THE ACHIEVEMETRICS IMPROVEMENT PROCESS · PLAYBOOK

Clear structure. Decisions teachers own. Growth students can see.

One uniform process for any secondary math team, from state results to proficiency students can see

WHAT THIS IS

A uniform process any secondary math team can run: understand what state results measure, agree on what proficiency looks like, test one change at a time on students' work, and follow the same students until they reach proficiency. Teachers own the instructional decisions. Students see and understand their growth.

The process at a glance

	STAGE	WHEN	WHAT THE TEAM DOES	OUTPUT
1	Understand the root causes	Weeks 1 to 2	Teams learn the five root causes and how each one shows up in classrooms and in students' results.	Shared language for why students struggle
2	Read the results through them	Weeks 2 to 3	Read state results by area, with expected variation, grade 8 cohorts and similar schools. Each team diagnoses the root cause its own evidence points to.	A diagnosed root cause with evidence
3	Learn PDSA with high-impact practices	Weeks 3 to 4	Teams learn the PDSA cycle and choose a change idea from Hattie's high-impact practices that fits their root cause, with a prediction and a measure of proficiency.	First PDSA question, change idea, prediction
4	Map the unit backward	Before each unit	Calibrate rigor in the Test Bank, then map goals to SBAC targets, actual assessment items, what earning the point takes, prerequisites, lessons and checks.	Backward unit map with items and criteria
5	Run the cycle	Every 3 to 6 weeks	A two-hour planning day: one gap, shared criteria from the mapped item, a co-planned lesson, a check and reassessment, four dates. Weekly PLC check-ins keep it moving.	Planning sheet, predictions, dates
6	Close the loop	Next planning day	Matched work for the same students, the count against the prediction, missing follow-up, and the team's decision: continue, adapt or change.	Count of students who reached proficiency; recorded decision
7	Report and carry forward	Mid and end of semester	Leadership sees what each team tested and what the evidence shows, as data. Teams revisit prerequisites and pass persistent gaps and supports that worked to the next course team.	Principal update, hand-off notes, next unit

Stages 4 to 6 repeat for every unit. Stage 7 closes each semester and feeds the next.

ONE SEMESTER

The calendar and who does what

WHEN	STAGE	WHAT HAPPENS	WHO
Weeks 1 to 2	Stage 1	Learn the five root causes and how they affect achievement	Teams, facilitator
Weeks 2 to 3	Stage 2	Results report through the root causes; each team diagnoses	Principal, teams
Weeks 3 to 4	Stage 3	PDSA introduction with Hattie's practices; first PDSA question	Each course team
Week 4	Stage 4	Rigor calibration and backward map of the first unit	Course team
Week 5	Stage 5	Planning day 1: start the unit and the cycle	Course team, facilitator
Weeks 6 to 8	Stage 5	Lesson, first check, reteach, reassessment; weekly check-ins	Teachers, students
Week 9	Stages 6, 5	Planning day 2: close the loop, then the next goal	Course team, facilitator
Week 10	Stage 7	Mid-semester principal update	Principal, facilitator
Weeks 11 to 16	Stages 4 to 6	Next unit mapped; planning days 3 and 4; new-context checks	Course team
Weeks 17 to 18	Stage 7	End-of-semester update, hand-offs, next semester's first unit	All

A starting point. Schools that start mid-year begin at Stage 1 and move to Stage 4 with the current unit after Stages 1 to 3.

Roles

ROLE	WHAT THEY DO
Principal	Protects planning time, reads the evidence with teams, and hears the update. Does not pick the change.
Facilitator (AchieveMetrics)	Brings structure, data, resources and coaching questions; never directs the instructional decision.
PLC lead	Keeps the PDSA record and the tracker current between planning days; runs weekly check-ins.
Teachers	Map units, set criteria, choose the approach, teach, score and decide.
Students	Restate the criteria, predict their result and track it on the growth card.

STAGE 1 · WHERE EVERY SCHOOL BEGINS

The five root causes and how they affect achievement

A root cause is the underlying reason students struggle, not the symptom (the score). Teams learn all five before they look at results, so the data conversation starts from shared language instead of blame.

