

A-Level Economics: The Data Response Decoder

How to read an extract and use it. AQA 7136 and Edexcel 9EC0.

The editable Word version is included in this download. Both extracts, every question, every answer and every annotation are ordinary Word text. Change the market, change the figures, swap an extract for one of your own, or adjust the tariffs to match your current past papers. A PowerPoint version of the four lessons is in the same download.

What this pack is

A method for the data response question, taught properly. Four complete lessons with timings and full answers, a full data response set built on a constructed extract with every figure checkable, three model answers in which every sentence is tagged with what it earns and why, a mid band answer improved sentence by sentence, the quantitative skills that actually appear with worked examples, and the fourteen errors that cost the most.

The thing that makes it different

Two things. The decoder is a repeatable method for reading an extract, and it is short enough to memorise. Then every model answer is broken into numbered sentences, each tagged with what it earns, so students can see which sentence carried the answer and which one earned nothing. Handing out a good answer and calling it good teaches very little, because the student cannot see where the marks were.

It is editable

Three formats. The PDF is for printing. The Word file contains every lesson, both extracts, every question, every answer and every annotation as ordinary editable text. The PowerPoint contains the slides for all four lessons. Change the market, change the figures, cut a task. Nothing is an image.

Who it is for

Teachers of A-Level Economics on AQA 7136 or Edexcel 9EC0, teaching Year 12 or Year 13. The method is the same on both boards because the demand is the same: read the extract, use the data, and reach a supported judgement. Nothing in the pack depends on a board specific assessment pattern, which is why none is quoted.

The diagnosis, in one paragraph

Students lose data response marks in a small number of repeatable ways. They quote the extract instead of using it. They calculate correctly and then say nothing about what the number means. They treat a correlation in the data as a cause. They compute an elasticity from two points years apart and do not notice that everything else moved as well. And they save judgement for a final paragraph they never reach. Every one of those is a habit, and habits are teachable.

A note on accuracy

Assessment patterns, tariffs and level descriptors change and differ between boards, so this pack does not quote them. The question set uses marks chosen for teaching and says so on the page. The market in the extract is constructed, which means every figure is internally consistent and any calculation a student attempts will agree with the answer. Take the real assessment pattern from your current specification and recent past papers.

Where data response marks are lost

	What happens
Quoting is not using.	A sentence that reproduces a line from the extract has moved a fact from one page to another. The mark comes from what you do with it: a consequence, a comparison, or a judgement about what it implies.
A number with no meaning earns half of what it could.	Students calculate a 40 per cent rise and stop. The mark for calculation is small. The marks sit in what 40 per cent means for this market, this year, against this base.
The extract contains at least one trap.	Every well written data response has a figure that invites a wrong inference. Usually it is a correlation presented as though it were a cause, or a change measured across a period in which several things moved at once.
Judgement is not a paragraph at the end.	The strongest answers weigh as they go and arrive at the conclusion having already earned it. An answer that saves all judgement for a conclusion usually runs out of time before reaching it.
The diagram is a tool, not a decoration.	A diagram earns when it is used to make a point that the words then develop. A correct diagram sitting next to unrelated prose earns very little, and a wrong one costs more than leaving it out.

The decoder, in six steps

Step	What to do and why
1. Read the questions before the extract.	Two minutes. You then read the extract looking for something, which is faster and more accurate than reading it cold and going back.
2. Label every number.	Absolute or percentage. Level or change. Real or nominal. Index or actual. A stock at a point in time or a flow over a period. A large share of data response errors is a student treating one of these as another.
3. Mark direction and magnitude in the margin.	Up or down, and by how much. Write the percentage next to the figure if the extract gives you the levels. This is where the calculation marks come from, and it takes seconds.
4. Find the trap.	Ask what the extract wants you to conclude, then ask whether the data actually supports it. There is usually one figure placed to invite a wrong inference, and spotting it is worth more than any calculation on the paper.
5. Decide whether the question needs a diagram.	If the question is about a change in a market, a diagram usually helps. If it is about the size of an effect or a policy trade off, words and numbers usually serve better. Draw it only if you will then use it.
6. For the evaluative question, find the number that decides it.	Most evaluative questions in a data response turn on one figure, or on one comparison between two figures. Find it before you write, and build the answer around it.

The four assessment objectives

	Name	What it is	The test
AO1	Knowledge	A concept, term or theory stated correctly.	Cheap and necessary. A paragraph of definitions earns very little on its own.
AO2	Application	The point is tied to this market and this data.	The test: could this sentence appear in an answer about a different market? If yes, it is not application.
AO3	Analysis	A chain of reasoning followed through, often with a diagram or a calculation.	Because this, therefore that, which means this here. One developed chain beats three assertions.
AO4	Evaluation	A judgement, a weighing, a condition, or a challenge to the data itself.	In a data response, questioning the reliability of the evidence is one of the highest value evaluative moves available.

