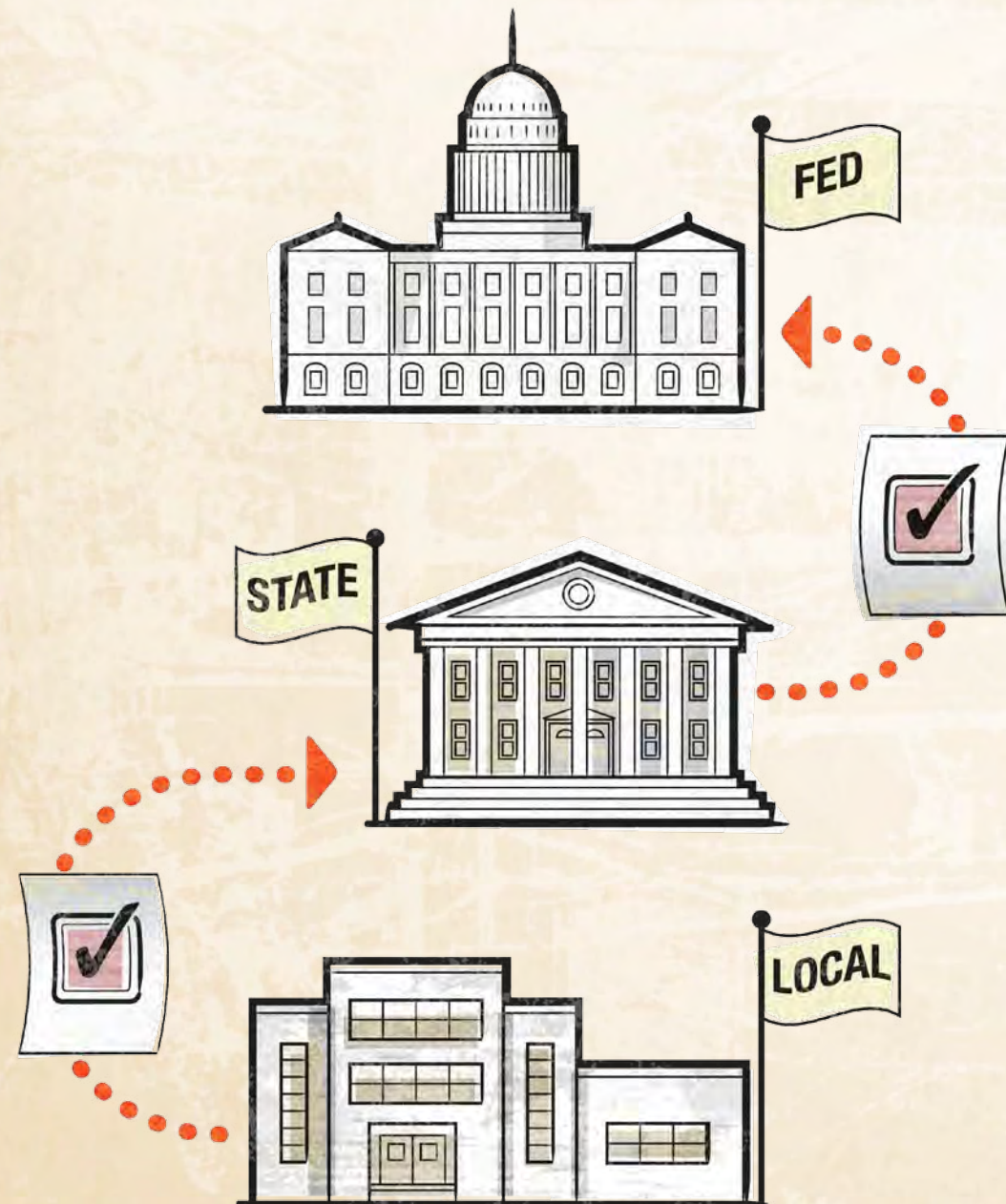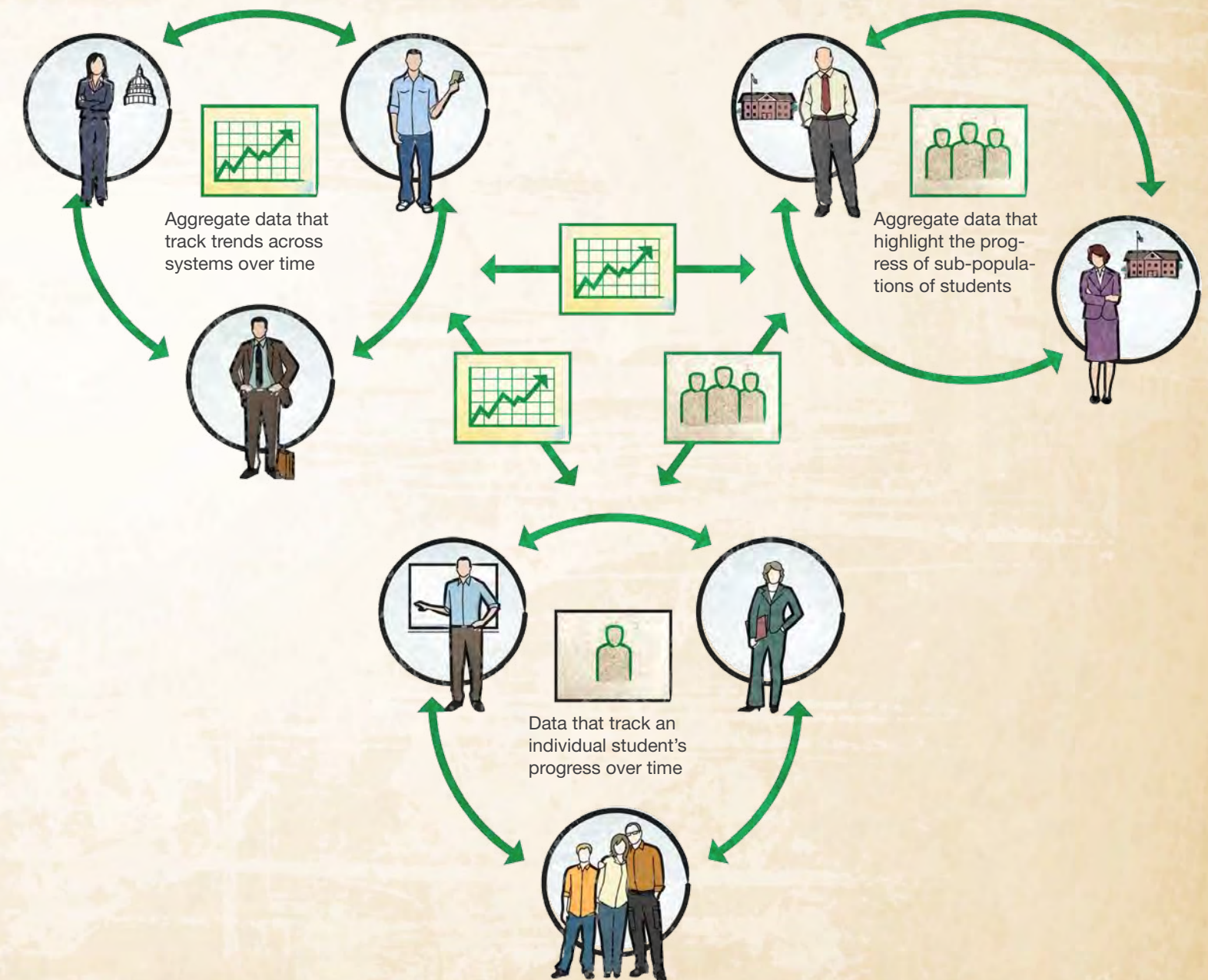## PAST

Data are collected to satisfy compliance requirements and are often used as "hammers" to punish teachers, schools, and school districts. The data are usually available in aggregate form and flow in one direction—up.

