

Speaker Notes & Story Bank

Lean Six Sigma White + Yellow Belt Bootcamp

Grit & Team Workforce Summer Bootcamp | Launch Tools Academy

How to use this: notes are mapped to the 60-card deck. Each entry gives you the **hook**, a **story or example** to tell, and a **transition** to the next idea. Bolded "👉 Say this" lines are ready to read aloud. Keep stories to 60–90 seconds so you stay on the 2-hour clock. Pacing reminders are in brackets, e.g. [*~24 min for this whole module*].

OPENING — Cards 1–3 [*5 min*]

Card 1 (Title) & Card 2 (Agenda):

Set energy high. This is a credential, not a lecture.

👉 Say this: "In two hours, you're going to walk out with something you can put on a resume that employers actually recognize. Companies pay consultants six figures to do what you're about to learn the basics of."

Card 3 (What you're working toward):

Defuse exam anxiety up front.

👉 Say this: "Here's the deal — 50 questions, 75% to pass. That means you can miss 12 questions and still pass. My job is to make sure you don't even need that cushion. When I repeat something, that's me telling you it's on the test."

PART 1 — FOUNDATIONS — Cards 4–13 [*23 min*]

Card 5 — What is Six Sigma?

Story — Motorola's pagers: In the 1980s, Motorola was getting destroyed by competitors whose products just broke less. An engineer named Bill Smith put a name to a method for hunting down defects and variation. That method became Six Sigma. A decade later GE rolled it out company-wide and credited it with billions in savings. It started because a company was tired of making junk.

👉 Say this: "'Sigma' is just a measure of how much a process bounces around. The higher your sigma, the fewer mistakes. Six Sigma is so good it allows only about 3 defects per million."

Card 6 — Lean vs. Six Sigma.

Example — the burger joint: *Lean* is the cook who stops walking back and forth across the kitchen 200 times a shift — it's about **speed and removing waste**. *Six Sigma* is making sure burger #1 and burger #500 taste exactly the same — it's about **consistency and removing variation**. Put them together and you've got a fast kitchen that never disappoints.

👉 Say this: "Lean = remove waste. Six Sigma = remove variation. Easy way to remember it."

Card 7 — Cost of Poor Quality (COPQ).

Story — the wrong drive-thru order: You order a meal, get the wrong thing. Watch what it costs: they remake it (labor), throw out the wrong one (wasted food), you wait (frustration), and you tell five friends the place messes up orders (lost future sales). One small defect, five different costs.

👉 Say this: "Quality isn't a 'nice to have.' Every defect costs money in ways you can't always see on the receipt."

Card 8 — Voice of the Customer.

Example — the cafeteria garnish: Imagine the school cafeteria spends 20 extra minutes a day putting a little parsley sprig on every tray. Looks fancy. Nobody eats it, nobody asked for it. That effort isn't quality — it's just cost. Quality is defined by the customer, not by what we think looks good.

👉 Transition: "So how do we actually improve things? There's a roadmap."

Card 9 — DMAIC roadmap.

👉 Say this: "Define the problem, Measure where you are, Analyze the cause, Improve it, Control it so it stays fixed. Five steps: D-M-A-I-C. We'll spend real time on this in Part 4 — for now, just know the map exists."

Cards 10–12 — The belt system / You are here.

Analogy — martial arts: Just like karate, you earn belts as you level up. White = you understand the language. Yellow = you can serve on a project team (that's today's goal). Green = you can lead a small project part-time. Black = you do this full-time. Master Black Belt = you coach the Black Belts.

👉 Say this: "By the end of today, you're going for Yellow — that's a real team-member-level credential. You're two rungs up the ladder before lunch."

Card 13 — Key takeaways. Quick recap, then pivot hard into the exam content.

👉 Transition: "That's the foundation. Now we get into the stuff that's all over your exam. Pens ready."

PART 2 — THE SEVEN WASTES (TIM WOOD) — Cards 14–26 [24 min — biggest exam block]

Card 15 — Muda.

Story — Toyota's floor: A Toyota engineer named Taiichi Ohno spent his career hunting waste on the factory floor. He gave it a name — *muda* — and he eventually sorted it into categories. Everything in this section traces back to one guy who refused to accept wasted effort as "just how it is."