One thing to say to the class before you use the tags. Both boards mark by level, judging the answer as a whole rather than sentence by sentence. Tagging individual sentences is a teaching device for showing where the marks come from. It is not how your script is marked, and no examiner writes AO3 in a margin.

Command words

Command	What it asks	What earns the mark	The common error
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Calculate	Work it out and show the method.	Formula, substitution, answer, unit or percentage sign.	A bare number, so a slip costs everything.
Explain	Say why, and follow it through once.	A reason plus its consequence in this market.	Listing several reasons and developing none.
Analyse	Build the chain.	A longer sequence of consequences, using the data and a diagram where it helps.	Describing the change rather than examining what follows from it.
Assess	Weigh and reach a supported view.	Arguments each way, then a judgement resting on the data.	Two lists and the sentence it depends.
Evaluate	The same, usually with more weight on the judgement.	A decision, the evidence behind it, and the condition that would change it.	A conclusion that repeats the arguments instead of resolving them.
To what extent	Answer the extent, not just the question.	A degree, not a yes or no. Largely, partly, only under these conditions.	Answering as though it asked whether rather than how far.
Comment on	Interpret the data and say what it implies.	What the figures show, what they do not show, and what follows.	Restating the figures in words.

The tag key

Tag	Objective	What it means
K	Knowledge, AO1	A concept, term or theory stated correctly and doing work in the sentence.
AP	Application, AO2	Tied to this market and this data. If it would fit another market, it is not application.
AN	Analysis, AO3	A chain of consequences followed through.
EV	Evaluation, AO4	A judgement, a weighing, a condition, or a challenge to the data itself.
0	Earns nothing	Restating the question, announcing the answer's structure, or quoting the extract with nothing added.

Extract A

Extract A. The market for domestic heat pumps

Domestic heat pumps replace gas boilers as a way of heating a home. They cost more to install but less to run in most properties, and they produce lower emissions at the point of use. Since 2023 the government has offered a grant of £7,500 towards each installation.

Installations have risen quickly from a small base. The average installed price has fallen over the same period, which the industry attributes partly to competition between installers and partly to falling equipment costs. The number of trained installers has also risen sharply. In 2023 firms reported that they were turning work away because they could not staff it.

Not everyone is convinced. One analyst commented, "We are paying £7,500 a time for a benefit nobody has priced properly, in a market where installations are still under four per cent of the heating systems fitted each year." Others argue that the grant is not buying installations so much as buying an industry, and that the trained installer base and the fall in price would not have happened without it.

	2023	2024	2025
Heat pump installations	36,000	45,000	63,000
Average installed price	£13,500	£12,300	£11,200
Price index, 2023 = 100	100	91.1	83.0
Trained installers	3,100	3,800	4,900
Government grant per installation	£7,500	£7,500	£7,500
		Figure	
Gas boiler installations, 2025			
Estimated external benefit per heat pump installation			
Estimated lifetime of an installation			

This market is constructed. Every figure is internally consistent, so any calculation a student attempts will agree with the answer, including the ones the models use. That is the reason for building an extract rather than lifting real figures that would be out of date within a year.

Question set

#	Question	Marks
1.	Calculate the percentage change in heat pump installations between 2024 and 2025.	2
2.	With reference to Extract A, explain one reason why the average installed price has fallen.	4
3.	Calculate the total cost to the government of the grant scheme in 2025.	2
4.	Assess the extent to which the fall in price explains the rise in installations.	10
5.	Evaluate the case for continuing the £7,500 grant.	15

Total 33 marks

The tariffs above are chosen so that the set works as a lesson. They are not a claim about the structure of any paper on either board. Check your current specification and recent past papers, and adjust the tariffs on this page if you want the practice to feel identical to the real thing.

