USING ASSESSMENTS TO SUPPORT INSTRUCTIONAL DECISION MAKING

Prepared for [California District]

August 2020

HANOVER RESEARCH

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INTRODUCTION

[California District] is committed to the needs of all students, including those that may require additional supports to reach higher levels of academic performance. The Spring 2020 school closures further highlight the importance of identifying and supporting students in need of additional academic support. In particular, the district is interested in prioritizing the needs of the special education community in [California District] and in understanding the unique and differentiated supports to ensure their success. To best support students with the greatest needs, the district seeks to develop a more robust data collection system that uses and reliably collects longitudinal data to identify individual student needs.

To support these priorities, this report describes practices for using data to identify students in need of additional support and tailoring support to these needs. The report also identifies and reviews academic diagnostic and progress monitoring assessments that will allow the district to collect and track longitudinal data and make data-driven decisions about student support.

- **Section I: Data-Driven Academic Supports** discusses best practices and strategies for using and supporting teachers and schools to make data-driven decisions about instruction, interventions, and supports for students.

- **Section II: Assessment Tools** presents a selection of assessment tools found to have high levels of validity and reliability that districts can use for screening and progress monitoring for English language arts and math.

RECOMMENDATIONS

Provide training to all levels of school and district staff on assessments and data analysis. Plans for professional development, training, and coaching should be addressed within the district's assessment plan in order to support the implementation and use of data in decisions about instruction and interventions.

Take steps to build a culture of data-driven decision making around instruction. The successful use of assessment data relies on a strong culture of assessment and data use from both teachers and school and district leaders.

Develop recommended or required processes and cycles related to the administration of screening, progress monitoring, and diagnostic assessments. Most recommend universal screening to identify at-risk students two to three times per year. Progress monitoring should be administered monthly, while diagnostic assessments should be used to assist in creating intervention plans and when interventions do not produce their intended results.

Use standard district-wide assessments to allow for analysis of student performance across and within schools and student subpopulations. When selecting an assessment, consider stakeholder needs to ensure that the assessment includes necessary components, functions, and resources to drive buy-in and use.

KEY FINDINGS

- **To support at-risk students, schools should employ comprehensive, validated, and age-appropriate assessments to assist teachers in identifying, planning, and implementing effective interventions and supports**. Assessments should include the following components:

  o **Universal screening** of all students two to three times per year to flag students that may be at-risk for academic struggle. Follow-up assessments should then be used to determine if and what types of interventions are needed.

  o **Progress monitoring** of students receiving targeted interventions and supports to track progress and growth and determine if changes are needed.

  o **Diagnostic testing** to gather data on the root causes of why a student may be struggling as well as to support the initial and ongoing refinement of interventions and supports.

- **Schools should develop assessment plans that outline processes and policies, including those related to data analysis, to inform instructional decisions**. Assessment cycles are comprised of four stages: data collection, data analysis, development of an implementation plan, and evaluation. A central feature of the assessment cycle is the data analysis process, which includes the systematic interpretation of data to design implementation plans that address students' needs. To conduct the analysis more effectively, schools can establish data teams to support school- or district-wide implementation of assessments and provide training and coaching on the analysis and use of assessment data.

- **School leadership has a central role in the successful implementation of assessments and data-driven instruction.** School leaders are in the best position to model and drive a culture of data use across the school. Importantly, school leaders should consider dedicating appropriate resources to train staff to gather, interpret, and communicate student data. Comprehensive professional development plans should be informed by student data, address student learning, and aimed to improve teachers' and administrators' assessment-related skills and knowledge. Moreover, principals should consider continuously monitoring student data to inform improvements to the school's assessment plan and evaluate the effectiveness of instructional strategies and interventions.

- **There are multiple nationally-recognized and reviewed assessment tools that districts can use for universal screening and progress monitoring purposes**. Hanover identified five assessments that function as both screeners and progress monitors for English language arts and math that also show convincing or partially convincing evidence of reliability and validity. All of these assessments are delivered online and include multiple features to support data analysis and use in instructional decision-making.

