

Visual Communication Design Units 3 & 4

Chapter 9 — Design factors & influence

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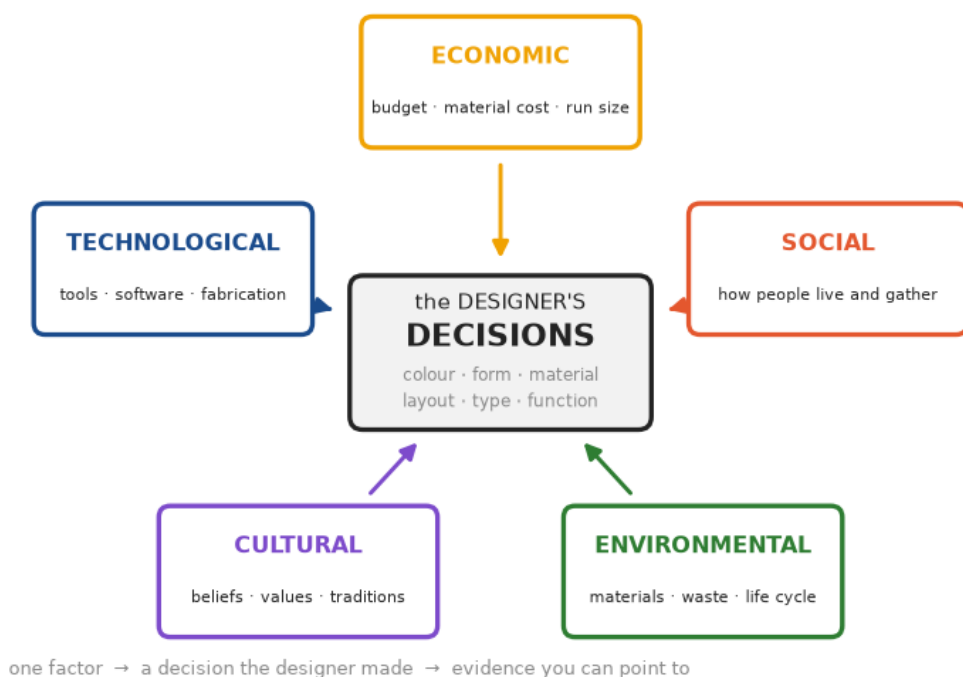
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Chapter 9 Influences on design & design's influence — 9A The five factors

Theory

Designers do not make decisions in a vacuum. Every project sits inside a set of conditions — how much money there is, what machines and software are available, who the design is for and how those people live, what a community believes and values, and what the design will cost the natural world. The Study Design calls these conditions **factors**, and it names exactly five: **economic**, **technological**, **cultural**, **environmental** and **social**.

These five terms are examinable wording. Unit 3 Area of Study 1 requires you to “explain the economic, technological, cultural, environmental and social factors that influence design practices”, and Unit 3 Area of Study 2 requires you to analyse “the influence of technological, economic, cultural, social or environmental factors on design decisions”. The order changes; the five terms do not.



A factor influences the DESIGNER, not just the world. This is the single most important idea in the subtopic and the place where most examination marks are lost. A factor question is never asking you to explain why the world needed the design. It is asking what the **designer** did differently because of that factor — which material they specified, which colours they chose, how they laid out the page or the screen, what form they gave the object, what they left out. Write about decisions, and point to where you can see them.

The five factors.

Factor	What it covers	Decisions it typically shapes	Evidence to look for
Economic	The money and resources available: the client's budget, the cost of materials and labour, the size of the production or print run, freight and storage, what the audience can afford.	Number of parts and components; a cheaper substrate; number of print colours; standard stock sizes; flat-packing; reusing one layout across a range.	One-colour printing; a standard bag or board size; few components; no special finishes; repeated identical parts.
Technological	The tools, software, machinery, processes and platforms available to the	How a form is fabricated; the level of detail a process can hold; what a screen	Flat cut profiles; moulded seams; flat colour instead of photography;

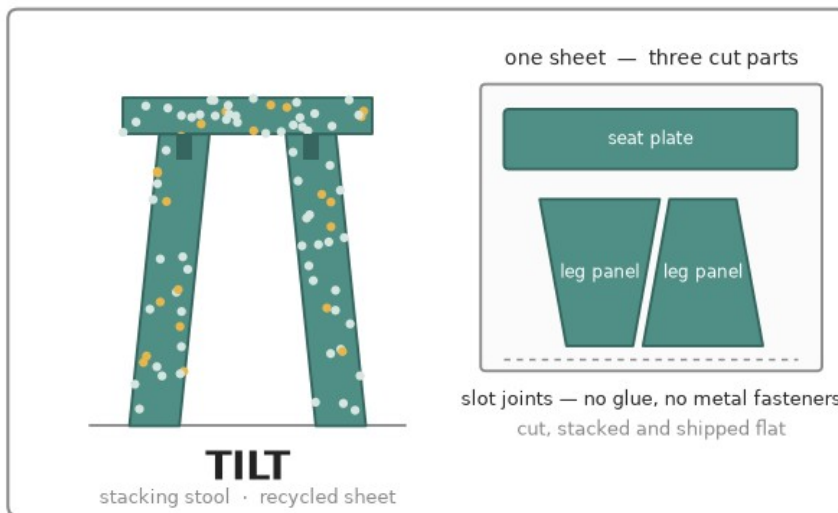
Factor	What it covers	Decisions it typically shapes	Evidence to look for
Cultural	designer, and the technology the audience owns and uses.	can render; file formats; whether a design must work offline.	responsive or sized screens; offline capability; QR codes.
	The shared beliefs, values, traditions, histories, languages and symbols of a particular community or group.	Colour meanings; imagery, motifs and symbols; typeface choice; language and translation; what may or may not be depicted; how cultural material is used.	A culturally specific motif; bilingual type; a heritage reference; a traditional form or pattern; an acknowledgement.
Environmental	The impact of the design on the natural world, and the physical conditions of the site: materials and their life cycle, waste, energy, climate, orientation, weather.	Material selection; single-material construction; avoiding glues and laminates; designing for refill, repair or disassembly; siting and orientation; durable finishes.	Recycled or mono-material construction; no metal fasteners; a refillable format; shading, skylights or a raised platform.
Social	How people live, work, travel, gather and behave: household size, an ageing population, accessibility and inclusion, safety, health, changing patterns of work.	Scale and ergonomics; modularity; legibility and contrast for a wide range of users; tap-target size; plain language; how many people a thing seats or serves.	Adjustable or modular parts; large type and high contrast; a light, portable form; more than one way to complete a task.

Cultural or social? These two are confused more often than any other pair. **Cultural** factors are about what a particular group *believes, values and passes on* — its traditions, symbols, language and histories. **Social** factors are about how people *live and behave* — household size, age, mobility, work patterns, who gathers with whom. “Families are getting smaller and homes are getting smaller” is social. “In this district, the harvest is marked with a shared meal every autumn” is cultural.

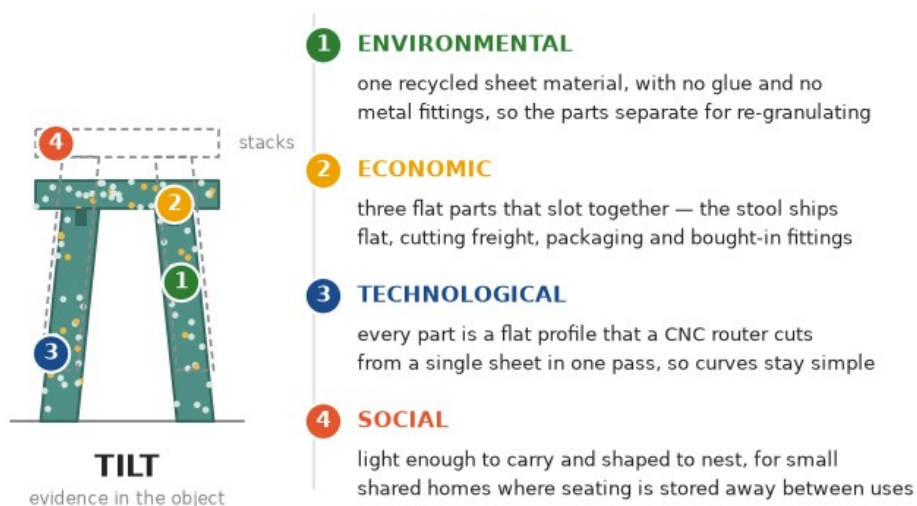
Factors are not elements, principles or criteria. A design **element** (colour, shape, type) and a design **principle** (contrast, hierarchy) belong to visual language. A factor is an outside condition that pushed the designer toward one element or principle choice rather than another. Design criteria and constraints, which you write in a brief, are the project’s own rules; a factor sits behind them.

The analytical move. A response that earns full marks does three things, and a strong one adds a fourth:

1. **Name the factor** using the Study Design’s exact term.
2. **Name a decision the designer made** in response to it — a material, colour, form, layout, typeface or functional choice.
3. **Point to the evidence** for that decision in the design example — something visible or functional that a reader can check.
4. **Say what the decision achieves** for the audience, users or purpose.



Consider the original design example above: **TILT**, a stacking stool for small households, cut from recycled sheet. Three flat parts — a seat plate and two identical leg panels — slot together without glue or metal fittings, and the assembled stools nest so they can be stored in a stack. Almost every visible feature of this object is the trace of a factor acting on the designer.



