

VCE Visual Communication Design Units 1 & 2

Chapter 1 — Reframing design problems

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Chapter 1 Reframing design problems — 1A Good design & the role of visual language

Theory

Designers do not only deliver solutions; they also **find** and **reframe** the problems worth solving. Both jobs need the same tool — a set of ideas about what makes a design *good* — because a conception of good design is what lets you say that one outcome is better than another, and what lets you notice that something people put up with every day is actually a design problem.

A conception of good design is a criterion you can test a design against. The Study Design is direct about the kind of criteria these are: notions of good design are **personal, contextual and political**.

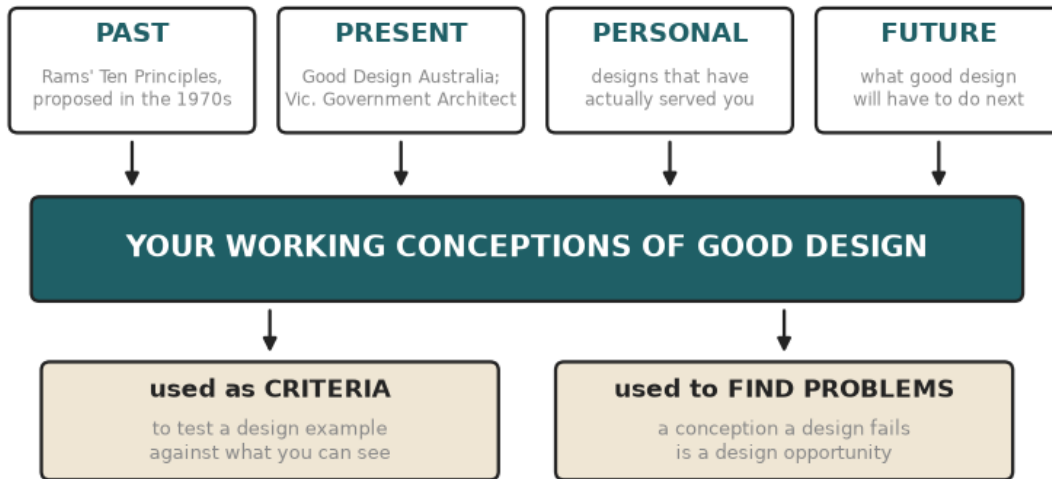
- **Personal** — your conceptions come partly from your own experience of designs that have served you well, so two designers can hold different criteria and both be defensible.
- **Contextual** — what counts as good depends on the field, the purpose, the setting and the moment. “Unobtrusive” is a compliment for a bedside lamp and a criticism for a fire exit sign.
- **Political** — a judgement about good design decides whose needs are served and whose are not. Deciding that a footpath is well designed is also deciding whose walking speed counts as normal.

There is therefore no single test that settles the question. You are expected to draw on both **universal** and **culturally specific** understandings, together with your own experience, to formulate **your own** conceptions — and then to use them as working criteria.

Where conceptions come from. References to good design usually travel with best-practice guidelines, policies, principles of practice and the criteria of design competitions. Three you can name and cite:

- **Dieter Rams’ Ten Principles for Good Design** — proposed in the 1970s by a German industrial designer; still the most frequently quoted list (good design is useful, understandable, unobtrusive, honest, long-lasting, thorough down to the last detail, environmentally friendly, innovative, aesthetic, and as little design as possible).
- **Good Design Australia’s Good Design Award** — an Australian awards program whose jury scores every entry against three published criteria: **Good Design** (how well it is resolved — appeal, usability and viability), **Design Innovation** and **Design Impact**.
- **the Good Design series published by the Victorian Government Architect** — which sets out what good design means for public buildings, places and infrastructure in Victoria.

To these you add **personal** conceptions from your own life, and **culturally specific** conceptions — for example, understandings held by Aboriginal and Torres Strait Islander communities about connection to Country, custodianship and benefit to community, which may rank a design’s relationship to place above its novelty.



Notions of good design are personal, contextual and political — no single test settles them.

Conceptions do two jobs. Read the diagram left to right at the bottom. A conception used as a **criterion** lets you judge an existing design against what you can actually see in it. The same conception turned around becomes a way of **finding problems**: wherever a design in the world fails a conception you hold, you have found a candidate human-centred design problem. That second job is the reason this subtopic sits at the front of a chapter about reframing problems.

Conceptions across disciplines and contexts. This study looks at four **fields of design practice** — **messages, objects, environments** and **interactive experiences**. The same conception means something different in each, so translate it before you apply it.

- **“Good design is understandable.”** In **messages**, the reader knows what it is and what to do without being told. In **objects**, the form itself shows how it is used. In **environments**, a first-time visitor can orient without a guide. In **interactive experiences**, there is one obvious next action on each screen.
- **“Good design is unobtrusive.”** In **messages**, it says what is needed and stops. In **objects**, it folds, stacks or recedes when not in use. In **environments**, it does not block light, sightlines or movement. In **interactive experiences**, it does not interrupt the user without cause.
- **“Good design is honest.”** In **messages**, it claims only what can be delivered. In **objects**, it does not imitate a quality it lacks. In **environments**, it does not disguise how a space is really used. In **interactive experiences**, it shows how current or reliable its data is.

The role of visual language in producing good design outcomes. **Visual language** is a system of communication in which ideas and information are conveyed to audiences through **visual means**. Designers combine three kinds of component — **pictorial, symbolic** and **typographic** — to influence how people experience or interact with places, systems and things.

Below is **WARRIGAL**, an original design example from the field of **messages**: the trailhead sign at the entrance to a 1.8 km boardwalk loop through a council wetland reserve. It is read outdoors, on foot, standing still, by people deciding whether to start the walk — families with prams, older walkers, birdwatchers, and visitors who have never been here before.



Reading the sign as visual language means separating the three components and asking what each one contributes.



Three components, one message — each carries a different part of the meaning, so more people receive it.

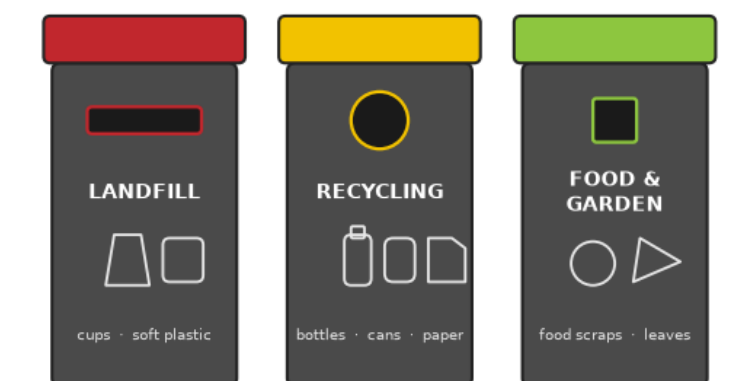
Why the components matter separately. Each one reaches a different person. The **map** answers a question a sentence answers badly (“does it come back to where I started?”). The **icons** work for a visitor whose English is limited, and for a visitor who is scanning for one fact only. The **type**, ranked by size, decides the order in which the sign is read: name, then distance and time, then surface and handrails.

The role visual language plays. A council can build a genuinely step-free boardwalk and still fail the people it built it for, because a person in a wheelchair standing at the trailhead has no way of knowing it is step-free. Visual language is what turns a good **intention** into a good **outcome**. It does this in four ways:

1. **It makes information findable and readable** — scale, contrast and position decide what is read first, second and third.
2. **It carries meaning without words** — pictorial and symbolic components reach people who cannot read the language, are moving, or are too far away to read text.
3. **It sets expectations** — the look of a thing tells an audience what kind of thing it is and whether to trust it.
4. **It changes what people do** — it guides a choice: which chute, which direction, which button.

Redundancy is the most reliable technique. Saying the same thing in more than one channel means that if one channel fails for a user, the message still arrives. Here is **BANKSIA**, an original design example from the field of **objects**: a three-stream waste station on a suburban shopping strip, used by passers-by for about one second each, often while carrying something.

BANKSIA street waste station



Red, yellow and lime-green lids follow the Australian household bin-lid convention.

BANKSIA states each stream four separate ways — the **lid colour** (following the Australian household bin-lid convention of red, yellow and lime green), the **word** on the body, a **picture** of the accepted items, and the **shape of the aperture** itself: a wide slot for landfill, a round hole sized for bottles and cans, a small square hatch for food and garden waste. A user who is colour-blind still has the word; a user who cannot read English still has the pictures and the shapes; a user who reads nothing at all is still steered by the openings. That redundancy — not any one clever decision — is what produces the good design outcome, which here is *waste ending up in the right stream*.

Design terminology used in research, analysis and evaluation. The Study Design asks you to use **appropriate design terminology in research, analysis and evaluation**. These are three different jobs, and each has its own vocabulary. Getting them mixed up is the commonest reason a sound observation earns no marks.

Where it is used	What you are doing	Terminology that does the work
Research (Discover)	Recording what already exists and what stakeholders do, need and say	stakeholder, client, audience or users, communication need, purpose, context, constraint, field of design practice, human-centred, insight
Analysis	Breaking a design open to show how each choice contributes to the communication	visual language; pictorial, symbolic and typographic; the design elements (point, line, shape, form, tone, texture, colour, type) and principles (figure–ground, balance, contrast, cropping, hierarchy, scale, proportion, pattern) — set out in full in Chapter 2; legibility, visual path, redundancy
Evaluation	Judging how well something works, against stated criteria	conception of good design; useful, understandable, unobtrusive, honest, accessible; effective or ineffective; appropriate; strength, limitation; meets or does not meet the criterion; overall judgement

The three stack into a ladder, and the command term tells you which rung is wanted:

- **Description** — what is there. *“The middle unit of BANKSIA has a yellow lid and a round opening.”*
- **Analysis** — how a choice does its job. *“The opening is round and sized for a bottle, so the shape of the hole itself tells a user what belongs in the yellow stream even if they never read the label.”*

- **Evaluation** — how well it works, with a judgement. *“This is effective for a passer-by who gives the station about a second, although a user holding an oversized container is given no guidance about what to do instead.”*

Using a conception to find a human-centred design problem. Turn a conception around and it becomes a search tool. State the conception, look for a design that fails it, then write the problem as **who, what they cannot do**, and **why it matters** — not as a solution. “The sign needs a map with distance markers” is a solution smuggled in early; the problem is that a visitor part-way around a 1.8 km loop has no way of knowing how far is left. Reframing at this level is what lets a designer explore many answers instead of the first one.

Units 3 & 4 preview — beyond the Units 1&2 study design. In Units 3 & 4 these same examples are read with a tighter examination method: **name the specific aesthetic** (calm, natural, technological, playful), then name **one design element** and **one design principle**, then show the mechanism by which that pairing builds the named aesthetic for the audience. Units 1 & 2 works with conceptions of good design and the components of visual language instead. The method is shown here only so you can see where the course leads; it is **not** required or assessed in any Units 1 & 2 task in this book.

Watch-out — a conception is a criterion, not a preference. “It looks modern and I would use it” is taste. A conception is a stated criterion, attributed to a source or reasoned from your own practice, that can be tested against evidence.

Watch-out — name the conception and say whose it is. “It is good design” and “it meets the conception” state nothing. Write the criterion out — “Dieter Rams’ principle that good design is unobtrusive” — before you apply it.

Watch-out — evidence, not assumption. Claim only what the design example shows. You can see that BANKSIA separates three streams; you cannot see what happens to them after collection, so a claim that it is environmentally friendly is an assumption, not an evaluation.

Watch-out — visual language is not “the pictures”. It has pictorial, symbolic **and** typographic components, and how they are arranged is part of it. A response that discusses only imagery has covered a third of the key knowledge.

Watch-out — translate the conception into the field. “Unobtrusive” is not a compliment for a street bin or a fire exit sign. Ask what the conception would actually look like for *this* field, purpose and context before you use it.

Watch-out — context is the setting and circumstances of use. A footpath on a shopping strip; a regional town with patchy mobile coverage. Saying a design “is shown on a phone screen” or “is a flat panel” describes the presentation format, not the context.

Watch-out — keep the ladder straight. Describe, analyse and evaluate are three different demands. “Analyse” wants a cause-and-effect chain; “evaluate” wants strengths, limitations and a judgement. Description alone rarely earns more than one mark.

Watch-out — state the problem, not the solution. A human-centred design problem names a person, something they cannot do, and why it matters. If your sentence already contains the answer, you have skipped the reframing that this outcome is about.

Worked examples

Example 1 — scaffolded

Explain how the designer of the WARRIGAL trailhead sign has used the three components of visual language to produce a good design outcome. (4 marks)

Working	Comment
Visual language is a system of communication in which ideas and information are conveyed to audiences by visual means; its components are pictorial, symbolic and typographic .	Open from the definition. This key knowledge is marked partly on whether the three components are correctly named.
Pictorial — the trail map shows the shape of the loop,	Name the component, point to what is actually on the

Working	Comment
the water it runs beside, and an orange “you are here” dot, so a visitor can see at a glance where they are standing and that the walk returns to the same point.	sign, then say what the visitor gets from it. Evidence first, effect second.
Symbolic — four captioned icons (step-free, drinking water, bird hide, no dogs) deliver four separate facts without a sentence, so a visitor scanning for one thing (“can I bring the dog?”) finds it in a second.	The same move for the second component. Note that each icon is captioned, so the meaning does not depend on decoding a picture alone.
Typographic — the walk’s name is the largest element, the distance and time sit beneath it, and the surface and handrail line is smallest. This hierarchy answers “what is this?”, then “how long?”, then “can I manage it?”	Explain hierarchy as an order of reading , not as “big text”. That is the cause-and-effect chain “explain” is asking for.
∴ The good design outcome — a visitor deciding correctly, before they commit, whether this walk suits them — is produced by the three components together, not by any one of them.	Close by naming the outcome . An “explain” chain has to arrive somewhere.

Example 2 — scaffolded

Compare how the conception “good design is understandable” applies to WARRIGAL (a message) and BANKSIA (an object). (4 marks)

Working	Comment
The conception: a design is understandable when its visual language and its form tell the audience what it is and what to do, without instruction.	State the criterion before testing it. An untranslated conception cannot be applied to two different fields.
WARRIGAL (messages). Understandable here means grasping the walk <i>before</i> committing to it: the map fixes the visitor’s position with a “you are here” dot, the four captioned icons each state one fact plainly, and the three-step type hierarchy delivers name, then distance and time, then surface.	Translate the conception into what it means in this field, then evidence it from the example.
BANKSIA (objects). Understandable here means choosing the right chute in the one second a passer-by gives it. The design says the same thing four ways — lid colour, the word, a picture of accepted items, and an aperture shaped like what belongs in it (round for bottles and cans, a wide slot for landfill, a small square for food and garden).	The congruent second side, at the same depth. Note the different mechanism: part of the message is carried by the form of the object , not by graphics.
Similarity: both meet the conception by repeating the message across several channels, so one failed channel does not defeat the design. Difference: WARRIGAL is understood by being <i>read</i> , and has a visitor’s full attention; BANKSIA must be understood <i>without</i> being read, which is why it puts part of the message into the shape of the openings.	“Compare” requires a congruent two-sided treatment with an explicit similarity and an explicit difference. Do not write two separate paragraphs and stop.

Example 3 — unscaffolded

Analyse how BANKSIA uses visual language to influence the behaviour of the people who use it. (6 marks)

The behaviour BANKSIA has to influence is a one-second sorting decision made by a passer-by on a shopping strip who is usually carrying something and not looking for instructions. The designer has responded by making the visual language carry the whole instruction, in four channels at once.

Colour is the first channel and works at distance: the red, yellow and lime-green lids follow the Australian household bin-lid convention, so a user arrives already knowing what each colour means and spends no time learning the system. **Type** is the second: the words LANDFILL, RECYCLING and FOOD & GARDEN are set in capitals in white on the dark body, giving strong tonal contrast, and they are the largest text on the unit, so they are read first by anyone who does look. **Pictorial components** are the third — small outline drawings of a cup, a bottle, a can, paper, a core and a leaf answer the question the words leave open, which is not “what is this bin” but “does *my* item go here”.