Answers and award guidance

Q	Marks	Answer and how to award it
1	2	63,000 minus 45,000 = 18,000. 18,000 divided by 45,000 x 100 = 40 per cent. One mark for the method, one for the answer with the percentage sign. Do not accept 40 without working, and do not accept a figure calculated on the 2023 base.
2	4	Two marks for a reason drawn from the extract and two for developing it in this market. The extract offers competition between installers and falling equipment costs. A strong answer connects the rise in trained installers from 3,100 to 4,900 to increased supply, and then to a lower market price, which is a chain rather than a quotation. Reject an answer that reproduces the extract sentence without adding a consequence.
3	2	£7,500 x 63,000 = £472.5 million. One mark for the method, one for the answer with the unit. Accept £472,500,000.
4	10	Award for knowledge of demand and supply, application of the data, analysis of the chain, and a judgement on extent. The question says extent, so an answer that argues only one side has not answered it. The case for price: the price index fell from 100 to 83 while installations rose 75 per cent, which is consistent with a movement along a demand curve. The case against price as the explanation: the £7,500 grant did not change, but supply capacity did, with trained installers rising from 3,100 to 4,900 after firms reported turning work away. That is a supply constraint being relaxed, which raises quantity and lowers price at the same time, so price is a symptom here as much as a cause. The strongest answers notice that the two influences cannot be separated from this data. An answer that computes an elasticity of about minus 4.4 from these two points and reports it as a demand elasticity has fallen into the trap. Credit the student who calculates it and then explains why it fails, and note that the good reason is not simply that supply shifted. A supply shift along a stable demand curve is how a demand curve is identified. It fails because the extract says firms were turning work away in 2023, so that quantity was rationed by capacity and is not a point on the demand curve, and because two years is long enough for the determinants of demand to move as well. A good judgement on extent. Be careful how the split is expressed. If supply shifted along a stable demand curve then the lower price is the channel through which the extra capacity reached buyers, not a rival cause, so there is no split to apportion between them. The genuine distinction is between the extra quantity bought because the price fell, and the extra quantity bought because a buyer who wanted one in 2023 could not get an installer and now can. The data cannot separate those two, and saying so is the answer to how far.
5	15	Award for knowledge of subsidies and externalities, application of the figures, analysis of the effects, and a supported judgement with a condition. Against the grant: it costs £7,500 per installation against an estimated external benefit of £2,400, a gap of £5,100 per unit, and the 2025 scheme cost £472.5 million. On the measured externality alone the scheme does not pay for itself. The strongest version of this argument, which almost no student makes, is additionality: the grant is paid on every installation including those that would

	have happened anyway, so the cost per additional installation is higher than £7,500 and the data cannot tell us by how much. For the grant: the external benefit figure is per installation and the installation lasts 18 years, so a single year comparison understates it. The extract also offers a dynamic argument, that the grant bought an installer base and a lower price rather than simply buying installations, and the fall in the price index from 100 to 83 alongside a 58 per cent rise in installers is consistent with that. Scale: at 63,000 installations against 1.6 million gas boilers, heat pumps are under four per cent of annual fittings, so the scheme is either early in its life or failing, and the data cannot tell you which. A strong judgement names what would settle it. If the £2,400 is an annual figure the case is strong, and if it is a lifetime figure the case is weak. The pack's own models take the second reading and say so explicitly, which is the correct treatment of an ambiguous figure: state your reading, then reason from it. Do not reward a conclusion that lists both sides and declines to decide. Do not penalise either decision when it is supported.
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The trap in this extract

Every good data response contains a figure placed where a student will misuse it. In Extract A it is the combination of the price index and the installation count.

Price fell 17.0 per cent between 2023 and 2025, from £13,500 to £11,200. Installations rose 75 per cent over the same period, from 36,000 to 63,000. Divide one by the other and you get minus 4.4, which looks like a beautifully elastic answer.

Here is the part worth twenty minutes of your lesson. A student who says supply shifted, so these two points trace out the demand curve, is thinking correctly. That is how a demand curve is identified in practice, and a class that reaches it unaided has understood something most textbooks skip. The estimate still fails, but not for the reason students usually give.

It fails for three reasons, and the first is the strongest. The extract says firms were turning work away because they could not staff it. That means the 2023 quantity was rationed by capacity rather than chosen by buyers at that price, so it is not a point on the demand curve at all. You cannot measure a response along a curve using a point that is not on it. The same problem shrinks as installer numbers rise, which is why the 2025 figure is the more trustworthy of the two and the 2023 figure is the one that breaks the calculation.

Second, two years is long enough for the determinants of demand to move as well. The running cost of the alternative, awareness of the technology, and expectations about how long the grant will last are all demand side changes, and any of them moving breaks ceteris paribus on the side that matters for a demand elasticity.

Third, even if the first two problems were solved, anything recovered from a two year window is a long run demand response. That is a different number from the short run elasticity students usually mean, and it is almost always larger.

So teach students to do the calculation, state what it would mean if the conditions held, and then name precisely which condition fails. A student who computes minus 4.4 and writes that supply shifting may identify the demand curve, but the 2023 figure was capacity rationed so it does not, is writing at the top of the paper. A student who computes it and reports it as a finding has been caught.

Model answer, question 5, annotated

#	The sentence	Tag	What it earns and why
1	The grant costs £7,500 per installation against an estimated external benefit of £2,400, so on the measured externality alone each installation is subsidised at	K + AP + AN	Opens with the decisive comparison rather than a definition of a subsidy. Note the careful wording: the subsidy is measured against the external benefit, not against the total value of the installation to the household.