👉 Say this: "Muda is Japanese for waste — anything the customer wouldn't pay for. Write that down. (Question 1, by the way.)"

Card 16 — Meet TIM WOOD. *This is the most important card in the deck.*

Memory device: Picture a guy named **Tim Wood**. He carries all seven wastes in his name: Transportation, Inventory, **M**otion, **W**aiting, **O**ver-processing, **O**verproduction, **D**efects.

👉 Say this: "Say it with me — TIM WOOD. Again. If you remember nothing else today, remember Tim Wood. He's worth at least five questions."

[Have the room say it out loud twice. Seriously — this is the highest-yield 30 seconds of the day.]

Card 17 — Overproduction = the **WORST** waste.

Story — the donut shop: A shop makes 200 donuts at 6 a.m. By noon they've sold 50. Now watch the chain reaction: the other 150 sit around (that's **Inventory**), they go stale (**Defects**), someone has to move them to a back shelf (**Transportation** and **Motion**), and the staff spent time on them instead of fresh ones (**Waiting** for real demand). One bad call — making too much — triggered five other wastes.

👉 Say this: "That's why overproduction is the worst. It's the parent waste. Make too much, and all the others come along for the ride."

Card 18 — Motion vs. Transportation. *The #1 most-missed concept on the exam.*

👉 Say this, slowly: "Motion moves **people**. Transportation moves **things**. Motion = people. Transportation = things." [Repeat it a third time later in the review.]

Card 19 — Quick examples.

Example — the nurse and the lab: A nurse walking back to the supply closet 30 times a shift — that's her body moving, so it's **Motion**. A blood sample getting carried across the hospital to the lab — that's a *thing* moving, so it's **Transportation**.

👉 Say this: "Printer 50 feet away? You walking there is Motion. Forklift moving pallets between warehouses? That's Transportation. People versus things."

Cards 20–21 — The value-added test.

Example — making a sandwich: Putting the meat on the bread? That's **value-added** — the customer pays for it, it transforms the product, and you did it right. Now imagine the wrapper tears and you have to re-wrap it. The customer won't pay extra for that, it didn't transform anything, and it wasn't right the first time. **All three rules have to be true. If even one fails, it's waste.**

👉 Say this: "Three rules: customer pays, it transforms the product, done right the first time. ONE strike and it's waste. That 'any one fails' part is a question."

Card 22 — Required (Business) NVA.

Example — airport security: Nobody enjoys taking their shoes off at the airport. You wouldn't pay extra for it. It doesn't make your trip better. But it's legally required, so we can't delete it — we can only make it faster. That's **Required Non-Value-Added**.

👉 Say this: "Compliance paperwork, safety checks, taxes — required, but no customer value. Can't cut it, just minimize it."

Card 23 — Inventory hides problems.

Story — rocks under the water (the classic Lean image): Picture a boat floating on water. Under the surface are jagged rocks — those rocks are your real problems: machine breakdowns, bad quality, slow suppliers. The *water* is your inventory. When you keep the water high (lots of inventory), the boat floats right over the rocks and you never see them. Lower the water — cut the inventory — and suddenly the rocks stick out. Now you're forced to fix them.

👉 Say this: "That's why excess inventory is dangerous. It's not just storage cost — it hides the problems you actually need to solve. On the exam, the answer is 'all of the above.'"

Card 24 — Over-processing.

Example — the 40-slide answer: Your boss asks, "How many units did we sell?" You build a 40-slide deck with charts, animations, and a cover page. They wanted one number. That extra polish nobody asked for is **over-processing** — like gift-wrapping a pizza.

👉 Say this: "Doing MORE than the customer asked for is still waste, even though it feels like hard work."

Card 25 — Gemba Walk.

Story — go and see: Toyota's leaders had a rule: don't sit in your office reading reports about the factory — go stand *on* the factory floor and watch. *Gemba* means "the real place." A principal who actually sits in classrooms learns more than one who only reads test scores.

👉 Say this: "A Gemba Walk — also called a Waste Walk — means you physically go where the work happens and watch with your own eyes."

Card 26 — Impact-Effort Matrix.