Read the annotated breakdown as four separate chains, not one. **Environmental** factors shaped the material and the joining method; **economic** factors shaped the part count and the flat-pack format; **technological** factors shaped the profiles, because a flat-sheet cutting process can only produce shapes it can cut in one pass; **social** factors shaped the weight and the nesting, because the people who buy this stool live in small, shared homes and put their seating away.

Matching marks to the command term.

- **Identify / Name a factor (1 mark)** — the exact term, nothing else. Only the first answer is marked.
- **Explain how one factor may have influenced the designer (3–4 marks)** — the factor, at least one and usually two decisions, evidence, and what the decisions achieve.
- **Discuss, with evidence, how two factors influenced the design decisions (6 marks)** — two genuinely different factors, each given its own decision and its own evidence.
- **Compare how a factor influenced two designers (6 marks)** — a congruent two-sided treatment: the same factor, traced through both examples, with a similarity and a difference drawn out.
- **Evaluate (3+ marks)** — a judgement about how convincingly the influence can be argued from the evidence, with both the strong and the weak side of the case.

Watch-out — use the exact five terms. Assessors report that responses saying “sustainability” instead of **environmental** factors, or “budget”, “money” or “financial” instead of **economic** factors, lose the terminology marks even when the reasoning is sound. If you catch yourself writing “trends”, stop and decide whether you mean **social** or **cultural**, then say which.

Watch-out — write about the designer, not the need. Explaining that electronic waste is a problem, so an information kit was needed, describes the design problem. It does not explain how environmental factors shaped the designer’s choices of colour, imagery, material or composition. Always finish the sentence “because of this factor, the designer chose to ...”.

Watch-out — give evidence from the example. A factor response without visual or functional evidence reads as generic and pre-learned, and assessors mark it down for exactly that. Name the thing you can see: the flecked surface, the single ink colour, the offline chip, the blank price panel.

Watch-out — choose a factor the example can actually support. Forcing a cultural reading onto a design that shows no cultural evidence produces a strained answer. Scan the example first, decide which factor leaves the clearest fingerprints, and write about that one.

Watch-out — two factors must be two. If a question asks for two factors, do not write the same point twice under two labels. Where a single decision could be attributed to two factors (recycled material is both **economic** and **environmental**), commit to one, evidence it, and give the second factor a decision of its own.

Worked examples

Example 1 — scaffolded

Explain how one factor may have influenced the designer of the TILT stool. (4 marks)

Working	Comment
Factor: environmental factors.	Open by naming the factor in the Study Design’s exact term. “Sustainability” describes the same idea but is not the examinable term and will not be credited.
Decision — material. The designer specified one recycled sheet material for all three parts, rather than a timber seat on a steel frame.	Move straight to a decision the designer made. Explaining that the world produces too much furniture waste would describe the need, not the designer.
Decision — joining. The parts are slot-jointed, so there is no glue, no laminate and no metal fitting anywhere in the object.	A second, different kind of decision (construction rather than material) earns the second and third marks.
Evidence. The flecked recycled surface is visible across the seat and both legs, and the slots are exposed where each leg panel keys into the seat plate.	Every claim needs evidence that can be seen or checked in the example. Assessors single this out as the difference between a 2-mark and a 4-mark response.
Effect. Because the stool is one material and can be pulled apart by hand, it can be re-granulated at end of life instead of going to landfill.	Close the chain by saying what the decisions achieve. This is what lifts a listed response to full marks.

Example 2 — scaffolded

A student wrote the response below to the question “Explain how one factor may have influenced the designer of the TILT stool.” Identify two faults in the response, then rewrite it so that it would gain full marks. (4 marks)

“Money was a big factor. Flat-pack furniture is cheap to buy and a lot of people cannot afford expensive furniture at the moment, so there is a real need for a low-cost stool.”

Working	Comment
Fault 1 — terminology. “Money” is not one of the five factors. The correct term is economic factors .	Terminology is marked in its own right. This is the most commonly reported wording error, alongside “budget” and “sustainability”.
Fault 2 — wrong target. The response explains why there is a <i>need</i> for a low-cost stool. It never says what	The headline trap. Test every sentence against “what did

Working	Comment
the <i>designer</i> did because of the factor. <i>(A third fault, worth naming if you have room: no evidence is drawn from the example.)</i> Rewrite. “Economic factors have influenced the designer of the TILT stool. To hold down unit and freight costs, the designer reduced the stool to three flat parts cut from a single sheet and joined them with slots rather than bought-in screws or brackets, so no fittings have to be purchased, counted or packed. The two leg panels are identical, so one cut profile serves twice and only two profiles are programmed in total. The three parts nest inside one flat carton, so a pallet carries many more stools than it would assembled. The evidence is in the object: the two matching leg panels, the exposed slots where they key into the seat, and a form made entirely of straight-edged flat pieces.”	the designer choose to do?” Where a question asks for “two faults”, give the two strongest and note a third only briefly. The rewrite does the three things the assessors ask for — the exact term, decisions the designer made, and evidence from the example — and it closes with what the decisions achieve.

Example 3 — unscaffolded

Explain how one factor may have influenced the designer of the COBALT regional transit app. (4 marks)

Technological factors have influenced the designer of the COBALT app. Because the app is used across a regional network where mobile coverage drops out between towns, the designer could not assume a live data connection and has instead designed the interface to hold the timetable and the ticket on the device itself; this is stated to the user by the “works offline” status chip and by the ticket panel, which declares its own two-hour validity rather than checking a server each time it is shown. The same technological condition has shaped how the screens are drawn: information is carried by flat colour blocks, generous type and simple rectangular cards rather than by photography or a live map, so the screens load quickly on the older, lower-specification handsets that are common outside the cities. The technology available to the users has therefore determined both what the designer put on the screen and how it is rendered, not merely what the app is for.

Example 4 — unscaffolded

Discuss, with evidence, how two factors have influenced the design decisions in the MILLET grain co-op packet. (6 marks)

Cultural factors. MILLET sells a heritage grain back into a farming district where growing, milling and sharing grain is part of local identity, and the designer has worked with that tradition rather than against it. The name is set in a serif typeface with the proportions of an older mill label instead of a contemporary sans-serif; the grain is shown as a drawn seed head rather than a photograph, which reads as a maker’s mark rather than a brand image; and the line “grown & milled within 60 km” places the product inside the district. The evidence is the serif wordmark, the illustrated seed head and the absence of any photographic or supermarket-style imagery.

Economic factors. The co-op is small and member-run, buying short runs, and the designer has removed cost from every part of the packet. It is printed in a single ink colour on a stock, unlaminated kraft bag rather than a four-colour printed pouch; the weight and price are left as a ruled blank panel for the shopkeeper to fill in by hand, so one bag serves every grain and every quantity instead of a separate printed bag for each; and there is no window, no label and no secondary packaging. The evidence is the one-colour printing, the blank panel ruled “kg” and “\$”, and the plain uncoated stock.

Both factors push the designer toward the same plain, printed-once, hand-finished packet, but for different reasons: the cultural factor is about belonging to a district and its traditions, while the economic factor is about a small co-op keeping its costs down. Reading them separately, and evidencing each from the packet, is what makes this a discussion of two factors rather than one point stated twice.

Practice questions

Scaffolded

Q1. Factor terminology: (a) State the five factors named in the Study Design. (2 marks) (b) A student writes about “sustainability factors” and “budget factors”. Give the correct Study Design term for each. (2 marks) (c) State one reason why using the exact terms matters when answering a factors question. (1 mark)

Q2. Using the TILT stool: (a) Identify one factor, other than environmental factors, that has influenced the designer. (1 mark) (b) Describe one decision the designer made in response to that factor. (2 marks) (c) State the evidence in the stool that supports your answer. (1 mark)

Q3. Cultural and social factors: (a) Distinguish between cultural factors and social factors. (2 marks) (b) Explain why “more people are living in small, shared apartments” is a social factor rather than a cultural factor. (2 marks) (c) State one cultural factor a designer of packaging for an imported food product might respond to. (1 mark)

Q4. Using the COBALT app: (a) Name the factor a designer is responding to when they design an interface to work without a mobile signal. (1 mark) (b) Explain how environmental factors may have influenced the designer of COBALT. (2 marks) (c) Explain why cultural factors would be a weak choice of factor for this design example. (2 marks)

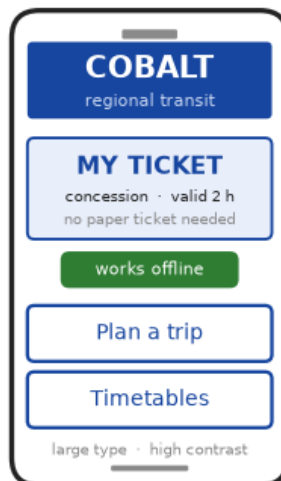
Q5. The method: (a) A complete response to a factors question has three parts. State them. (3 marks) (b) Explain why a response that names the correct factor but gives no evidence from the design example cannot receive full marks. (2 marks)

Q6. Attributing a decision: (a) The designer of TILT chose a recycled sheet that costs slightly more than new sheet but keeps waste out of landfill. Name the two factors this single decision could be attributed to, and explain how you would decide which one to write about. (2 marks) (b) A question asks you to discuss two factors. Explain why writing “economic, because the stool is cheap to make” and “economic, because the client had a small budget” would not gain full marks. (2 marks)

Un scaffolded



MILLET — grain co-op packet
field: Messages



COBALT — regional transit app
field: Interactive experiences

Questions 7–18 refer to the MILLET grain co-op packet and the COBALT regional transit app shown above, and to the TILT stool shown earlier, as indicated in each question.