	roughly three times the external benefit it is credited with creating.		
2	Across 63,000 installations that is £472.5 million of public money in 2025 against £151.2 million of measured benefit.	AP + AN	Scales the per unit figure to the whole scheme. Both calculations come from the data table and both are checkable.
3	Taken at face value the scheme fails a straightforward welfare test and should be cut.	EV	A position, in sentence 3. The phrase taken at face value is doing work, because it signals that the answer is about to test its own opening.
4	That conclusion does not survive contact with two things the extract supplies, the period over which the benefit accrues and the effect the grant had on supply.	EV	Rejects its own first conclusion and names both grounds, so the reader knows what is coming without a sentence that only announces structure. A sentence that signposts and nothing else earns nothing.
5	An installation lasts 18 years, so setting a £2,400 benefit against a one off £7,500 grant is only fair if the £2,400 is itself a lifetime figure, and the extract does not say which it is.	AP + AN + EV	Challenges the data rather than accepting it, and the reasoning is a stock against a flow. In a data response this is one of the highest value moves available and it is rarely attempted.
6	If it is an annual figure the scheme repays its cost in just over three years and the case for continuing is overwhelming.	AP + AN + EV	Follows the alternative reading through to its conclusion. £7,500 divided by £2,400 is 3.1 years, and the arithmetic is worth doing rather than gesturing at.
7	The most important number in this decision is therefore ambiguous, and I will take the less favourable reading, that £2,400 is a lifetime benefit.	EV	States the assumption explicitly and chooses the conservative one. Naming an ambiguity and reasoning from a stated position is stronger than writing as though it were not there.
8	The grant is also paid on every installation, including the ones that would have happened anyway, so the cost per additional installation is higher than £7,500 and the data cannot tell us by how much.	K + AP + EV	Additionality. This is the strongest argument against the scheme and it appears in almost no student answer, because it requires noticing what the data does not contain.
9	The second ground is dynamic rather than static.	K	The distinction is a real concept and it earns the knowledge, but nothing here weighs or decides anything, so there is no evaluation in it. Compare sentence 4, which also introduces what is coming but attaches the grounds while doing so.
10	The extract argues the grant bought an industry rather than installations, and the data supports it: trained installers rose 58 per cent while the price index fell from 100 to 83.	AP + AN	Two figures used to test a claim from the extract, rather than quoting the claim and moving on.
11	A falling price alongside a rising quantity is the signature of supply expanding, not of subsidised demand alone, which suggests the grant relieved a capacity constraint the extract says was real.	K + AN + EV	The economics is doing the work here. Recognising which curve moved, from the direction of price and quantity together, is the analytical core of the answer.
12	If that capacity is now in place, the next £7,500 buys less than the first did, because the constraint it was paying to remove has already gone.	AN + EV	Marginal reasoning. This is the sentence that turns the answer from a verdict on the grant into a verdict on the rate of the grant.
13	That argues for tapering the grant rather than holding it at £7,500 or abolishing it.	EV	A third option, generated by the analysis rather than offered in the question. Answers that only choose between the two options given rarely reach the top.
14	Scale cuts the other way, though: at 63,000 installations against 1.6 million gas boilers, heat pumps are under four per cent of annual fittings, so withdrawing support now risks stalling the market before it can sustain itself.	AP + EV	The strongest argument against the answer's own direction, taken seriously and quantified. Rejecting a weak counter argument earns far less than engaging a strong one.
15	On balance the grant should continue	EV	The decision, stated plainly and specific enough to act on.

	but at a falling rate, reducing as installer capacity and price allow.		
16	The number that would change this is the basis of the £2,400: if it is annual rather than lifetime, the grant is cheap at £7,500 and should be held where it is.	EV	The condition, tied to the specific ambiguity identified in sentence 5. The answer ends where its own doubt began, and that is what makes it feel resolved rather than merely finished.

Sixteen sentences. Four carry knowledge, seven carry application, seven carry analysis, twelve carry evaluation, and none earn nothing. The answer reaches a position in sentence 3 and then spends the rest of the answer testing it, which is why the conclusion feels earned rather than announced. Note that four sentences challenge the data itself rather than the policy. In a data response that is where the highest marks live, and it is the move students are least likely to attempt.

The short model

#	The sentence	Tag	What it earns and why
1	The grant should continue but at a falling rate.	EV	The decision, in the first line and in nine words.
2	At £7,500 against a £2,400 external benefit it costs about three times the measured gain, or £472.5 million in 2025 against £151.2 million of benefit.	K + AP + AN	The whole static case, quantified, in one sentence.
3	But the £2,400 may be annual rather than lifetime, and on an 18 year installation that difference decides the question entirely.	AP + EV	Challenges the key figure and states why it matters, without spending a paragraph on it.
4	The dynamic case is stronger anyway: installers rose 58 per cent while the price index fell from 100 to 83, which is supply expanding rather than demand being bought.	K + AP + AN + EV	Four objectives in one sentence. This is what density looks like under time pressure.
5	That means the next £7,500 buys less than the first, because the capacity constraint it was removing has largely gone.	AN + EV	The marginal argument, complete.
6	Against that, at under four per cent of annual heating installations the market is not yet self sustaining, so removal would be premature.	AP + EV	The counter argument, quantified and conceded.
7	Taper it, and revisit if the £2,400 turns out to be an annual figure.	EV	Decision restated as an action, with the condition attached.