Example — cleaning your room: Picking clothes up off the floor is *low effort, big visual impact* — that's a **Quick Win**. Reorganizing your entire closet is *high effort* for less immediate payoff. When you've got a list of problems, start with the quick wins.

👉 Say this: "Top-left of the grid — High Impact, Low Effort — that's the Quick Wins box. Memorize that quadrant."

👉 Transition: "You just covered the biggest chunk of the exam. Shake it out — we're moving to the part with a little math, and I promise it's easier than it looks."

PART 3 — VALUE STREAM, FLOW & PULL — Cards 27–34 [15 min]

Card 28 — Value Stream Mapping.

Analogy — Google Maps for a process: A value stream map is basically Google Maps for how work gets done. It shows every stop from start to customer — and just like Maps shows you red traffic, a VSM shows you where work sits stuck in "traffic" (waiting). The **Current State** map is today's reality. The **Future State** is where you want to go.

Card 29 — Lead time vs. process time.

Story — the doctor's appointment: You're at the clinic for 90 minutes. How much of that was actually *with* the doctor? Maybe 7 minutes. The other 83 you spent in the waiting room. That waiting room time is the hidden killer.

👉 Say this: "Lead time = process time PLUS wait time. And it's almost always mostly waiting."

Card 30 — Value-Added Ratio. Math slide — do it live.

👉 Say this: "Value-added ratio is just process time divided by lead time. Our example: 20 minutes of real work, 400 minutes total. $20 \div 400 = 5\%$. That doctor visit? $7 \div 90$, about 8%. Most processes are shockingly low — that's the opportunity."

[Write $20 \div 400$ on the board. Make them do one more: "If it's 30 minutes of work in 600 total, what's the ratio?" Answer: 5%.]

Card 31–32 — Takt Time. Math slide — do it live.

Analogy — the heartbeat: Takt time is the heartbeat of production — the steady rhythm you have to hit to keep up with customers.

👉 Say this: "Takt = available time divided by customer demand. Sandwich shop at lunch: 60 customers, 60 minutes — you need one sandwich every minute. Our exam example: 450 minutes, 90 units. $450 \div 90 = 5$ minutes per unit."

[Do one more together: 480 minutes, 120 units $\rightarrow 4$ min/unit. Build the muscle memory.]

Card 33 — Push vs. Pull.

Story — buffet vs. sushi belt: An all-you-can-eat buffet cooks giant trays of food in the morning *hoping* it sells — that's **push**, and whatever doesn't sell gets tossed (overproduction). A sushi conveyor belt only refills what you actually grab — that's **pull**. Fun fact: Toyota got the idea for pull systems from watching American grocery stores restock shelves only when customers took items off them.

👉 Say this: "Pull means work starts from a real downstream demand signal — not a guess, not a forecast."

Card 34 — Kanban & Flow.

Example — you already use Kanban: That Trello board with To-Do, Doing, Done columns? That's Kanban — Japanese for "signboard" or visual signal. **One-piece flow** means finishing one complete item before starting the next, instead of batching.

👉 Say this: "Exam trap: if your cycle time is FASTER than takt, you're making stuff faster than customers want it — that's overproduction sneaking back in."

👉 Transition: "Math's over. Now the heart of Six Sigma — the toolkit for actually solving problems."

PART 4 — DMAIC FOUNDATIONS — Cards 35–48 [25 min — tied for biggest exam block]

Cards 36–37 — SIPOC.

Example — the café latte: Let's SIPOC a coffee shop. **Suppliers:** the bean roaster, the dairy farm. **Inputs:** beans, milk, water, a cup. **Process:** grind, brew, steam, pour. **Outputs:** your latte. **Customers:** you. Five columns, one picture of the whole operation.

👉 Say this: "SIPOC = Suppliers, Inputs, Process, Outputs, Customers. And here's the exam catch — you build it starting from the **Process** in the middle, then work outward. Process first."

Card 38 — Measure = baseline.

Example — the scale: You can't prove you lost weight if you never stepped on the scale on day one. You can't prove your mile got faster if you never timed your first mile. The Measure phase is you stepping on the scale.

👉 Say this: "Measure establishes your baseline — your starting line. No baseline, no proof you improved."

Card 39 — Problem statement.