Q7. Explain how environmental factors may have influenced the designer of the MILLET packet. (4 marks)

Q8. Discuss, with evidence, how two factors have influenced the design decisions in the COBALT app. Do not use technological factors. (6 marks)

- Q9.** Explain how technological factors may have influenced the designer of the TILT stool. *(3 marks)*
- Q10.** Compare how technological factors have influenced the designers of the MILLET packet and the COBALT app. *(6 marks)*
- Q11.** A student claims: “The TILT stool shows the influence of cultural factors, because young people today like minimalist Scandinavian style.” Evaluate this claim. *(4 marks)*
- Q12.** Explain how social factors may have influenced the designer of the MILLET packet. *(3 marks)*
- Q13.** A regional council has commissioned a shelter and seating for a riverside walking path. Explain how environmental factors would influence the designer’s decisions, referring to at least two specific decisions. *(4 marks)*
- Q14.** Using the COBALT app, explain the difference between a factor that influenced the **designer** and a factor that created the **need** for the design. *(4 marks)*
- Q15.** Designers often find that two factors pull their decisions in opposite directions. Using the TILT stool, explain one tension between economic factors and environmental factors, and how the designer has resolved it. *(4 marks)*
- Q16.** A regional gallery is commissioning a visual identity for an annual harvest festival. Explain how cultural factors and social factors would influence the designer’s decisions differently. *(4 marks)*
- Q17.** For each of the three design examples in this subtopic, name the factor you consider is most strongly evidenced, and justify each choice in one sentence. *(3 marks)*
- Q18.** Choose one of the three design examples in this subtopic. Discuss, with evidence, how three of the five factors have together influenced a single design decision made by the designer. *(6 marks)*

Answers

Q1. (a) Economic, technological, cultural, environmental, social. (b) Sustainability = environmental factors; budget = economic factors. (c) See solutions. **Q2.** (a) Social (accept economic or technological). (b)–(c) See solutions. **Q3.** (a) Cultural = shared beliefs, values, traditions and symbols of a group; social = how people live, work and gather. (b)–(c) See solutions. **Q4.** (a) Technological factors. (b)–(c) See solutions. **Q5.** (a) Name the factor using the exact term; name a decision the designer made; point to the evidence in the example. (b) See solutions. **Q6.** (a) Economic and environmental. (b) See solutions. **Q7–Q18.** See fully-worked solutions.

Fully-worked solutions

Q1. (a) **Economic, technological, cultural, environmental and social** factors (*2 marks: all five for 2, three or four for 1*). (b) “Sustainability factors” should be **environmental factors**; “budget factors” should be **economic factors**. (c) Any one reason, for example: the examination credits the Study Design’s own terminology, so a response that says “sustainability” or “budget” has not identified the factor and loses that mark even when the reasoning behind it is sound.

Q2. (a) **Social factors** (*accept economic or technological, marked on the working below*). (b) The designer made the stool light enough for one person to carry with one hand and tapered the leg panels so that stools nest inside one another when stacked, rather than designing a heavier fixed-height stool that has to stay where it is put (*2 marks: a decision about form and weight, attributed to the factor*). (c) The splayed, tapering leg panels and the thin sheet construction are visible in the stool, and the annotated breakdown shows a second stool nesting above the first.

Q3. (a) **Cultural factors** concern what a particular community believes, values and passes on — its traditions, histories, languages and symbols. **Social factors** concern how people live and behave — household size, age, mobility, work and travel patterns, and how they gather (*2 marks: a congruent two-sided distinction, not two unrelated definitions*). (b) It describes a change in the way people live and in the size of the household, not a belief, tradition or symbol held by a particular community. A designer responding to it would change the scale, weight or storability of what they design, which is a response to a social factor. (c) Any one of: the language spoken by the community the product is sold to; dietary or religious conventions that must be shown or avoided; a colour or symbol that carries a different meaning in that culture; a traditional motif associated with the food.

Q4. (a) **Technological factors**. (b) The designer replaced the printed paper ticket with a ticket held on the user’s own device, shown by the “MY TICKET” panel and the line “no paper ticket needed”. The decision removes the paper, ink and ticket-machine waste generated by a printed ticket for every journey (*2 marks: a decision plus its evidence*). (c) There is no evidence in the COBALT screens of any particular community’s beliefs, values, traditions, language or symbols shaping the designer’s choices — the palette, the plain English labels and the unadorned rectangular cards are generic to the transit category. A cultural answer would therefore have to be invented, and assessors describe such forced connections as weakening the response. This is not to say interfaces never respond to cultural factors — a network map carrying Traditional Owner place names, or an interface offered in several languages, would be clear evidence — but nothing of that kind is visible here, so technological, social or environmental factors are the defensible choices.

Q5. (a) 1. Name the factor using the Study Design’s exact term. 2. Name a decision the designer made in response to it (material, colour, form, layout, type or function). 3. Point to the evidence for that decision in the design example (*3 marks, one each; a fourth step — what the decision achieves — lifts a strong response further*). (b) Without evidence the response could have been written about any design example at all, so it demonstrates no analysis of the one in front of you. Assessors report marking down responses that are generic or rehearsed for exactly this reason: the claim about the designer is not grounded in anything a reader can check.

Q6. (a) **Economic factors** and **environmental factors**. Decide by asking which factor the evidence for *this particular decision* actually supports. The recycled sheet costs more than new sheet, so choosing it cannot be evidenced as a saving; what it does deliver is a single recycled material that can be pulled apart and re-granulated, so the stronger claim for the material decision is environmental. Economic factors are still at work in this stool, but they are evidenced by *different* decisions — the three-part count, the one leg profile cut twice, and the flat-pack format — so if the question asks for two factors, give each factor a decision and evidence of its own rather than reading the same decision twice (*2 marks: both factors named + a workable rule for choosing*). (b) Both halves name the same factor

and make the same point about cost in different words, so only one factor has actually been discussed. The question asks for two factors, and marks are allocated to two separate factor-to-decision chains, each with its own evidence.

Q7. Environmental factors have influenced the designer of the MILLET packet. First, the designer specified a single uncoated kraft board with no plastic window, no foil layer and no laminate, so the empty packet is one material that can go into paper recycling or compost; the plain brown, ink-on-board surface is the evidence, since a laminated or windowed pack would look and feel different. Second, the designer has designed the packet to be superseded rather than repeated: the line “refill · bring your own jar” and the ruled blank weight panel invite the customer to buy in bulk next time, so the packaging is positioned as a one-off carrier rather than something reprinted for every purchase. Together these decisions reduce the material entering the waste stream, which is what an environmental factor asks of a packaging designer (4 marks: exact term, two decisions, evidence for each, effect stated).

Q8. Social factors. The COBALT network serves regional towns, where the people most dependent on public transport are often older residents, students and people without a car, using the app in bright outdoor light at a roadside stop. The designer has responded by scaling the interface up rather than packing it in: two large full-width buttons instead of a dense menu, a ticket panel set in large bold type, high contrast between dark blue and white, and plain wording (“Plan a trip”, “Timetables”) in place of icons that would have to be learned. The evidence is the size of the tap targets, the type scale and the “large type · high contrast” treatment across all the screens.

Economic factors. A regional operator has a thin revenue base and cannot install and maintain ticketing hardware in every town. The designer has responded by moving the whole ticket onto the passenger’s own phone — the “MY TICKET” panel is the product, not an accessory to a machine — and by building the concession fare into that same panel rather than into a separate flow, so one screen covers the network’s main fare types. The evidence is the ticket panel labelled “concession · valid 2 h” sitting at the top of the home screen, above trip planning.

The two factors are distinct: the social factor shaped the *scale and legibility* of the interface, while the economic factor shaped *what the interface has to do* in place of physical infrastructure (6 marks: two different factors, each with decisions and evidence, and the difference between them made explicit).

Q9. Technological factors have influenced the designer of the TILT stool. The stool is made on a flat-sheet cutting process, so the designer restricted the whole object to shapes that can be cut as flat profiles from one sheet in a single pass — straight tapers, simple radii and open slots, with no moulded curve, no bent section and no undercut anywhere in the object. The evidence is the three flat parts nested in one sheet and the exposed slot joints, both of which are the direct signature of a cutting rather than a moulding process (3 marks: exact term, a decision about form driven by the process, evidence from the example).

Q10. Both designers have let the **production technology** available to them determine what their visual language can be, but the constraint bites in different places.

For the MILLET packet the limit is a printing process: a single-colour print on an absorbent, uncoated kraft board cannot hold fine tonal detail or a photograph, so the designer has worked in flat solid areas — a drawn seed head made of simple discs, a serif wordmark heavy enough to survive ink spread on a rough stock, and a ruled panel that a shopkeeper completes by hand rather than a variable-data print. The technology sets the *palette and the level of detail*.

For the COBALT app the limit is the delivery device and the network: the designer cannot assume a signal or a recent handset, so the interface stores its ticket and timetable locally and is built from flat rectangles, solid colour and type that render instantly on a low-specification screen. The technology sets *what the interface can do without a connection*, and only then how it looks.