The fourth channel is the one that changes behaviour most, because it does not require reading at all: the **aperture shapes differ**. A round hole sized for bottles and cans, a wide slot for landfill and a small square hatch for food and garden waste mean the object itself steers the hand. A user who ignores every graphic still receives a strong hint from the opening, and an item that plainly will not fit prompts a second look before it is pushed in.

The four channels are deliberately **redundant**: a user who cannot distinguish red from green still has the word, a user with limited English still has the pictures and the openings, and a user in a hurry still has the colour. Because no single channel has to succeed on its own, the design influences the behaviour of a much wider range of people than a labelled bin would.

∴ BANKSIA changes behaviour not through one strong idea but through repetition across channels, each pitched at a different way of reading — which is precisely the role visual language plays in turning a council’s intention to divert waste into waste actually being diverted.

Example 4 — unscaffolded

Using a conception of good design, identify a human-centred design problem that the WARRIGAL sign does not yet resolve, and state the communication need that follows from it. (6 marks)

The conception. I am applying Dieter Rams’ principle that **good design is honest** — a design should not lead people to expect more than it can deliver — together with my own conception that **good design lets a person change their mind**.

Where the sign meets it. WARRIGAL is honest about the things it states: the distance (1.8 km), an estimated time (about 35 minutes), the surface (boardwalk), the handrails and the seating interval are all given plainly at the trailhead, and the icons are captioned rather than left to be decoded.

Where it does not. Everything the sign says is said *once*, at the start. The map shows a single closed loop with no distance markers, no shortcut and no second exit, and the “you are here” dot exists only at this one point. A visitor who sets out and then finds the walk harder or longer than expected — an older walker, a person with a young child, someone who has misjudged the light — cannot find out how far they have come, how far remains, or whether turning back is now the longer option. The sign’s estimate of 35 minutes quietly assumes a walking pace that not every visitor in its audience shares, so for those visitors the sign promises a manageable outing it cannot guarantee.

The problem, stated as a problem. *Visitors on the WARRIGAL loop who are slower, tired or travelling with children commit at the trailhead to a 1.8 km walk and then have no way, once they are on the boardwalk, of judging their progress or deciding whether to turn back — so some avoid the walk altogether and others are caught out by it.*

The communication need that follows. *Visitors part-way around the WARRIGAL loop need to know how far they have come, how far remains, and where they can leave the boardwalk.* Note that this states what has to be **communicated** and to whom; it does not specify markers, an app, a shortened loop or any other answer. Keeping the need free of a solution is what allows the Develop stage to explore several.

Practice questions

Scaffolded

Q1. Conceptions of good design: (a) The Study Design describes notions of good design as **personal, contextual and political**. Explain what each of the three words means for the way a design is judged. (3 marks) (b) Name **two** published sources, other than your own experience, from which conceptions of good design are commonly drawn. (2 marks) (c) Explain how two designers can reach different judgements about the same design and both be defensible. (2 marks)

Q2. Using the WARRIGAL trailhead sign: (a) Define **visual language**. (1 mark) (b) Identify one **pictorial**, one **symbolic** and one **typographic** component of the sign. (3 marks) (c) Explain how the symbolic components help a visitor who reads little English. (2 marks)

Q3. Three statements have been written about the WARRIGAL sign:

- **i.** “The title is set in large white capitals on a dark teal band.”
- **ii.** “The tonal contrast between the white title and the dark band makes the walk’s name the first thing read, so a visitor identifies the trail before taking in anything else.”
- **iii.** “The sign works well for a visitor standing at the trailhead, although the captions under the icons are too small to be read from the car park.”

(a) Classify each statement as **description**, **analysis** or **evaluation**. (3 marks)

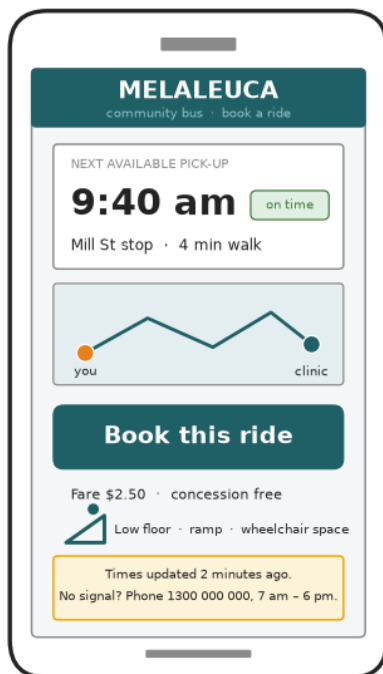
(b) Explain what statement **i** would need in order to become analysis. (2 marks)

Q4. Past, present and future conceptions: (a) Name one conception of good design proposed in the **past**, and name its source. (2 marks) (b) Describe one way conceptions of good design have changed between the 1970s and now. (2 marks) (c) Formulate **one** conception of good design that you think will matter in 2050, and justify it. (2 marks)

Q5. Using the BANKSIA street waste station: (a) Identify the **field of design practice** to which BANKSIA belongs. (1 mark) (b) Describe the **context** in which BANKSIA is used. (2 marks) (c) Explain why “good design is unobtrusive” is a poor criterion to apply to BANKSIA in that context. (2 marks)

Q6. Evidence, using BANKSIA: (a) State one conception of good design that BANKSIA meets, and give the evidence visible in the design. (2 marks) (b) Identify one conception that could **not** be supported by the evidence visible in the design, and explain why. (2 marks) (c) Rewrite the claim “BANKSIA is good design because it is good for the environment” so that it is supported by evidence. (2 marks)

Un scaffolded



Questions 7–17 refer to MELALEUCA, shown above, unless otherwise stated. MELALEUCA is the booking screen for an on-demand community bus run by a regional shire council. It is used by residents without cars — many of them older, some travelling to medical appointments, some students — in a town where mobile coverage is patchy, both at home and while standing at a stop.

Q7. Describe the **purpose**, the **context** and the **users** of MELALEUCA. (3 marks)

- Q8.** Explain how the designer of MELALEUCA has used the **pictorial**, **symbolic** and **typographic** components of visual language to communicate to its users. *(4 marks)*
- Q9.** Analyse how the visual language of MELALEUCA supports **two** named conceptions of good design. *(6 marks)*
- Q10.** Evaluate the extent to which MELALEUCA can be considered good design for a resident who is not confident using apps. *(6 marks)*
- Q11.** Two conceptions of good design pull against each other in MELALEUCA. Identify them and discuss the trade-off the designer has made. *(4 marks)*
- Q12.** Using **one** conception of good design, identify a human-centred design problem that MELALEUCA does not resolve, and state the communication need that follows from it. *(4 marks)*
- Q13.** Compare how the conception “good design is honest” applies to MELALEUCA and to BANKSIA, referring to evidence in each. *(6 marks)*
- Q14.** The MELALEUCA service is run by a shire whose community includes a Traditional Owner group and a large number of recently arrived residents. Explain how **culturally specific** conceptions of good design could change the criteria used to judge the service. *(4 marks)*
- Q15.** Formulate **one** conception of good design that a **future** context will demand, then judge how far MELALEUCA already meets it. *(3 marks)*
- Q16.** Explain how design terminology is used differently in **research**, in **analysis** and in **evaluation**, giving one example of each drawn from MELALEUCA. *(4 marks)*
- Q17.** Discuss the role of visual language in producing a good design outcome, referring to MELALEUCA and to **one** of WARRIGAL or BANKSIA. *(6 marks)*
- Q18.** Choose **either** WARRIGAL **or** BANKSIA. Evaluate the extent to which it can be considered good design, referring to at least **three** conceptions and to the design’s purpose, context and audience or users, and state **one** design opportunity your evaluation reveals. *(8 marks)*
- Q19.** Explain what the conception “good design is accessible to as many people as possible” would look like in **each** of the four fields of design practice, using WARRIGAL (messages), BANKSIA (objects), an environment of your own choosing, and MELALEUCA (interactive experiences). *(6 marks)*

Answers

Q1. (a) Personal = formed from your own experience; contextual = depends on field, purpose and setting; political = decides whose needs are served. (b) Any two of: Dieter Rams' Ten Principles; Good Design Australia's Good Design Award; the Good Design series by the Victorian Government Architect; design-competition criteria; best-practice guidelines or policies. (c) See solutions. **Q2.** (a) A system of communication in which ideas and information are conveyed to audiences through visual means. (b) Pictorial = the trail map; symbolic = any one icon; typographic = the title (or the distance/time line). (c) See solutions. **Q3.** (a) i = description; ii = analysis; iii = evaluation. (b) See solutions. **Q4.** (a) E.g. "good design is as little design as possible" — Dieter Rams' Ten Principles, 1970s. (b) & (c) See solutions. **Q5.** (a) Objects. (b) A footpath on a suburban shopping strip; used for about one second by passers-by, often carrying something. (c) See solutions. **Q6.** (a) E.g. understandable — colour, word, pictures and aperture shape all state the same stream. (b) E.g. environmentally friendly, or long-lasting — nothing visible shows what happens after collection or how the unit wears. (c) See solutions. **Q7–Q19.** See fully-worked solutions.

Fully-worked solutions

Q1. (a) **Personal** — conceptions are formed partly from an individual's own experience of designs that have served them, so two people may hold different criteria and both be defensible. **Contextual** — what counts as good depends on the field, the purpose and the setting: "unobtrusive" is a virtue in a bedside lamp and a fault in a fire exit sign. **Political** — a judgement about good design decides whose needs are served and whose are not, so it distributes benefit and cost between people (*1 mark each, each explained rather than merely named*).

- (b) Any two of: **Dieter Rams' Ten Principles for Good Design**; **Good Design Australia's Good Design Award** criteria; **the Good Design series published by the Victorian Government Architect**; the published criteria of **international design competitions**; **best-practice design guidelines, policies and principles of practice**.
- (c) Because conceptions are personal and contextual, two designers may be applying **different criteria** to the same object — one weighting "as little design as possible", the other weighting "accessible to as many people as possible" — and reach opposite conclusions without either being wrong. They may also be picturing **different contexts of use**. What makes each judgement defensible is not agreement but method: the criterion is named, and the claim is supported by evidence visible in the design (*2 marks: the reason difference is legitimate + what still makes a judgement defensible*).

Q2. (a) **Visual language** is a system of communication in which ideas and information are conveyed to audiences through **visual means**, combining pictorial, symbolic and typographic components.

- (b) **Pictorial** — the trail map (the loop, the water body, the "you are here" dot). **Symbolic** — any one of the four icons: step-free, drinking water, bird hide, no dogs. **Typographic** — the title WARRIGAL WETLAND WALK (accept the "1.8 km loop · about 35 minutes" line or the surface and handrail line) (*1 mark each; only the first component named in each category is marked*).
- (c) The four icons state four facts **without depending on the reader's English**: a droplet for drinking water, a ramp for step-free access, a hut for the bird hide, and a paw inside a red circle with a bar through it for no dogs. Because the meaning is carried by a picture and, for the no-dogs icon, by a convention the visitor is likely to have met before, a visitor who reads little English can still learn what facilities exist and what is not permitted before starting the walk (*2 marks: the mechanism — meaning carried visually rather than verbally — plus the effect on that visitor*).

Q3. (a) **i = description** — it reports what is present without saying what it does. **ii = analysis** — it identifies a choice (tonal contrast) and traces its effect on the viewer's order of reading. **iii = evaluation** — it makes a judgement of how well the design works and names a limitation.

- (b) Statement **i** would need a **cause and effect**: it must say what the choice does and for whom. Adding, for example, "...so the name reads at a distance and is the first thing a visitor takes in, identifying the trail before they read anything else" converts the observation into analysis. The test is whether the sentence explains a **consequence** of the choice for the audience, rather than recording that the choice was made (*2 marks: identifies the missing element as effect on the audience + demonstrates it*).

Q4. (a) “Good design is as little design as possible” — from **Dieter Rams’ Ten Principles for Good Design**, proposed in the 1970s by a German industrial designer. (*Accept any of Rams’ ten, correctly attributed.*)

- (b) Any one, developed. **Scope:** Rams’ list judges the individual product in the user’s hand, whereas current frameworks judge the whole system a design sits inside — where its materials come from and what happens after use (circular design). **Inclusion:** the 1970s list says nothing about accessibility or about who is excluded; contemporary criteria, including those used for public projects in Victoria, treat being usable by as many people as possible as a threshold rather than an extra. **Ownership:** current conceptions ask whose knowledge and cultural material a design draws on, and whether consent was given — a question the earlier list does not raise. Note that Rams’ list *does* already include “environmentally friendly”; what has changed is that sustainability has moved from one criterion among ten to a condition of entry (2 marks: a change identified + explained, with the earlier and current positions both stated).
- (c) (*Model — any defensible conception, stated as a testable criterion and justified, is acceptable.*) **“Good design asks a person for no more of their personal information than the task actually needs.”** By 2050 almost every everyday design — a bin, a bus stop, a doorbell, a shopfront — will collect data as a by-product of being used, and a design that takes more than the job requires has moved a risk onto the user that the user can neither see nor undo. This is a criterion, not a preference, because it can be tested: list what the design collects, then strike out everything the task could still be completed without (2 marks: a conception stated as a testable criterion + a justification, not a preference).

Q5. (a) Objects.

- (b) BANKSIA stands on a **footpath on a suburban shopping strip**, outdoors, in all weather and lighting. It is approached by passers-by who give it roughly **one second**, usually while walking and often while carrying a bag, a coffee or a child’s hand, and who are not looking for instructions. It is used by a very wide public — including people with limited English, colour-blind users and children (2 marks: setting **and** circumstances of use; a response describing the drawing or the “three bins side by side” format scores nothing).
- (c) Because the design only works if it is **found**. In a busy street the station competes with shopfronts, signage and traffic for attention, and a user who does not see it drops litter or uses the wrong stream. “Unobtrusive” would push the designer toward muted colour and low contrast — exactly the decisions that would defeat the purpose. This is what it means to say conceptions are **contextual**: the criterion is sound for a domestic object and wrong for this one (2 marks: the conception shown to conflict with the purpose in this context + the point about contextuality).

Q6. (a) “Good design is understandable.” Evidence: each stream is stated four ways — the lid colour (red, yellow, lime green, following the Australian household bin-lid convention), the word on the body (LANDFILL, RECYCLING, FOOD & GARDEN), outline pictures of accepted items, and an aperture shaped for what belongs in it. A user only has to receive one of the four to sort correctly (*accept “useful”, evidenced by three streams provided at the point of disposal*).

- (b) **“Good design is environmentally friendly”** cannot be supported. The design shows waste being **separated**, but nothing visible shows what happens after collection — whether the recycling stream is actually recycled, whether the organics reach a composting facility, or what the unit itself is made of. Claiming an environmental benefit would be an assumption about a system beyond the design example. (*Accept “long-lasting” — nothing shown indicates how the unit wears in weather — with the same reasoning.*)
- (c) (*Model.*) **“BANKSIA supports better environmental outcomes because its visual language makes correct sorting easy: the lid colour, the word, the pictures of accepted items and the differently shaped apertures all state the same stream, so a passer-by who receives any one of the four cues places the item in the right chute. What happens to each stream after collection is not shown by the design and cannot be claimed from it.”** (2 marks: the claim narrowed to what the evidence shows + the limit of the evidence acknowledged.)

Q7. Purpose — to let a resident without a car see when the next community bus can pick them up, and book that ride, in a few seconds. **Context** — a regional shire town with patchy mobile coverage; the screen is used at home or standing at a stop, outdoors, often one-handed, sometimes with no signal at all. **Users** — residents without access to a

car: many older people, some travelling to medical appointments, some students; a group in which confidence with apps varies widely (*1 mark each; the purpose must be specific — “to help people” scores nothing*).