Example — 'we need a new printer': That sentence has the solution already baked in — and it might be dead wrong. A real problem statement says: "Documents take 15 minutes to print, causing three missed deadlines a week." Maybe the fix is a new printer. Maybe it's a setting. Maybe it's training. Don't bake the answer into the question.

👉 Say this: "A problem statement is specific, measurable, and neutral — and NOT solution-focused. 'Solution-focused' is the wrong answer on the exam."

Card 40 — SMART goals.

Example — basketball: "I want to get better at basketball" is useless. "I'll make 8 of 10 free throws by August 1st" is **SMART** — Specific, Measurable, Achievable, Relevant, Time-bound.

👉 Say this: "The 'A' you need to know is **Achievable**."

Card 41 — Operational definitions.

Story — 'clean your room': Ask a teenager and a parent what a "clean room" is and you'll get two completely different answers. So you define it: zero items on the floor, bed made, trash empty. Now everyone measures "clean" the same way.

👉 Say this: "An operational definition makes sure everybody measures the same thing the same way. No arguments, no guessing."

Card 42 — Continuous vs. Discrete data.

👉 Say this: "Continuous data is measured on a scale — time in minutes, weight, temperature. Discrete data is counted — number of defects, pass/fail, yes/no. And the exam fact: discrete data needs LARGER sample sizes to be reliable."

Card 43 — DPU. Quick math.

👉 Say this: "Defects Per Unit = defects divided by units. 100 burgers, 8 came out wrong: $8 \div 100 = 0.08$. That's it."

Card 44 — 5 Whys.

Story — the Jefferson Memorial (the famous one): The Jefferson Memorial in Washington was crumbling. Instead of just patching it, someone asked *why* five times:

1. *Why is it crumbling?* The harsh soap used to clean it.
2. *Why clean it so often?* Tons of bird droppings.
3. *Why so many birds?* They came to eat the spiders.
4. *Why so many spiders?* They came to eat the insects.
5. *Why so many insects?* The bright lights at dusk drew them in.

The real fix wasn't gentler soap or scaring off birds — it was **turning the lights on an hour later**. Five "whys" took them from a crumbling monument to a lightbulb timer.

👉 Say this: "If they'd stopped at the first answer, they'd be repainting that monument forever. Keep asking why until you hit the real cause."

Cards 45–46 — Fishbone & the 6 M's.

Example — the flopped cake: Your cake came out flat. Why? Run a fishbone: **Man** (baker rushed), **Machine** (oven runs cold), **Method** (wrong recipe step), **Material** (expired baking soda), **Measurement** (used the wrong cup), **Mother Nature** (humid kitchen). The fishbone — also called **Ishikawa** or **Cause-and-Effect** — organizes every possible cause so you don't tunnel-vision on one.

👉 Say this: "Fishbone, Ishikawa, Cause-and-Effect — three names, same tool. The six M's: Man, Machine, Method, Material, Measurement, Mother Nature."

Card 47 — Symptom vs. root cause.

Analogy — the fever: A fever is a *symptom*. The infection is the *root cause*. Take aspirin and the fever drops for a few hours — but you're still sick because you never touched the cause. "Customers are complaining about late orders" is a fever. The root cause is somewhere underneath.

👉 Say this: "And never start fixing solutions before you've confirmed the root cause with data. That's like a mechanic swapping random parts hoping one works."

Card 48 — Stakeholder grid.

Example — the group project: Think of a class project. Your teacher set it up and grades it — **high influence**, but low day-to-day interest in your group chat. You **keep them satisfied** (don't surprise them, hit the deadlines), but you don't loop them into every message. Your teammates are high influence AND high interest — those you **manage closely**.

👉 Say this: "High influence, low interest = **Keep Satisfied**. That's the one the exam asks about."

👉 Transition: "Last stretch — the quality toolbox and how to collect data you can actually trust."

PART 5 — QUALITY TOOLS & DATA — Cards 49–58 [15 min]

Card 50 — The 7 Basic Quality Tools.

👉 Say this: "Seven tools in the toolbox: Pareto, Histogram, Control Chart, Fishbone, Check Sheet, Scatter Diagram, Flowchart. You don't need to master all seven today — just recognize them."

Card 51 — Pareto / 80-20.