The similarity is that in each case the technology has pushed the designer toward flat colour and simple shapes and away from imagery. The difference is the kind of limitation: MILLET’s is a fixed, one-off manufacturing constraint at the moment of printing, while COBALT’s is a variable, ongoing constraint that changes with the user’s device and location, so the designer had to build a response to it into the product itself (6 marks: congruent two-sided treatment, evidence on both sides, similarity and difference).

Q11. The claim is only partly defensible. Its strength is that it does identify a real influence: a preference for pared-back, flat-pack furniture is genuinely shaping what designers of small-space furniture produce, and TILT does sit within that preference. Its weakness is twofold. First, a taste for a style is better described as a **social** factor — a change in how people live and furnish small, shared homes — than as a **cultural** factor, which concerns the beliefs,

traditions, languages and symbols of a particular community; the claim uses the wrong one of the five terms. Second, the claim offers no evidence from the stool itself and never states a decision the designer made; “young people like minimalist style” would apply equally to any plain object. A stronger version would keep the observation but re-label it social and attach it to evidence: because small shared households store their seating, the designer made the stool light and tapered it so stools nest. Overall the claim should not be accepted as written, because it misapplies the terminology and asserts an influence without evidence (4 marks: a strength, two limitations, and a judgement).

Q12. Social factors have influenced the designer of the MILLET packet. Bulk and refill buying is now a normal part of how households shop, particularly where cost-of-living pressure has people buying by weight rather than by pack, and the designer has built that behaviour into the packet: the weight and price are a ruled blank panel completed at the counter, and the instruction “refill · bring your own jar” is printed on the front of the pack rather than hidden on the back. The evidence is the blank panel ruled “kg” and “\$” and the refill line, both of which assume a shopper who is served rather than one who takes a sealed unit off a shelf (3 marks: exact term, a decision, evidence).

Q13. Environmental factors would shape the designer’s decisions about siting, material and detail. First, the designer would orient the shelter and its seating to the site: setting the open side away from the prevailing wind and extending the roof overhang on the northern side so the seats are shaded through summer but catch low winter sun, which is a decision about the form and the plan of the structure, not just where it is put. Second, the designer would select materials for the conditions of a riverside site — a durable, UV-stable and water-tolerant material for the slats and a platform set above the recorded flood level — and would fix the slats individually so a damaged one can be replaced without demolishing the seat, extending the life of the structure. Both decisions follow from the physical conditions of the site and the intention to reduce replacement and waste over the structure’s life (4 marks: exact term, at least two specific decisions, each reasoned from the environmental condition).

Q14. A factor that created the **need** for the design belongs to the design problem: for COBALT, it is true that a regional community with poor transport information and no ticket machines needed a better way to plan and pay for a trip. Stating that identifies the problem the client brought to the designer. A factor that influenced the **designer** shows up in the decisions inside the finished design: because coverage across the network is unreliable, the designer chose to store the timetable and the ticket on the device and to tell the user so with the “works offline” chip; because the users are often older and standing outside, the designer chose large tap targets, high contrast and plain wording. The test is simple — if the sentence would still be true with no design example in front of you, it is about the need; if it names something the designer chose and you can point at it on the screen, it is about the designer (4 marks: both sides defined, illustrated from the example, and a usable test given).

Q15. The tension is that recycled sheet costs more per square metre than new sheet, so the **environmental** decision to specify a recycled material works against the **economic** pressure to keep the unit cost down. The designer has resolved it by recovering the cost elsewhere in the same object rather than by abandoning the material. The stool was reduced to three parts, so there is less material in it to begin with; the two leg panels are identical, so one profile is cut twice and the parts nest tightly in the sheet with little offcut; and the slot joints remove every screw, bracket and glue line, so there are no bought-in components to purchase, count, pack or pay someone to fit. The saving on parts, assembly labour and flat-pack freight offsets the higher price of the sheet, which is why both factors can be read in the finished object at once (4 marks: the tension stated in both terms, the resolving decisions named, and evidence from the stool).

Q16. Cultural factors would shape what the identity *depicts and says*. The designer would draw on what this district holds in common — the crops actually grown there, a long-standing festival emblem, the harvest customs the event marks, and the languages spoken by the farming families who attend — and those would drive the choice of motif, the colour associations, the typeface and whether copy is produced in more than one language. If any Aboriginal or Torres Strait Islander cultural material is involved, the designer would also be bound by cultural protocols, which are an ethical rather than a legal obligation.

Social factors would shape *how the identity has to perform*. Attendance is multi-generational and outdoors, with a wide range of eyesight and reading confidence, and most people arrive by car and read signs at distance. Those conditions push the designer toward large scale, strong contrast, plain language, and an identity that survives being applied to a banner, a ticket, a stall sign and a phone screen.

The difference is that cultural factors govern the *content and meaning* of the visual language, while social factors govern its *scale, legibility and range of applications* (4 marks: each factor tied to a distinct class of decision, and the distinction between them made explicit).

Q17. TILT — environmental factors: the whole object is one recycled material joined without glue or metal fittings, so it can be pulled apart and re-granulated, which is a decision no other factor explains as economically. **MILLET — economic factors:** one ink colour on a stock kraft bag with a hand-completed weight panel means a single printed item serves every grain and every quantity, which is the clearest cost-driven decision on the packet (*accept cultural, evidenced by the serif wordmark and drawn seed head*). **COBALT — technological factors:** the interface is built to hold its ticket and timetable on the device and says so with the “works offline” chip, which is a direct response to the technology available to its users (*3 marks, one per justified choice; alternatives accepted where the evidence supports them*).

Q18. (*Model, using the TILT stool and the single decision to key the parts together with slots rather than glue, screws or brackets.*) Three factors converge on that one joint, which is why it is the most informative detail in the object.

Technological factors made the decision cheap to execute: on a flat-sheet cutting process the slot is simply another line in the same toolpath as the part outline, so the joint is produced in the same pass, with no second operation, no jig and no tooling of its own. The evidence is that every slot sits on a straight edge and is the same width as the sheet is thick.

Environmental factors made it worth choosing: a glued or riveted stool is a mixture of materials that cannot be separated, whereas a slotted one comes apart by hand, so the whole object stays a single recycled material and can be re-granulated. The evidence is the absence of any adhesive line or metal fitting anywhere in the object.

Social factors made it usable: the people this stool is for live in small, shared homes, move often and store their seating, and a joint that can be pushed together and pulled apart without a tool lets them assemble the stool on delivery and flatten it again when they move. The evidence is that the joints are exposed and hand-sized rather than concealed and fixed.

All three factors are read off the same feature. That is how factors usually work in practice: they rarely act one at a time, and a designer’s strongest decisions are those that answer several at once — which is also why the slot joint, not the silhouette, is the detail worth writing about (*6 marks: three factors in the exact terms, all tied to one evidenced decision, with the convergence explained*).

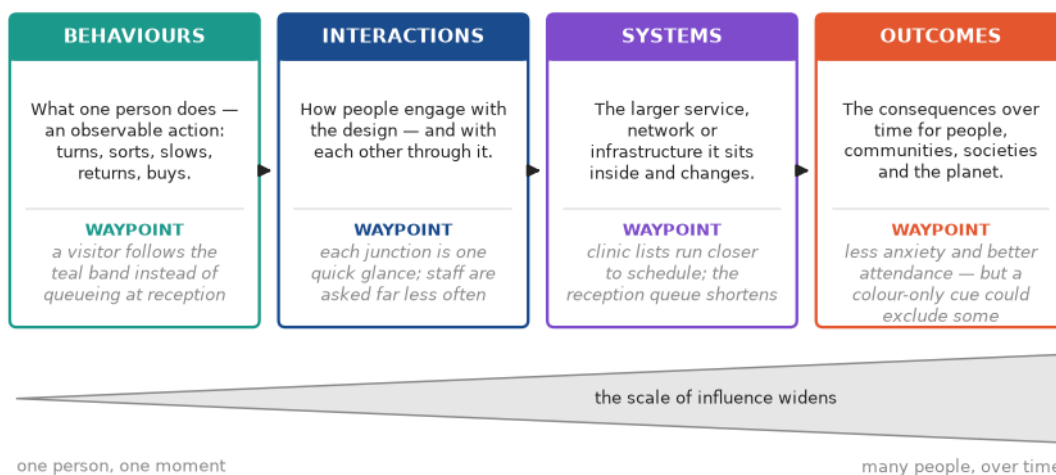
Chapter 9 Influences on design & design's influence — 9B Design's influence on behaviours & systems

Theory

Chapter 9 runs in two directions. In 9A the arrow pointed *at* the designer: the **economic, technological, cultural, environmental and social factors** that influence design decisions. This subtopic turns the arrow around. You now examine **the influence of design on behaviours, interactions, systems and outcomes** — what a design *does* to the world once it is out in it.

This is not a side-topic. The Study Design defines visual communication as “the practice of using visual language to communicate meaning and **influence behaviours**”, and defines visual language itself as a system in which designers combine **pictorial, symbolic and typographic** elements “to influence how people experience or **interact** with places, **systems** and things”. Influence is the purpose of the discipline, not an accident of it. The field of **Messages** exists partly to serve “influencing behaviour, educating viewers, guiding decision-making”; the field of **Interactive experiences** exists to ensure “the objectives of users are met when engaging with a product, system or service”.

The four levels. The Study Design names four, and they are not synonyms. Each one is wider than the last.