FED

STATE

LOCAL

FUTURE

Data are collected and analyzed in order to answer critical questions facing all education stakeholders: everyone from parents to policymakers. Student-level data shine a light on what is working, so decisions at all levels are informed by high-quality data aimed at improving the achievement of every student.

Aggregate data that track trends across systems over time

Aggregate data that highlight the progress of sub-populations of students

Data that track an individual student's progress over time

Data are not delivered in a timely manner and arrive too late for stakeholders to help individual students as they have already moved on to the next grade.
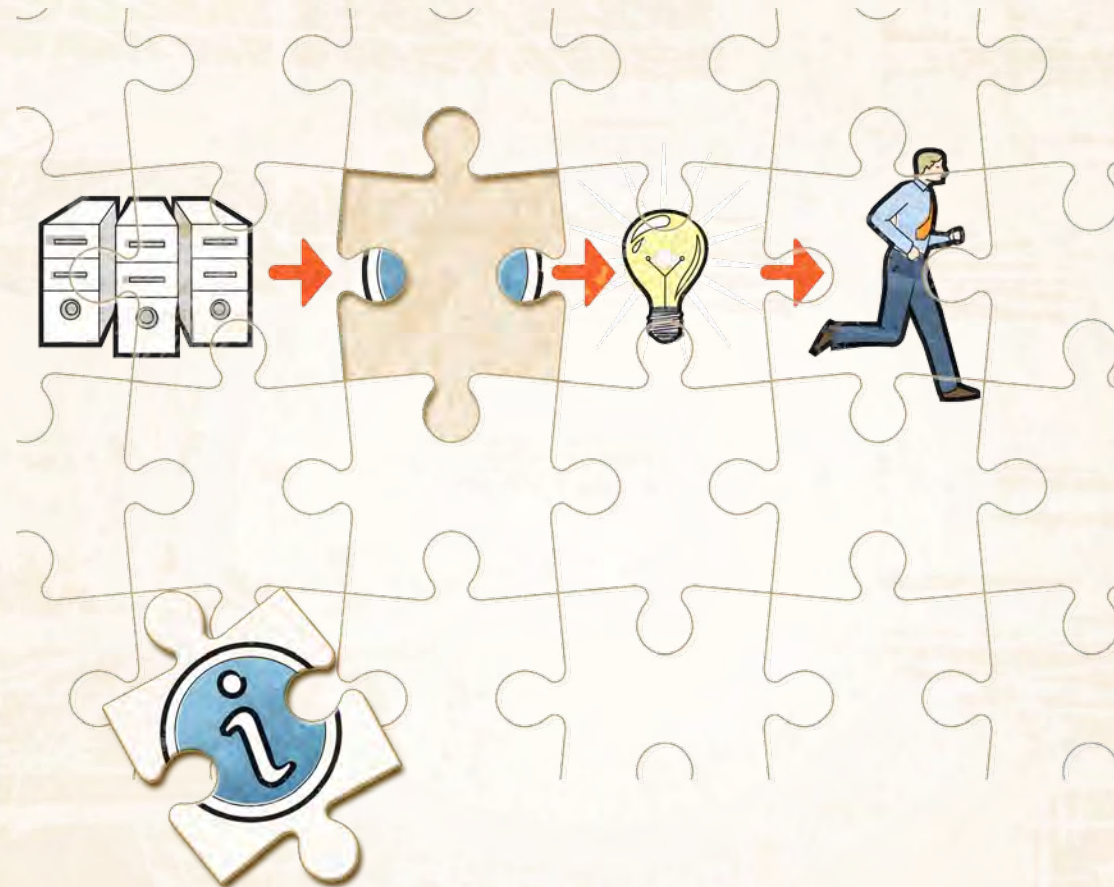
Education stakeholders are data-rich but information-poor. They must transform stacks of papers and spreadsheets into usable information that they can use to make decisions.

Data collection is driven by compliance and box-checking. No one uses the data other than for required reporting, so data are not of high quality or trustworthy.

States connect disparate data, tailor information to individuals' needs, and deliver it in a timely and user-friendly manner. Education stakeholders now have actionable information to guide more effective decision-making.

Turnaround time is fast because data are accessed online within established business rules and processes that ensure streamlined delivery to help teachers and students in real-time.
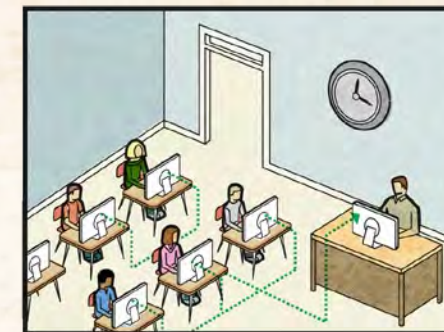
Data are presented graphically through online dashboards and tailored to the user to better provide the information they need based upon their unique role.

Data is high-quality and trusted because the stakeholders closest to the data are accessing it, catching errors and quickly resolving them.
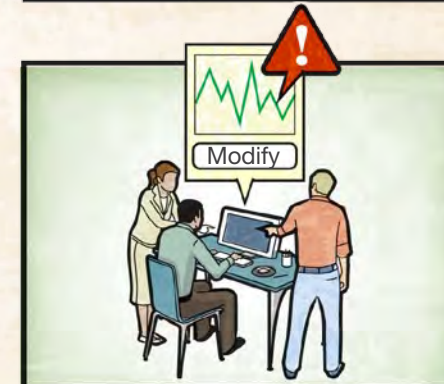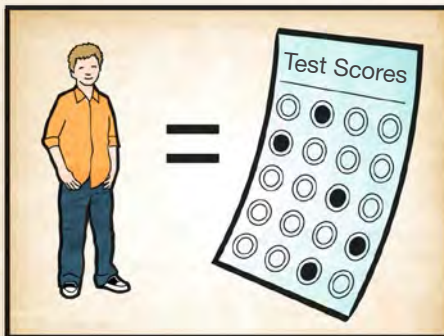
ACTIONABLE

WHAT IS DATA?

Student data are presented as single data points in isolation (e.g., number of absences, individual test scores, or program enrollment). As a result, these data lack meaning.
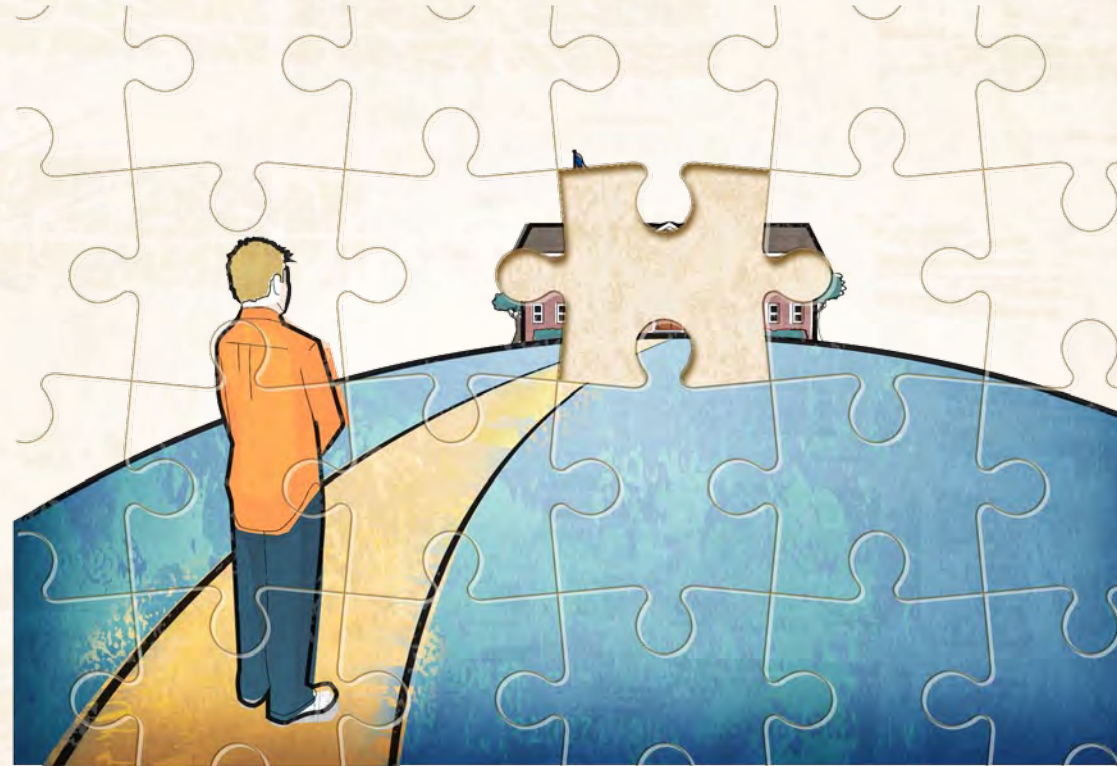
Student data of different types and from different sources are linked to enable a richer and more comprehensive understanding of students' performance and trends over time.

