This document is part of the **Frontiers Design Documentation**, a set written to teach instead of to instruct. Each entry takes one subsystem, explains what that subsystem is in the wider language of tabletop design, surveys how games have solved it, and then shows what Frontiers does as one worked answer among many.

It is written for several readers at once:

- Designers using Frontiers who want to understand why it works the way it does.
- Designers using Frontiers who want to change it, and need to know what a change will cost.
- Designers building something else entirely, who want the design space mapped before they choose.

Frontiers is a toolkit, and a toolkit is only useful if you can see what each tool is for. None of this is a rule; the rules live in the Rulesets, and what follows is the reasoning, the history, and the alternatives.

There will be terminology here that is unfamiliar to casual players. Treat this documentation as advanced content, written for designers interested in building. It will not teach you every term or phrase it uses, but it will do its best to define them as they arrive.

What are Attributes

Attributes are a game's answer to what a character fundamentally is, before training, tools, or circumstance. Nearly every system has some version of them, and nearly every system derives other numbers from them, which makes this the load-bearing layer of a character sheet: change an Attribute and a dozen other values move.

To give a well-known example, Traveller gives every character six characteristics, from Strength through Social Standing, each rolled at creation and rated on a small numeric scale. They govern rolls, they gate careers, they take damage in combat, and they decay with age. A Traveller character's entire life is legible from those six numbers, and the game's structure is built to make them matter in more than one way.

What makes Attributes distinct from Skills is that they set the floor while Skills supply the bonus. A character with no relevant training still has an Attribute to fall back on, and that fallback is what a system is really defining when it picks its list.

Three questions decide the shape:

1. **How many, and what do they cover?** How finely innate capability is divided, and whether every meaningful action has an obvious home.
2. **What scale do they sit on?** Whether the number is used directly, converted into a modifier, or read as a chance.

3. **What is built on top of them?** How much of the character sheet is derived instead of chosen, and how much a single point is therefore worth.

Why it matters

Attributes are the most quoted numbers in any system, and the hardest to change later.

The list is a claim about what kinds of characters can exist. A game with separate Strength and Constitution is saying those can meaningfully differ; a game with one Body stat has decided they cannot. Every split you make is a build direction you have opened, and every merge is one you have closed.

The list also has a well-known failure mode. Physical Attributes usually find obvious work, while mental ones often govern a narrow slice of rolls and end up as dump stats, the thing nobody invests in because nothing on the sheet depends on it. Which Attribute is weakest is usually a symptom of what the Derivatives forgot to use.

The second half of this document takes that up. Derivatives are where Attributes acquire their real weight, since every value calculated from an Attribute is another reason to raise it, and the map of what derives from what decides which Attributes are good.

> How much of a character should be chosen, and how much should follow from the choices already made?

The Approaches

Attribute systems differ on two decisions made together: how many stats there are, and how much other machinery hangs off them. A game with many stats and heavy derivation feels very different from one with few stats and none, even when the list looks similar on paper.

A few shapes worth knowing.

Six stats, heavily derived

The most familiar shape. Six Attributes feed a large derived sheet, so a single point of a stat moves several downstream numbers at once. The 5e SRD is the reference point most designers share, and a great many games inherit its structure directly.

The appeal here is depth and familiarity. Six stats give room for fine distinctions, derivation makes each point feel consequential, and most players already know how to read the sheet. The cost is the dump stat. With six Attributes, some will always carry more downstream weight than others, and the ones that carry least become the safe place to put a low number. The intelligence-versus-wisdom question, which many systems in this family never resolve cleanly, is a symptom of the same problem: once you have six, telling them all apart is genuinely hard.

A wide characteristic spread on a flat scale

Some systems carry many characteristics but derive little from them, using the stats mostly as inputs to a skill roll, not as the root of a calculated sheet. Call of Cthulhu works this way: an investigator has a broad set of characteristics, but the game's weight sits in the skill list, and the characteristics mostly feed it.

That keeps a large, textured set of numbers without the derivation cascade, so a point of a stat rarely ripples far. The cost is that some characteristics end up doing very little on their own, present for completeness or flavour and not because the system leans on them.

Few stats, each doing double duty

Modern systems often cut the count and make the survivors work harder. Cypher popularized the version I find most elegant: three stats, Might, Speed, and Intellect, that are each both a rated capability and a pool you spend from to push rolls, absorb harm, and fuel abilities. The stat measures how good you are and doubles as a resource you burn.

Fewer stats leaves nowhere for a dump stat to hide, since three cannot conceal a weak one the way six can, and the double duty gives every stat constant relevance. The cost is that each stat now carries a lot of conceptual load, so the lines between them have to be drawn carefully, and a system with this few has less room to express fine distinctions between characters.