- **Behaviours** — what one person *does*: an observable action. Turns left. Sorts a cup. Slows down. Returns the bottle. Taps the button. A behaviour is something you could film. A feeling, an opinion or an increase in “awareness” is not a behaviour.
- **Interactions** — how people *engage with* the design, and with each other through it: the touchpoints, the sequence of steps, the length and effort of the moment of contact — and also the exchanges between people that the design makes easier, harder or unnecessary.
- **Systems** — the larger **service, network or infrastructure** the design sits inside and changes. The Study Design describes design practice as expanding “to the improvement of experiences and interactions that occur within larger systems and services”. One sign changes a walk; a signage *system* changes how a hospital runs.
- **Outcomes** — the **consequences over time** for people, communities, societies and the planet: attendance rates, injury rates, tonnes diverted from landfill, who is included and who is left out. Outcomes may be **intended** or **unintended**.

How influence actually works. A design does not persuade people the way an argument does. It changes what is easy, obvious, fast or possible. These are the mechanisms you name when you explain *how* a decision produces a behaviour.

Mechanism	How the influence works	The visual language doing the work
Salience	what is seen first is acted on first	hierarchy, scale, contrast, focal point (Gestalt)
Recognition	a symbol is understood faster than a	symbolic components, pictograms,

Mechanism	How the influence works	The visual language doing the work
	sentence, and without reading English	colour coding
Grouping	like things read as one set, so the choice is simplified	Gestalt similarity and proximity
Affordance	the shape of a thing tells you what to do with it	form, shape and scale of an opening, handle or control
Sequence	the order in which steps are met	Gestalt continuity, directional line, numbering, layout
Feedback	the design confirms that an action has registered	a change of colour, tone or state; a filling gauge
Friction	an action is deliberately made slower or harder	small type, an extra step, a resistant form, a guard
Association	how the choice <i>feels</i> , and so how willingly it is made	colour, imagery and type — the aesthetic

These mechanism names are this book's shorthand for *how* a decision does its work; they are not Study Design terms, and no examination question will ask for them by name. The examinable vocabulary is that of the right-hand column — design **elements**, design **principles**, **Gestalt** principles and the **components of visual language** — together with behaviours, interactions, systems and outcomes. Name the visual evidence and the behaviour it produces; the mechanism is the sentence that joins them, never the answer on its own.

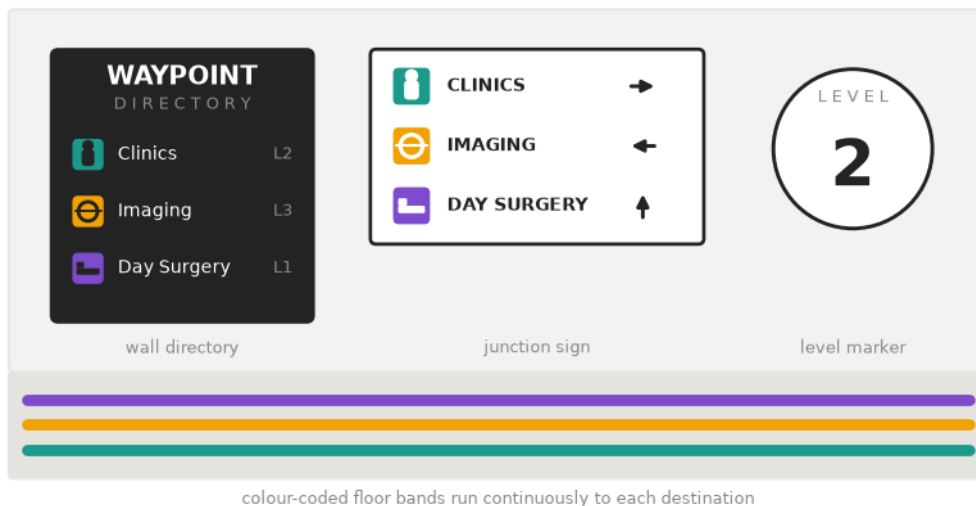
What each field typically influences. The four levels look different across the fields of design practice.

Field of design practice	What the design typically influences
Messages	decision-making and attitudes — what is noticed, believed, chosen or reported
Objects	how a thing is held, used, maintained, repaired and disposed of
Environments	how people move through, occupy and share a space; where they gather or do not
Interactive experiences	the sequence, speed and completion of a task, repeated over time

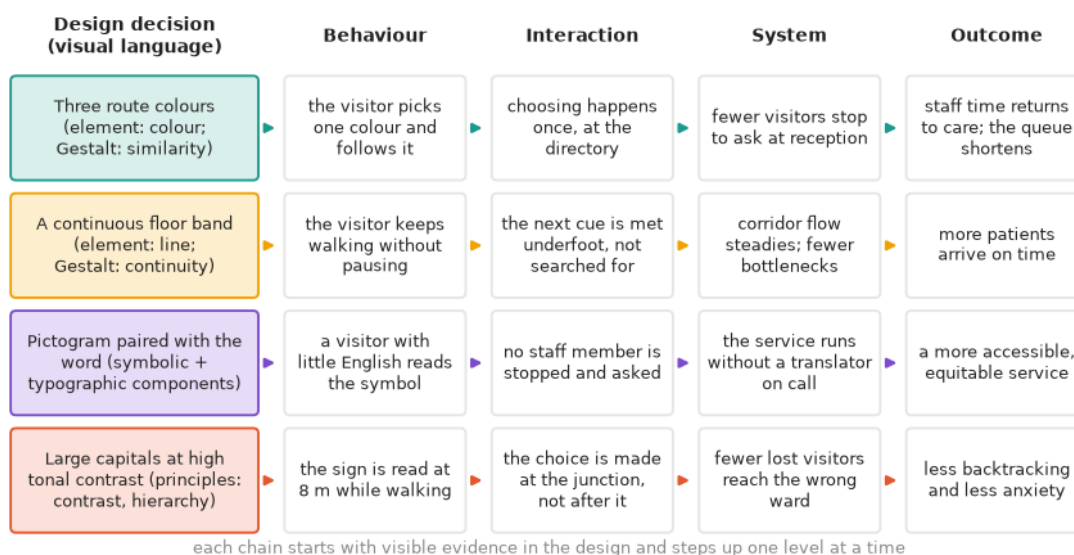
The analytical move. A full response to a 9B-style question is a four-link chain:

1. **Point to visible evidence** — name the design decision, using the design element, design principle, Gestalt principle or typographic convention you can see in the example.
2. **Name the mechanism** — salience, recognition, grouping, affordance, sequence, feedback, friction or association.
3. **Name the observable behaviour** — what a stated audience or user *does*.
4. **Step up a level** — say what that means for the interaction, the system, and the outcome over time (including any unintended one).

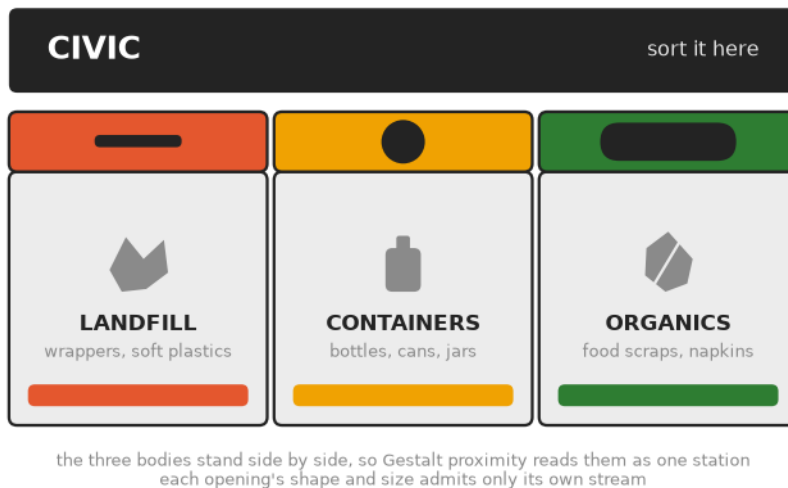
A reliable sentence stem: “*Because the designer [decision, with element/principle named], [mechanism], so [audience or user] [observable action]; across the [service or setting] this [system change], producing the outcome of [consequence for people, community or environment].*”



The design example — WAYPOINT. Above is an original wayfinding system for a fictional community hospital. Its components are not three separate designs but one **system** in several formats: a wall directory at the entrance, a junction sign at every corridor decision point, continuous colour-coded floor bands, and a numbered level marker at each lift lobby. Three routes carry three colours — teal for Clinics, amber for Imaging, purple for Day Surgery — and each colour is always paired with the same pictogram and the same word.



The annotated breakdown traces four decisions across all four levels — behaviour, then interaction, then system, then outcome, each in a column of its own. Read each row left to right and notice that nothing is explained by taste: the route colours answer the problem of choosing, the floor band answers the problem of keeping going, the pictogram answers the problem of language, and the large high-contrast capitals answer the problem of reading while walking. Notice too that each row ends somewhere the designer never touches — staff time, punctuality, equity, anxiety. That is what “influence on outcomes” means.



A second example — CIVIC. The CIVIC three-stream sorting station is an object placed in a public environment. It works through different mechanisms from WAYPOINT. **Affordance** does most of the work: the openings are shaped so that each one suits only its own stream — a thin slot for wrappers, a round hole sized for a bottle, a wide mouth for a scraped plate — so the user’s hand is guided before any label is read. Colour coding and a pictogram add **recognition**; because the three bodies stand side by side with far less space between them than around them, the Gestalt principle of **proximity** — grouping by nearness — makes them read as one station rather than three bins, and the single dark header simply names that station. The user therefore understands there is a choice to make rather than a bin to use. The narrow landfill slot also applies **friction**: putting a large item in landfill is physically awkward, which nudges the user to look again at the other two. And because the station is a shared, visible object, the person sorting is watched by the person waiting — the design changes an **interaction between people**, not only one person’s behaviour.