Seven sentences. Two carry knowledge, four carry application, three carry analysis, six carry evaluation, and none earn nothing. Seven sentences against sixteen, reaching the same place. Show this last. A class that sees only the long model concludes that the way to the top band is more words, and then runs out of time on a paper where the data response is only part of the assessment.

A mid band answer, annotated

#	The sentence	Tag	What it earns and why
1	This question is asking whether the government should continue to give the £7,500 grant for heat pumps.	0	Restates the question. It costs a line and earns nothing. Open with the position instead.
2	A subsidy is a payment by the government to reduce the cost of production or consumption of a good.	K	Correct, and worth very little on its own. A definition earns AO1 once, and this answer never gets past AO1 into what the definition does here.
3	The extract says that installations have risen from 36,000 to 63,000, which shows the grant is working.	AP	The figures are used, but the inference is unearned. Installations rose while several things changed, so this shows the market grew, not that the grant caused it.
4	Using the data, price elasticity of demand is minus 4.4, so demand is very	AP	This is the trap. The calculation itself is correct and drawn from the data, so it earns the application, but

	elastic and the subsidy is effective.		everything built on it is wrong. The 2023 quantity was rationed by capacity, so it is not a point on the demand curve. A number can still be computed, but it cannot be identified as a demand elasticity. A confident wrong inference costs credibility across the whole answer.
5	However, the grant is expensive and costs the government a lot of money.	0	No concept is deployed and no figure is used. The data gives £472.5 million. Expensive without a number is an opinion, and an opinion earns nothing.
6	There is also an opportunity cost because the money could be spent on other things like the health service.	K + AN	A real chain, but it would fit any subsidy anywhere. Nothing in it is about this market.
7	In conclusion, it depends on whether the government thinks the benefits are worth the costs.	0	The classic ending. It looks evaluative and resolves nothing, because no reading of the evidence is chosen and no condition is named.

The same answer, fixed

Sentence	What to do	What it becomes
Sentence 1	Delete it and open with the position.	Taken at face value the grant fails a welfare test, and the interesting question is whether face value is the right reading.
Sentence 2	Keep the term but make it do work.	The grant is a subsidy of £7,500 against an estimated external benefit of £2,400.
Sentence 3	Keep the figures, remove the unearned inference.	Installations rose from 36,000 to 63,000, but installer numbers rose 58 per cent over the same period, so the rise is not evidence about the grant on its own.
Sentence 4	Do the calculation, then say precisely why it fails.	Dividing the 75 per cent rise in quantity by the 17 per cent fall in price gives minus 4.4, but the extract says firms were turning work away in 2023, so that quantity was rationed by capacity and is not a point on the demand curve.
Sentence 5	Put the number in.	The scheme cost £472.5 million in 2025 against £151.2 million of measured benefit.
Sentence 6	Cut the generic opportunity cost point.	
Sentence 7	Replace it depends with the condition.	Taper the grant, and revisit if the £2,400 turns out to be an annual rather than a lifetime figure.

Seven sentences in, six out. One is deleted outright, one is replaced by the position, four gain a figure or lose an unearned inference, and the ending becomes a condition. The answer gains about twenty words and loses three sentences of padding, which is the trade worth making. Do this live on the board, and spend the longest on sentence 4, because a correct calculation used wrongly is the hardest thing to persuade a student to give up.

Lesson 1. Reading an extract properly

Objectives

1. Apply the six step decoder to an unseen extract.
2. Label every figure by type: level or change, absolute or percentage, index or actual.
3. Identify the figure in an extract that invites a wrong inference.

Do Now

#	Question	Answer
1	What is the difference between a level and a change?	A level is the value at a point or over a period. A change is the difference between two levels, often expressed as a percentage.

2	If an index is 100 in the base year and 83 two years later, what has happened?	The value has fallen by 17 per cent relative to the base year.
3	What does ceteris paribus mean and why does it matter here?	Other things held constant. It matters because most extract data is collected over time, when other things are not constant.

Sequence

5 min. Do Now, three questions above.

10 min. The decoder. Read it, then put it away. Six steps, and it is meant to be memorised.

8 min. Why data response marks are lost. Read it with the class rather than at them.

20 min. Students read Extract A and the data and mark it using steps 2 and 3: label every number by type, and write direction and magnitude in the margin.

12 min. Compare in pairs. Anything one student labelled and the other did not is worth a discussion, because that is where a lost mark comes from.

5 min. Close on step 4. Ask which figure in this extract is the trap. Take answers and do not settle it.

You will need

The decoder.

Extract A and the data, one per student.

Teacher note

Do not hand out the questions in this lesson. Students who see the questions first mark only what the questions ask for, and the habit this lesson builds is reading a data set properly before you know what will be asked.