Q8. The designer has used all three components and given each a distinct job. The **typographic** component carries the hierarchy: “9:40 am” is by far the largest element, so the one fact the user opened the app for is delivered first; the small grey label NEXT AVAILABLE PICK-UP above it says what the number means; and the stop and walking time sit below in smaller type as the second thing read. The **pictorial** component is the route strip, which shows the ride as a line from a dot marked “you” to a dot marked “clinic” — a relationship that is quicker to grasp as a picture than as a sentence. The **symbolic** component includes the ramp icon beside the accessibility line and the green “on time” tag, which attach a status to the booking without adding a sentence. Together the three components let a user answer “when, from where, to where, can I get on, and can I trust it” without reading a paragraph (*4 marks: three components correctly identified and evidenced from the screen + their combined effect on the user*).

Q9. (*Model — any two conceptions correctly named and evidenced are acceptable.*)

“Good design is understandable.” The screen is organised so that one question is answered at a time. A single large time, one large primary button labelled in plain words with the action it performs (“Book this ride”), and one route strip mean there is never a choice about what to look at or what to do next. The vocabulary is ordinary — “pick-up”, “stop”, “fare”, “book” — rather than transport jargon, so a user meeting the service for the first time is not required to learn a system before using it. The visual language does the explaining that instructions would otherwise have to do.

“Good design is useful.” A design is useful when it delivers the thing the user came for, and everything needed to act on it, in the one place. MELALEUCA answers “when can I be picked up” with a single oversized time, then supplies the facts that decide whether that ride can actually be taken: which stop and how far it is to walk (“Mill St stop · 4 min walk”), what it costs and whether a concession applies, whether the vehicle has a low floor, a ramp and a wheelchair space, and the action that commits the booking. Every one of those is a fact the booking depends on, and every one of them is present at the moment the booking is made, so the screen does the whole of the job it was opened to do rather than half of it.

The two conceptions reinforce each other here: because the screen answers one question at a time it stays readable at a glance, and because everything the ride depends on is on that same screen, the user is never asked to hold a half-finished task in their head while going to look for a missing fact. ∴ the visual language is not decorating the service — it is what makes the service usable for people who have to rely on it (*6 marks: two conceptions named and defined; each evidenced from the example; the mechanism explained; the two related*).

Q10. For a resident who is not confident with apps, MELALEUCA can be considered good design to a substantial degree, with real but narrow limitations.

Strengths. The screen makes a single decision, and makes it obvious. There is one primary action, one dominant piece of information (9:40 am) and no secondary navigation competing with it, so the user is never asked to choose a path. The button says what it does in plain language rather than using an icon alone, which matters for a user who has not learned interface conventions. The accessibility line and fare are stated on the same screen as the booking, so nothing important is hidden behind a further tap. Most importantly for this user, the amber panel offers a **phone number and staffed hours** — the design accepts that some users will not complete the task in the app and does not treat that as failure.

Limitations. The user still has to know that “Book this ride” commits them, because the screen shows no confirmation step and no way to cancel; for a hesitant user, an irreversible-looking button is a reason not to press it. Nothing tells the user what happens after booking — whether the bus will arrive at 9:40 or whether that is when they must be at the stop is left to the phrase “4 min walk” to imply. And the honesty of “Times updated 2 minutes ago” is only useful to a user who understands that the figure could now be stale.

Overall, the design serves this user well because it reduces the task to one decision and provides a human fallback, which addresses the real risk for a low-confidence user — not misunderstanding the screen but being stranded by it. The shortfall is at the moment of commitment rather than in the reading of the screen, ∴ it is a smaller failing than it first appears (*6 marks: judgement made; at least two strengths evidenced; at least one genuine limitation; the whole argument kept on the named user*).

Q11. The two conceptions in tension are “**good design is as little design as possible**” and “**good design is honest**”. Reduction has clearly been the governing decision: one time, one route strip, one button, no photography, no advertising and no secondary navigation. That produces a screen a user can act on in seconds, which is what the service needs. But honesty asks the design to say things reduction would remove — how old the data is, what happens without signal, what the fare is, what accessibility the vehicle offers.

The designer has resolved the tension by keeping the **honesty cues small but present** rather than cutting them: the timestamp and the phone fallback sit in a single low-contrast amber panel at the bottom, below the fold of attention but on the same screen, and the fare and access lines are set in the smallest type on the screen. This is a defensible trade: the user’s decision is not slowed, and the information that protects them is still available at the point of decision. The cost is that a hurried user may not read the panel at all, so the honesty is offered rather than delivered — which is the price of choosing reduction as the governing conception *(4 marks: both conceptions named; the conflict explained; the specific decision that resolves it identified; the residual cost stated)*.

Q12. *(Model — other well-evidenced answers are acceptable.)*

The conception. “Good design keeps working when the infrastructure it depends on fails” — a conception the design itself half-acknowledges with its “No signal?” panel.

Where the design falls short of it. The screen’s central content — the next available pick-up time and the “on time” status — exists only while the phone has coverage and current data. In a town described as having patchy coverage, the moment a user most needs the service is often the moment the screen cannot tell them anything, and the fallback offered is a phone call that requires the same network. A resident standing at the Mill St stop with no bars has a booking they cannot confirm and no way to find out whether the bus is still coming.

The problem, stated as a problem. *Residents waiting at a stop in areas of the shire with poor mobile coverage cannot confirm that a booked community bus is still coming or when it will arrive, so some abandon the wait and others stop using the service.*

The communication need. *A resident waiting at a MELALEUCA stop needs to be able to confirm that their booked ride is still coming, and roughly when, without a live data connection. The need names the person, the information and the constraint, and deliberately specifies no answer — a printed timetable at the stop, a text-message confirmation, cached information held on the device and a staffed number are all still open (4 marks: conception named; failure evidenced from the example; problem stated as a problem, not a solution; communication need named for a specific user).*

Q13. Both designs are honest in the sense the conception intends — neither claims more than it delivers — but they are honest about different things and the evidence available is not equally strong in each.

Similarity. Each design states its limits where the user is making the decision rather than somewhere the user will never look. MELALEUCA puts “Times updated 2 minutes ago” and the “No signal?” phone fallback on the booking screen itself, so a user weighing whether to rely on the time can see how current it is. BANKSIA puts the accepted items on the face of each unit — “cups · soft plastic”, “bottles · cans · paper”, “food scraps · leaves” — rather than implying that any of the three streams takes anything.

Differences. First, **what is being kept honest.** MELALEUCA is honest about the **reliability of information**: it separates what it knows from how recently it knew it. BANKSIA is honest about the **boundaries of a category**: it narrows what each opening is for, and reinforces that boundary with an aperture that physically resists the wrong item. Second, and more importantly, **how far the evidence reaches.** MELALEUCA’s honesty is visible on the screen and can be assessed directly. In BANKSIA the visible design cannot speak to what happens to the waste after collection, so a claim that the station is honest about environmental outcomes cannot be made from the example at all — only that it is honest about what belongs in each chute.

Overall, both meet the conception within their own reach, but MELALEUCA demonstrates honesty about its own limitations, whereas BANKSIA can only demonstrate honesty about its own categories. ∴ the stronger evidenced claim is MELALEUCA’s *(6 marks: congruent two-sided treatment; evidence from both; an explicit similarity and at least one substantial difference; a judgement)*.

Q14. A culturally specific conception draws its criteria from a community’s own values rather than from a universal list, and applying one changes the questions asked, not just the answers.

Evaluated through conceptions held by **Aboriginal and Torres Strait Islander communities**, the criteria might include **benefit to community** and **connection to Country**: the service would be judged less on the elegance of the screen than on whether the routes reach the places the community actually needs to reach, whether Elders are served, and whether the design was developed with the community rather than for it. **Custodianship** would ask whether the service is built to last and to be maintained locally, not to be replaced at the next funding round. If any imagery, name or motif belonging to a community were used, a further criterion would apply: whether the community was consulted, credited and paid — an obligation set out in protocols such as the Australian Indigenous Design Charter.

For **recently arrived residents**, the criteria would shift again: whether the language on the screen assumes knowledge of how Australian public transport works, whether “concession” is a term the user can be expected to know, and whether the phone fallback can be answered in a language the caller speaks.

The same screen could therefore be rated highly against one set of conceptions and poorly against another — which is exactly what the Study Design means when it describes notions of good design as personal, contextual and political (*4 marks: what a culturally specific conception is; at least two criteria that would change; applied to this design; the link back to personal/contextual/political*).

Q15. (Model — any defensible conception is acceptable if stated as a criterion, tied to a future context and judged against the example.) **My conception: good design still fits its user as that user changes.** Services are increasingly delivered only through a screen, and the population expected to depend on them is ageing, so a design tuned to the eyesight, steadiness and confidence its users happen to have this year will quietly shed those same users a decade later. This is a criterion rather than a preference because it can be tested: ask what the design would demand of the *same* person in ten years’ time.

MELALEUCA partly meets it. The decision the screen exists for is carried by the elements that survive that change best — one oversized time, one large button that can be hit one-handed without accurate aim, and ordinary words rather than transport jargon — so the core task stays within reach of a user whose sight or dexterity has declined. It only partly meets it because of where the rest of the screen is ranked: what the ride costs, whether a concession applies, whether the vehicle can take a wheelchair, how old the times are and who to phone all sit at the bottom of the type hierarchy — the sizes a reader loses first — so the design protects the user it is losing least well (*3 marks: conception stated as a testable criterion; a reason a future context will demand it; a judgement of how far the example meets it, with evidence*).

Q16. The three uses sit on a ladder, and the vocabulary shifts at each rung.

Research terminology names the situation and the people in it, without judging: the **users** of MELALEUCA are residents without cars; the **context** is a regional shire with patchy coverage; the **purpose** is booking an on-demand ride; a **constraint** is that the service must work for people with limited data. These words come from the Discover stage and are used to record what is true.

Analysis terminology names the design choices and traces their effect: the **typographic hierarchy** places “9:40 am” as the largest element, so the user reads the pick-up time before anything else; the **pictorial** route strip shows the trip as a relationship between two points. This vocabulary explains *how a choice works*, and always has a consequence attached to it.

Evaluation terminology applies criteria and reaches a judgement: MELALEUCA is **effective** for a low-confidence user because a single primary action and a staffed phone fallback remove the risk of being stranded; a **limitation** is the absence of a confirmation step. These words — effective, appropriate, strength, limitation, overall — only belong once a criterion has been named.

∴ the difference is not the topic but the job: research records, analysis explains, evaluation judges (*4 marks: the three uses distinguished + a correct example of each drawn from MELALEUCA*).

Q17. (Model, using MELALEUCA and WARRIGAL.) Visual language is the means by which a good intention becomes a good outcome. In both examples the underlying service already exists — a boardwalk that is genuinely

step-free, a bus that will genuinely come — and in both, whether people receive the benefit depends entirely on what the visual language does.

In **WARRIGAL**, the facts that settle the visitor's question are already true of the boardwalk — the surface is step-free, the handrails run both sides, there is a seat every 400 m. All the sign has to do is deliver them to the person who most needs them, at the one moment the decision is taken. It does that by putting them where they cannot be missed rather than leaving them to be discovered on the walk, and by stating each of them in more than one channel, so a visitor who takes in only the map, or only the icons, or only the largest line still leaves with enough to choose on. Without that, the council's intention and the visitor's experience never meet, and the money spent on access buys the wheelchair user at the trailhead nothing.

In **MELALEUCA**, the outcome sought is a resident actually getting to an appointment. A single oversized time answers the question the user opened the app to ask; a plainly worded button carries the one action; a route strip shows the trip as a picture; and small honesty cues — the timestamp, the fare, the ramp icon, the phone fallback — let the user judge how much to rely on what they are reading.

The role is therefore the same in both, though the risk differs: **WARRIGAL** must communicate to a stranger standing still with time to read, while **MELALEUCA** must communicate to a user acting quickly and possibly without signal. In each, visual language does not describe the service — it **is** the part of the service the user meets (*6 marks: the role stated as a general claim; two examples developed with specific evidence; the differing demands drawn out; a conclusion that returns to the role*).

Q18. (Model, using **WARRIGAL**. A response on **BANKSIA** of the same structure is equally acceptable.)

The **purpose** of the **WARRIGAL** sign is to let a person standing at the trailhead decide whether to start a 1.8 km boardwalk loop, and to know what they will find on it. Its **context** is outdoors in a council wetland reserve, read on foot and standing still, in daylight and in weather. Its **audience** is a broad public: families with prams, older walkers, birdwatchers, wheelchair users and first-time visitors.

Judged against “**good design is understandable**”, the sign is strong. It states each fact in more than one way — the loop appears both as a shape on the map and as “1.8 km loop” in words; the step-free surface appears both as an icon and in the bottom line — so a visitor who reads only the picture, or only the text, still receives it. Every icon is captioned, so meaning does not depend on decoding a symbol.

Judged against “**good design is useful**”, it is also strong for the decision it exists to support. Distance, estimated time, surface, handrails and seating interval are exactly the five facts a visitor needs to judge whether the walk is within their reach, and they are given together in one place at the moment the decision is made.

Judged against “**good design is honest**”, it is strong in what it states and weaker in what it implies. The facts given are plain and specific rather than promotional. But the access facts are stated as labels rather than as anything a visitor could act on: “step-free” and “handrail both sides” say nothing about how wide the boardwalk is, whether two people can pass on it, or whether there is anywhere to turn a wheelchair or a double pram around. The icons leave the same kind of gap — they announce that drinking water and a bird hide exist without saying where on the loop either one is.

Overall, **WARRIGAL** can be considered good design to a high degree. Its purpose, context and audience all demand the same qualities — being readable at a glance by a very mixed public, and being specific — and the design delivers both with evidence visible on the panel. The limitations are concentrated in one place: on the facts that matter most to the visitors with the least margin, the sign stops at the label and does not go on to the detail those visitors would have to act on.

The design opportunity this reveals: a visitor who uses a wheelchair, a walking frame or a double pram cannot tell from the panel whether “step-free” also means the boardwalk is wide enough to pass another user or to turn around on, so they must commit to the loop before they can find out whether it is usable for them — a need for the boardwalk's usable width and its passing and turning places to be communicated at the point of decision (*8 marks: purpose, context and audience each stated specifically; three conceptions named and evidenced; at least one genuine limitation; an overall judgement; a design opportunity expressed as a need rather than a solution*).

Q19. The conception is that a design should be usable by as many people as possible, including people with disability, people with limited English and people with little confidence or equipment. It looks different in each field because the material of the design is different.

Messages — WARRIGAL. Accessibility is carried by legibility and redundancy: large white capitals at high tonal contrast against a dark band, icons that are also captioned in words, and facts a disabled visitor needs (step-free surface, handrails both sides, seats every 400 m) stated on the panel rather than left to be discovered.

Objects — BANKSIA. Accessibility is carried by the form as much as the graphics: colour is never the only cue, so a colour-blind user still has the word, the pictures and the aperture shape; the differently shaped openings guide the hand of a user who cannot read the labels at all.

Environments — a suburban railway station forecourt. Accessibility would mean a step-free path from footpath to platform, a tactile ground surface at level changes, seating at intervals for people who cannot stand for long, lighting that does not leave dark stretches, and sightlines that let a person see where to go on arrival without asking.

Interactive experiences — MELALEUCA. Accessibility is carried by the interface: a large primary button that can be hit one-handed, plain words instead of transport jargon, the vehicle's access provisions stated before booking rather than after, and a staffed phone number for a user who cannot or will not complete the task on a screen.