Student data implies "test scores" because of one-dimensional compliance requirements and accountability policies.
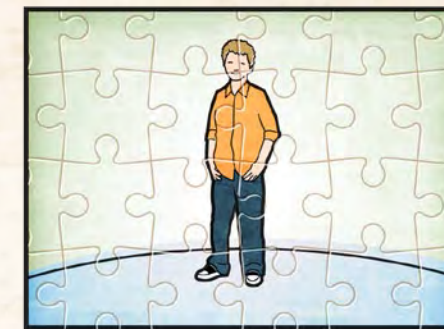
Test Scores

Student test scores are supplemented with other rich sources of data so that stakeholders can make informed decisions aimed at improving student achievement and system performance.

Absences

Grades A

As stakeholders only have access to local data, student data lack relative points of comparison within and across local systems and communities.

School- and district-level data are comparable across the state so stakeholders can gauge relative performance and better identify and learn from best practices.

Single data points cannot tell the whole story of what is happening with a student, a school, a school district, or even a state. Data need to be put into context in which rich and diverse sources of data can be compiled and compared within and across systems to enable more effective decision-making.
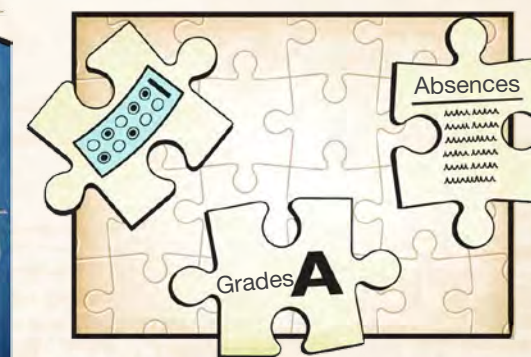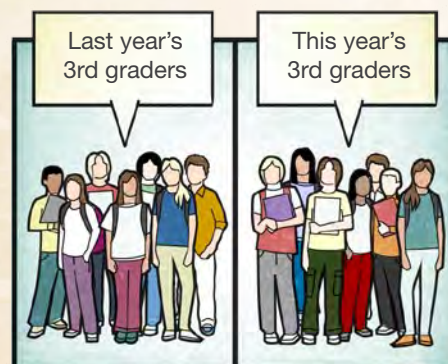
CONTEXTUAL

WHAT IS DATA?

LONGITUDINAL

Without student data linked over time, it is difficult to understand how to appropriately meet an individual child's needs based on their progress over time.

Based on individual students' strengths and weaknesses, education stakeholders can tailor interventions and adapt instruction based on previous academic preparation.

Systemic decisions are difficult because comparisons are only possible between different cohorts of students (e.g. last year's 3rd graders compared to this year's 3rd graders).

Last year's 3rd graders

This year's 3rd graders

Systemic solutions are clearer because robust analyses identify trends and characteristics of policies, interventions, and programs that lead to student growth.

Last year's 3rd graders

This year's 4th graders

GROWTH

Data can only illustrate, in retrospect, which students have succeeded and cannot be used in real-time to ensure individual students are on track for college and career readiness.

Where did I go wrong?
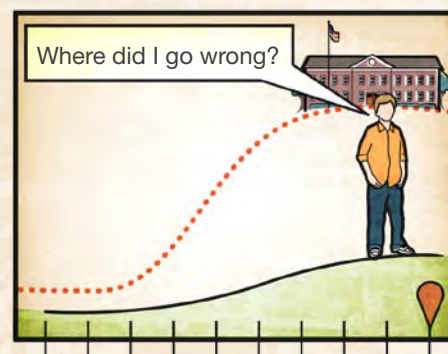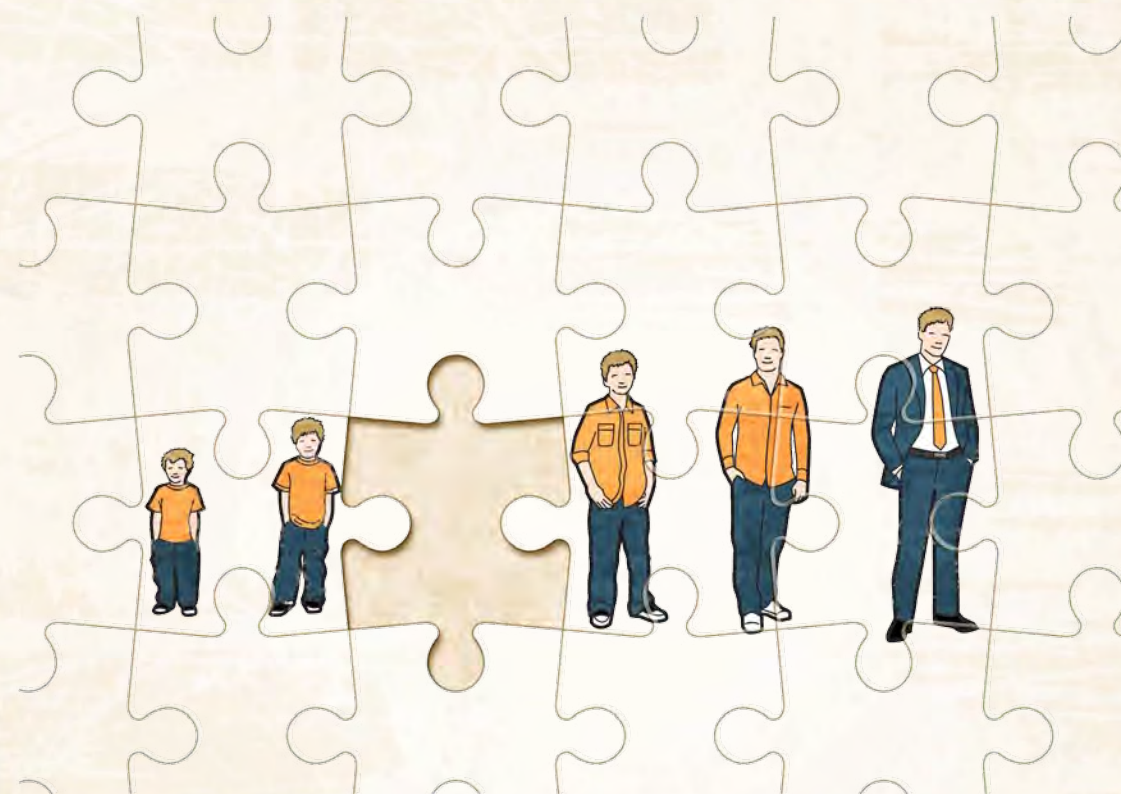
Longitudinal data and student-level data are linked over time. This ensures that all students are on track to graduate college and are career-ready because education stakeholders can now make informed decisions to achieve those goals based on individual students' progress.
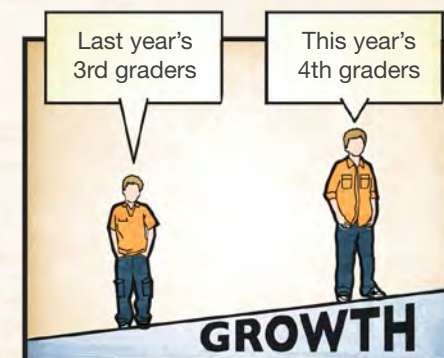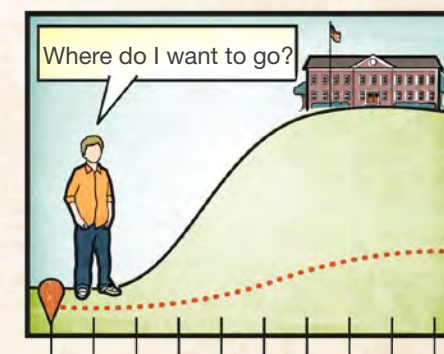
Where do I want to go?