ROOT CAUSE	WHAT IT IS	HOW IT AFFECTS ACHIEVEMENT	QUESTIONS TO EXPLORE
1 Curricular alignment	Lessons and tasks may not match the SBAC targets or the depth (DOK) the test asks for.	Students practice mostly DOK 1 recall, then meet DOK 2 and 3 items on the test.	Are units mapped to the targets? What share of our checks ask for DOK 2 or higher?
2 Shared understanding of proficiency	Teachers may not share one picture of proficient work, and students may not know what it looks like.	The same paper earns different scores in different rooms; students can't say what proficient means.	If we score the same work, where do we agree and differ? Can students describe proficient work?
3 Informative data	Checks may not measure the target and its DOK, or data is collected but not acted on.	Gaps, including prerequisite gaps, go unseen until the unit test or the state test.	Do our checks show who needs what, by student? When do we review them together?
4 Intervention	Support may be missing, inconsistent or not matched to the specific gap.	Students who fall behind move on to new material and gaps from earlier grades accumulate.	When a check shows a gap, what happens next, for whom, and does it target the specific gap?
5 Explicit instruction	Instruction may show steps without modeling the reasoning or the meaning behind them.	Students can carry out a procedure but can't explain it, which shows up in Communicating Reasoning.	How often do students see the why modeled, in more than one representation?

QUESTION TO OFFER

"Which of these might we recognize in our own classrooms, and what would we look for in our materials, checks and student work to know?"

STAGE 3 · INTRODUCING PDSA

The PDSA cycle, built on high-impact practices

Once a team has diagnosed a root cause, PDSA turns it into a small test of change. The change idea comes from instructional practices with strong evidence, chosen by the team.

STEP	WHAT THE TEAM DOES
Plan	Name the root cause, one change idea from a high-impact practice, the question, the prediction, the measure (proficiency on shared criteria for the same students) and who does what.
Do	Every teacher on the team tries the same change in the same window. Students predict and track.
Study	Compare matched student work with the prediction. Count who reached proficiency and who has no evidence yet.
Act	The team decides: continue, adapt or change. Then plan the next cycle.

A protocol for putting a practice into the cycle

STEP	QUESTION FOR THE TEAM
Prioritize	Which practice fits our root cause and our students? Start with one.
Define it in our context	What does it look like in our course? Agree on a short look-for list.
Co-plan	Build one lesson that embeds the practice (planning-day segment 3).
Collect evidence	Student work, checks and observations: did students learn, and did we do what we planned?
Adjust and scale	Refine it, or ask whether the issue was the practice or how we carried it out.

EFFECT SIZE IS NOT A GUARANTEE

High effect sizes mean a practice works well on average. How a team carries it out matters as much as which practice it picks, so the Study step looks at both: did students learn, and did we do what we planned?

STAGE 3 · CHOOSING A CHANGE IDEA

Hattie's high-impact practices, matched to the root causes

PRACTICE	EFFECT	WHAT IT LOOKS LIKE	A CHANGE IDEA A TEAM MIGHT TEST	ROOT CAUSES
Student expectations and self-efficacy	1.44	Students believe they can succeed and know what they are aiming for.	Students predict their result and track it against criteria.	2, 4
Teacher clarity	0.75	Learning goals and success criteria are explicit and in student-friendly words.	Post unit targets and criteria in student words; check that students can restate them.	1, 2
Reciprocal teaching	0.74	Students explain, question, clarify and summarize for each other.	Tasks where students explain reasoning to peers, with discourse protocols and stems.	5
Feedback	0.73	Specific, timely feedback on where students are against the goal and what's next.	Feedback templates for common misconceptions; practice feedback on student work in the PLC.	2, 3, 4
Metacognition	0.67	Students monitor their thinking and adjust strategies.	Reflection built into lessons: what strategy, did it work, what next?	2, 5
Direct instruction	0.59	Clear modeling, worked examples and active student engagement.	A bank of worked examples with think-aloud scripts.	5
Mastery learning	0.58	Students show mastery before moving on; reteaching is built into pacing.	Define mastery with a proficiency rubric; plan intervention windows; checks trigger regrouping.	1, 3, 4

Effect sizes as listed in the AchieveMetrics Hattie practices handout, from Hattie, J. (2023), Visible Learning for Mathematics, Corwin; 0.40 is roughly one year of growth. Values differ across Visible Learning editions. Root cause numbers refer to page 3.