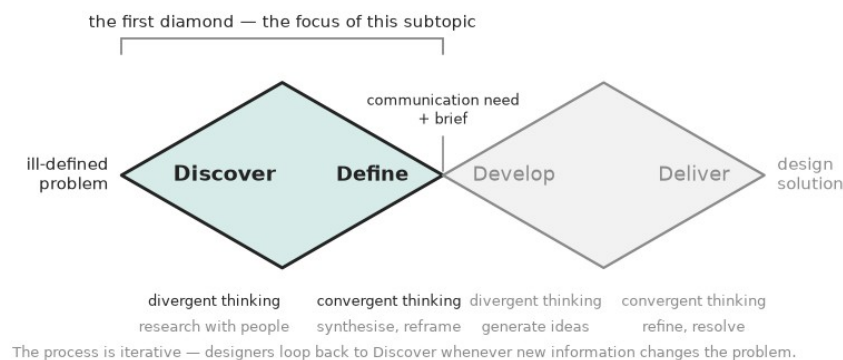
∴ the criterion is constant — as many people as possible — but the mechanism moves from **legibility** in messages, to **form** in objects, to **movement and orientation** in environments, to **interaction** in interactive experiences (*6 marks: the conception correctly stated; all four fields addressed with a specific, field-appropriate mechanism; the examples used as evidence*).

Chapter 1 Reframing design problems — 1B Discover & Define — human-centred research

Theory

Designers do not only deliver solutions — they **find and reframe problems**. Real design problems arrive **ill-defined**: vague, contested, or already dressed up as a solution (“we need a new logo”). The first half of the design process exists to fix that. Its job is to find out what is actually happening for the people involved, and then to state, precisely, what has to be communicated.

The VCD design process. In this study you apply an **iterative** design process with four stages — **Discover, Define, Develop, Deliver** — based on the Double Diamond model developed by the Design Council (UK). The shape matters: each diamond **widens** (divergent thinking) and then **narrows** (convergent thinking). This subtopic is the first diamond.



The stages are not a one-way line. The process is **iterative**: a designer returns to Discover whenever new information changes the problem. What the first diamond hands to the second is a **communication need** set out in a **brief** (the contents of the brief are the subject of 1C).

Discover — widen. In Discover you gather insights into the problem, using research methods that are **human-centred**: they investigate the habits, experiences and mindsets of real people so that you can build **empathy** and make sense of an ambiguous situation. You think **divergently** — searching widely, suspending judgement, staying open to perspectives that do not match your first assumption.

The people you research are **stakeholders**: individuals, groups or organisations involved in a design project who have an interest in its process or outcome. Stakeholders include the **client** and the **audience or users**, and may also include specialist practitioners, suppliers, project teams and managers, sponsors, subcontractors and employees. A common beginner’s error is to research only the client — the client commissions the work, but is rarely the person living the problem.

Human-centred research methods. The study names a set of methods that include, but are not limited to, interviews, surveys, focus groups, competitor analysis, audience or user personas and ethnographic research; the Discover stage also draws on observations and secondary research.

Human-centred research methods — what each one gives you

Interviews One-to-one, open questions. Depth: motives, feelings, stories. PRIMARY · what people SAY	Surveys The same questions, many people. Breadth: patterns across a group. PRIMARY · what people SAY	Focus groups A small group discusses together. Shared language and disagreement. PRIMARY · what people SAY
Observation Watch people in the real setting. What people DO, not what they say. PRIMARY · ethnographic	Competitor analysis Examine designs for the same need. Conventions, gaps, opportunities. First-hand · what already exists	Secondary research Reports and statistics by others. Cheap context — check it is current. SECONDARY · what is already known

Primary research = data you gather yourself. Secondary research = data someone else has already gathered and published.

Two distinctions do most of the work when you choose methods.

- **Primary or secondary?** Primary research is data *you* gather first-hand (an interview you run, a count you take). Secondary research is data *someone else* has already gathered and published (a council report, an industry statistic, a news article). Competitor analysis sits in between: it is first-hand if you examine the designs yourself, but secondary if you rely on somebody else's published review of them.
- **Say or do?** Interviews, surveys and focus groups capture what people **say**. Observation and ethnographic research capture what people **do**. These often disagree — the *say-do gap* — and the gap is frequently where the real design problem is hiding.

Because every method is partial, designers **triangulate**: they use at least one method that hears people's voices, at least one that observes behaviour, and secondary research for context. A single method, run once, gives you an opinion; three that agree give you a finding you can build on.

An **audience or user persona** is a slightly different animal. It is not a way of *collecting* data but a way of *condensing* it — a one-page portrait of a representative user (goals, habits, frustrations, context of use) built from the research you already have. It belongs in Define and in the presentation of findings, and it is only as trustworthy as the data behind it.

Ethical design research practices. Human-centred research asks strangers for their time and, often, for private experience. Ethical practice is not paperwork bolted on at the end; it changes what you are allowed to collect, how you store it, and what may appear in your folio.

ETHICAL DESIGN RESEARCH — check before you collect data

- ☒ Say who you are, what the project is for, and how the information will be used.
- ☒ Ask permission first — taking part is voluntary and can be stopped at any time.
- ☒ Get written consent from a parent or guardian for any participant under 18.
- ☒ Ask separately before you photograph, record or film anyone.
- ☒ De-identify: no full names, faces, addresses or workplaces in your folio.
- ☒ Store responses securely and share only what the project actually needs.
- ☒ Ask neutral questions — a leading question manufactures the answer you wanted.
- ☒ Report honestly: give the sample size and include evidence that disagrees with you.
- ☒ Follow cultural protocols — ask permission before using anyone's cultural knowledge.

Not optional paperwork — check your school's consent, privacy and child-safety policies first.

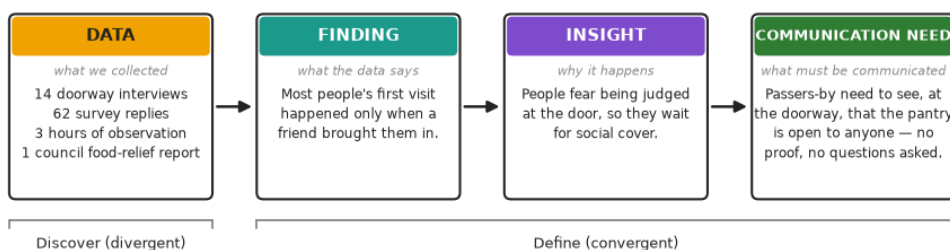
Three points deserve emphasis. First, **consent must be informed and voluntary** — a participant cannot agree to something they have not had explained, and they can stop at any time. Second, **de-identification is the default**: a

quote is evidence, a person's full name, face, address, school or workplace is not, and your folio is a document other people will read. Third, **honest reporting is an ethical obligation, not a stylistic one** — state your sample size, include the responses that contradict you, and never stretch a small sample into a claim about everyone. Additional obligations apply when participants are under 18 (written consent from a parent or guardian, and compliance with your school's child-safety policy, which every Victorian school maintains under the Child Safe Standards) and when research touches cultural knowledge, where permission and consultation are required (see Chapter 8).

Define — narrow. In Define you switch to **convergent thinking**: you review, categorise and summarise the research so it makes sense, then use those insights to clarify or **reframe** the problem and state a **communication need**. The most useful way to picture Define is as a ladder.

*Running example — the **COOLAMON STREET PANTRY** is a volunteer-run food-relief pantry on the main street of a regional Victorian town. Its committee arrived with the problem “nobody knows we exist”, despite a large street sign. The team's Discover work produced 14 doorway interviews, 62 survey replies, three hours of observation and one council food-relief report.*

From data to a communication need — the Define stage · COOLAMON STREET PANTRY



- **Data** is the raw material — transcripts, tallies, photographs, survey responses.
- A **finding** is what the data *says*, stated plainly and with its evidence attached (“most first visits happened only when a friend came too”).
- An **insight** is *why* it happens — the interpretation that explains the finding and that a designer can act on (“people fear being judged at the door, so they wait for social cover”).
- A **communication need** states *what must be communicated, to whom, and where*. It is not a solution. “A poster” is a solution; “passers-by need to see, at the doorway, that the pantry is open to anyone” is a need — and it can be met by a sign, a window graphic, a uniform or a doorway ritual.

Practical Define techniques include **clustering** (writing every observation on a separate note and grouping them until themes appear), building **personas** and **empathy maps** from those clusters, mapping the **journey** a user takes through the current experience, and rewriting the strongest insight as a “**How might we...**” question to hand to the Develop stage.

Units 3 & 4 preview — beyond the Units 1&2 study design. In Units 3 and 4 the same Discover and Define work is scaled up: for the School-assessed Task a designer derives **two distinct communication needs for a single client** from one body of research, and writes one brief covering both. That method — deliberately splitting one insight into two divergent needs and testing that each can stand alone — is **not** required in Units 1 and 2, where you define **one** communication need. It is previewed here only so the habit of writing needs rather than solutions is already in place, and it is **not assessed** in any question in this subtopic.

Techniques for the presentation of human-centred research findings. Research that stays in your notebook cannot reframe anything. Findings are presented so that stakeholders can test your reasoning and agree on the need before any designing begins.

Common **formats** are a research or insight board, a short presentation with visual aids, an illustrated report, an infographic, persona cards, an empathy map, a journey map, a photographed affinity wall, or a one-page insight summary.

The **techniques** that make any of those formats work:



1. **Sequence it as a story** — the problem, who you spoke to, what you did, what you found, what it means, and the communication need it points to.
2. **Lead with the insight, not the method.** “We ran 14 interviews” is admin; “people wait for social cover” is the finding that changes what gets designed.
3. **One idea per panel or slide**, so a reader can take it in at a glance.
4. **Put the evidence beside the claim** — a de-identified quote, a labelled chart, a photograph of the setting — and always state the sample size.
5. **Use the design elements and principles deliberately.** Hierarchy, contrast, scale and generous space decide what a stakeholder reads first; a board with no hierarchy buries its own insight.
6. **Visualise quantities honestly.** Label the axis, give the count as well as the percentage, and never scale a chart to flatter the answer you were hoping for.
7. **De-identify participants and acknowledge secondary sources**, including the retrieval date.
8. **Tailor it to the audience.** Peers in a critique want your reasoning so they can challenge it; a client wants the implication for their problem and their money.
9. **Finish on the communication need and invite feedback** — the presentation is a checkpoint, not a victory lap.

Watch-out — Discover is not “looking it up”. Human-centred research is research *with people*. Secondary research gives you context and should be used, but it cannot tell you how the people in *this* problem experience it.

Watch-out — a finding is not an insight. A finding reports what the data says; an insight explains why. Only the insight lets you reframe an ill-defined problem.

Watch-out — a communication need is not a design solution. If your “need” names an artefact (poster, app, logo), you have skipped Define and started designing.

Watch-out — do not over-claim your data. Small samples give direction, not proof. Write “13 of the 17 people surveyed”, not “most shoppers”.

Watch-out — ethics applies to school projects too. Consent, de-identification, secure storage and honest reporting are requirements of ethical design research and of your school’s own consent, privacy and child-safety policies — not optional extras you can skip because the project is “only for school” — and extra duties apply with participants under 18.

Watch-out — use the study’s stage names. Discover, Define, Develop, Deliver — not “research, plan, make, finish” — and remember the process is iterative, not a straight line.

Worked examples

Example 1 — scaffolded

*The COOLAMON STREET PANTRY committee says “nobody knows we exist”, although the pantry sits on a main street behind a large sign. Describe the Discover stage of the VCD design process and explain how **one** human-centred research method would be used to investigate this problem. (4 marks)*

Working	Comment
Discover is the first stage of the VCD design process. In it the designer gathers insights into an ill-defined problem, using human-centred research to understand the needs and experiences of stakeholders, and thinks divergently — searching widely and suspending judgement.	“Describe the stage” means give its features: <i>when</i> it sits, <i>what happens</i> , and <i>which mode of thinking</i> . Naming divergent thinking is worth having.
Method — interviews. The team would run short one-to-one interviews at the doorway with people who use the pantry and with people who walk past and do not.	Name ONE method and say who it is used with. A method without participants is not an answer.
Open questions (“tell me about the first time you came in”) let participants describe motives and feelings in their own words, rather than confirming the committee’s	Explain <i>how</i> the method is used and <i>what it yields</i> — this is the mark most responses miss.

Working	Comment
theory.	
This tests the committee’s assumption directly: the sign may be visible while the doorway still feels closed. ∴ Discover produces evidence about the real barrier, not the assumed one.	Tie the method back to the ill-defined problem. Showing that Discover can overturn the client’s framing is exactly the point of the stage.

Example 2 — scaffolded

*Explain **two** ethical design research practices the COOLAMON team must apply when interviewing people at the pantry doorway, and why each matters. (4 marks)*

Working	Comment
1. Informed, voluntary consent. Before any question, the team says who they are, that the research is a school design project, how the responses will be used, and that the person may decline or stop at any time.	“Explain ... and why” needs the practice stated <i>and</i> a reason. Note the four things a participant must be told — that is the markable detail.
It matters because people at a food-relief service are in a vulnerable position; without a clear offer to decline, agreement is pressure, not consent.	The reason must be specific to <i>these</i> participants, not a general “it is polite”.
2. Neutral questioning and honest reporting. Ask “what happened the first time you came in?” rather than “the sign is easy to see, isn’t it?”, and report the responses that disagree with the team’s theory alongside those that support it.	A second, genuinely different practice. Leading questions and selective reporting are both failures of evidence, so they pair naturally.
It matters because a leading question manufactures the answer the team wanted, and a brief built on manufactured evidence defines the wrong communication need.	Close on the consequence <i>for the design work</i> — this lifts the response above a list of rules.

Example 3 — unscaffolded

Explain how the COOLAMON team used the Define stage to move from research data to a communication need. (4 marks)

In **Define** the team switched from divergent to **convergent thinking** and set out to make sense of what Discover had produced: 14 doorway interviews, 62 survey replies, three hours of observation and one council food-relief report. They clustered every observation into themes, which produced a clear **finding** — most people’s first visit happened only when a friend brought them in. Asking *why* that pattern existed turned the finding into an **insight**: people fear being judged at the door, so they wait for social cover. That insight **reframed** the problem the committee had brought them; the barrier was not awareness but exposure. From it the team defined a **communication need** — passers-by need to see, at the doorway, that the pantry is open to anyone, with no proof and no questions asked. ∴ Define converted raw data into a need that is specific about *what* must be communicated, *to whom* and *where*, without yet naming any design solution.

Example 4 — unscaffolded

*Discuss **two** techniques the COOLAMON team could use to present their human-centred research findings to the pantry committee, and justify the one you would choose. (6 marks)*

The first technique is an **insight board**: a single surface carrying one panel per theme, each with a headline insight and its evidence beside it — a de-identified quote, a labelled chart with the sample size, and a photograph of the doorway. Its strength is hierarchy; using scale and contrast the team can make the insight the largest thing on the board, so a committee member grasps the argument in seconds and the supporting data is there to be challenged. The second technique is a short **presentation with persona cards**: two one-page portraits built from the interview data — a first-time visitor and a regular — each showing goals, habits and the moment the person hesitates. Its strength is

empathy; a committee that has been arguing about signage meets the person instead of the statistic, which makes the reframing easier to accept.

I would choose the **insight board**, and justify it on the audience and the purpose of this presentation. The committee holds a fixed theory (“nobody knows we exist”) and needs to be persuaded by evidence, not by a portrait; the board puts the contradicting evidence physically next to each claim, states the sample size so the committee can judge its weight, and can stay on the wall through the discussion so members can point at it. Persona cards would be the better choice later, when the team needs designers to empathise while generating ideas. ∴ the board is chosen because it matches this audience, at this checkpoint, for this purpose.

Practice questions

Three research projects are referred to below: the **COOLAMON STREET PANTRY** project described in the Theory section; the **BILBY RESERVE** project described here; and the **QUANDONG MAKERS’ MARKET** findings board shown before Question 7.

BILBY RESERVE is a small suburban park with a playground, a shaded lawn and a shared path. The council has noticed that families with young children use the playground heavily during school hours on weekdays but almost never after school, while the council’s own survey records parents saying they “would like to use it more”. A student design team has been asked to Discover and Define the problem before anything is designed. The reserve has no lighting after dusk, a single entrance from a busy road, and a community noticeboard at the gate.

