a higher toll for crossing during the morning and evening peaks and leave the toll unchanged at other times.
- Check each one against both parts of the goal.

12 Question 2: test each choice

Prediction: dearer at both peaks, cheaper the rest of the day

A: same toll cut at all hours	no reason to move; peaks worse	**misses goal**
B: a car lane for cyclists	less room at the peaks	**opposite**
C: dearer peaks, cheaper rest	move journeys, keep them	**both parts**
D: dearer evening only	the morning rush stays	**half the goal**
E: dearer peaks, rest unchanged	some journeys are lost	**half the goal**

IN THE LESSON

- Choice A cuts the toll by the same amount all day.
- Nobody has a reason to change the time of a journey, and cheaper crossings could draw more cars into the peaks.
- It misses the goal.
- Choice B takes a lane from cars at the rush hours, which cuts room at exactly the wrong time, and gives no reason to cross later.
- Choice C matches our prediction: dearer at both peaks, cheaper at other times, so drivers move their journeys rather than drop them.
- Both parts are met.
- Choice D raises only the evening toll and lowers the morning one, so the morning rush stays, or grows.
- Half the goal.
- Choice E raises the peak toll but offers nothing cheaper, so some drivers stop crossing, and total crossings fall.
- Half the goal.
- The answer is C.

13 Question 3: the call centre bonus

- A call centre will pay each agent a bonus for every customer call that the agent ends within four minutes, in order to increase the number of customer problems that the centre solves each day.
- Which of the following, if true, most seriously weakens the case that the plan will achieve its aim?

IN THE LESSON

- Question three is a hard one.
- It is short, so read it with me slowly, and compare what the bonus pays for with what the centre wants.
- A call centre will pay each agent a bonus for every customer call that the agent ends within four minutes, in order to increase the number of customer problems that the centre solves each day.
- The question: Which of the following, if true, most seriously weakens the case that the plan will achieve its aim?
- Think about how agents will behave once the bonus starts.

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14 Question 3: what does the bonus reward?

Call centre: a bonus for each call ended within four minutes

Goal	more problems solved a day	goal
Plan	bonus per call under 4 minutes	action
It rewards	short calls, not solutions	the catch
Prediction	short-call problems come back	side effect

IN THE LESSON

- The goal: more customer problems solved each day.
- The plan: a bonus for every call ended within four minutes.
- The link the plan assumes: shorter calls mean more calls, and more calls mean more problems solved.
- But look at what the bonus actually rewards.
- It pays for ending a call quickly, not for solving the problem.
- An agent could end a call after three minutes with the problem unsolved, collect the bonus, and the customer simply rings again.
- That is a side effect that undoes the gain: the centre handles more calls but solves no more problems, and may even get busier.
- Predict: many problems on short calls are not really solved and come back.

15 Question 3: the five choices

- A. Many of the problems on calls ended within four minutes are reported again in later calls
- B. Calls that last longer than four minutes tend to involve the more complex customer problems
- C. Supervisors judge that agents who end calls quickly are often less courteous than agents who take longer
- D. The bonus is paid only on short calls that customers go on to rate as satisfactory
- E. Agents who end the most calls within four minutes also receive the highest customer satisfaction ratings

IN THE LESSON

- Here are the five choices.
- Choice A.
- Many of the problems on calls ended within four minutes are reported again in later calls Choice B.
- Calls that last longer than four minutes tend to involve the more complex customer problems Choice C.
- Supervisors judge that agents who end calls quickly are often less courteous than agents who take longer Choice D.
- The bonus is paid only on short calls that customers go on to rate as satisfactory Choice E.
- Agents who end the most calls within four minutes also receive the highest customer satisfaction ratings We want the choice that most weakens the plan.

16 Question 3: test each choice

Prediction: many problems on short calls come back

A: short-call problems come back	calls end, problems remain	weakens
B: long calls are complex	why calls are long, no more	background
C: quick agents less courteous	manner, not problems solved	different goal
D: bonus only if rated well	makes short calls better	opposite
E: quick agents rated highest	short calls seem to work	opposite

IN THE LESSON

- Choice A matches our prediction.
- Many problems on calls ended within four minutes are reported again in later calls.
- So the bonus rewards calls that do not solve the problem, and the number solved need not rise.
- That most weakens the plan.
- Choice B explains why some calls are long, but it does not show that problems on short calls go unsolved.
- Choice C, courtesy, is about manner, a different goal from problems solved.
- Choice D is the opposite direction: if the bonus is paid only on calls customers rate as satisfactory, the plan looks stronger.
- Choice E also supports the plan: quick agents getting the highest ratings suggests short calls work.
- The answer is A.

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17 Question 4: cheaper tram fares

- A tram operator will cut its single fares by a quarter, in order to increase the total fare revenue it collects.
- Which of the following would be most useful to know in evaluating whether the plan is likely to achieve its goal?

IN THE LESSON

- Question four is another hard one, and it hides a small piece of arithmetic.
- It is short, so read it with me slowly.
- A tram operator will cut its single fares by a quarter, in order to increase the total fare revenue it collects.
- The question: Which of the following would be most useful to know in evaluating whether the plan is likely to achieve its goal?
- Ask exactly how many more passengers the plan needs.