QUESTION TO OFFER

"Given the root cause we named, which of these practices might make the biggest difference for our students, and what would it look like in our course?"

THE SEVEN STAGES

What happens in each stage

1 STAGE Understand the root causes

Before looking at any scores, teams build shared language for why students struggle.

1. Read the five root causes together: curricular alignment, shared understanding of proficiency, informative data, intervention and explicit instruction (page 3).
2. For each, talk through how it shows up in a classroom and how it affects what students can show on the state test.
3. Each teacher notes, privately, which root causes they recognize in their own course.

READY TO MOVE ON WHEN

Every teacher can explain each root cause and give a classroom example.

QUESTION TO OFFER

"Which of these might we recognize in our own classrooms, and what makes you think so?"

2 STAGE Read the results through the root causes

Use the results to test the team's thinking about root causes, not to judge.

1. Read the school results report: the three math areas, two years side by side, with the range of typical expected results, the grade 8 view of current students and similar schools. Data only.
2. Choose an area to focus on and ask which root cause might explain it.
3. Name the evidence from the team's own context: materials, checks, student work, support structures.

READY TO MOVE ON WHEN

The team has a diagnosed root cause, the area it affects, and evidence from its own context.

QUESTION TO OFFER

"Which root cause might best explain this pattern, and what evidence would we look for?"

3 STAGE
Learn PDSA with high-impact practices

Turn the diagnosis into a small, testable change grounded in practices with strong evidence.

1. Introduce the PDSA cycle (Plan, Do, Study, Act) and the PDSA template (page 4).
2. Review Hattie's high-impact practices and which root causes each one addresses (page 5).
3. Choose one practice and turn it into a change idea the whole team will try.
4. Write the question, the prediction and a measure of proficiency for the same students.

READY TO MOVE ON WHEN

The team has a PDSA question, a change idea from a high-impact practice, a prediction and a measure.

QUESTION TO OFFER

"Which practice might have the most impact on the root cause we named, for our students?"

4 STAGE
Map the unit backward

Plan from the evidence students must produce, at the rigor the test expects.

1. Calibrate rigor: each teacher works Test Bank items for the unit's targets at each DOK the target uses.
2. For each learning goal, pull one or two actual items (released sample items, practice tests, aligned district assessments, Test Bank). Solve them first.
3. Name what earning the point takes; write it as criteria students can use. Flag prerequisites.
4. Sequence lessons, checks, reassessment and a later new-context check on the map.

READY TO MOVE ON WHEN

Every goal in the unit has an item, criteria in student words, prerequisites and dates.

QUESTION TO OFFER

"What would a student need to say for you to be confident they earned the point?"

5 STAGE
Run the cycle

Test one change at a time on students' work, inside the unit.

1. Planning day (two hours): 15 pattern or close the loop, 20 criteria from the mapped item, 45 protected co-planning, 25 check and reassessment, 15 dates.
2. In class: the co-planned lesson with targeted support; students predict their result.
3. First check: score with shared criteria, group by error, reteach inside the unit, reassess with a fresh problem on the same target, DOK and criteria.
4. Weekly PLC check-in: what happened this week, what students showed, what's next.

READY TO MOVE ON WHEN

The tracker has check and reassessment results for the same students.

QUESTION TO OFFER

"What would you expect to see if this approach is working?"

6 STAGE
Close the loop

Decide with evidence the team trusts.

1. Lay out matched work for the same students: check, reassessment, and new-context check when it comes.
2. Count students who started below Proficient and reached it; compare with the prediction.
3. Count missing follow-up separately. Unknown is not zero.
4. The team decides: continue, adapt or change, and records why.

READY TO MOVE ON WHEN

The PDSA record shows the prediction, the count, the missing evidence and the decision.