Scaffolded

Q1. Using the VCD design process: (a) Name the four stages of the VCD design process in order. (1 mark) (b) State which mode of thinking dominates Discover and which dominates Define. (2 marks) (c) Explain why Discover is described as divergent. (2 marks)

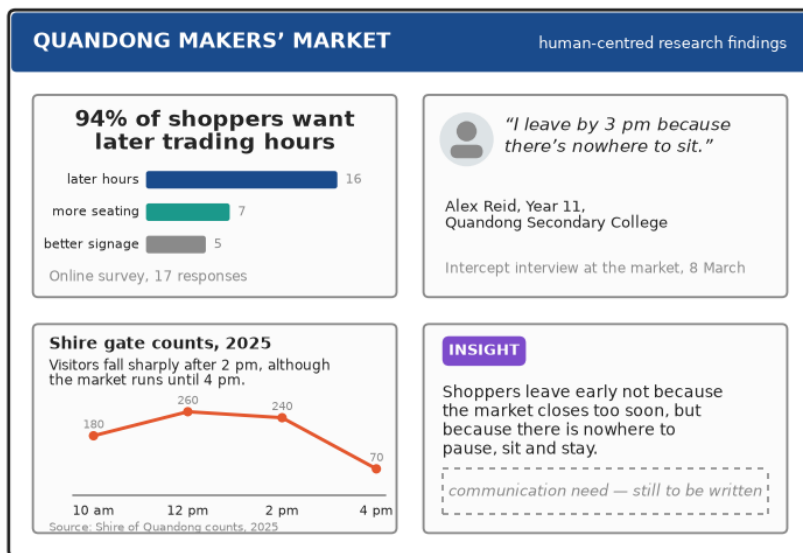
Q2. Research methods for the COOLAMON STREET PANTRY project: (a) Distinguish between primary and secondary research. (2 marks) (b) Name one primary and one secondary method suited to this project, and state what each would give the team. (2 marks) (c) Explain one limitation of relying on a survey alone. (2 marks)

Q3. A COOLAMON team wants to audio-record its interviews and quote participants in its folio: (a) State two things the team must tell a participant before recording begins. (2 marks) (b) Explain what de-identifying a quote means and why it is required. (2 marks) (c) Describe what the team must do with the recordings while the project runs and once it ends, and why. (2 marks)

Q4. Stakeholders in the BILBY RESERVE project: (a) Define the term *stakeholder*. (1 mark) (b) Identify three stakeholders in this project and state each one’s interest. (3 marks) (c) Explain why the client’s view of a problem and the users’ view may differ, and what a designer should do about it. (2 marks)

Q5. A BILBY RESERVE team records three findings: (i) 11 of the 15 parents interviewed said they leave the reserve by 4 pm; (ii) observation showed the playground is in full shade from 3.30 pm; (iii) the only route from the primary school crosses the busy road with no marked crossing. (a) Distinguish between a finding and an insight. (2 marks) (b) Write one insight statement supported by these findings. (2 marks) (c) Identify one further piece of research the team should do before accepting that insight. (1 mark)

Q6. Presenting human-centred research findings: (a) Name two formats in which research findings can be presented. (2 marks) (b) Explain one technique that makes an insight board readable at a glance. (2 marks) (c) Explain why de-identified participant quotes strengthen a findings presentation. (2 marks)



Questions 7–13 refer to the *QUANDONG MAKERS' MARKET* research findings board shown above, produced by a student team at the end of their Discover stage.

Q7. Identify the human-centred research method that produced each of the three pieces of evidence on the board, and state whether each is primary or secondary. (3 marks)

Q8. Describe the Define stage of the VCD design process and explain where this board sits within the process. (3 marks)

Q9. Identify one ethical shortcoming in the way the board presents its research, and describe how the team should have handled it. (3 marks)

Q10. Explain why the headline claim “94% of shoppers want later trading hours” is not supported by the evidence on the board, and rewrite the claim accurately. (3 marks)

Q11. Evaluate the effectiveness of the board as a presentation of human-centred research findings. (6 marks)

Q12. Write a communication need for the *QUANDONG MAKERS' MARKET* that follows from the evidence on the board, and explain why a communication need is not the same as a design solution. (4 marks)

Q13. Discuss how ethnographic research could be used to strengthen the *QUANDONG* team’s findings. (4 marks)

Q14. (BILBY RESERVE.) Recommend two human-centred research methods for this project and justify each choice. One of the two must be **competitor analysis**. (4 marks)

Q15. (BILBY RESERVE.) The team intends to photograph children using the playground for its findings board. Explain the ethical obligations that apply and describe a compliant alternative. (4 marks)

Q16. Compare interviews and surveys as human-centred research methods. (4 marks)

Q17. Explain how convergent thinking is used in the Define stage to reframe an ill-defined design problem. (3 marks)

Q18. Explain the role of an audience or user persona in human-centred research, and describe how one would be built from the *COOLAMON STREET PANTRY* research. (4 marks)

Q19. Explain how a presentation of research findings should differ when the audience is (i) peers in a class critique and (ii) the client who commissioned the project. (4 marks)

Q20. Choose **one** of the three projects in this subtopic. Outline how you would apply the Discover and Define stages to it, naming two research methods, one ethical practice you would follow, and one technique you would use to present your findings. (6 marks)

Answers

Q1. (a) Discover, Define, Develop, Deliver. (b) Discover = divergent; Define = convergent. (c) See solutions. **Q2.** (a) Primary = gathered by you; secondary = gathered and published by others. (b) e.g. doorway interviews (primary) + a council food-relief report (secondary). (c) See solutions. **Q3.** (a) Any two of: who you are, the purpose, how the recording will be used, that it is voluntary and can be stopped. (b) Removing identifying detail; required to protect privacy. (c) Store securely, share only as consented, delete when the project ends. **Q4.** (a) Anyone involved in or with an interest in the project's process or outcome. (b) e.g. the council (client), families with young children (users), neighbouring residents, the school, the maintenance team. (c) See solutions. **Q5.** (a) Finding = what the data says; insight = why it happens. (b) Model insight in solutions. (c) e.g. observe or interview families at the school gate at 3.30 pm. **Q6.** (a) Any two of: insight board, presentation with visual aids, illustrated report, infographic, persona cards, empathy map, journey map, one-page summary. (b) & (c) See solutions. **Q7.** Survey (primary); interview (primary); shire gate counts (secondary). **Q8.** Define = convergent synthesis of research into an insight and a communication need; the board sits at the hand-over from Discover into Define. See solutions. **Q9.** The participant is identified by full name, year level, school and a portrait — de-identify and obtain consent. See solutions. **Q10.** 94% is 16 of the 17 people surveyed, not of all shoppers; the gate counts contradict it. See solutions. **Q11–Q20.** See fully-worked solutions.

Fully-worked solutions

Q1. (a) **Discover, Define, Develop, Deliver.** (b) Discover is dominated by **divergent thinking**; Define is dominated by **convergent thinking**. (c) Discover is divergent because the designer deliberately **widens** the field of enquiry: they search broadly for information, seek out several kinds of stakeholder and several research methods, and **suspend judgement** so that unexpected perspectives are not filtered out by an early assumption (2 marks: *widening the search + suspending judgement*).

Q2. (a) **Primary** research is data the designer gathers first-hand for this project — an interview they conduct, a count they take, an observation they make. **Secondary** research is data someone else has already gathered and published — a report, a statistic, an article (2 marks: *one for each, defined by who gathered it*). (b) **Primary:** doorway interviews with people entering and passing the pantry, which give depth — motives, feelings and the story of a first visit. **Secondary:** a council or charity food-relief report, which gives context — how many households in the area are affected, and what is already known about barriers to using such services. (c) A survey collects only what people are willing and able to **say**, in the categories the designer wrote in advance. It cannot capture what people actually **do**, and it cannot ask “why?” in response to an unexpected answer, so a survey alone will confirm the designer's existing framing rather than challenge it (2 marks: *the limitation named + its consequence for the research*).

Q3. (a) Any **two** of: who the researchers are and that this is a school design project; the purpose of the research; how the recording will be stored and used and who will see it; that taking part is voluntary and can be stopped at any time. (b) **De-identifying** means removing any detail that could identify the speaker — full name, face, address, school, workplace — so the quote is reported as evidence (“a first-time visitor, 30s”) rather than as a person. It is required because participants consented to help a design project, not to be publicly named, and because the folio is a document that other people will read (2 marks: *what it means + why*). (c) While the project runs the recordings must be **stored securely** — on a password-protected school account rather than a shared drive or a personal phone — and shared only with the people the participant was told about. Once the project ends the recordings must be **deleted**, with only the de-identified quotes the participant consented to retained in the folio. This matters because the team holds personal information it did not create and has no right to keep indefinitely; secure handling and deletion are the conditions on which the participant's consent was given, and they are required by the school's own privacy and record-keeping policy (2 marks: *secure storage and limited sharing + deletion or retention limit, with a reason*).

Q4. (a) A **stakeholder** is any individual, group or organisation involved in a design project who has an interest in its process or its outcome. (b) Any three, each with its interest, for example: the **council** (the client — wants the reserve used and maintained within budget); **families with young children** (the users — want a safe, comfortable place to spend after-school time); **neighbouring residents** (want amenity without noise or after-dark activity); the **primary school** (a route and a duty of care for children walking there); the **maintenance team** (must service whatever is installed) (1 mark each: *stakeholder + interest*). (c) The client sees the problem from the outside and usually states it as a solution or a symptom (“the park is under-used”), while users experience the specific frictions that cause it (shade, an unsafe crossing, no lighting). A designer should therefore research the users directly rather than accept the client's

framing, and then present the evidence back to the client so the problem can be reframed by agreement (2 marks: *why the views differ + the designer's response*).

Q5. (a) A **finding** is what the data says, reported plainly with its evidence attached (“11 of 15 parents said they leave by 4 pm”). An **insight** is the interpretation that explains *why* the finding occurs and that a designer can act on. (b) *Model insight*: families stop using the reserve at exactly the hour they are free to visit it, because after 3.30 pm the playground is cold and shaded and the walk from school feels unsafe — so the reserve is least usable at its most wanted time (2 marks: *an explanatory “why”, supported by more than one of the three findings*). (c) Any one of: observe families at the school gate and along the crossing at 3.30 pm; interview parents who *do* stay after 4 pm; check whether families know about any alternative entrance; obtain the council’s own visitor counts by hour.

Q6. (a) Any **two** of: an insight or research board; a short presentation with visual aids; an illustrated report; an infographic; persona cards; an empathy map; a journey map; a photographed affinity wall; a one-page insight summary. (b) **Hierarchy**. By setting the insight in the largest type with the strongest contrast, and the supporting evidence smaller beneath it, the designer ranks the information so the reader’s eye lands on the argument first and the evidence second — the board is understood at a glance rather than read line by line (2 marks: *the technique named + the effect on the reader*). (c) A de-identified quote supplies **evidence in the participant’s own words**, so the audience can judge the interpretation for themselves rather than taking the designer’s summary on trust, while removing the name protects the participant’s privacy and keeps the presentation ethical. Evidence and ethics are served at once (2 marks).

Q7. The headline statistics come from an **online survey** of 17 responses — **primary** research. The quotation comes from an **interview** (an intercept interview conducted at the market) — **primary** research. The visitor numbers come from the **Shire of Quandong’s own gate counts**, collected and published by the shire — **secondary** research (1 mark *per correct method + correct classification*).

Q8. **Define** is the second stage of the VCD design process. In it the designer applies **convergent thinking** to the material gathered in Discover: reviewing, categorising and summarising the data to develop insights, and using those insights to clarify or reframe the problem and state a communication need for the brief. This board sits at the **hand-over from Discover into Define**: the three evidence panels are the Discover output, the INSIGHT panel is the first genuine act of Define, and the empty panel shows that the stage is unfinished — the communication need has not yet been written (3 marks: *the stage described, convergent thinking named, the board correctly located*).

Q9. The **shortcoming is the identification of a participant**: the board shows a portrait alongside the person’s full name, year level and school, which is enough to identify a minor and publishes far more than the quotation requires. The team should have **de-identified** the quote — attributing it to “a Year 11 student, market visitor” with no portrait — and should have obtained **written consent from a parent or guardian** before interviewing or photographing anyone under 18, with a separate permission for the image. (*Also accept: no evidence that participants were told how their responses would be used.*) (3 marks: *the fault identified + a correct remedy + the consent obligation*).

Q10. The figure of 94% is **16 of the 17 people who answered the survey**, so the only claim the data supports is one about those 17 people — not about “shoppers” as a group. Seventeen self-selected online responses are far too few, and too likely to over-represent people who already feel strongly, to describe the market’s whole audience. The board’s own **secondary evidence contradicts the claim**: the shire’s gate counts fall from 240 visitors at 2 pm to 70 at 4 pm, a change of about **–71%**, which shows that most people have already left well before the current closing time. ∴ the claim should be rewritten as: *“16 of the 17 people who answered our survey said they would like later trading hours; the shire’s gate counts suggest visitor numbers are already falling sharply before the market closes.”* (3 marks: *sample-size error + the contradicting evidence + an accurate rewrite*).

Q11. The board is **partly effective**. Its strengths are real. It presents a clear **hierarchy** — a large headline, four separate panels, one idea in each — so a stakeholder can take it in quickly, and the INSIGHT panel is properly distinguished by a coloured chip so the argument is easy to find. It **triangulates**, combining primary survey data, a primary interview quote and secondary shire counts rather than resting on one method, and it puts **evidence beside each claim**, including the survey’s sample size. Its insight is genuinely interpretive: it explains *why* people leave rather than merely restating what they said.

Its limitations are serious, however. The **headline over-claims** — “94% of shoppers” describes 17 survey respondents, and it is contradicted by the board’s own gate counts, so the largest, most prominent element on the

board argues against the insight printed beside it. A stakeholder reading only the headline would take away the wrong conclusion. The board also **identifies a participant** by name, school and portrait, which is an ethical failure and a distraction from the evidence. And the presentation is **incomplete**: the communication need is left blank, so the board stops short of the outcome a Define presentation exists to deliver.

Overall, the board is effective in structure and in its use of triangulated evidence, but not yet effective as a piece of communication, because its dominant element misrepresents its own data and a participant's privacy has not been protected. Correcting the headline, de-identifying the quote and writing the communication need would make it fit for a stakeholder presentation (6 marks: at least two strengths and two limitations, each tied to evidence on the board, plus an overall judgement).

Q12. Model communication need: the market's committee and stallholders need to be shown, at the meeting where next season's trading hours are set, that visitors are leaving for want of somewhere to pause and stay — not because the market closes too early.

Notice what the need does *not* say. The board's evidence is that there is currently **nowhere** to pause — “there's nowhere to sit”, and the INSIGHT panel says the same — so a visitor-facing need such as “visitors need to be shown where they can sit and stay” would announce something the team's own research says is false, which is exactly the over-claiming Q10 penalises. Nothing can point a visitor to seating until the market provides some; what the evidence supports **now** is communicating the insight to the people who decide what the market offers, because they are the stakeholders currently about to fix the wrong problem. (Accept any need grounded in the board's evidence — the interview quote, the seating responses, the falling gate counts — that names what must be communicated, to whom and where, and that does not assert what the evidence denies. A visitor-facing need is acceptable where the student makes the condition explicit, e.g. “once the market provides somewhere to pause, visitors need to be shown, before the early-afternoon drop-off, where they can stop and stay”.)

A communication need is **not** a design solution because it states the *problem to be communicated* rather than the artefact that will do the communicating. “Make an infographic for the committee” names an outcome and closes off every other possibility; the need above could be met by an illustrated report, an infographic in the stallholders' newsletter, persona cards of the visitors who leave at 3 pm, a short presentation built around the gate-count chart, or a photographed affinity wall left up in the market office. Keeping the need solution-free is what allows the Develop stage to think divergently, and it is what lets the finished solution be judged against the need rather than against the designer's first idea (4 marks: a defensible need with what/whom/where + the distinction explained + why keeping it open matters).