Three stats, no derivation

The minimalist end. Into the Odd and its relatives use three stats and derive almost nothing from them: the number is the number, and the rest of the character comes from equipment and fiction.

It is the fastest possible version. Nothing needs calculating, creation takes minutes, and a stat means exactly what it says. The tradeoff is that characters differentiate through gear and play rather than through their sheet, so two characters with identical stats are told apart by what they carry and do.

No attributes at all

A few systems remove the layer entirely. Fate has no attribute line; a character is defined by skills and aspects, and innate capability is folded into those. There is no "before training" number because the game does not model that separation.

The gain is focus, since everything on the sheet becomes something the character does, with no baseline stats sitting behind it. The cost is that the floor Attributes usually provide goes with them. Without an innate number to fall back on, an untrained action has to be handled some other way, usually through the fiction or a default rating baked into the resolution system.

Running under it all is a trade between **count and weight**. Many stats give you fine distinctions and a rich derived sheet, at the price of some of them being ignorable. Few stats guarantee every one matters, at the price of range. Modern design has broadly trended toward fewer stats that each carry more, and the reason is the dump stat: it is easier to make three or four Attributes all matter than to make six all matter, and a stat nobody invests in is a stat that is not really there.

What Frontiers Does

Now, with that overview to catch you up to speed, here is the approach Frontiers takes, and the reasoning that led there.

Frontiers uses **four Attributes**, each read two ways, with most of the sheet derived from them:

Icon	Attribute	Covers
❖	**Vigor**	Bodily power and endurance
✩	**Deft**	Bodily precision and speed
◉	**Acuity**	Mental sharpness and reach
◬	**Resolve**	Mental fortitude and steadiness

Every Attribute has a **Score** (used without a roll) and a **Rank** (added to a roll). Full rules live in the Rulesets; what follows is why the shape looks like this.

Four, because every one has a job

The common count is six, and six is where the dump stat problem lives. Most six-Attribute systems cannot fully justify their own list, and the intelligence-versus-wisdom divide is the usual evidence: two stats that are hard to tell apart, one of which many characters ignore.

Frontiers settled on four for a simple reason. Every Attribute has to do a job no other Attribute does, and every Attribute has to matter to every character regardless of their build. There is no Attribute a martial character can safely dump and none a scholar can, because each one drives something everyone needs. Four is where that held. Earlier development carried six, and the two that were cut were the two that could not answer what they did that the others did not.

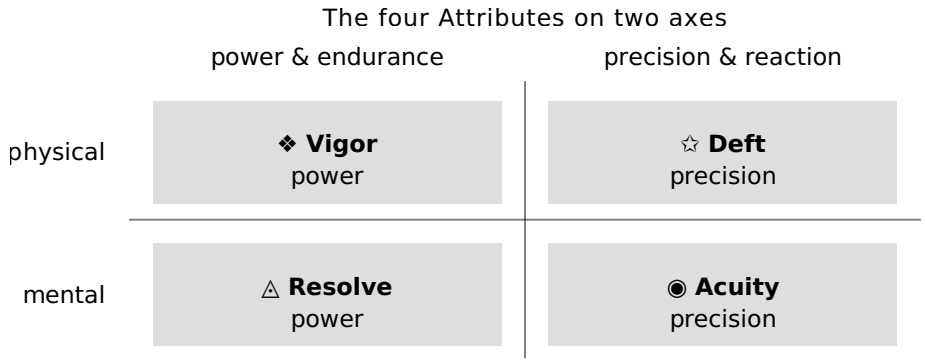
The two axes

The four sit on a grid, physical against mental and power against precision:

	Power & Endurance	Precision & Reaction
Physical	❖ Vigor	✩ Deft

	Power & Endurance	Precision & Reaction
Mental	◬ Resolve	◉ Acuity

The grid keeps the set complete without overlap, with four quadrants, four Attributes, and neither a gap nor a redundancy. It also sidesteps the stat every system struggles with. Charisma, in most games, could plausibly be physical or mental, power or precision, which is why it ends up ill-defined and negotiable. Frontiers has no such Attribute. Social force lives inside ◬ Resolve as the mental version of endurance, and nothing floats between quadrants.



Four quadrants, four Attributes: no gap, and nothing floating between two of them.

The names

The names took a while to decide on, and there were many variations through development, but I landed on these because the goal was twofold: avoid the familiar terms, and make sure each word clearly represents what it covers. Strength, Dexterity, and Intelligence come pre-loaded with what players expect them to mean, and each of the four covers more ground than those labels suggest.

- ❖ **Vigor** reads as constitution and natural strength together.
- ✩ **Deft** describes both fine precision, like sleight of hand, and gross precision, like footwork and reflexes.
- ◉ **Acuity** is clarity of mind combined with raw intelligence, wider than "smart."
- ◬ **Resolve** covers the social and mental wall a character holds, and reads as constitutional as well, which is why it can lend to durability.