Story — Pareto's peas: Over a hundred years ago, an Italian economist named Vilfredo Pareto noticed 80% of Italy's land was owned by 20% of the people. Then he looked at his own garden and realized 80% of his peas came from 20% of his pods. The pattern was everywhere. Today: 80% of a store's complaints usually come from 20% of its products.

👉 Say this: "The 80-20 rule: 80% of your problems come from 20% of the causes. Fix the vital few, ignore the trivial many. Want to stop being late? 80% of it is probably one cause — hitting snooze."

Card 52 — Scatter Diagram.

Example — ice cream and temperature: Plot ice cream sales against the temperature and you'll see dots climbing together — hotter day, more sales. A scatter diagram shows the **relationship between two variables**. (Fun warning: ice cream sales and pool drownings also rise together — but ice cream doesn't cause drowning. Both go up because it's *summer*. Relationship isn't always cause.)

Cards 53–55 — Control Charts.

Analogy — the heart monitor: A control chart is like the heart monitor in a hospital. A little wiggle up and down is normal — that's **common cause** variation, no big deal. But a sudden **spike outside the lines** means something's wrong — that's a **special cause**, and you investigate immediately. And if you see **7 points in a row** all drifting to one side of center, the patient's baseline has shifted — the process mean moved.

👉 Say this: "Two signals to memorize: one point outside the limits = special cause, investigate. Seven in a row on one side = the mean shifted."

Card 56 — Check Sheet & Hawthorne Effect.

Story — the Hawthorne factory: At a factory called Hawthorne Works almost a century ago, researchers turned the lights *up* to see if workers got more productive. They did. Then they turned the lights *down*. Workers got more productive again. The lighting wasn't the point — productivity rose simply because people knew they were being **watched**. That's the **Hawthorne Effect**. You've felt it: you drive more carefully when there's a police car behind you.

👉 Say this: "A check sheet is just an organized tally for collecting data. And the Hawthorne Effect — people change their behavior when they know they're observed — can quietly mess up your data."

Card 57 — Sampling methods.

Example — the school survey: You want to know what the whole school thinks about a new schedule. If you only ask seniors, you'll get a skewed answer — seniors and freshmen want different things. So you **stratify**: sample across every grade because the subgroups differ. The lazy way — asking whoever's standing nearby — is **convenience sampling**, and it's unreliable.

👉 Say this: "Subgroups differ? Use stratified. Convenience sampling — just grabbing whoever's easy — is the unreliable one."

Card 58 — Data Integrity.

Example — the fitness tracker: Good data is like a fitness tracker you trust: **accurate** (right step count), **complete** (doesn't drop hours), and **consistent** (same reading for the same walk). Notice what's NOT on that list — how *expensive* it was to collect. Cost has nothing to do with whether data is trustworthy.

👉 Say this: "Data integrity = accurate, complete, consistent. 'Is it expensive?' is NOT a data-integrity question. That's the trick on the last one."

CLOSING — Cards 59–60 [13 min — rapid review + send-off]

Card 59 — Rapid Review. Machine-gun it. Call and response keeps energy up:

- "Seven wastes?" → **TIM WOOD**
- "Motion moves...?" → **people**. "Transportation moves...?" → **things**.
- "Worst waste?" → **Overproduction**
- "Takt time formula?" → **available time ÷ demand**
- "Value-added ratio?" → **process ÷ lead**
- "SIPOC starts with...?" → **Process**
- "Point outside the control limits?" → **special cause**
- "Convenience sampling is...?" → **unreliable**

Card 60 — Send-off.

👉 Say this: "You can miss 12 and still pass. Watch for the 'NOT' and 'EXCEPT' questions — read those twice. On anything you're unsure of, knock out two wrong answers first, then pick. You've got this. Go earn your Yellow Belt."

Instructor Reminders

- **Hit Motion vs. Transportation three separate times** (Cards 18, 19, and the rapid review). It's the #1 miss.
- **Do every formula live on the board with a second example.** Definitions alone won't carry them through the math questions.
- **Never put the answer key on screen.** These notes are for you; the deck is for them.
- **If you're running long,** trim the foundation stories (Cards 5–8) first — they're context, not tested content. Protect the time in Parts 2 and 4.