Longitudinal data enable predictive analysis, so education stakeholders know immediately if a student is on or off track to success and are empowered to tailor interventions accordingly.

LONGITUDINAL

INTEROPERABLE

ATM cards could only be used at individual banks while traveler's checks were often needed when crossing state lines.
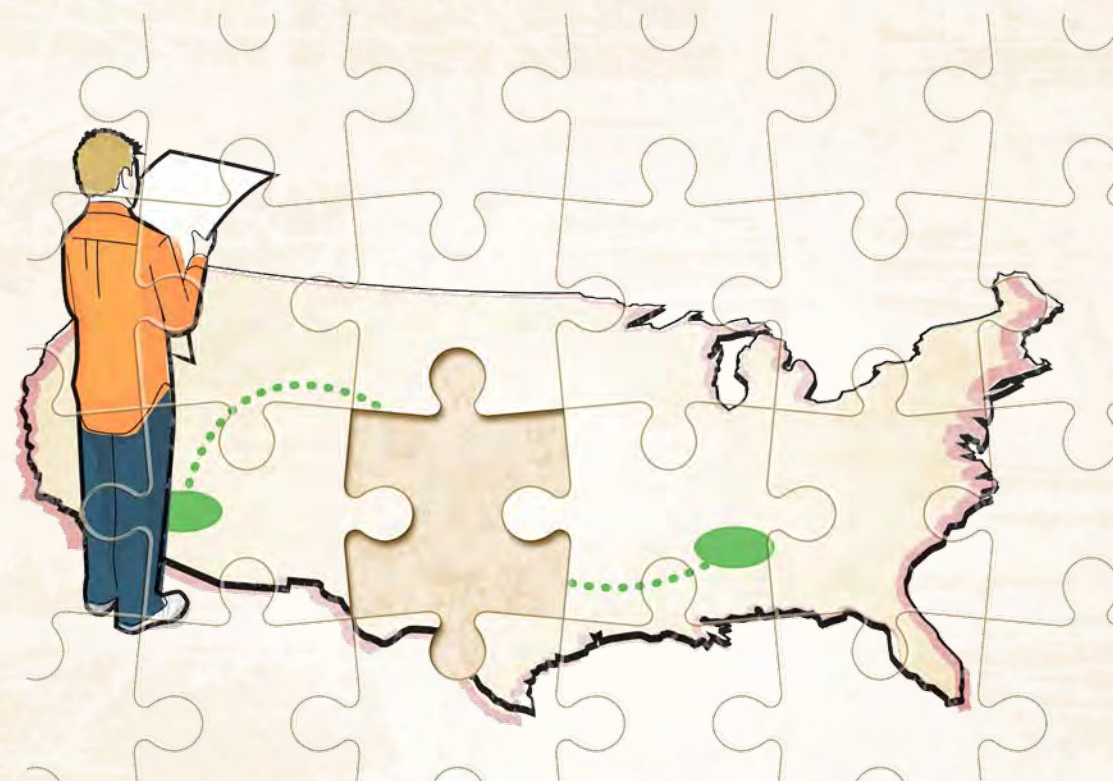
Although consumers demanded data to move with them, they lost their phone numbers on landlines and cells when switching carriers or when moving to new area codes.

Data files and documents created on a Mac could not be used or opened on a PC because the systems were incompatible.
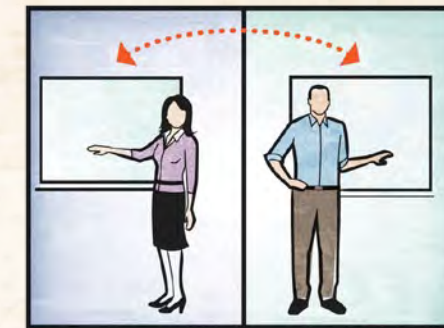
With a common vocabulary and set of business rules in place, transporting data across entities and systems is more efficient, accurate, and seamless. Without standardization, more resources and time are required to standardize the data after the fact. The best examples are from other industries.

Districts share records in real time as students and teachers move across district lines to ensure seamless enrollment, reduced paperwork, and more robust academic records.
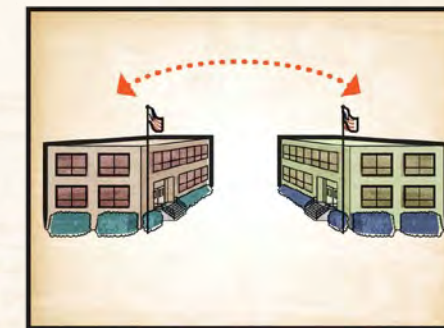
Data move efficiently across education sectors to better track individual students' progress over time while providing feedback throughout the system to ensure that all students are on track to succeed.

When students, families, and educators move across state lines, their data moves with them to ensure that stakeholders have better information regarding outcomes.

INTEROPERABLE

WHAT IS DATA?

PAST

High school graduates, often times with high GPAs, arrive at college only to learn that they must take remedial courses because they were, unknowingly, unprepared for college-level courses.

When making decisions about which school best meets their child's unique educational needs, parents have limited sources of information—usually rife with subjective and conflicting opinions.

Students do not know where they stand and are ill-prepared to make informed decisions—including which courses to take—that would prepare them for success and high-paying jobs.

FUTURE

Parents and students know well before they even complete a college application how prepared they are and can make decisions to increase college and career readiness.
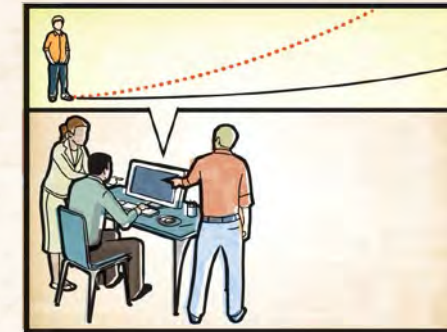
Parents access objective data that empower them to make the best decisions possible, including which school to attend and what they can do to meet their child's unique educational needs.