QUESTION TO OFFER

"Is this a result we can stand behind, or an early signal worth testing again?"

7 STAGE
Report and carry forward

Make the work visible to leadership and keep the gains.

1. Mid and end of semester: a principal update with what each team tested and what the evidence shows, data only, teachers de-identified.
2. Revisit recurring prerequisites in later units (spaced return).
3. Hand persistent gaps and the supports that worked to the next course team.
4. Choose the next unit and return to Stage 4.

READY TO MOVE ON WHEN

Leadership has seen the evidence, and the next course team has the hand-off.

QUESTION TO OFFER

"What are we learning across cycles that the next team should know?"

SEEING A TEAM'S GROWTH

The team growth continuum

Use it to describe where a team's practice is and what the next step could be, never to rate teachers. Teams usually sit in different columns on different rows, and move one row at a time.

	STARTING	DEVELOPING	ESTABLISHED	SUSTAINING
Focus	A broad goal (for example, raise scores by a set amount)	One driver and one problem of practice	One learning goal tied to an SBAC target	Whole units mapped backward from actual items
Measure	Completion or participation	Scores on a common task	Proficiency on shared criteria for the same students	Proficiency that holds in a new context
Shared proficiency	Each teacher's own judgment	A common rubric	Criteria from actual items and the ALD, calibrated by scoring together	Students describe and model proficient work
Response	Whole-class reteach	Groups by score	Groups by error or reasoning gap with a chosen approach	Spaced return and hand-off to the next course
Decision	Not recorded	Adopt, adapt or abandon recorded	Compared with the prediction, with counts and missing evidence	A team record that builds across cycles
Student ownership	Students receive scores	Students rate themselves	Students predict and track against criteria	Students explain their growth with evidence

QUESTION TO OFFER

"Looking at this row, where would you place our work right now, and what would the next column look like in our classrooms?"

TAKING IT TO A NEW SCHOOL

Start-up and what transfers

The first 30 days

	WHAT TO SET UP
Agreements	Who is on each team, when planning days happen (two hours, 45 minutes protected), how evidence is shared, and that teachers own the decisions.
Root causes session	Schedule Stage 1 before anyone sees scores, with the school's own Five Root Causes guide.
Results report	School results by area with expected variation, eighth-grade view, similar schools. Data only.
Calendar	Planning days every three to six weeks; weekly one-hour check-ins; two principal updates.
Templates	PDSA template, Backward Unit Map, planning sheet, tracker, growth card, weekly check-in.
Access	Test Bank accounts for each teacher, so rigor calibration and item pulls can start in Stage 4.

Stays the same at every school

- The seven stages and their order, starting with the root causes
- The two-hour planning day and the protected 45 minutes
- Criteria from actual items and the ALD
- Following the same students across checks
- Teachers own the decisions; data-only reports
- The tools in this kit

Adapts to each school

- Where the first planning day starts (structure first, or an active PDSA cycle)
- Which driver and unit each team chooses
- Meeting days and calendar
- Which assessments the district already uses as common checks
- How much of the facilitation the team takes on over time

Tools by stage

TOOL	STAGE	WHERE
School results report	Stage 2	Built from CDE research files for each school
Five Root Causes guide	Stages 1 and 2	School version, built on that school's results
Hattie high-impact practices handout	Stage 3	Visible Learning for Mathematics (Hattie, 2023)
PDSA template	Stages 3 and 6	Team document
Test Bank and DOK Progression Guides	Stage 4	achievemetricstestbank.com
Backward Unit Map	Stage 4	Backward_Unit_Map.docx
Facilitator guide	Stages 5 and 6	Facilitator_Guide_PLC_Planning_Day.docx
Teacher planning sheet	Stage 5	Teacher_Planning_Sheet.docx
Student growth card	Stage 5	Last page of the facilitator guide
Weekly PDSA check-in	Stage 5	Weekly check-in handout and team reflection form
Same-Students Tracker	Stages 5 and 6	Same_Students_Tracker.xlsx
Principal update	Stage 7	PLC update deck, data only