Deft sits as an adjective among three nouns, and it was kept because it fit the capacity better than any noun that got tried.

Score and Rank

Every Attribute is read two ways: the **Score** when you are not rolling, the **Rank** when you are. In the roll-over Rulesets a Score defaults to 10 and the Rank is the Score minus 10: flat, linear, no tiers. The d100 runs the same structure on a wider scale, where the default is 50 and the Rank is (Score − 50) ÷ 5. The scale differs; the Rank it produces does not, which is why every value built on Rank is identical across all three.

The two-reading structure exists because passive resolution is a real part of the engine. Since a character can take their Score instead of rolling, the standing value needs to be a first-class number instead of something worked back from the modifier. Score is that number. Rank is the rolled value, and it is called Rank and not Modifier because Modifier only describes what it does to a roll, while Rank is more genre-agnostic and travels better across systems that might not roll the same way.

The conversion is linear rather than stepped, where a Rank changes every two points. (Figures below are given on the roll-over scale; the d100's equivalents follow from its own conversion.) Stepped scales invite an argument that never ends, over whether the odd or the even point is the one that counts, and they waste half the range. Linear means every point of Score is worth one point of Rank, and it scales cleanly in both directions: a designer wanting a wider or narrower spread can stretch or compress the range, because there is no conversion to break.

Derivatives, and why Defense uses pairs

Most of the sheet is derived: ✚ HP, the ⊗ Wound and ⊖ Fatigue tracks, ⇉ Movement, ➤ Initiative, and both Defenses all come from Attributes. Derivation is what gives an Attribute its weight, since every value built on it is another reason to raise it.

One value sits alongside the Attributes instead of being derived from them: ϟ **Energy**, the resource that governs how far a character can reach past their level. It behaves like an Attribute-adjacent stat of its own, and it is documented in full in the Abilities documentation, which is where its reasoning lives.

Two derivation choices are worth the reasoning.

DEFENSE DRAWS ON A PAIR, NOT A SINGLE STAT

 Physical Defense uses half the sum of ❖ Vigor and ☆ Deft; Mental Defense uses half the sum of ◉ Acuity and ◬ Resolve. Two reasons. First, most systems give physical defense a standing value and route the mental side through a separate saving throw subsystem instead. Frontiers wanted mental defense to be a standing Defense equal to the physical one, so everything in the game resolves the same way: beat a number. No save-versus-attack split, and no second resolution path to learn. Second, pairing rewards rounded builds. A blow is turned by toughness and speed, an assault on the mind by sharpness and will, so a character leaning on a single stat defends worse than one balanced across the pair. Halving the sum keeps Defenses in a tight band, so no one becomes unhittable.

◬ RESOLVE LENDS TO ✚ HP

❖ Vigor drives HP, but ◬ Resolve contributes as a character levels. It is the mental counterpart to bodily durability, the will to keep standing, and it gives ◬ Resolve a stake in survival rather than only in the mind.

Caps, and Live versus Anchored

The ⊗ Wound and ⊖ Fatigue tracks cap at 5 and do not grow with Level. Past a point, more boxes stop meaning anything and only slow play down, so the tracks stay short and readable for the whole life of a character. ✚ HP, which is meant to grow, is the pool that scales.

Derivatives are also marked **Live** or **Anchored**: Live values recalculate whenever their Attributes change, while Anchored values are fixed when set. The distinction lets designers write abilities that temporarily move an Attribute and have the right things follow, without the whole sheet shifting underfoot. It is an option instead of an obligation, but it is cheaper to offer now than to retrofit later.

Is this the best solution for Attributes?

This is the part of the engine that feels most settled. The four-Attribute grid comes out complete without redundancy, every Attribute has work every character needs, and the Score-and-Rank structure leaves the numbers open to tune.

That last point is the important one for a designer. Almost everything here is a default rather than a fixture: the Score baseline, the linear conversion, the Defense formula, the caps. The structure is the opinion. The numbers are yours.

There is a good chance you want different numbers, and possibly a different count. The final section below sets out variant and alternative rules to use in their place, along with what each one changes and what it will cost you elsewhere.

Variants

Variants keep the philosophy intact. Four Attributes, each read as a Score and a Rank, with the sheet derived from them. The numbers change while the structure holds, so derivation keeps working throughout. The groups below are dials, and they are meant to be mixed.

Tune the scale

The Score baseline is 10 and the Rank is the Score minus 10.

SHIFT THE BASELINE

Move the default Score up or down. A lower baseline makes Ranks negative more often and gives the game a grittier, less-capable feel; a higher one does the reverse. Everything derived from Rank follows automatically.