Students have timely and quality information to help them understand the implications of the classes they take, and how they will impact their future ability to succeed in postsecondary education and to compete for high-paying jobs.
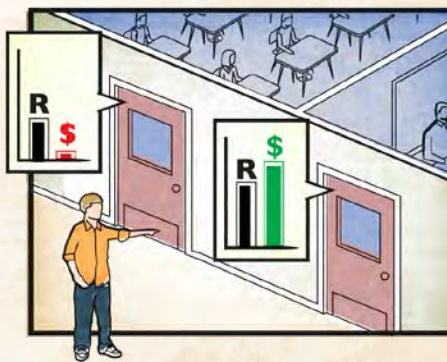
Informed by contextual, quality data, parents can make better decisions to ensure that their child is on track to succeed in college and embark upon a highly skilled career. Students can use this information in much the same way to make decisions that support their unique educational goals.
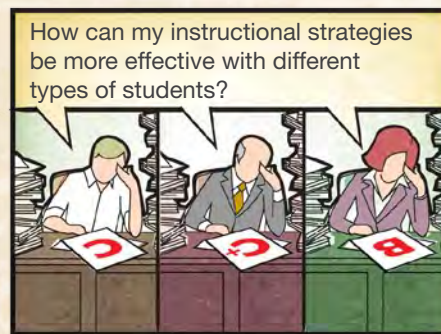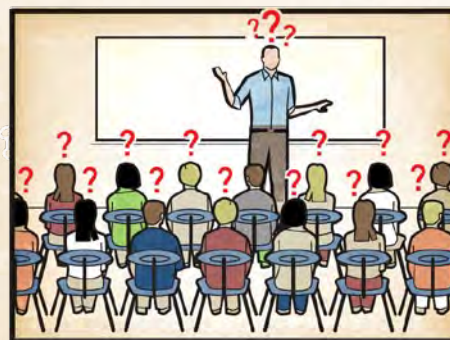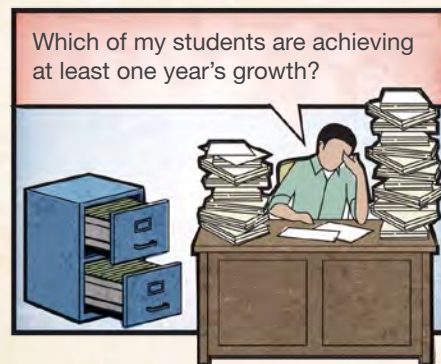
PARENTS AND STUDENTS

HOW WILL IT HELP?

TEACHERS

Teachers have to spend significant time to individually collect, organize, and analyze data on each of their students in order to understand which students are improving over time.

Which of my students are achieving at least one year's growth?

Teachers quickly access web-based information that shows the individual growth of each of their students, allowing teachers to spend less time gathering data and more time with students.
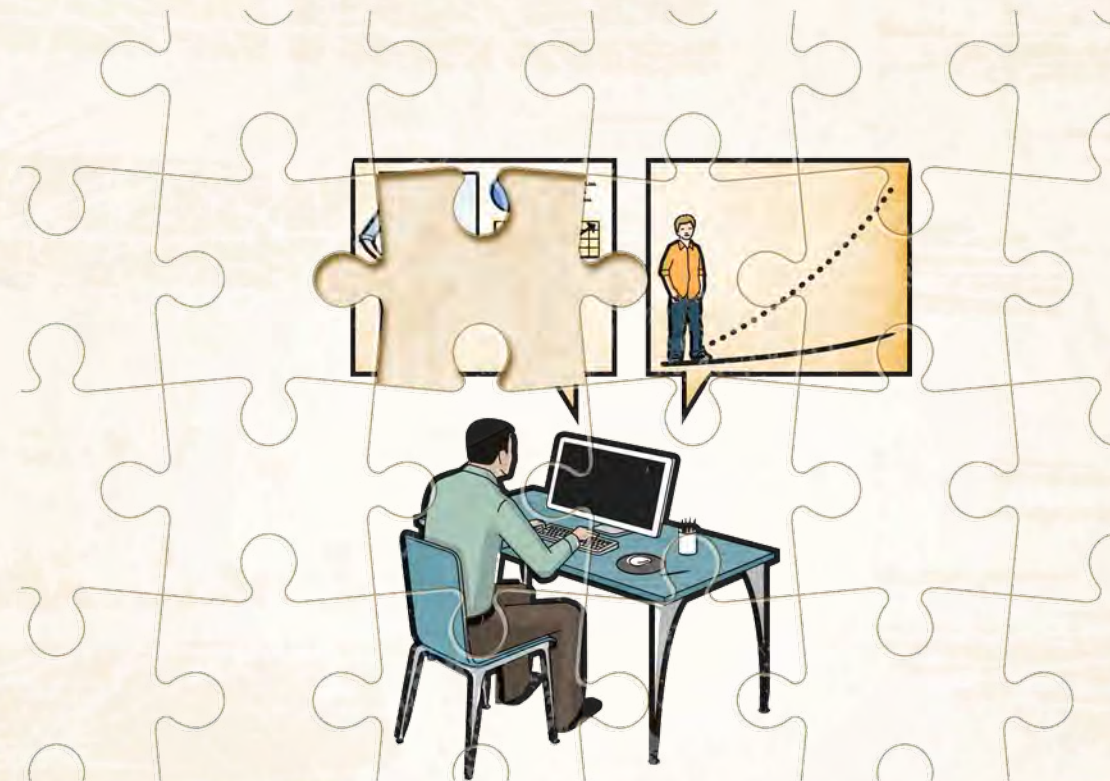
Without data on student progress over time, teachers do not know which students are exceling and which are struggling with certain concepts and how they might tailor instruction.

Teachers understand the individual strengths and weaknesses of each student and are able to group them appropriately while tailoring instruction to a student's unique educational needs.

Teachers work alone in their classrooms to improve their instructional strategies without the benefit of peer insights and the potential to learn from their strengths and weaknesses.
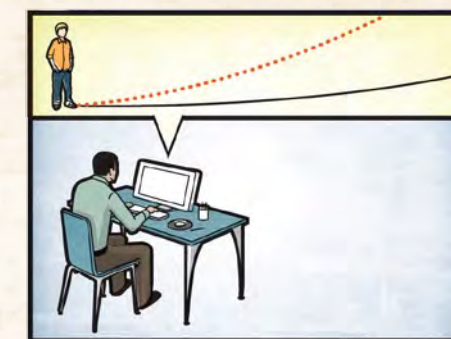
How can my instructional strategies be more effective with different types of students?

Teachers meet regularly to share data and instructional strategies based on their individual teaching strengths and weakness so that all teachers are more effective.
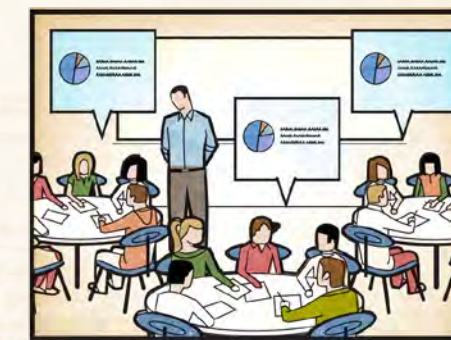
Teachers use student-level data to tailor instruction to individual students' strengths and weaknesses. They use data to collaborate with their peers to improve their instructional strategies. Using data reduces burden on teachers and increases effectiveness by eliminating guesswork.

TEACHERS

HOW WILL IT HELP?

SCHOOL ADMINISTRATORS

Students graduate with a high school diploma and still require college remediation because administrators lack information to align coursework and graduation requirements to prepare students to meet college demands.