Lesson 2. Using data instead of quoting it

Objectives

1. Turn a figure from an extract into a chain of reasoning.
2. Answer the lower tariff questions in a data response set.
3. Explain why a calculated elasticity can be arithmetically right and economically meaningless.

Do Now

#	Question	Answer
1	Name the six steps of the decoder.	Read the questions first. Label every number. Mark direction and magnitude. Find the trap. Decide on a diagram. Find the number that decides the evaluative question.
2	What is wrong with quoting the extract?	It moves a fact from one page to another. The mark is in what follows from it.
3	Calculate the percentage change in installations from 36,000 to 63,000.	$27,000 \text{ divided by } 36,000 \times 100 = 75 \text{ per cent.}$

Sequence

5 min. Do Now.

20 min. The trap page. Do the calculation on the board first, let the class agree it is right, then take it apart. Give the supply shift argument its due before you explain why the 2023 figure still fails.

18 min. Question set. Students answer questions 1 to 4.

12 min. Mark questions 1 to 3 against the answers, in a different colour, then read the guidance for question 4 aloud.

5 min. Set question 5 as homework. They will see three model answers to it next lesson, and it lands very differently if they have already tried it.

You will need

The trap.

Question set, one per student.

Answers, teacher copy.

Teacher note

The elasticity trap is the centre of this lesson and it has twenty minutes for a reason. Students find it very hard to give up a calculation they have done correctly, and the argument has a step most classes get right before the step they get wrong, so it needs room.

Lesson 3. The evaluative answer, sentence by sentence

Objectives

1. Identify which sentence in a strong answer carries the judgement.
2. Explain why challenging the data earns more than accepting it.
3. Improve a mid band answer by deleting, quantifying and adding a condition.

Do Now

#	Question	Answer
1	What does a condition sentence do at the end of an answer?	Names what would change the decision, which shows the judgement was reasoned rather than picked.
2	Why is challenging a figure in the extract worth marks?	Because the reliability of the evidence is part of the judgement, and almost nobody does it.
3	What is wrong with ending on it depends?	No reading of the evidence is chosen and no condition is named, so nothing is resolved.

Sequence

5 min. Do Now.

18 min. Model answer 1, annotation covered, then revealed a sentence at a time. Stop on sentences 6, 11 and 12.

7 min. Now the short model. Seven sentences, same place. Show it only after the long one.

18 min. The mid band answer and the fixes, rewritten live on the board. Spend longest on sentence 4.

12 min. Students tag their own most recent data response answer and count by objective, then rewrite three sentences.

You will need

Model answer 1.

Short model.

Mid band answer and fixes.

Students' own marked work.

Teacher note

Sentence 4 of the mid band answer is the one to linger on. It is a correct calculation used wrongly, and persuading a student to delete a right answer is harder than persuading them to add a missing one.

Lesson 4. Timed practice on a second extract**Objectives**

1. Apply the decoder to an unseen extract under timed conditions.
2. Write a full evaluative answer in the time available.
3. Mark a peer's answer by objective and give one specific improvement.

Do Now

#	Question	Answer
1	State the six steps of the decoder from memory.	Read the questions first. Label every number. Direction and magnitude. Find the trap. Diagram or not. Find the deciding number.
2	What should you do with a calculation you are not sure is valid?	Do it, then say plainly why it may not be valid. That earns more than either omitting it or reporting it as fact.
3	Where should the position appear in an evaluative answer?	Early, then everything after it earns the right to it.

Sequence

5 min. Do Now, books closed.

5 min. Hand out Extract B. Questions first, then read.

30 min. Timed answer to the question. Silence.

12 min. Swap and tag by objective using the key, then write one specific improvement naming a sentence number.

8 min. Read two answers that reached opposite decisions. Compare the support, not the conclusion.

You will need

Extract B.

Question and peer marking grid.

Answer guidance, teacher copy.

Teacher note

If most answers still have no condition in the final sentence, teach that single move again as a starter for a week. It is one sentence and it lifts answers more reliably than anything else in this pack.

Extract B

Extract B. A city bus fare cap

A city of about 600,000 people introduced a cap of £2 on single bus fares, replacing an average fare of £2.80. Operators are compensated by central government for the difference between the capped fare and the fare they would otherwise have charged. The cap has now been in place for a full year.

Passenger journeys rose. Fare revenue collected from passengers fell. Car journeys within the city boundary fell by 3 per cent over the same year, although a new city centre parking charge was introduced four months into the period. Bus operators report that the busiest services are now crowded at peak times and that they have not added vehicles, because the compensation is agreed annually and they are unwilling to commit to costs they may not recover.