Intended and unintended. Every design brief states an intended influence; real designs also produce influences nobody asked for. WAYPOINT’s colour coding would exclude a visitor with colour-vision deficiency if colour were the only cue — which is exactly why each colour is doubled with a distinct pictogram and word. CIVIC placed *after* an exit rather than beside the seating will be walked past. Analysing influence honestly means naming both.

Past and present contexts. The Study Design asks you to “research and analyse the influence of design in past and present contexts”, so influence has a history. When schematic transit diagrams replaced geographically accurate maps in the 1930s — Harry Beck’s diagram for the London Underground is the standard reference — passengers began to judge journeys by connections rather than distance, a behaviour change that reshaped how a whole network was used. When standardised pictogram systems were developed for public buildings and transport in the 1960s and 1970s — the national symbol-sign programs, which drew on Otto Neurath’s earlier Isotype method for picturing social and economic statistics — people could act without a shared written language, and the convention itself became an expectation designers still work inside. You may name real designers, movements and awards as **pointers** of this kind; in the examination you analyse the design examples supplied in the Resource Book. Influence is also how a conception of good design is tested: Dieter Rams’ claim that good design “makes a product understandable” is a claim about behaviour, not about looks.

Watch-out — check the direction of the arrow. A **factors** question asks what influenced the **designer** (9A). A **design’s influence** question asks what the design changes for people, systems and the world. Writing “the environmental factor led the designer to choose recycled board” when asked how the design influences behaviour answers a different question and earns nothing.

Watch-out — a behaviour is an observable action. “People like it”, “it raises awareness” and “it makes people think” are not behaviours. Name what the audience or user physically **does**: sorts, follows, slows, returns, taps, buys, reports.

Watch-out — do not collapse the four terms. Behaviours, interactions, systems and outcomes are four different levels of the same influence. A high-scoring response steps **up** the levels; a weak one restates the first level three times in different words.

Watch-out — tie every claim to visual evidence. “The design encourages recycling” is an assertion. Name the element, principle, Gestalt principle or typographic choice you can point to in the example, then show how it produces the behaviour.

Watch-out — outcomes can be unintended. Influence is not automatically positive, and an **evaluate** question needs both sides: who is excluded, what habit is discouraged, what is made worse. Colour-only coding excludes users with colour-vision deficiency unless it is doubled with shape and text.

Watch-out — keep the three vocabularies distinct. Design **elements** (point, line, shape, form, tone, texture, colour, type), design **principles** (figure–ground, balance, contrast, cropping, hierarchy, scale, proportion, pattern) and **Gestalt** principles (proximity, continuity, similarity, closure, common fate, figure–ground, focal point) are three separate systems. Label which one you are naming when you state the mechanism.

Worked examples

Example 1 — scaffolded

Explain how one design decision in the WAYPOINT system influences the behaviour of a visitor. (4 marks)

Working	Comment
The decision: a continuous coloured band — the element of line — runs along the floor of every corridor in the same colour as the route the visitor selected on the entrance directory.	Begin with visible evidence and name the design element. A claim with no evidence in the example earns nothing.
The mechanism: because the band is unbroken, the Gestalt principle of continuity carries the eye along it, and the matching colour uses Gestalt similarity to tie the band to the route already chosen.	Name the mechanism, and label continuity and similarity as <i>Gestalt</i> — they are not design principles.
The behaviour: the visitor keeps walking and glances down at each corridor, rather than stopping to re-read a wall sign or joining the queue at reception to ask.	State an observable action. “The visitor feels reassured” is a feeling, not a behaviour.
Because the cue sits on the floor, it stays visible in a crowded corridor when wall-mounted signs are blocked by people, so the behaviour holds in the real context of use.	“Explain” wants a cause-and-effect chain that survives the context — this is where the fourth mark is earned.

Example 2 — scaffolded

Analyse how the WAYPOINT system influences interactions and the wider system of the hospital. (6 marks)

Working	Comment
The junction sign. Each row pairs a colour chip and pictogram with a route name set in large capitals at high tonal contrast , then a directional arrow.	Analyse = break the example into its element and principle choices before drawing conclusions.
Hierarchy places the route name first and the arrow last, so the interaction is a single glance of about a second rather than a paragraph of reading.	Show what the choice does to the <i>interaction itself</i> — its length, effort and sequence.
Interactions between people. Because the pictogram carries the meaning without English, a visitor no longer needs to stop a staff member to ask; the exchange the design removes is itself an interaction.	An interaction is not only the moment of contact with the sign. It also covers the exchanges <i>between people</i> that the design creates or removes, so look past the individual user.
System. With fewer direction requests, the reception queue shortens and staff time returns to check-in; more patients reach clinics at their appointed time, so the day’s appointment schedule holds.	Step up to the system: the service, not the sign. Name a specific system effect, not “it helps the hospital”.
The directory, the junction sign, the floor band and the	The influence comes from the system’s consistency; say

Working	Comment
level marker all repeat the same three colours and pictograms, so the building behaves as one system rather than a set of separate signs.	so explicitly.
Overall , WAYPOINT converts a sequence of anxious enquiries into a self-guided journey, changing both how people interact and how the hospital runs.	Close by naming the change at both levels the question asked for.

Example 3 — unscaffolded

Evaluate the outcomes of the WAYPOINT system for the hospital and its community, referring to both intended and unintended outcomes. (6 marks)

The intended outcomes are largely achieved. Because the route colours, floor bands and pictograms let visitors self-guide, fewer people arrive late or reach the wrong department, so clinic lists run closer to schedule and the community receives a more punctual service. Reception staff spend their time on check-in rather than directions, which returns paid hours to care — an economic as well as a service outcome. Pairing each pictogram with a word also means the system works for visitors with limited English literacy, so the benefit is distributed across the whole community rather than only to confident readers; this is a genuine equity outcome and the system's greatest strength.

There are unintended outcomes as well. If the three routes were distinguished by colour alone, a visitor with colour-vision deficiency could not use the system at all, and the design would produce exclusion from the very outcome it promises; WAYPOINT reduces but does not remove this risk, because the floor bands carry colour only and no symbol. Second, a system this legible can encourage visitors to bypass reception entirely, so a patient who needs to be redirected or triaged may arrive at a clinic unannounced. Third, the strong route colours must be maintained: a repainted corridor or a temporary ward move breaks the continuity, and a partially wrong system is more misleading than no system at all.

Overall the outcomes are strongly positive, because the design's influence extends beyond individual journeys to the punctuality and equity of the whole service. To secure them, the designer would need to add a shape or symbol to the floor bands and build a maintenance protocol into the system (6 marks: *intended outcomes at community and service level; unintended outcomes including exclusion; an overall judgement supported by evidence*).

Example 4 — unscaffolded

Compare how the WAYPOINT system and the CIVIC sorting station influence behaviour, referring to at least one design decision in each. (6 marks)

Both designs influence behaviour by changing what is easy and obvious rather than by persuading, and both use colour coding paired with a pictogram so the choice can be made without reading. They differ in the mechanism they rely on and in the shape of the decision they influence.

WAYPOINT influences behaviour **across a journey**. Its continuous floor band (the element of line) uses the Gestalt principle of continuity to draw the visitor forward, so the behaviour it produces is sustained movement over many metres and several minutes: the visitor keeps walking and keeps choosing correctly at each junction. The influence is spread over a sequence of decisions.

CIVIC influences behaviour **at a single point**. Its three differently shaped openings — a thin slot, a round hole, a wide mouth — work through affordance: the form of each opening tells the hand what belongs in it before any label is read, so the behaviour it produces is one two-second sorting decision made while holding a cup. The narrow landfill slot adds friction, making the wrong choice physically awkward.

The comparison shows that the same intention — changing behaviour through visual language — is met with opposite means. WAYPOINT must sustain attention along a path, so it invests in continuity, contrast and repetition of the system across formats; CIVIC must resolve one decision instantly, so it invests in the form of the opening itself (6 marks: *a decision named in each, congruent two-sided treatment, similarity and difference, both tied to the behaviour produced*).