School and district administrators receive feedback data on the success of their graduates in college, so they can change direction to ensure that all students graduate college and are career-ready.
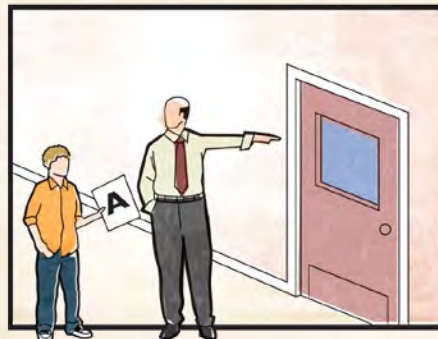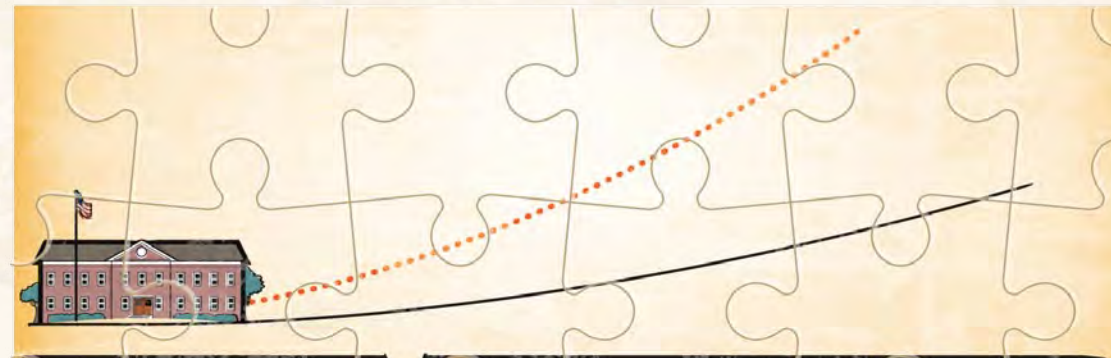
Principals and district administrators struggle to understand why students are dropping out of high school and what interventions are proven to increase graduation rates and postsecondary preparation.

School and district teams analyze data to identify students who are on- or off-track to succeed in college and highly-skilled careers and guide immediate intervention.

District superintendents struggle to communicate their decision to close schools or reduce program funding because they do not have data to justify their decisions.

District superintendents use data to clearly and objectively communicate to the public and explain major decisionmaking.
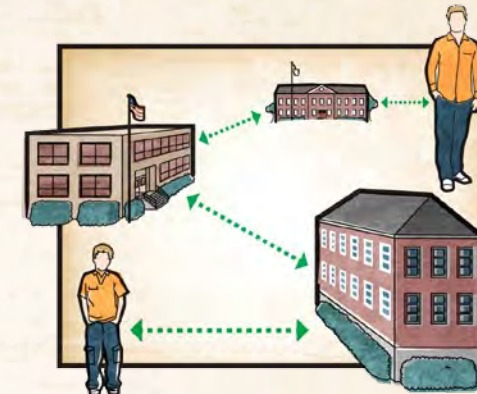
School and district administrators regularly review and disaggregate student-level data to effectively manage schools and districts. They use data to identify best practices and scale up within and across schools. They allocate resources based on what is proven to increase student achievement.
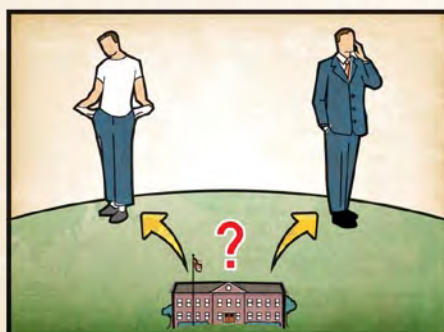
SCHOOL ADMINISTRATORS

HOW WILL IT HELP?

Taxpayers' money goes into the school system, but no information or evidence regarding how it is used and what it accomplished comes out.
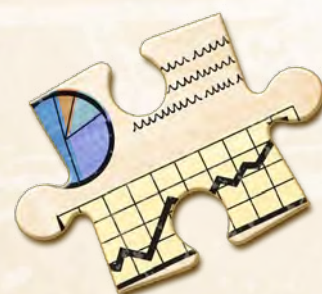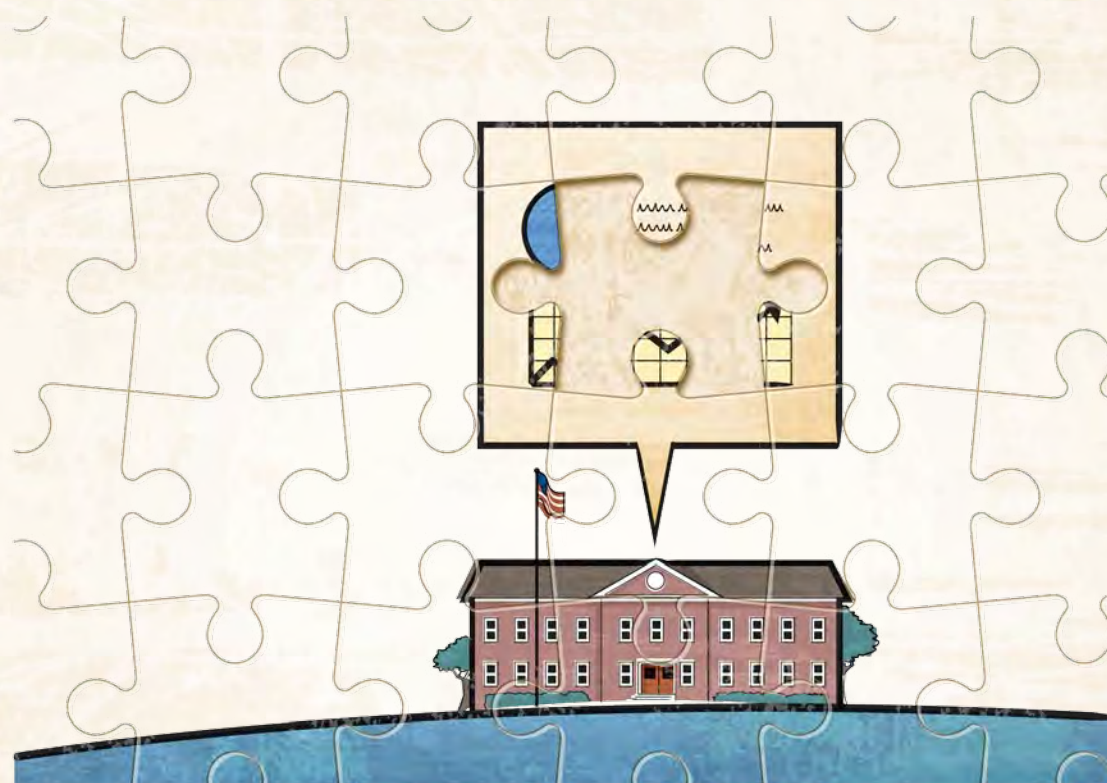
Taxpayers and community members have little to no information about the effectiveness of their schools and whether they are producing productive citizens.

Property values decline because low-performing schools are driving away residents in search of a better education for their children, and taxpayers search for answers.

Taxpayers have access to timely and user-friendly data that ensure transparency as to how their dollars are used to improve student achievement. Publicly accessible data illuminate the return on investment of their dollars and how their community compares to surrounding areas.

Increased transparency ensures taxpayers understand not only how public dollars are invested in school systems but also the outcomes they achieve.

Taxpayers have access to comparable data on individual schools' success in preparing productive citizens. With this information, taxpayers can advocate for high-performing schools and demand better results from the rest.
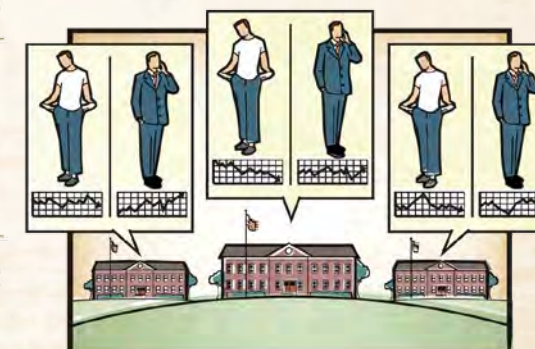
Property values increase as taxpayers, armed with quality data, demand better results from schools in their community and attract new residents.