18 Question 4: how many more passengers?

Tram fares cut by a quarter, to raise fare revenue

Revenue	fare times passengers	**rule**
New fare	three quarters of the old	**3/4**
Break even	a third more passengers	**4/3**
Prediction	more than a third more?	**the test**

IN THE LESSON

- The goal: more total fare revenue.
- The plan: cut single fares by a quarter.
- Revenue is the fare times the number of passengers.
- After the cut, each passenger pays three quarters of the old fare.
- So how many more passengers do we need just to stand still?
- Think of four passengers at the old fare.
- That is four fares.
- At three quarters of the fare, four passengers bring in only three fares.
- To get back to four fares at the lower price, we need five and a third passengers, which is one third more than four.
- Exactly a third more leaves revenue unchanged.
- So revenue rises only if passengers rise by more than a third.
- Predict: the useful question asks whether the cut brings more than a third more passengers.

19 Question 4: the five choices

- A. Whether the cost of running the trams will rise if the operator carries more passengers
- B. Whether most of the operator's present passengers would travel more often at the lower fares
- C. Whether the cut will bring more than a third more passengers than now
- D. Whether passenger numbers have been rising or falling over the past five years
- E. Whether many of the extra passengers would be people who now travel by bus rather than by car

IN THE LESSON

- Here are the five choices.
- Choice A.
- Whether the cost of running the trams will rise if the operator carries more passengers Choice B.
- Whether most of the operator's present passengers would travel more often at the lower fares Choice C.
- Whether the cut will bring more than a third more passengers than now Choice D.
- Whether passenger numbers have been rising or falling over the past five years Choice E.
- Whether many of the extra passengers would be people who now travel by bus rather than by car Which question would settle it, whatever the answer?

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20 Question 4: test each choice

Prediction: will passengers rise by more than a third?

A: will running costs rise?	costs are profit, not revenue	**different goal**
B: will regulars travel more?	more, but how much more?	**too vague**
C: over a third more passengers?	yes: revenue up; no: not	**settles it**
D: past passenger trend?	the past, not the fare cut	**background**
E: extra riders from buses?	where from, not how many	**background**

IN THE LESSON

- Choice A asks about running costs.
- Costs matter for profit, but the goal is fare revenue, so this is a different goal.
- Choice B asks whether regulars would travel more often.
- Some extra travel is likely, but more often does not say whether the rise beats one third, so it is too vague to settle the question.
- Choice C asks exactly what we need.
- Yes, more than a third more passengers: revenue rises, and the plan works.
- No: revenue does not rise, and the plan fails.
- A split, just like the evaluate lesson.
- Choice D, the trend over the last five years, does not tell us how passengers will react to the cut.
- Choice E asks where new passengers come from, not how many there will be.
- The answer is C.

21 Accurate and quick

- Question line first: succeed, fail, best or useful?
- Write the goal word for word
- Say the link: it works only if
- How will people respond to the incentive?
- A number goal? Do the small sum

IN THE LESSON

- Some habits that keep you accurate and quick.
- First, read the question line first, because it tells you whether you want success, failure, the best plan or a useful question.
- Second, write the goal word for word, with every condition.
- Third, say the link out loud: the plan works only if this happens.
- Fourth, think about the people affected by the plan.
- How will drivers, agents or passengers actually behave?
- Side effects usually come from people responding to a new incentive.
- Fifth, when a goal is a number, do the small sum, as in the tram question.
- A quarter off needs a third more, and the right answer is often the choice that names that exact target.

22 What the four questions taught

- Prove the link: no bin nearby
- Meet every part of the goal
- Watch for side effects of incentives
- Find the target number: a third more

IN THE LESSON

- Look back at the four plans.
- In question one, the bins worked only if people litter because no bin is near, and the right answer proved that link.
- In question two, the goal had two parts, so the right plan had to move journeys without losing them, and the traps met only one part.
- In question three, the bonus rewarded short calls, not solved problems, so a side effect could cancel the gain.
- In question four, a quarter off the fare needed a third more passengers, and only one choice asked about that exact amount.
- Link, two-part goal, side effect, and a target number: four things to check in every plan question.

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23 Quick check

1. Goal: more revenue. A choice says costs will fall. Goal met?
   Answer: No: costs affect profit, not revenue.
2. A price is cut by half. How much must sales rise to keep revenue?
   Answer: They must double.
3. Teachers are paid for each pass. What side effect?
   Answer: Easier tests or marking.

IN THE LESSON

- A quick check.
- Pause after each question.
- Question one.
- A shop's goal is more revenue.
- A choice says the plan will cut the shop's costs.
- Does that show the plan meets its goal?
- The answer is no.
- Costs affect profit.
- Revenue is money coming in.
- Question two.
- A price is cut by half.
- By how much must sales rise for revenue to stay the same?
- The answer is double: sales must rise by one hundred percent, because half the price times twice the sales is the same revenue.
- Question three.
- A school pays teachers for each pupil who passes.
- What side effect should you look for?
- The answer: easier tests or marking, so more pupils pass without learning more.

24 Recap: the plan method

- Goal word for word; plan; the link
- Three ways a plan fails
- Check every part of the goal
- Name the trap in each wrong choice

IN THE LESSON

- Let us recap.
- Write the goal word for word, with every condition, and write the plan.
- Say the link: the plan works only if this happens.
- Then use the three ways a plan fails: the link is missing, a side effect cancels the gain, or the plan misses part of the goal.
- To strengthen, prove the link; to weaken, break it or find the side effect; to choose a plan, check every part of the goal; to evaluate, ask the question that settles it.
- Name the trap in every wrong choice: background, a different goal, half the goal, the opposite direction, or too vague.
- Practise this on every plan question.

Summary notes for the Charta whiteboard lesson. Figures are from the lesson's made-up examples.

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