STRETCH OR COMPRESS THE RANGE

Change what a point of Score is worth, for example a Rank of one per two points of Score, for a tighter spread where Attributes matter less against the dice. This is the one scale change that touches the linear conversion, so decide it early; every derived value inherits it.

Tune the derivation

The formulas hanging off the Attributes are all defaults.

SINGLE-STAT DEFENSES

Base each Defense on one Attribute rather than a pair. Simpler to calculate, and it makes specialists better defended, at the cost of the rounded-build reward the paired formula was built to give.

UN-CAP THE TRACKS

Let ⊗ Wounds and ⊖ Fatigue grow past 5, or scale with Level. Longer tracks make characters more durable and combat longer, and hand back the bookkeeping the cap removed.

RE-WEIGHT ✚ HP

Change how much ❖ Vigor and ◬ Resolve contribute, or add a third contributor. The quickest lever on how survivable the game feels.

Tune what each stat drives

Re-map which Attribute feeds what. Move Skill count off ◉ Acuity, change what lends to ✚ HP, point a Defense at a different pair.

This is the riskiest group, because the dump stat problem lives here. Every derived value you move is a reason to invest removed from one Attribute and added to another, and it is possible to re-map the sheet into a state where one Attribute is clearly best and one clearly skippable. If you change what a stat drives, check afterward that all four still have a job every character needs.

Alternatives

Alternatives replace the philosophy instead of tune it, and here that is expensive. The four-Attribute, Score-and-Rank structure is the single most-derived thing in the engine, so almost everything else, Defenses, ✚ HP, the tracks, Skill count, is built on top of it. Changing the count or the structure means rebuilding all of it.

One thing to hold in mind throughout: **ϟ Energy is effectively a second Attribute-like system**, a stat that governs how far a character can reach past their limits. Several of the alternatives below overlap with what Energy already does, so any restructuring of Attributes should account for it rather than treat it as separate. The reasoning behind Energy lives in the Abilities documentation.

More or fewer Attributes

The obvious swap. Go to six for finer distinctions, or three for a leaner sheet.

Six reintroduces the dump stat problem this design was built to avoid, and you will need to find a real, universally-needed job for each of the six or accept that some will be ignored. Three loses a quadrant of the grid, so decide which axis collapses, usually by merging the two mental Attributes or the two physical ones. Every derived formula that names a specific Attribute has to be rewritten either way, and any that named a pair has to be reconsidered entirely.

Attributes as spendable pools

Make each Attribute a resource a character burns, in the manner Cypher popularized: the stat is both how capable you are and a pool you spend from to push rolls or absorb harm.

This is compelling and complicated on Frontiers, because ϟ Energy already occupies much of that space. You would either be building a second spendable system alongside Energy, which is a lot of overlapping bookkeeping, or folding Energy into the Attributes and rebuilding both at once. Worth attempting only if the spend-your-stats feel is central to your game, and worth reading the Energy documentation first to see what you would be duplicating.

Minimal derivation

Keep four Attributes but derive almost nothing from them, after the fashion of Into the Odd. The Score is the number, and character identity moves onto Equipment and Abilities instead of a calculated sheet.

Cheaper than it looks, since removing derivation is mostly deletion. What it costs is the weight Attributes carry: with nothing built on them, raising an Attribute stops rippling outward, so advancement has to find its meaning elsewhere, usually in gear and abilities. Suits fast, lethal, improvisational play.

No Attributes at all

Remove the layer, as Fate does, and fold innate capability into Skills, Abilities, and the fiction.

This is the most expensive removal in the engine, the exact opposite pole from where Frontiers sits. Everything derived from an Attribute has to be re-rooted on something else, and the passive-resolution structure, taking a Score without rolling, has no standing number left to take. Realistically this is not a modification of Frontiers so much as a different engine that borrows its other parts. Possible, but know going in that you are rebuilding the foundation.

Further afield

A few directions worth knowing about, each a larger departure, offered as references, not worked options:

- **Roll-based lifepath generation**, where Attributes emerge from a character's history instead of being assigned, as in Traveller. This changes character creation more than the Attributes themselves, and layers cleanly onto the four-stat frame if you want origins to feel earned.
- **Attributes that shift in play**, rising and falling as a character is changed by events rather than only through advancement. Some horror and transformation-focused games do this; it pairs naturally with the Live derivation the engine already supports.
- **Asymmetric or archetype-specific stat sets**, where different kinds of character use different Attributes entirely, as some tactical and mecha games do. This is the furthest departure here, and it breaks the shared-chassis assumption the whole engine rests on, so treat it as inspiration for a new system instead of a variant of this one.

Whichever you choose, remember that Attributes are the most-derived layer in Frontiers. A change here reaches further than a change anywhere else, so make it first, before building the rest of your system on top of it.