Q13. Ethnographic research means observing people in the real setting, over time, as they actually behave — here, spending several market days watching what visitors do rather than asking them. It would strengthen the findings in three ways. First, it addresses the **say-do gap**: the survey records what 17 people *say* they want (later hours), while observation would record what people *do* — where they slow down, where they stand because there is nowhere to sit, and the point at which they leave. Second, it would **explain the gate counts**: the shire's numbers show visitors falling after 2 pm but not why, and observation at 2 pm would supply the mechanism. Third, it would **test the insight** independently of the single interview it currently rests on, so the claim about seating would be supported by behaviour as well as by one person's opinion. The team would still need to observe ethically — in a public space, without photographing identifiable people, and recording behaviour rather than individuals (4 marks: the method described + at least two specific strengthenings tied to the board + the ethical condition).

Q14. 1. Structured observation at the reserve. The team should count and describe use of the playground across several afternoons, between 3 pm and 6 pm on weekdays. This is justified because the council's problem is defined by a **contradiction between what parents say** (“we would like to use it more”) **and what they do** (almost no after-school use); only a method that records behaviour can resolve that contradiction, and it would also capture the physical conditions — shade, light, the road — at the relevant hour.

2. Competitor analysis of comparable reserves. The team should visit and document three or four other suburban reserves that *are* used after school, examining how each is designed for that hour: where the shade and shelter sit, whether there is lighting, how the entrance meets the road, and — the part that is visual communication — what the gate signage and noticeboard tell a family about what is there and when it can be used. (“Competitor analysis” means examining existing designs that answer the same need; the reserves need not be commercial rivals.) This is justified because it is fast, free and available before a single participant has been approached: it establishes the **conventions**

families already expect at a reserve, so the team does not spend Develop re-inventing a solved problem, and it exposes the **gaps** nobody has addressed, which is usually where the design opportunity sits. It is **primary** research where the team examines the reserves first-hand, and **secondary** where it relies on a council report or somebody else's published review of them (2 marks per method: named and appropriate + a justification tied to this project. Accept short intercept interviews with parents and carers, at the reserve and at the school gate, as the non-competitor method — justified because observation records what happens but not why, and the school gate reaches the families who never arrive at the reserve at all).

Q15. Photographing children carries obligations that go beyond ordinary research courtesy. The team must obtain **written consent from a parent or guardian** for any participant under 18, and a **separate, explicit permission for photography** — consent to be interviewed is not consent to be photographed. It must **explain how the image will be used** (a school folio and a class presentation) and honour a withdrawal of that permission. It must **de-identify**: no name, school or location detail attached to an image, and the photographs must be **stored securely** and not published or posted beyond the project. The team must also work within its school's **child-safety policy** — every Victorian school maintains one under the Child Safe Standards — which is what actually governs whether students may photograph children for a school project, who may hold the images and where they may be shown; that permission has to be obtained before the research begins, not defended afterwards. At a public reserve the team would also be photographing children who are not its participants and whose families have consented to nothing at all.

A **compliant alternative** that produces the same evidence: photograph the **setting without people** (the empty playground at 3.30 pm showing the shade line, the unmarked crossing, the noticeboard), and record use as **tallies and a simple diagram** — for example a plan of the reserve with dots marking where groups gathered each half-hour. This documents behaviour and conditions accurately while identifying nobody (4 marks: consent and separate photo permission + de-identify or secure storage + the school's child-safety policy governing photography of children + a workable alternative).

Q16. Both interviews and surveys are primary, human-centred methods that gather what people **say** about their experience, and both depend on neutral, non-leading questions to be worth anything. They differ in **depth against breadth**. An **interview** is one-to-one and open: the researcher can follow an unexpected answer with “why?”, so it yields motives, feelings and stories and can overturn the designer's framing — but it is slow, reaches few people, and its findings can be shaped by the interviewer. A **survey** asks the same fixed questions of many people, so it yields patterns across a group and can show how widely a view is held — but the categories are decided in advance, so it cannot pursue an answer the designer did not anticipate, and small or self-selected samples are easily over-claimed. ∴ designers commonly run interviews first to learn *what to ask*, then a survey to test *how widely it holds* (4 marks: a congruent two-sided treatment — at least one similarity and matched differences on both sides).

Q17. **Convergent thinking** is analytical, critical and comparative: it summarises, categorises and synthesises information in order to clarify a problem. In Define, the designer uses it to sort a large, contradictory pile of Discover data into themes, to judge which themes are supported by more than one method, and to compress the strongest theme into a single insight that explains *why* the pattern exists. Because the insight explains the cause rather than the symptom, it lets the designer **reframe** the problem — restating an ill-defined complaint (“nobody knows we exist”) as a specific, evidenced need (“people hesitate at the doorway because they fear being judged”). ∴ convergent thinking is what turns a mass of research into a problem that can actually be designed for (3 marks: convergent thinking defined + the synthesising actions + the reframing outcome).

Q18. An **audience or user persona** is a one-page portrait of a representative user — their goals, habits, context of use and frustrations — condensed from real research. Its role is to hold the research in a form a design team can keep in mind and design against: it turns scattered data into a person whose needs can be argued about, and it exposes disagreement early (“would Mira actually read that?”). It is a **synthesis and presentation device, not a data-collection method**, and it is only as reliable as the research behind it — a persona invented from assumption is worse than none, because it lends false authority to a guess.

From the COOLAMON research the team would cluster the 14 interviews and 62 survey replies until recurring patterns appeared, then build **two** personas from the clusters — a first-time visitor and a regular. Each card would carry a de-identified name and age range, the person's situation, their goal, their habits around the pantry, a verbatim quote drawn from the interviews, and the moment at which they hesitate. Every element on the card must be traceable to data, and the cards must be de-identified so no real participant can be recognised (4 marks: role explained + the caution that it is synthesis not collection + a research-grounded build process + de-identification).

Q19. The **evidence and the insight stay the same**; what changes is the emphasis, the depth of process shown and the ask at the end.

(i) Peers in a class critique are there to test the team’s reasoning, so the presentation should be transparent about **method and doubt**: which methods were used and why, how many participants, what the data actually said, which findings contradicted each other, and where the team is unsure. Detail such as the sample size, the interview questions and the rejected interpretations is useful here, because it gives critics something specific to push against. The presentation should close by asking for feedback on the insight itself.

(ii) The client is there to decide, and has limited time and a stake in the outcome, so the presentation should **lead with the insight and its implication for their problem**, keep the method to a brief statement of what was done and with how many people, and present the evidence in summarised, visual form. Where the research contradicts the client’s own framing — as at the COOLAMON pantry — the contradicting evidence must still be shown, respectfully and with its sample size, because the client’s agreement to the reframing is what the presentation is for. It should close with the proposed communication need and a request for approval to proceed *(4 marks: a congruent two-sided treatment — purpose, emphasis and closing ask for each audience)*.

Q20. *(Model response, using BILBY RESERVE. Accept an equivalent response for either other project.)*

Discover. I would treat the council’s statement as an assumption to be tested, not as the problem, and think divergently — several methods, several kinds of stakeholder, judgement suspended. **Method 1 — a focus group with six parents and carers**, run at the primary school after pick-up. A group discussion is chosen because the decision to go home rather than to the reserve is a shared household routine; hearing parents respond to each other surfaces the language they use about it and the points on which they disagree, which one-to-one questioning tends to flatten.

Method 2 — secondary research: the council’s existing visitor counts for the reserve, the school’s finishing times, and published sunset times for the suburb by month. This is chosen because it is free, immediate, and can establish whether the pattern is seasonal — a question no amount of talking to parents will settle.

Ethical practice. I would use **neutral questioning and honest reporting**. In the focus group I would ask “tell me what happens after school pick-up” rather than “the reserve would be better with lighting, wouldn’t it?”, because a leading question manufactures the answer I was hoping for. When I report, I would state that six parents took part — not “parents say” — and include the parents who said they simply prefer to get home, even though that view does not help my argument.

Define. I would work convergently: cluster the focus-group notes into themes, test each theme against the council’s counts and the sunset data, and keep only the themes that more than one source supports. I would then write the strongest theme as an **insight** explaining *why* the pattern exists — for example, that families are free to visit the reserve only in the hour when it is shaded, cooling and about to lose daylight, so the reserve is least usable at its most wanted time. From that insight I would write **one communication need** naming what must be communicated, to whom and where, without naming any artefact.

Presenting the findings. I would present a **journey map** of the 3.15 pm to 4.30 pm routine — school gate, road crossing, reserve entrance, playground, decision to leave — with the evidence placed at each step (the count of families observed, a de-identified quote, the sunset time) and the insight called out at the exact point where families drop away. A journey map is chosen because the problem is about *when* in a sequence people are lost, and a map of that sequence shows the council the moment its intervention has to land. I would finish on the communication need and invite the council and the school to challenge it before any designing begins.

(6 marks: Discover described with two appropriate, justified methods; a correct and relevant ethical practice; Define described as convergent synthesis producing an insight and a communication need; one presentation technique with a reason. Deduct where the “communication need” names a design solution.)

Chapter 1 Reframing design problems — 1C Collaboration, divergent/convergent thinking & the brief

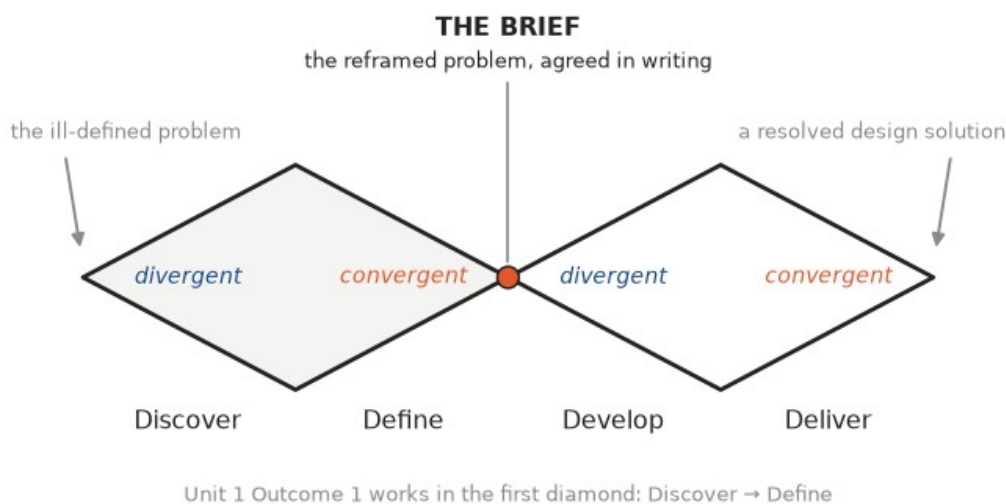
Theory

Designers are rarely handed a tidy problem. A client arrives with a complaint, a symptom or a solution they have already chosen — “nobody comes any more”, “our logo looks old”, “we need an app”. Problems that arrive in this state are **ill-defined**: they have no single correct answer, the real issue is hidden behind the way it has been described, and the boundaries of the problem keep moving as you learn more about it.

Reframing is the work of restating an ill-defined problem so that it describes the *human need* behind the complaint rather than the symptom or the client’s pre-chosen solution. Reframing is not guessing — it is done *with other people*, using research findings, and it finishes with a written **brief**.

Three terms must be kept apart from the start:

- a **design problem** is the situation that is affecting people, communities or societies;
- a **communication need** is the specific thing that will be designed to address part of that problem (a card, a sign system, a package, a screen);
- a **stakeholder** is any individual, group or organisation with an interest in the project or its outcome — the **client**, the **audience or users**, and often specialists, suppliers, funders and staff as well.



The VCD design process runs through four phases — **Discover, Define, Develop, Deliver** — and each phase is driven by one of two modes of thinking. In Unit 1, Outcome 1 you work inside the **first diamond only**: an ill-defined problem goes in at the left, and a brief comes out at the pinch point in the middle. The problem is not resolved in this outcome; it is *reframed*.

Techniques for effective collaboration. Reframing needs more perspectives than one designer holds, so it is done collaboratively — with peers, and with the stakeholders who live inside the problem. Useful techniques include:

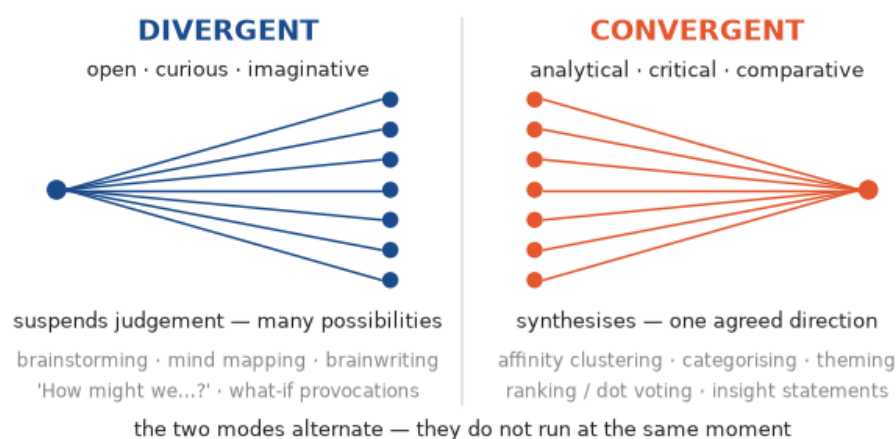
1. **Assign roles before you start.** A *facilitator* keeps the session moving and makes sure everyone contributes; a *scribe* records every idea in the group’s own words; a *timekeeper* protects the session from drifting. Roles stop a session being run by whoever speaks loudest.
2. **Agree ground rules.** For example: one conversation at a time; build on ideas rather than block them; no judging during generation; no idea is recorded as “wrong”. Ground rules are what make a divergent session productive rather than merely noisy.

3. **Work in a shared visual workspace.** Everything is written or drawn on notes, a wall or a shared board where the whole group can see it. Ideas then belong to the group, and the team argues with the wall rather than with each other.
4. **Generate silently before discussing (brainwriting / round-robin).** Each member writes ideas alone for a set time, then all are posted and read. This prevents *anchoring* — the whole group converging on the first idea spoken — and gets quieter members' thinking into the room.
5. **Co-design with stakeholders.** Invite the people affected into the session rather than only researching them at a distance. They correct wrong assumptions on the spot, which is exactly what reframing depends on.
6. **Cluster and name the themes together.** Grouping notes as a group forces the team to argue about meaning until it agrees, so the reframing is genuinely shared and not one person's summary.
7. **Record decisions and next actions.** A short decision log — what we agreed, what we rejected and why, who does what next — means the team does not re-argue settled points, and the brief can be traced back to evidence.
8. **Collaborate ethically.** Seek consent before recording anyone; represent what participants actually said rather than what suits the team; credit contributions; and let stakeholders see how their input was used. (Ethical *research* practice is covered in 1B; the same duties apply inside a collaborative session.)

Watch-out — collaboration is not dividing up the work. Splitting a task into pieces and emailing them together is *coordination*. Collaboration means thinking about the same problem at the same time and converging on a reframing everyone can defend.