	Figure
Average single fare before the cap	£2.80
Capped single fare	£2.00
Passenger journeys, year before	41.2 million
Passenger journeys, year after	49.4 million
Government compensation to operators	£39.5 million a year
Change in car journeys in the city	Fall of 3 per cent

Timed question

Evaluate the case for keeping the £2 fare cap in this city. (15 marks)

Peer marking

	Answer
Position stated by sentence number	
Number of figures from the extract actually used	
Any calculation attempted? Was it valid?	
Was the confounding variable identified?	
Condition present? Quote it.	
One specific improvement, naming a sentence number	

Answer guidance

Award for knowledge, application of the data, analysis and a supported judgement with a condition.

The calculations a strong answer will do. The compensation figure reconciles first: £2.80 minus £2.00 is £0.80, and £0.80 times 49.4 million journeys is £39.5 million, which matches the extract. Journeys rose 8.2 million, which is 19.9 per cent. The fare fell 28.6 per cent. Dividing one by the other gives about minus 0.70. Fare revenue collected from passengers fell from about £115.4 million to about £98.8 million, a fall of 14.4 per cent.

The trap, and it is the same trap as Extract A. That minus 0.70 is not a clean price elasticity of demand. A city centre parking charge was introduced four months into the same period, and a charge that cuts car journeys by 3 per cent shifts bus demand to the right. A price fall and a demand shift happening together is exactly the case in which an elasticity cannot be identified. There is a second contamination pulling the other way: the extract says the busiest services are crowded and no vehicles have been added, so 49.4 million is a rationed quantity rather than the quantity demanded at £2. Work out which way each one pushes, because they push opposite ways. The parking charge lifts

part of the 19.9 per cent rise without any help from the fare, so the observed response overstates the price response and the estimate is biased away from zero. The rationing works on the later observation: 49.4 million is less than the quantity that would have been demanded at £2, so the observed rise understates the true one and the estimate is biased towards zero. The two cannot be netted off from this data, so the direction of the overall bias is unknown. Note that this is the mirror image of Extract A, where the rationing sits on the earlier observation and therefore pushes the other way. The lesson is not a rule about rationing, it is that you have to work out which observation the problem sits on. Credit heavily a student who spots either, and very heavily one who spots both. Note also that the revenue fall is not independent evidence, because it is arithmetically implied by the same two numbers.

The policy framing most answers miss. A £2 cap is a maximum price to the passenger, but it is not the standard maximum price question, and this is worth saying to the class. Operators are compensated for the difference, so the price producers receive is unchanged. Drawing the textbook price ceiling, with quantity contracting along the supply curve, contradicts the data on the facing page, where journeys rose 8.2 million. The correct picture is a fall in the price paid by passengers with the producer price held up by the compensation, quantity demanded rising, and the quantity actually carried limited in the short run by vehicles rather than by willingness to supply. That is why the excess demand appears as crowding rather than as a shortage of service.

The case for keeping it. Nearly 20 per cent more journeys for £39.5 million is about £4.82 of public money per extra journey, and car journeys fell 3 per cent alongside it, which carries external benefits in congestion and emissions if the fall is genuinely caused by the cap.

The case against. The 3 per cent fall in car journeys cannot be attributed to the cap, for the same reason the elasticity cannot: the parking charge is in the same period. The supply side argument is stronger still. Operators have not added vehicles because compensation is agreed annually, so the cap has raised the quantity of journeys demanded without raising supply, and crowding will eventually undo the gain. This is the strongest argument in the extract and the one most students miss.

A strong judgement. Keep the cap but move compensation to a multi year commitment so operators will invest in capacity, because otherwise the policy buys journeys the network cannot carry. The condition that would change the answer: if the parking charge explains most of the car journey fall, the external benefit case weakens and the cap has to be justified on affordability grounds alone.

The quantitative skills that actually appear

Skill	How to calculate it	What students get wrong
Percentage change	Change divided by the original x 100	Always the original, never the new figure. This is the most common arithmetic slip in the subject.
Index number	Value in year divided by value in base year x 100	An index of 83 means 17 per cent below the base year, not 83 per cent below it.
From an index back to a level	Index divided by 100 x base year value	Useful when the extract gives you an index and asks about actual amounts.
Real from nominal	Nominal value divided by price index x 100	A rise in a nominal figure is not a rise in the real one unless it beat inflation.
Price elasticity of demand	Percentage change in quantity demanded divided by percentage change in price	Valid only if other influences are held constant. Two observations years apart rarely qualify.
Income elasticity of demand	Percentage change in quantity demanded divided by percentage change in income	The sign tells you the type of good, so state it.
Cross elasticity of demand	Percentage change in quantity of one good divided by percentage change in price of another	Positive means substitutes, negative means complements.
Price elasticity of supply	Percentage change in quantity supplied	Time is the main determinant, which matters

	divided by percentage change in price	when an extract covers several years.
Percentage point	The arithmetic difference between two percentages	A rise from 4 to 6 per cent is two percentage points and a 50 per cent increase. Both are correct and they are not the same claim.
Market share	One firm's or product's sales divided by total market sales x 100	Both figures must cover the same market and the same period.