Practice questions

Scaffolded

Q1. Using the WAYPOINT wayfinding system: (a) Identify the design element the designer used to distinguish the three routes. *(1 mark)* (b) Name the Gestalt principle that makes every teal item read as one route. *(1 mark)* (c) Explain how this influences a visitor's behaviour at a corridor junction. *(2 marks)*

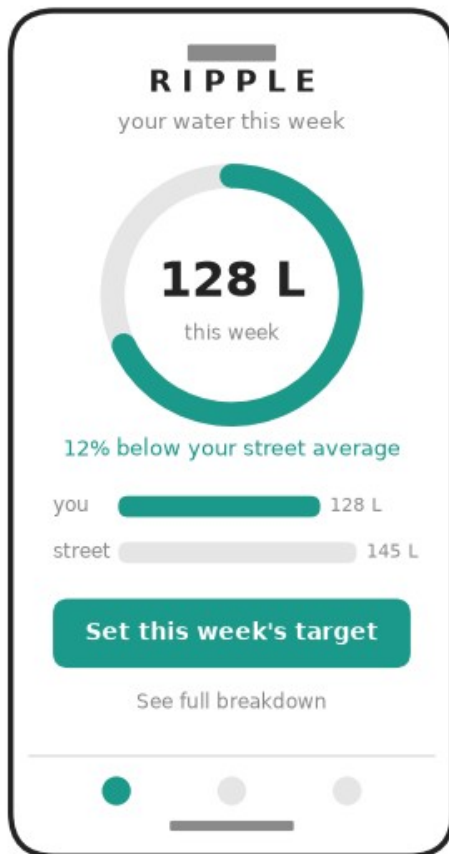
Q2. In the context of design's influence: (a) Distinguish between a **behaviour** and an **interaction**. *(2 marks)* (b) Distinguish between a **system** and an **outcome**. *(2 marks)* (c) Using WAYPOINT, give one example of an influence at the system level and one outcome. *(2 marks)*

Q3. Using the CIVIC sorting station: (a) Identify one design element the designer used to code the three streams. *(1 mark)* (b) Describe how the colour coding and pictograms influence what a user does at the station. *(2 marks)* (c) Explain how that behaviour changes the council's wider waste system. *(3 marks)*

Q4. Design and influence run in two directions. (a) Explain the difference between a **factor influencing design** and **design's influence**. *(2 marks)* (b) Rewrite the following so that it describes design's influence rather than an influence on design: *"Rising landfill charges led the council to commission a new sorting station."* *(2 marks)* (c) State which of the four levels — behaviours, interactions, systems or outcomes — your rewritten sentence describes. *(1 mark)*

Q5. Using the CIVIC sorting station: (a) State one intended outcome of the station. *(1 mark)* (b) Describe one unintended outcome that could arise from it. *(2 marks)* (c) Explain one design decision that would reduce the risk of that unintended outcome. *(2 marks)*

Q6. Mechanisms of influence. In each part, name the design element, design principle or Gestalt principle that does the work. (a) Explain how the WAYPOINT level marker is made the first thing seen at a lift lobby (**salience**), and state what the visitor then does. *(2 marks)* (b) Explain how a designer might deliberately make an action slower or harder (**friction**) in order to influence behaviour, giving one example. *(2 marks)* (c) Describe how a designer can control the order in which a user meets the steps of a task (**sequence**). *(2 marks)*



RIPPLE — household water app

Questions 7–12 refer to the RIPPLE household water app screen shown above, unless otherwise stated.

- Q7.** Analyse how visual language on the RIPPLE screen influences the behaviour of a household user. (4 marks)
- Q8.** Explain how the RIPPLE screen reports the consequence of a household's water use back to that household (**feedback**), and how this sustains a change in behaviour over time. (3 marks)
- Q9.** Discuss how RIPPLE influences the **system** in which it operates. (4 marks)
- Q10.** Evaluate the effectiveness of the RIPPLE screen in directing the user to a single intended action, referring to **hierarchy** and at least one other design principle. (4 marks)
- Q11.** Identify one unintended outcome that could result from RIPPLE's street-comparison display, and explain how it might arise. (3 marks)
- Q12.** Explain how one **Gestalt** principle is used on the RIPPLE screen, and state what it makes the user do. (3 marks)
- Q13.** Explain why a design met repeatedly, such as RIPPLE, may influence behaviour differently from a design met once at a decision point, such as a WAYPOINT junction sign. (4 marks)
- Q14.** Explain how the CIVIC station influences the behaviour of people **other than** the person currently using it, referring to one design decision. (4 marks)
- Q15.** With reference to the RIPPLE screen, explain how the designer's decisions about **accessibility** influence who shares in the outcome the app is designed to produce. (4 marks)
- Q16.** Describe how the WAYPOINT system reflects one conception of **good design**, and explain how that conception relates to the system's influence on users. (4 marks)

Q17. *“Design does not only reflect the world; it changes what people do in it.”* Discuss this statement with reference to one design example from this subtopic and one design from a **past** context. (6 marks)

Q18. Choose any one of the three original design examples in this subtopic. Analyse how it influences **behaviours, interactions, systems and outcomes**. (6 marks)

Answers

Q1. (a) Colour. (b) Similarity. (c) See solutions. **Q2.** (a) Behaviour = what one person does; interaction = how people engage with the design and with each other through it. (b) System = the wider service the design sits inside; outcome = the consequence over time. (c) See solutions. **Q3.** (a) Colour; accept shape (the slot, the round hole and the wide mouth). (b) & (c) See solutions. **Q4.** (a) Factors influence the designer; design's influence acts on people, systems and the world. (b) & (c) Behaviours (leading to systems). See solutions. **Q5.** (a) e.g. less contamination in the recycling stream, so less material is sent to landfill. (b) & (c) See solutions. **Q6.** (a) Scale/contrast make the numeral the first thing seen. (b) Friction = making the wrong or unwanted action slower/harder. (c) Sequence = ordering steps through continuity, layout or numbering. **Q7–Q18.** See fully-worked solutions.

Fully-worked solutions

Q1. (a) **Colour.** (b) The Gestalt principle of **similarity**. (c) At a junction the visitor does not have to read every line: the teal chip on the sign matches the teal band underfoot and the teal row chosen at the directory, so similarity groups all three as one route and the visitor turns in the direction of the teal arrow without pausing (2 marks: *mechanism of grouping named + an observable action*).

Q2. (a) A **behaviour** is what one person does — an observable action such as turning left at a junction. An **interaction** is how people engage with the design and with one another through it — for example the one-second glance at a junction sign, or a visitor no longer needing to ask a staff member for directions. (b) A **system** is the larger service, network or infrastructure the design sits inside and changes — the hospital's appointment and reception service. An **outcome** is the consequence over time for people, communities or the planet — better clinic punctuality, less anxiety, a more equitable service. (c) *System:* fewer direction requests shorten the reception queue, so check-in and appointment lists run closer to schedule. *Outcome:* a higher proportion of patients attend on time, and visitors with limited English are able to use the hospital independently (1 mark each, provided the two are genuinely at different levels).

Q3. (a) **Colour** — a coral, amber and green lid and front stripe for each stream (*accept shape: the thin slot, the round hole and the wide mouth code the streams by the form of the opening. Do not accept "pictogram": that is a symbolic component of visual language, not one of the eight design elements*). (b) The coding works by **recognition**: the three saturated lid colours are distinguishable several metres away and each is doubled with a pictogram of the stream's contents, so the user identifies the right bin without reading and makes the choice in about two seconds while still walking or holding a cup (2 marks: *mechanism + the observable action*). (c) Because items are separated at the moment they are discarded, the recycling and organics loads leaving the site carry far less contamination. A cleaner stream is accepted rather than rejected at the sorting facility, so less material is diverted back to landfill and the council's processing costs fall; the design has changed the wider waste system, not only one person's choice (3 marks: *behaviour linked to a named system, with the system effect specified*).

Q4. (a) A **factor** — economic, technological, cultural, environmental or social — is something in the world that influences the **designer's** decisions about colour, material, layout or form. **Design's influence** runs the other way: it is what the finished design changes about people's behaviours, their interactions, the systems it sits inside and the outcomes that follow. (b) *Model:* "The CIVIC sorting station leads people to separate their waste at the point of disposal, which lowers contamination in the council's recycling stream." (2 marks: *the design is the subject of the sentence, and a change in what people do is named*.) (c) **Behaviours** — the sorting action — which then flows through to the **systems** level (*accept "behaviours", or "behaviours and systems"*).

Q5. (a) Less contamination in the recycling and organics streams, so more material is recovered and less is sent to landfill (*accept: lower processing costs for the council*). (b) The pictograms are set in mid grey on the pale grey bin body — the weakest tonal contrast anywhere on the station — and they sit well below the openings, so a user standing at the lids meets the colour, the opening and the bold stream name, but not the picture. A user carrying a plastic-lined paper cup, which belongs in landfill, reads "ORGANICS", takes a paper cup to be compostable, and contaminates the load that the design exists to keep clean. The station would then reduce recovery rather than increase it (2 marks: *a specific unintended outcome traced to a visible design decision*). (c) Enlarging the pictograms, reversing them out of the saturated lid colour and placing them beside each opening would put the evidence at the point and the moment of the decision, at high tonal contrast and in the user's line of sight as the hand approaches. Because recognition would then happen before the item is released rather than after the colour is matched, the most common misplacement is prevented rather than corrected downstream (2 marks: *a design decision named + how it removes the risk*).

Q6. (a) The level marker is a large numeral, set at a much greater **scale** than any other type and in near-black at high tonal **contrast** inside an isolated white circle, so it becomes the focal point of the lift lobby. Because it is seen first, the visitor confirms the level before choosing a corridor, so the orientation step happens at the lift rather than halfway down the wrong hallway (2 marks: *salience mechanism + resulting action*). (b) Friction means deliberately making an action slower or harder so it is chosen less often. In CIVIC the landfill opening is a thin slot: a large item will not pass through it easily, so the user pauses and reconsiders the two wider openings beside it. The design does not forbid landfill disposal; it simply makes the alternative easier (2 marks). (c) A designer sets the order of steps using layout, numbering, directional line and the Gestalt principle of continuity, so the eye is carried from one step to the next in the intended order — for example a form or an interface that presents one action per screen, or a wayfinding system that supplies the next instruction only at the point where the choice is made (2 marks).