TAXPAYERS

HOW WILL IT HELP?
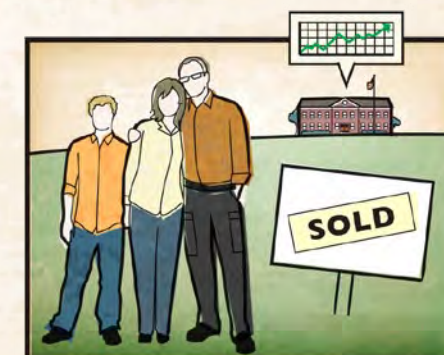
BUSINESS AND PHILANTHROPY LEADERS

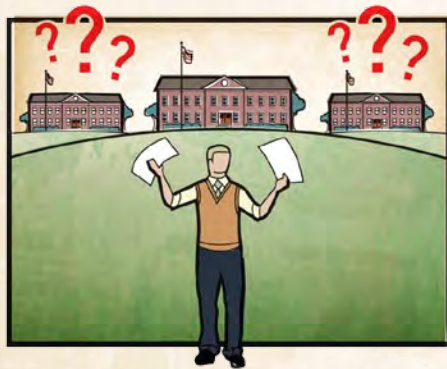Business and philanthropic leaders invest significant resources in improving educational outcomes but have no information regarding the results of those investments.
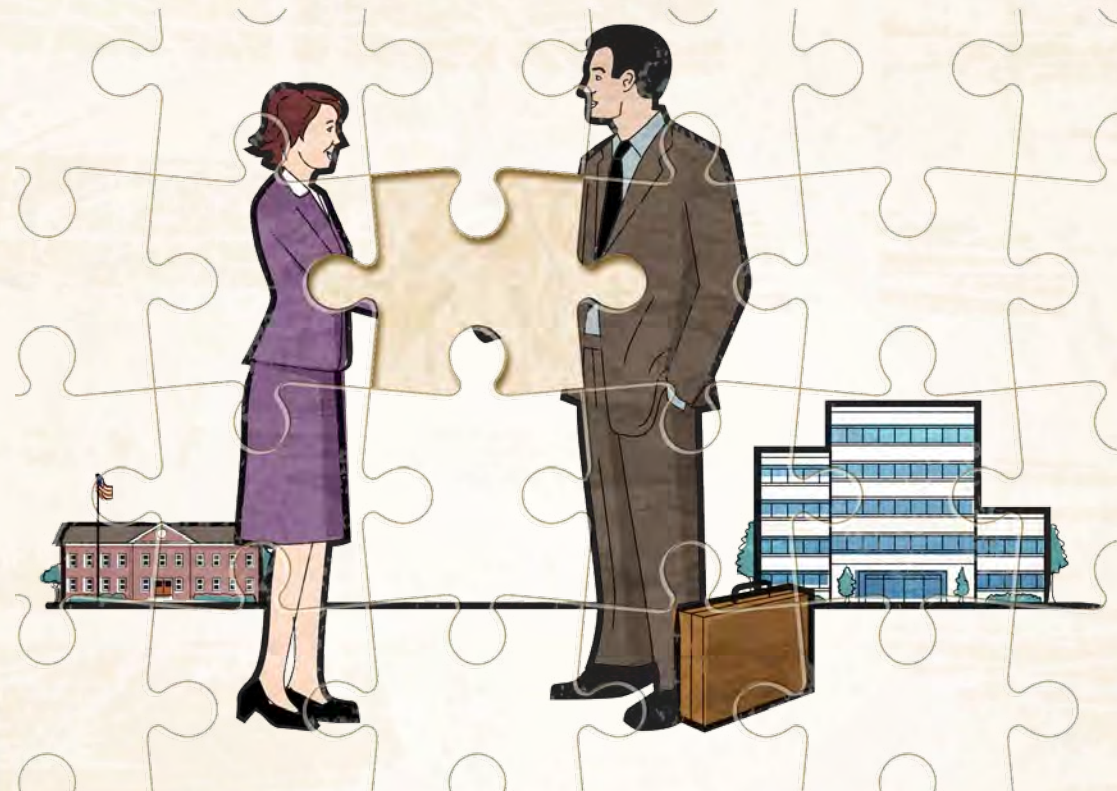
Greater transparency ensures that business and philanthropic leaders know which of their investments increased student achievement and exactly how much they cost.

Employers seek to recruit the best and the brightest but are forced to rely on anecdotes and word-of-mouth to formulate recruitment strategies.

Employers have data about which schools and institutions produce the highest-quality graduates and can recruit new employees accordingly.

Business leaders are flying blind when deciding where to relocate their business and do not have information regarding the quality of schools and potential employees in that area.

Business and philanthropic leaders understand the return on their investments. They have publicly available data that allow them to make better decisions, form partnerships, and target their resources in ways that are proven to improve student achievement.

Business leaders have information about which geographic areas have the highest quality schools and produce graduates that can best contribute to their businesses.

BUSINESS AND PHILANTHROPY LEADERS

HOW WILL IT HELP?

STATE POLICYMAKERS

State policymakers invest in programs to ensure school, college, and career readiness, but there is no specific information about which in particular achieve the desired outcomes.
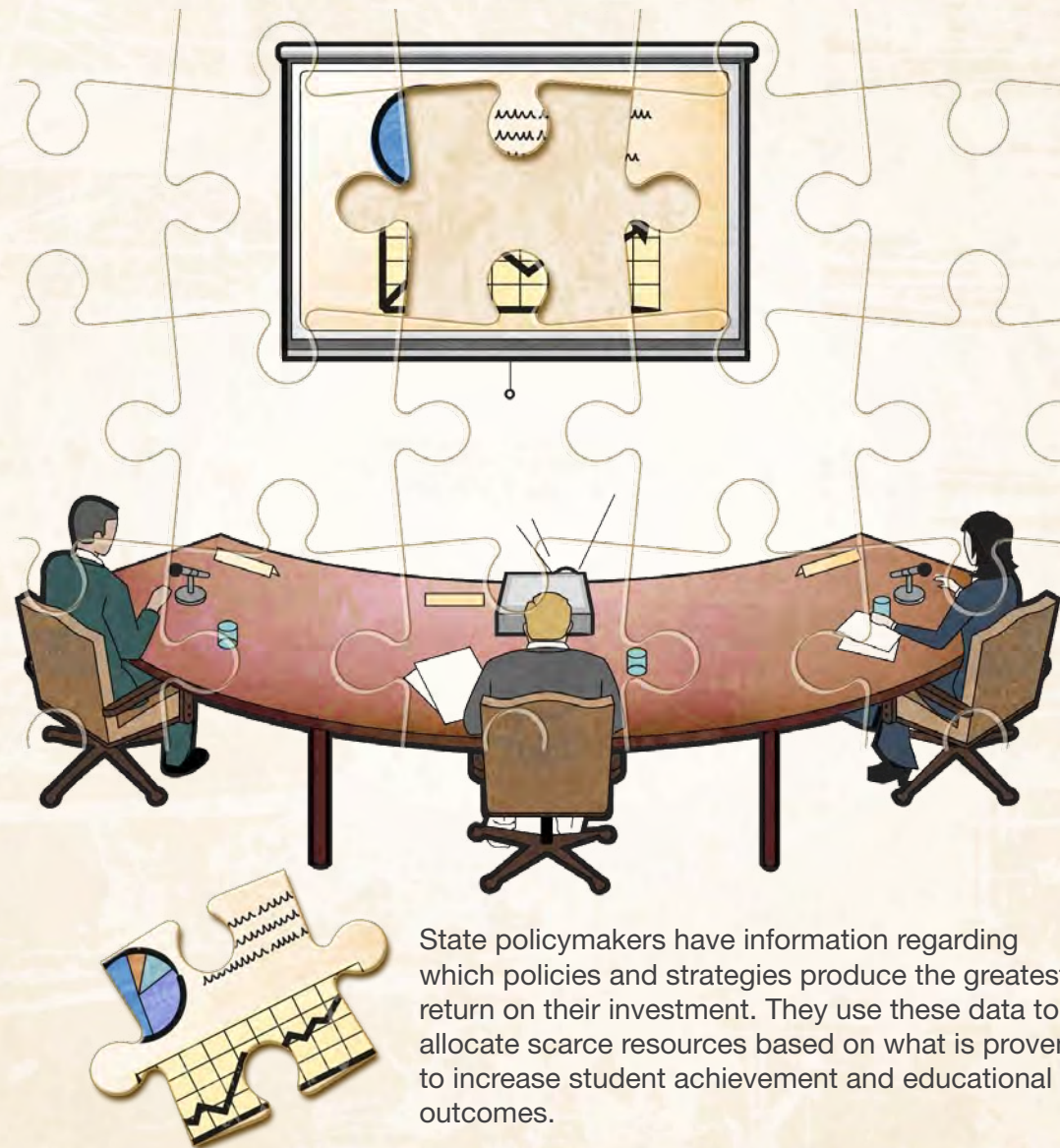
State policymakers enact policies to improve student achievement but do so in isolation, depending on diverse data of varying levels of quality and comparability regarding what is proven to work.