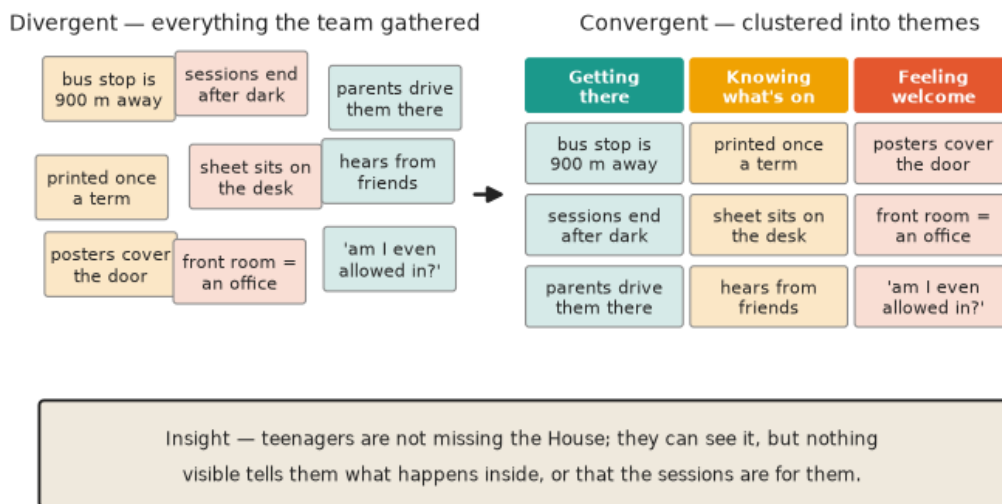
Divergent and convergent thinking. Design thinking uses two opposite modes, and a designer moves deliberately between them.

- **Divergent thinking** is open-minded, curious and imaginative. It suspends judgement and focuses on the many ways a problem might be understood or solved, including unusual or unexpected ones.
- **Convergent thinking** is analytical, critical, reflective and comparative. It summarises, categorises and synthesises information in order to clarify, reframe or resolve a problem.



Strategies for divergent thinking (used through Discover): brainstorming aloud; **brainwriting** (silent written generation); **mind mapping** and word association; **“How might we...?” question generation**, in which the team writes many different framings of the same problem; **what-if provocations** and reversals (“what would the worst possible version look like?”); searching widely through secondary sources and adjacent fields; and going deliberately for *quantity* before quality.

Strategies for convergent thinking (used through Define): **affinity clustering** — grouping notes until themes appear and naming each theme; **categorising and summarising** research data; **ranking and prioritising** (dot voting, or scoring options against agreed criteria); writing an **insight statement** that says in one sentence what the research actually revealed; **selecting one communication need** from a list of candidates; and finally **writing the brief**, which is the most convergent act of all.



The figure above shows a real convergent move made collaboratively. The design team working with **WARATAH Neighbourhood House** was told by the client, “*We need a new logo — no young people come to our programs.*” After interviews with local teenagers, an observation session at the front desk and a scan of nearby providers, the team put every finding on the wall (divergent), then clustered the notes as a group into three named themes (convergent) and wrote a single insight. The insight does something the client’s statement did not: it moves the problem away from the logo and onto what a teenager can actually see and understand before they reach the door.

Watch-out — do not reverse the diamond. Discover diverges, Define converges, Develop diverges, Deliver converges. A response that has the team “converging to gather lots of research” has the modes the wrong way round.

Watch-out — separate the modes in time. Judging while generating shuts divergence down after three ideas; generating forever never produces a brief. Name *when* each mode is running.

The brief. The Define phase ends with a written brief. Its **contents** are:

Content	What it must state
Client	Who the project is for, and enough of their situation to make sense of the problem.
Communication need	The specific thing to be designed — stated as a need, not as a finished solution.
Purpose	What the design must <i>do</i> : inform, promote, guide, identify, teach, persuade...
Context	Where, when and in what circumstances the design will be created, seen and used.
Audience or users	Who will read or use it, described specifically.
Constraints	The limits the designer must work within: budget, timeline, size, production method, materials, accessibility and legal requirements, existing brand rules.

The last four entries — **purpose, context, audience or users** and the **constraints** — are the **design criteria**: described in relation to the communication need, they are the agreed statements against which design ideas will later be judged. The client and the communication need are contents of the brief but are not themselves criteria: they name who the project is for and what is being designed, not what the design must satisfy.

JARRAH STREET REPAIR CAFÉ — brief

Client Jarrah Street Repair Café — a volunteer-run monthly repair morning at the community hall.	— who the project is for
Communication need A one-page repair-day flyer, plus a matching table card for each repair station.	— the thing to be designed — a need, not a solution
Purpose To inform residents what can be repaired, and to persuade them to bring an item in rather than throw it out.	— what the design must DO
Context Handed out at the hall door and pinned on shop noticeboards; read standing up, on the day.	— where and when it is seen and used — not the format
Audience or users Residents aged 25–70 within walking distance, most carrying one broken item and short of time.	— who reads it, described specifically
Constraints Photocopied black-and-white on A4; no budget; ready two weeks before each café.	— the limits the designer must work within

Design criteria = purpose, context, audience or users and constraints — the last four entries, described in relation to the communication need.

The role of the brief in reframing ill-defined problems. The brief does four things that spoken agreement cannot:

1. **It fixes the reframing in writing.** The vague, shifting situation becomes one agreed statement of the problem that everybody signed off.
2. **It converts a problem into something designable.** By naming a communication need, a purpose, a context and an audience, it turns “nobody comes any more” into a specific piece of work.
3. **It makes the reframing testable.** Because the criteria are written down, later ideas can be checked against them instead of against opinion.
4. **It is a shared reference point.** Client, designer and team all read the same document, so disagreements surface now rather than after the work is made.

A brief is also a **live document**. If later research changes the team’s understanding of the problem, the design process is iterative: the team returns to the brief, amends the affected entry and records why. What the brief must never be is *vague* — an entry that could describe any project gives the designer nothing to design to.

Watch-out — context is not a presentation format. “An A2 poster” is a format. The **context** is *where and when* it will be seen and used: on a wet noticeboard outside a hall, at night, read in three seconds by someone walking past.

Watch-out — a constraint is not an audience characteristic. “Many users are over 65” describes the **audience**. The matching *constraint* is what that forces on the designer: “type must be no smaller than 14 pt at reading distance”.

Watch-out — a brief states a need, not a solution. “A blue poster with a gum leaf on it” is a solution the designer has not earned yet. “A card that tells a passer-by what each session is and who it is for” is a communication need.

Watch-out — “everyone” is not an audience. An audience that includes everybody gives you no decisions. Describe the people: age, where they are, what they are doing when they read it.

Worked examples

Example 1 — scaffolded

The WARATAH Neighbourhood House team includes two designers, the House coordinator, a youth worker and three teenage members of the House. Describe **two** techniques the team could use to collaborate effectively while reframing the problem, and explain how each helps the team reach a shared reframing. (4 marks)

Working	Comment
Technique 1 — brainwriting (silent generation before discussion). Every person, including the three teenage members, writes findings and possible framings alone for five minutes; all notes are then posted and read	“Describe” needs the technique NAMED and its procedure stated — what people actually do. Naming it “we brainstorm” without the procedure earns little.

Working	Comment
aloud by the scribe.	
This stops the group anchoring on the coordinator's framing ("we need a new logo") and gets the teenagers' view — the view the project depends on — into the room in writing.	The explanation must give a <i>mechanism</i> : what the technique prevents or enables. Tie it to this team, not to teams in general.
Technique 2 — clustering and naming the themes together. The group physically groups the posted notes on the wall, argues about which note belongs where, and writes a heading for each cluster.	Second technique must be genuinely different in kind — one divergent, one convergent is a safe pairing.
Because the team must agree on the headings before it can move on, the reframing that comes out is one everybody can defend, rather than one member's private summary.	Close by linking the technique to the <i>shared</i> reframing the question asked about.

Example 2 — scaffolded

Using the WARATAH case, explain how **divergent** and **convergent** thinking were each used to move from the client's opening statement to a defined communication need. (4 marks)

Working	Comment
The client's statement — " <i>we need a new logo — no young people come to our programs</i> " — is ill-defined: it names a symptom and a pre-chosen solution.	Start by showing you know <i>what state</i> the problem was in. This frames both modes.
Divergent thinking (Discover): the team suspended judgement on the logo idea and searched widely — interviews with local teenagers, an observation session at the front desk, a scan of nearby providers — collecting many findings without deciding what any of them meant.	Divergent = many, wide, judgement suspended. Note the <i>deferral</i> of the logo idea; that is the mode doing its job.
Convergent thinking (Define): the team clustered every note into three named themes — getting there, knowing what's on, feeling welcome — and wrote one insight: teenagers can see the House but nothing visible tells them what happens inside or that the sessions are for them.	Convergent = group, categorise, synthesise into a statement. Name the actual technique (affinity clustering), not just "we discussed it".
Converging once more, the team selected a single communication need from the insight: a termly program card, in A5 and A3, showing what each after-school session is and who it is for — not a new logo.	"Explain" wants the cause→effect chain to <i>finish</i> . The reframed problem must land on a stated communication need.

Example 3 — unscaffolded

Explain the role of a brief in reframing an ill-defined design problem. (4 marks)

An ill-defined problem has no single correct statement of what is wrong, and the way a client describes it usually names a symptom or a solution rather than the underlying human need. The brief is where that ambiguity is closed. By requiring the team to write a client, a communication need, a purpose, a context, an audience or users and a list of constraints, the brief forces the reframing to become specific: the team can no longer leave the problem as "nobody comes any more" but must state who the design is for, what it must do and where it will be read. Because it is written and agreed by the client, the designer and the team, it also fixes the reframing — everyone is now working on the same problem, and any disagreement surfaces before work is made rather than after. Finally, four of its entries — the purpose, the context, the audience or users and the constraints — become the **design criteria** for that communication need, so the reframing is testable: later ideas are judged against what was agreed rather than against opinion. The brief is therefore both the record of the reframing and the instrument that makes it usable.

Example 4 — unscaffolded

Using the WARATAH case, write the **communication need, purpose, context, audience or users** and **two constraints** that would appear in the brief. (6 marks)

Communication need. A termly program card for the House's after-school sessions, produced in two sizes — an A5 card for counters and an A3 version for the front window.

Purpose. To inform local teenagers what each after-school session is and who it is for, and to persuade them that they are welcome to walk in without having to ask anyone first.

Context. Read from the footpath through the front window in the afternoon and early evening, often in low light and from three to four metres away; also picked up as a card at the library and two shops on the shopping strip. In every case it is read quickly, by someone on the move.

Audience or users. Local people aged 13–17 living within about two kilometres of the House, most arriving on foot or by bus straight after school; a secondary audience of parents and carers who read the same card.

Constraints. (i) It must print on the House's own A5/A3 office printer, so no special stock, finishes or oversize formats are possible. (ii) It must be re-issued every term by a volunteer using basic software, so the design must be supplied as a reusable template. *(Also acceptable: it must meet the council's accessibility guidance for minimum type size and tonal contrast; it must carry the council funding logo; it must be ready three weeks before term starts.)*

Units 3 & 4 preview — beyond the Units 1&2 study design. In Units 3 and 4 you prepare a *single* brief for one client that defines **two** communication needs which are distinct from one another in purpose *and* in presentation format, with design criteria specified for each, and you then run the Develop phase twice — once per need. In Units 1 and 2 you define **one** communication need. Do not use the two-need method in the questions below.

Practice questions

Scaffolded

Q1. (a) Define **divergent thinking**. (1 mark) (b) Define **convergent thinking**. (1 mark) (c) Name one strategy belonging to each mode. (2 marks)

Q2. Using the diagram of the VCD design process: (a) Name the mode of thinking that drives **Discover** and the mode that drives **Define**. (2 marks) (b) State where in the process the brief is written, and explain why it belongs at that point. (2 marks)

Q3. A class team is about to run a reframing workshop. (a) Identify two roles the team should assign before the session begins. (2 marks) (b) Explain how one agreed ground rule helps a divergent session stay productive. (2 marks) (c) Distinguish between collaborating on a design problem and simply dividing the work up. (2 marks)

Q4. Refer to the WARATAH clustering diagram. (a) Name the mode of thinking this technique belongs to. (1 mark) (b) Describe what the team physically does when it uses this technique. (2 marks) (c) Explain why the team writes an insight statement at the end of it. (2 marks)

Q5. (a) List the six contents of a brief. (3 marks) (b) Distinguish between the **purpose** and the **context** entries. (2 marks)

Q6. (a) Explain what makes a design problem **ill-defined**. (2 marks) (b) A client says, "Our members are leaving because our newsletter is boring." Rewrite this as a reframed problem statement suitable for a brief. (2 marks) (c) State the difference between a **design problem** and a **communication need**. (1 mark)

KARRI POINT COMMUNITY POOL — Discover notes

The client says:

'Nobody knows we're open any more.'

The team's research found:

- 14 of 20 people at the gate could not say which sessions were lap swimming and which were for families
- the only sign is at the car-park entrance, behind a hedge; the season timetable is a laminated A4 sheet
- when the timetable moved online, several older swimmers said they simply stopped coming
- the four session types are lap swimming (before and after work), family swim (middle of the day), learn-to-swim, and aqua-fit (regulars, mostly over 65); every one runs at different times in summer and winter

The team's DRAFT brief

Purpose

A bright, modern look for the pool.

Context

An A2 poster.

Audience or users

Everyone in the community.

Constraints

- council colours must be used
- no printing budget after October
- many users are over 65

(no further entries were written)

Questions 7–22 refer to the KARRI POINT COMMUNITY POOL Discover notes and draft brief shown above, unless otherwise stated.

Q7. Analyse how the KARRI team could use **one named divergent strategy** and **one named convergent strategy** to reframe the client's statement into a defined communication need. (6 marks)

Q8. Identify **two** contents of a brief that are missing from the KARRI draft, and explain why each is needed. (4 marks)

Q9. The draft brief gives the context as “An A2 poster.” Explain why this is not a context, and rewrite the entry using the research findings. (3 marks)

Q10. Explain why “Everyone in the community” is not an adequate audience entry, and rewrite it for KARRI. (3 marks)

Q11. Using the KARRI constraints list, distinguish between a **constraint** and a **characteristic of the audience**. (3 marks)

Q12. The draft gives the purpose as “A bright, modern look for the pool.” Explain what is wrong with this entry and rewrite it. (3 marks)

Q13. Write **three** different “How might we...?” questions that reframe the KARRI problem in three different ways, and name the mode of thinking this technique belongs to. (4 marks)

Q14. Explain why divergent and convergent thinking must be separated in time rather than run together, using the KARRI project as your example. (3 marks)

Q15. Compare the mode of thinking and the **output** at the end of Discover with the mode of thinking and the output at the end of Define. (4 marks)

Q16. After clustering, the KARRI team listed six possible communication needs — a new logo, an entrance sign, a seasonal timetable card, a social media campaign, a members' newsletter and a website redesign. Describe a **convergent** technique the team could use to select one, and justify the selection you would expect it to produce. (4 marks)

Q17. Explain how collaborating *with* pool users in the reframing session changes the outcome, compared with only researching *about* them. (3 marks)

Q18. Describe **two** techniques that would keep the KARRI reframing session ethical and respectful for the swimmers taking part. (4 marks)

Q19. A team member says, “We already know the answer — let's just design a new sign and get on with it.” Explain the risk this creates at the Discover stage. (3 marks)

Q20. Evaluate the KARRI draft brief as a set of design criteria. (6 marks)

Q21. Two weeks after the brief is signed off, new research shows that half of all visits are booked on phones before people leave home. Explain how the team should respond, and what this shows about the role of the brief. *(3 marks)*

Q22. Using the Discover notes, compose a complete brief for KARRI POINT COMMUNITY POOL, including all six contents. *(8 marks)*

Answers

Q1. (a) Open, curious, imaginative; suspends judgement; many possibilities. (b) Analytical, critical, reflective, comparative; summarises, categorises, synthesises. (c) e.g. brainwriting / mind mapping (divergent); affinity clustering / dot voting (convergent). **Q2.** (a) Discover = divergent; Define = convergent. (b) At the end of Define, the pinch point — see solutions. **Q3.** (a) Any two of facilitator, scribe, timekeeper. (b)–(c) See solutions. **Q4.** (a) Convergent. (b) Group the notes, argue placement, name each cluster. (c) See solutions. **Q5.** (a) Client; communication need; purpose; context; audience or users; constraints. (b) Purpose = what it must DO; context = where/when it is seen and used. **Q6.** (a) No single correct statement; symptom or solution stated instead of need; boundaries shift. (b) See solutions. (c) Problem = the situation affecting people; need = the specific thing to be designed. **Q7.** e.g. “How might we...?” generation (divergent) + affinity clustering (convergent) → a seasonal session-information system. See solutions. **Q8.** The **client** and the **communication need**. See solutions. **Q9.** “An A2 poster” is a presentation format. See solutions for the rewrite. **Q10.** It excludes no one, so it drives no decisions. See solutions. **Q11.** “Many users are over 65” is an audience characteristic; the constraint is what it forces on the designer. **Q12.** It describes appearance, not a job. See solutions. **Q13.** Divergent. Three “How might we...?” questions — see solutions. **Q14.** Judging during generation shuts divergence down; generating without converging never yields a brief. **Q15.** Discover: divergent → a wide body of un-synthesised findings. Define: convergent → an insight and a written brief. **Q16.** Score the six against the insight and the constraints (or dot vote), then select the seasonal timetable/session-information card. **Q17.** Users correct wrong assumptions inside the session. See solutions. **Q18.** Any two of: informed consent; recording people’s own words; anonymity; showing how input was used; the right to decline. **Q19.** It ends Discover before the problem is understood and locks in the client’s pre-chosen solution. **Q20.** Not yet usable — four entries attempted, two missing, three imprecise, one mis-classified. See solutions. **Q21.** Amend the brief’s context (and possibly the need), record why; the brief is a live document. **Q22.** See fully-worked solutions for a model brief.