Q7. The screen is dominated by the large circular gauge: the figure “128 L” is set in the element of **type** at by far the largest size on the screen and sits inside a teal arc, so **scale**, **contrast** and **hierarchy** make it salient and it is read within the first second. The **colour** teal is then repeated on the “12% below your street average” line, on the “you” comparison bar and on the single filled button, so Gestalt **similarity** groups the user’s result with the action the designer wants taken. Because the screen resolves to one saturated, full-width control, the household user’s behaviour is a short one: glance at the number, register that it is below the street bar, and tap “Set this week’s target” — after which they run the dishwasher full or shorten a shower to hold the figure down. Visual language here does not argue for saving water; it makes the user’s own consumption visible and gives a single next action (4 marks: *elements and principles named from the example; mechanism; an observable behaviour; link to purpose*).

Q8. Feedback means the design reports the consequence of an action back to the person who took it. RIPPLE’s gauge and litre figure change every time the household uses water, and the arc and the “you” bar move against the street bar, so the effect of a shorter shower appears on the screen within a day. Because the user meets the screen repeatedly, each check confirms whether the last change worked, and a behaviour that would otherwise be a one-off decision is reinforced into a routine. Over weeks the feedback loop, not a single message, is what sustains the reduced consumption (3 marks: *feedback defined through the example + the repetition + the behavioural consequence over time*).

Q9. RIPPLE sits inside the water utility’s supply and demand-management **system**, and it changes that system in several ways. First, thousands of small household reductions aggregate into lower total demand and a lower peak load, which can defer the cost of augmenting infrastructure — a system change no single household could produce. Second, by publishing a street average the design turns the utility’s metering data into a shared social reference, so the network’s own information becomes part of how neighbours judge their usage. Third, the app becomes a customer touchpoint: contact with the utility shifts from a quarterly bill and a complaint to a daily self-service check, altering how the service is staffed and how it communicates. The screen is small, but it is operating on a network (4 marks: *the system named precisely, with at least two specific system-level changes discussed*).

Q10. The screen is effective at directing the user to one action. **Hierarchy** is clear in three layers: the gauge and “128 L” are primary, the comparison line and bars are secondary, and “See full breakdown” is tertiary — small, grey, and deliberately low in the order so it does not compete. The principle of **figure-ground** then isolates the intended action: “Set this week’s target” is the only full-width solid teal rectangle on the white ground, and the only solid shape at the scale of a control — the “you” comparison bar carries the same teal, but it is a thin bar in a labelled pair — so the button reads instantly as the one thing to press. The limitation is that the gauge is so dominant that a satisfied user may read the number and close the app without ever reaching the button, which sits well below the focal point; and because the button and the “below average” line share the same teal, a user could read the whole lower half as confirmation rather than as a prompt. Overall the hierarchy succeeds in ranking the information and the figure-ground contrast succeeds in identifying the action, so the screen directs the user effectively — though placing the action closer to the gauge would convert more of that attention (4 marks: *hierarchy analysed in layers + a second principle + a limitation + an overall judgement*).

Q11. An unintended outcome is that a household already using far less than its neighbours **increases** its consumption. The comparison is displayed as a bar against a street average and is coloured teal — the same approval colour used for the button — so “below average” reads as the goal achieved. A frugal household therefore learns that it has room to spare, and the design that was meant to reduce demand quietly licenses more of it. The cause is that the design frames the average as a target rather than as a ceiling (3 marks: *a specific unintended outcome + the visual decision that produces it*). (Accept also: *a large or low-income household is shamed by a comparison that ignores occupancy*.)

Q12. The screen uses the Gestalt principle of **figure–ground**: the saturated teal arc reads as figure against the pale grey ring behind it, and the solid teal button reads as figure against the white field. Because the eye separates figure from ground before it reads anything, the user sees how far the arc has travelled and where the one control is without decoding either, so the behaviour is a single confident tap rather than a search (3 marks: *Gestalt principle named and correctly labelled as Gestalt + how it is used + the user action*). (Accept **focal point** — the isolated gauge; or **similarity** — the shared teal grouping result and action; or **proximity** — the two comparison bars read as one comparison.)

Q13. A junction sign is met once, for about a second, by someone who is walking and may never return. Its influence must be completed inside that moment, so the designer invests in mechanisms that work instantly — large capitals at high tonal contrast, a pictogram that needs no reading, and an arrow that resolves the choice — and the influence ends when the visitor has turned. RIPPLE is met daily by the same person, so it can rely on mechanisms that only work through repetition: a changing gauge gives feedback on yesterday’s action, a running comparison builds an expectation, and the same single call to action is offered again each time. Its influence is cumulative, so it can convert a decision into a habit and an outcome measured over months. Repeated contact also allows RIPPLE to use smaller type and more information than a sign ever could, because the user already knows the layout (4 marks: *single versus repeated exposure explained, with the design consequences named for each*).

Q14. The one decision that matters here is the **scale** of the colour coding: each stream is carried by a full-width saturated lid and a matching stripe across the front of the bin, so the three streams are legible from several metres away and not only at arm’s length. Because the station is public and legible at a distance, the person waiting sees the person in front of them place a bottle through the round hole, and arrives at the openings already knowing what is expected. The design therefore establishes a visible social norm: correct sorting is performed in public and copied, so influence passes from user to bystander without a word being exchanged. This is an influence on the **interaction between people**, not only on an individual’s behaviour (4 marks: *a specific design decision + visibility + the transfer of behaviour to others*).

Q15. Two decisions widen the group the screen can reach. The week’s figure is carried by the element of **type** — “128 L” set at a far greater **scale** than anything else and in near-black on white at high tonal **contrast** — so it survives being read quickly, at arm’s length or by a user with reduced vision. The household’s standing against its street is then carried three ways at once: by the **length** of the two bars, by the numerals set beside them (128 L against 145 L) and only lastly by colour, so the comparison still works for a user with colour-vision deficiency. Two decisions narrow it. “12% below your street average” is set small in teal on white, a much lower tonal contrast than the gauge it explains, and “See full breakdown” is small grey type, so the detail that would account for a high reading is the least legible thing on the screen. Accessibility therefore decides who the outcome belongs to: reduced consumption, and the deferred network cost that follows from it, accrue only to households that can read the screen — and, because the design is delivered on a phone, only to households that own one (4 marks: *specific accessibility decisions named from the screen, both inclusive and exclusive; the mechanism of inclusion; the outcome framed as unequally distributed*).

Q16. WAYPOINT reflects Dieter Rams’ conception that **good design makes a product understandable** — the system explains itself, with no instructions and no legend, because colour, symbol and word repeat consistently across the directory, the junction sign, the floor band and the level marker. Understandability here is not a general impression but a set of decisions: three routes and no more, one colour for each, that colour doubled every time with the same pictogram and the same word, and the route name set in large capitals at high tonal contrast so it can be read while walking. The conception and the influence are the same claim seen from two sides: a system is understandable exactly to the degree that it changes behaviour without demanding effort, and it is because WAYPOINT is understood at a glance that visitors self-guide, turn at the right junction and arrive on time instead of queueing at reception. Judging the design by this conception of good design therefore means judging it by what people do with it (4 marks: *one named conception described with evidence + the link to influence on users. A response that names a second conception earns nothing extra — the question asked for one*).

Q17. The statement is well supported, because design does not merely represent conditions — it alters what people do inside them. In a **past** context, the schematic transit diagram of the 1930s (Harry Beck’s London Underground diagram is the standard reference) abandoned geographic accuracy in favour of straightened lines, even spacing and colour-coded routes. Passengers stopped judging a journey by distance and began judging it by the number of interchanges, so behaviour changed at the scale of a whole network; the outcome outlived the artifact, because the diagrammatic convention became the expectation travellers now bring to every transport map. In a **present** context,

CIVIC does the same work at the scale of a bin: the shape of each opening guides the hand by affordance, the colour and pictogram give instant recognition, and the three bodies standing side by side group by Gestalt proximity into one station, so a two-second decision at the point of disposal is redirected. The resulting outcome — a cleaner stream that the sorting facility will accept — belongs to the council's waste system, not to any individual. Both cases show the same mechanism: the design changes what is easy and obvious, behaviour follows, and the consequences accumulate into system-level and community-level outcomes. The statement is therefore accurate, with the qualification that influence is not always the intended one (6 marks: the statement addressed directly; one past and one present example; visual evidence in each; influence traced beyond behaviour to systems or outcomes).

Q18. (Model, using CIVIC.) **Behaviours.** The three openings are shaped so that each admits only its own stream — a thin slot, a round hole sized for a bottle and a wide mouth — so **affordance** guides the user's hand before any label is read, and the user separates their waste at the moment of disposal instead of using the nearest bin. **Interactions.** The choice is made one-handed in about two seconds, because colour coding and pictograms supply **recognition** and the three bins, standing side by side with far less space between them than around them, group by Gestalt **proximity** into one object with one decision. The station is also public: the person waiting watches the person sorting, so the correct behaviour becomes visible and is copied, changing an interaction between people. **Systems.** Separating at the source means the recycling and organics loads that leave the site carry far less contamination, so they are accepted rather than rejected at the sorting facility and the council's kerbside and venue waste streams function as intended. **Outcomes.** Over time less material is sent to landfill, processing costs fall, and correct sorting becomes a visible community norm carried to other settings — although if the station is sited after an exit rather than beside the seating, people will default to the nearest bin and none of these outcomes will follow. The design's influence therefore reaches from the shape of an opening to the tonnage a council sends to landfill (6 marks: all four levels addressed, each anchored to visible evidence in the example, with an unintended outcome acknowledged).