Calculation drill

#	Question	Answer
1	Calculate the percentage change in installations between 2023 and 2025.	27,000 divided by 36,000 x 100 = 75 per cent.
2	Calculate the percentage change in the average installed price between 2023 and 2025.	£2,300 divided by £13,500 x 100 = a fall of 17.0 per cent.
3	The price index in 2025 is 83.0. Show that this agrees with the prices given.	£11,200 divided by £13,500 x 100 = 83.0, so the index and the prices are consistent.
4	Calculate the percentage change in trained installers between 2023 and 2025.	1,800 divided by 3,100 x 100 = 58.1 per cent.
5	Calculate the total cost of the grant scheme in 2025.	£7,500 x 63,000 = £472.5 million.
6	Calculate the total estimated external benefit created in 2025.	£2,400 x 63,000 = £151.2 million.
7	Calculate the gap per installation between the grant and the estimated external benefit.	£7,500 minus £2,400 = £5,100 per installation.
8	Calculate heat pumps as a percentage of all heating installations in 2025.	63,000 divided by 1,663,000 x 100 = 3.8 per cent.
9	Divide the percentage change in quantity by the percentage change in price for 2023 to 2025, then explain why the result is not a price elasticity of demand.	75 divided by minus 17.0 = minus 4.4. Note first that a supply shift along a stable demand curve would be a legitimate way to identify a demand elasticity, so that is not the objection. It fails because the extract says firms were turning work away in 2023, which means that quantity was rationed by capacity and is not a point on the demand curve, and because two years is long enough for the determinants of demand to move as well.
10	If the £2,400 external benefit were annual rather than lifetime, calculate how many years the grant would take to repay itself.	£7,500 divided by £2,400 = 3.1 years.

The fourteen errors that cost the most

Error	What it looks like	The fix
Quoting the extract	A sentence lifted from the extract with nothing added.	Every quotation must be followed by a therefore.
Calculating and stopping	A correct number with no interpretation.	The calculation mark is small. Say what the number means for this market.
Correlation as cause	Two things moved together, so one caused the other.	Ask what else changed in the period. There is usually something, and the extract usually mentions it.
Invalid elasticity	Dividing two percentage changes measured years apart.	Do it, then reject it, and explain why. That earns more than either alternative.
Index misread	An index of 83 read as a fall of 83 per cent.	An index is relative to the base year. 83 means 17 per cent below it.
Percentage and percentage point	A rise from 4 to 6 per cent described as a 2 per cent rise.	Two percentage points, or a 50 per cent increase. Both true, different claims.
Nominal treated as real	A rise in a money figure treated as a rise in purchasing power.	Ask whether it beat inflation before calling it a rise.
Diagram as decoration	A correct diagram next to prose that never refers to it.	Draw it only if the next sentence uses it. Otherwise the time is better spent writing.
Wrong curve	Attributing to demand a change that came	If price and quantity move in the same

	from supply, or calling a shift a movement.	direction, demand shifted. If they move in opposite directions, supply shifted.
Ignoring scale	Treating a large percentage rise from a small base as a large effect.	63,000 is 75 per cent up and still under four per cent of the market. Both facts belong in the answer.
Judgement at the end only	Four descriptive paragraphs and one evaluative one.	Weigh as you go. Answers that save judgement usually never reach it.
Accepting the data	Treating every figure in the extract as reliable and unambiguous.	Challenging a figure is one of the highest value moves in a data response, and almost nobody does it.
Answering whether, not how far	A to what extent question answered yes or no.	The answer is a degree. Largely, partly, or only under these conditions.
No condition	The answer decides and stops.	One sentence: what would change my mind. It is the cheapest mark available.

Ten things to do in every data response

#	Do this
1	Read the questions before the extract. Two minutes, and everything after it is faster.
2	Label every number as you read: level or change, absolute or percentage, index or actual, real or nominal.
3	Write direction and magnitude in the margin. If the extract gives two levels, calculate the percentage change before you are asked.
4	Find the trap. There is usually one figure placed so that you will misuse it.
5	Quoting the extract earns nothing. Using it earns everything. Every figure needs a therefore after it.
6	If a calculation might not be valid, do it anyway and then say why it might not be. That earns more than leaving it out.
7	If price and quantity move in the same direction, demand shifted. If they move in opposite directions, supply shifted.
8	A big percentage rise from a small base is still a small market. Say both.
9	Take a position early and spend the rest of the answer earning it.
10	Finish with the condition. What would change your mind, in one sentence. Most students never write it.

Before Lesson 1

#	Do this	Why
1	Print Extract A and the data, and the student page.	Those are the pages every student needs first.
2	Do not hand out the questions in Lesson 1.	The habit being built is reading a data set properly before you know what will be asked.
3	Read the trap before you teach Lesson 2.	You will handle the elasticity discussion better having worked out why the calculation fails.
4	Check the assessment pattern against your current specification.	Tariffs here are chosen for teaching, not copied from any series.

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