Fully-worked solutions

Q1. (a) **Divergent thinking** is open-minded, curious and imaginative; it suspends judgement and focuses instead on the many ways a problem might be understood or solved, including unusual or unexpected ones. (b) **Convergent thinking** is analytical, critical, reflective and comparative; it summarises, categorises and synthesises information in order to clarify, reframe or resolve a problem. (c) Divergent — brainstorming, brainwriting, mind mapping, “How might we...?” generation or what-if provocations. Convergent — affinity clustering, categorising and summarising, dot voting or ranking, writing an insight statement (*1 mark each; only the first strategy named is marked*).

Q2. (a) **Discover** is driven by **divergent** thinking (searching widely, suspending judgement) and **Define** by **convergent** thinking (synthesising the findings). (b) The brief is written at the **end of Define**, at the pinch point between the two diamonds. It belongs there because everything before it is gathering and everything after it is making: the brief is the moment the team stops collecting and commits, in writing, to one reframed problem and one communication need, giving the Develop phase something specific to design to.

Q3. (a) Any two of **facilitator** (keeps the session moving, makes sure everyone contributes), **scribe** (records every idea in the contributor’s own words) and **timekeeper** (protects the session’s shape). (b) The ground rule “*no judging during generation*” keeps a divergent session productive because ideas are only recorded, never evaluated, while the clock is running. Members who would otherwise self-censor an unusual framing contribute it, so the team ends with a wider field to converge on. (c) Dividing the work is **coordination** — each person completes a separate piece and the pieces are joined at the end, so the framing is never actually tested. **Collaboration** means several people working on the same problem at the same time, exposing and correcting each other’s assumptions, so the reframing that emerges is shared and defensible (*2 marks: a congruent two-sided distinction*).

Q4. (a) **Convergent** thinking. (b) The team puts every research note where all can see it, then moves the notes into groups, arguing about which note belongs with which until the group agrees, and finally writes a heading naming each cluster. (c) Clusters on their own are still just data. The insight statement forces the team to say in one sentence what the grouped evidence actually *means* — here, that teenagers can see the House but nothing visible tells them what happens inside. That single statement is what the communication need is then selected from, so without it the team converges on themes but never on a decision.

Q5. (a) **Client; communication need; purpose; context; audience or users; constraints** (*3 marks: all six contents required*). (b) **Purpose** states what the design must *do* — inform, promote, guide, identify, persuade. **Context** states

where, when and in what circumstances it will be created, seen and used. A newsletter's purpose might be to inform members of what is on; its context is that it is read on a phone, on a train, in under a minute.

Q6. (a) A problem is **ill-defined** when there is no single correct statement of what is wrong, when it is presented as a symptom or as a pre-chosen solution rather than as a human need, and when its boundaries shift as more is learned — so it cannot be designed for until it is reframed. (b) *Model*: “Members are not finding anything in the newsletter that is relevant to them, and it reaches them at a time and in a format they do not read, so it is not giving them a reason to stay involved.” (2 marks: the symptom “boring” is replaced by a stated human need; no solution is pre-chosen.) (c) The **design problem** is the situation affecting people (members disengaging); the **communication need** is the specific thing to be designed in response (for example, a monthly one-page member update).

Q7. The client's statement, “*nobody knows we're open any more*”, is ill-defined: it is a symptom, and it implies the solution is more publicity. A **divergent** strategy — “*How might we...?*” question generation — would be used first. Working from the research findings, the team writes many different framings without judging any of them: *How might we make the pool's information findable when the only sign is hidden behind a hedge? How might we let a first-time visitor tell whether a session is meant for someone like them? How might we use the walk from the car park to the gate to tell people what is on today?* Because judgement is suspended, the publicity framing is held as only one option among several, and the team keeps searching. A **convergent** strategy — **affinity clustering** — is then used to make sense of what was gathered. The team groups the findings and finds that they cluster not around *awareness* but around *legibility*: 14 of 20 people at the gate could not say which sessions were which, the only sign is hidden behind a hedge, the four session types change between summer and winter, and older swimmers dropped out when the timetable moved online. The team names the theme and writes one insight: visitors are not unaware that the pool is open, they cannot tell *which session is on, when, and who it is for*. The reframed problem is therefore one of on-site and printed session information, and the communication need converges on a seasonal session-information card — mounted at the entrance and available as a take-away — rather than on a publicity campaign (6 marks: both strategies named and applied to this evidence, judgement suspended then applied, and a reframed problem that differs from the client's statement).

Q8. The **client** and the **communication need** are both missing. The **client** is needed because the brief must record who the project is for and enough of their situation — here, the council-run Karri Point Community Pool — for anyone reading it to understand the problem and know whose approval matters. The **communication need** is needed because without it nothing is actually being designed: the draft states a purpose, a context and an audience for a thing it never names, so a designer could not begin and no idea could later be judged as fit for it (4 marks: two contents identified, each with a reason tied to what the brief must do).

Q9. “An A2 poster” is a **presentation format** — it describes what the design will be produced as, not the circumstances in which it will be encountered. The **context** entry must describe where, when and how it is seen and used. *Rewrite*: “Read outdoors at the car-park entrance and at the pool gate, in bright summer glare and in winter half-light, by people arriving on foot or in a car and deciding within a few seconds whether to come in; it must also work on a laminated sheet that staff replace at the start of each season” (3 marks: the error named, the definition of context supplied, a rewrite grounded in the research findings).

Q10. An audience entry that includes everybody excludes nobody, so it generates no design decisions: it gives no age, no reading distance, no circumstance and no reason to prefer one type size, tone or layout over another. *Rewrite*: “Local residents who use the pool's four session types — lap swimmers before and after work, families at the middle-of-the-day family swim, learn-to-swim families, and aqua-fit regulars, many of them over 65, who stopped using the timetable when it moved online and now rely on printed information read at the gate” (3 marks: why “everyone” fails + a specific rewrite built from the four session types and the lapsed older swimmers in the Discover notes).

Q11. A **constraint** is a limit the designer must work within — something that restricts the design decisions available. A **characteristic of the audience** describes the people the design is for. In the KARRI list, “*council colours must be used*” and “*no printing budget after October*” are genuine constraints: one limits the palette, the other limits the timeline and production. “*Many users are over 65*” is not a constraint at all — it is an audience characteristic, and it belongs in the audience entry. It *produces* a constraint once it is translated into a limit on the designer, such as “body type no smaller than 14 pt, with high tonal contrast for outdoor reading” (3 marks: a congruent two-sided distinction + the mis-classified item correctly re-placed).

Q12. “A bright, modern look for the pool” describes an **aesthetic outcome**, not a purpose. The purpose entry must state what the design has to *do* for its audience — inform, guide, promote, persuade — because that is what the design will later be judged against; an appearance also pre-chooses a solution before any idea has been generated. *Rewrite:* “To inform visitors which session is running at any time and who each session is for, and to guide them to the right entrance, so they can decide to come in without asking staff” (3 marks: the error named and explained, plus a purpose expressed as a job the design performs).

Q13. This is a **divergent** strategy: it deliberately produces many different framings of the same problem with judgement suspended. *Model questions:* (i) “How might we let someone at the gate see, in three seconds, which session is on right now?” (ii) “How might we make a whole season’s timetable understandable at a glance, in both summer and winter?” (iii) “How might we reach the swimmers who stopped coming when the timetable moved online?” Each opens a different problem — live information, seasonal information, and re-reaching lapsed users — rather than three versions of the same idea (4 marks: three genuinely different framings + the mode correctly named).

Q14. The two modes work against each other when they run together. If a team evaluates each framing as it is offered — “that won’t work, the council won’t pay for it after October” — the session stops producing options after two or three, so the reframing is decided before the evidence has been understood; at KARRI that single objection would have cleared every printed framing off the wall before anyone had weighed the finding that 14 of 20 people at the gate could not tell one session type from another. If the team never converges, it accumulates findings and framings but produces no insight, no selected communication need and no brief. The team therefore runs Discover with judgement suspended, then closes the session and converges deliberately in Define (3 marks: the cost of each failure + the resolution).

Q15. Both phases are stages of the same first diamond, and both work on the same problem, but the mode and the output differ. **Discover** runs on **divergent** thinking — searching widely, suspending judgement — and its output is a broad body of findings that has deliberately *not* been synthesised: at KARRI, gate surveys, an audit of the existing signage and comments from lapsed swimmers, all still separate. **Define** runs on **convergent** thinking — grouping, categorising and synthesising — and its output is a decision: named themes, one insight statement, one selected communication need and the written brief. The similarity is that neither phase produces a design; the difference is that Discover ends with *more* material than it started with, while Define ends with less material but greater clarity (4 marks: congruent two-sided comparison of mode and output, with both a similarity and a difference).

Q16. A suitable convergent technique is **scoring the options against agreed criteria** (a prioritisation matrix): the team writes the insight and the known constraints across the top, scores each of the six candidates against them, and then dot votes only among the highest scorers. Applied here, the insight is that visitors cannot tell which session is on and who it is for, and the constraints include no printing budget after October and a council palette. A new logo, a website redesign and a members’ newsletter score poorly because none of them puts information where the problem occurs — at the gate, at the moment of deciding. A social media campaign scores poorly against the research, which found that older users stopped coming when information moved online. The **seasonal timetable card** scores highest: it addresses the insight directly, carries all four session types for a whole season, works on site and in print, and can be produced within the October deadline. The **entrance sign** is the closest runner-up, and a strong response notes that it is not really a rival: mounting the timetable card at the entrance is *where the design is used* — that belongs in the context entry — whereas the card is the thing being designed. That is therefore the communication need the technique should produce (4 marks: technique described, applied to the criteria, and a justified selection; award full marks for any candidate selected with reasoning grounded in the insight and the constraints).

Q17. Researching *about* users produces findings that the team must then interpret, and the team interprets them through its own assumptions. Collaborating *with* users in the session means those assumptions are corrected in the room: when the KARRI team clusters “the timetable moved online” as an awareness problem, an older swimmer present can say that they knew perfectly well the pool was open and simply could not read the timetable — which moves the whole reframing from publicity to legibility. Co-design therefore changes not just the detail but the *problem the team decides to solve* (3 marks: the mechanism + a concrete effect on the reframing).

Q18. Any two, described: **Informed consent** — before the session, tell participants what the project is, what will be recorded, how their comments will be used and that they may stop at any time, and get their agreement. **Recording people in their own words** — the scribe writes what a swimmer actually said rather than the team’s paraphrase, so the notes clustered later are evidence, not interpretation. Also accept: keeping contributions anonymous on the wall; making sure quieter or less confident participants are heard (for example by writing before discussing); showing

participants how their input shaped the brief; not pressing people to justify personal circumstances (4 marks: two techniques, each described and each linked to respectful, accurate treatment of participants).

Q19. Saying “we already know the answer” ends Discover before divergence has done any work: the team stops searching and locks in the client’s pre-chosen solution — more signage — as though it were the problem. The risk is that the pre-chosen solution addresses the symptom only. At KARRI a bigger sign in the same hidden position, still carrying a single season’s laminated sheet, would not tell a visitor which of the four session types is running now, which is what the research shows people actually cannot do. The project would therefore deliver a solution that leaves the reframed problem untouched (3 marks: the mode short-circuited + the specific consequence for this project).

Q20. As a set of design criteria the draft is **not yet usable**. Its strengths are real but limited: it attempts four of the six required contents, and two of its listed constraints — the council colour requirement and the loss of printing budget after October — are genuine limits that will shape both the palette and the schedule. Against this, the weaknesses are decisive. Two contents, the **client** and the **communication need**, are absent, so the brief never says what is to be designed — and because design criteria are described *in relation to* a communication need, the four criteria entries have nothing to be criteria for. The **purpose** entry, “a bright, modern look”, describes an appearance rather than a job the design must perform, and so pre-chooses an aesthetic before any idea exists. The **context** entry gives a presentation format, “an A2 poster”, instead of the circumstances of use — outdoors, in glare, in a few seconds, at a gate. The **audience** entry, “everyone in the community”, drives no decisions. One listed constraint, “many users are over 65”, is a characteristic of the audience that has not been translated into a limit on the designer. Because criteria exist in order to be tested against, and only its two genuine constraints could be tested against anything, the brief would not let the team judge a single design idea; it needs the two missing contents added, three entries rewritten and the mis-classified constraint re-placed before Develop can begin (6 marks: strengths and limitations, specific evidence from the draft, and an overall judgement tied to the function of design criteria).

Q21. The team should return to the brief rather than ignore the finding or start again: the **context** entry is amended to include the phone screen on which half of all visits are now decided before people leave home, the **audience** entry is updated, and the change and its reason are recorded so the client can see why the criteria moved. If the new evidence changed the reframing itself, the communication need would be revisited too. This shows that the brief is a **live document** in an iterative process — it fixes the reframing so that work can proceed, but it is amended openly when new research changes what the team understands the problem to be (3 marks: the action + the iterative role of the brief).

Q22. (Model brief — accept any brief that is complete, specific and grounded in the Discover notes.)

Client. Karri Point Community Pool, a council-operated outdoor pool running four session types across the week, with different times in summer and winter.

Communication need. A seasonal session-information card for the pool: a large-format version mounted at the car-park entrance and at the gate, and a matching A5 take-away card, showing which session is on, when, and who it is for.

Purpose. To inform visitors which sessions run at which times in each season and who each session is for, and to guide them to the right entrance, so that they can decide to come in without asking staff.

Context. Encountered outdoors at the car-park entrance and at the pool gate, in bright summer glare and winter half-light, by people arriving on foot or by car and deciding within a few seconds; the take-away card is read at home and kept on a fridge for a season. The mounted version is replaced by staff at the start of each season.

Audience or users. Local residents using the pool’s four session types — lap swimmers before and after work, families at the middle-of-the-day family swim, learn-to-swim families, and aqua-fit regulars, many of whom are over 65; several stopped using the timetable when it moved online and now rely on printed information read at the gate.

Constraints.

- must use the council’s existing colour palette;
- must be printed before the end of October, after which there is no printing budget;
- body type no smaller than 14 pt with high tonal contrast, so it can be read outdoors by older users at a distance of two to three metres;

- must be produced as a template that staff can update each season without a designer;
- must be legible at the existing car-park entrance position, or specify a new position, since the present sign sits behind a hedge.

(8 marks: all six contents present; the communication need stated as a need rather than a solution; purpose expressed as a job; context describing circumstances of use rather than format; a specific audience; and at least three constraints that are genuine limits on the designer, including one translated from an audience characteristic.)