State policymakers make decisions about resource allocation blindly without information on which programs produce the greatest return on their investment.

State policymakers know which programs prepare students to succeed in school and in the workforce and exactly how much these strategies cost.

State policymakers regularly collaborate, using reliable and quality data from the same sources to achieve their common vision and goals of increasing achievement of all students in their state.

PROGRAMS

State policymakers have the information they need to make tough decisions about allocating scarce resources to programs that are proven to improve educational outcomes.

State policymakers have information regarding which policies and strategies produce the greatest return on their investment. They use these data to allocate scarce resources based on what is proven to increase student achievement and educational outcomes.
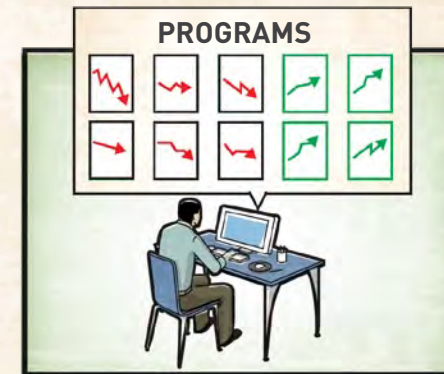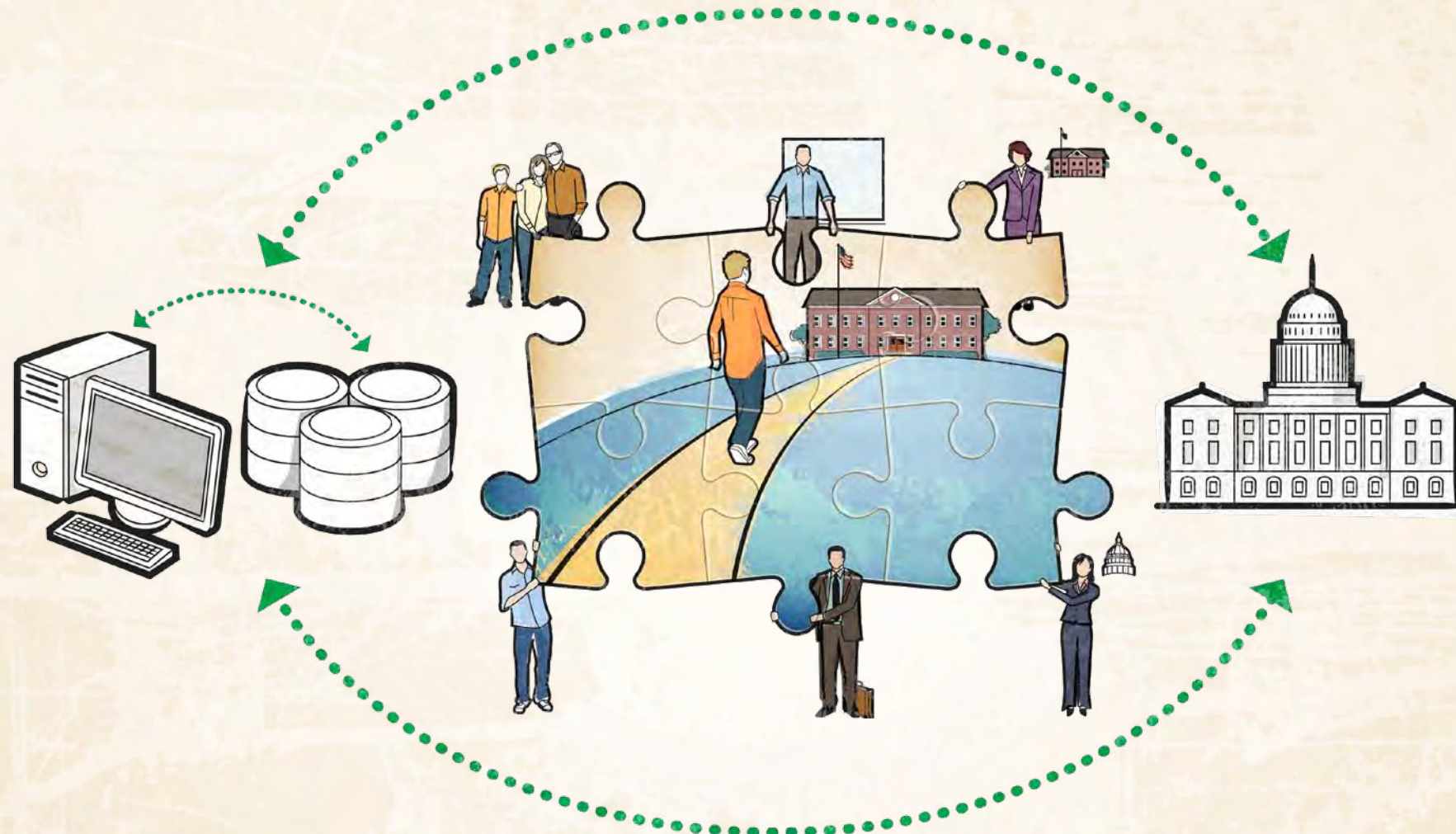
STATE POLICYMAKERS

HOW WILL IT HELP?

INVEST IN BUILDING STATE LONGITUDINAL DATA SYSTEMS

Although each state's education system is unique, these 10 Essential Elements provide the foundation for answering critical questions facing education stakeholders:

1. Unique statewide student identifier
2. Student-level enrollment, demographic and program participation information
3. Ability to match individual students' test records from year to year to measure growth
4. Information on untested students and the reasons why they weren't tested
5. Teacher identifier system with the ability to match teachers to students
6. Student-level transcript information, including courses completed and grades earned
7. Student-level college readiness test scores
8. Student-level graduation and dropout data
9. Ability to match student records between P-12 and postsecondary systems
10. State data audit system

ENACT STATEWIDE POLICIES THAT SUPPORT DATA USE

The 10 State Actions to Support Effective Data Use provide a roadmap to state policymakers to help create a culture in which quality data are not only collected but also used to increase student achievement:

1. Link state K-12 data with early childhood, postsecondary and the workforce
2. Create stable, sustained support for state longitudinal data systems
3. Develop governance structures to guide data collection, sharing and use
4. Build state data repositories
5. Provide stakeholders with timely access to information while protecting privacy
6. Create progress reports with individual student data
7. Create reports that include longitudinal statistics
8. Develop a purposeful research agenda
9. Implement policies and promote practices to build educators' capacity to use data
10. Promote strategies to raise awareness of available data

Building better and more sophisticated state data systems is not enough to transform our education system. To leverage current investments and ensure data are used, states must act to ensure data can be linked across education systems, are accessible to stakeholders, and that those stakeholders have the capacity to use data to improve student achievement.