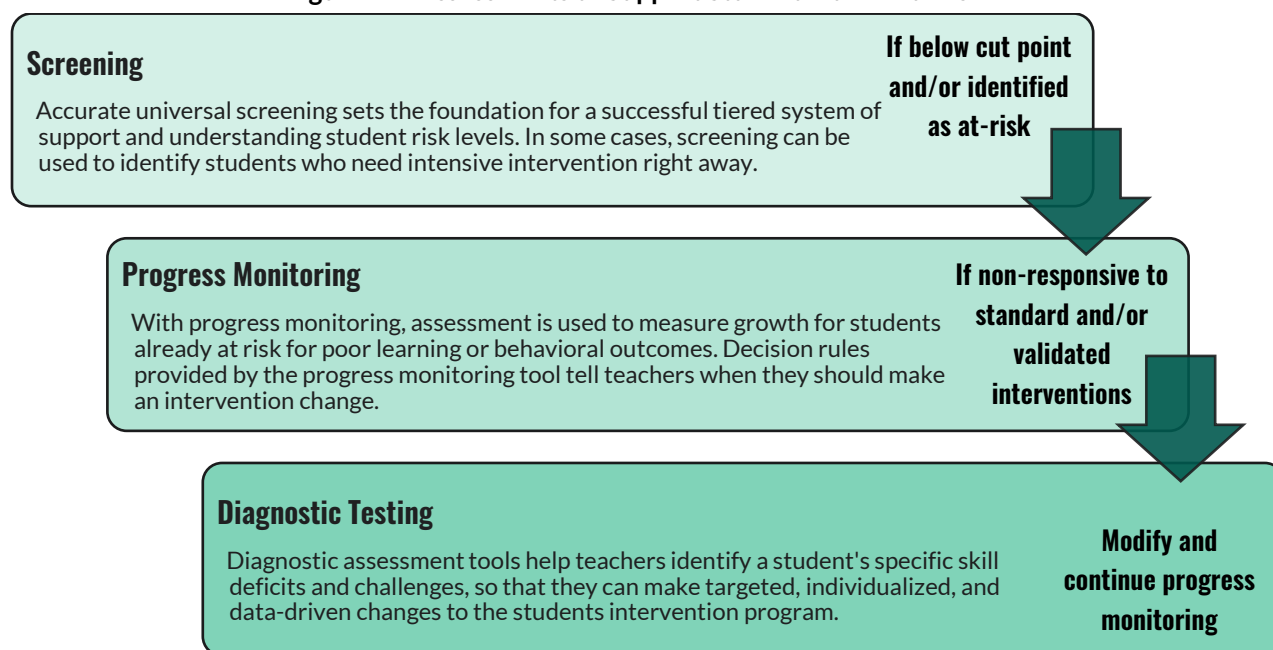# SECTION I: USING DATA TO INFORM STUDENT SUPPORTS

This section begins with a brief overview of each assessment type, followed by a review of district-level practices for supporting data-driven decision making within the context of providing students with academic supports and interventions.

ASSESSMENT TYPES

Schools and districts can use a variety of assessments to identify and support at-risk students, including those that require additional supports and interventions. These assessments broadly fall into three types based on their purpose and sequence in the student intervention process – screening, progress monitoring, and diagnostics. Often, districts use these three types of assessments to support Response to Intervention (RtI) or Multi-Tiered Systems of Support (MTSS).[1] Notably, there are some differences in the literature on how and where diagnostic assessments fit into the process. Two common frameworks are illustrated below in Figures 1.1 and 1.2. While there may be some differences in terminology, in practice diagnostic testing can fill two roles in the assessment cycle:[2]

- To determine if students flagged during the screening process are in need of additional support and interventions and to gather data on why and how a student is struggling.

- To refine interventions and supports when the standard and validated approaches do not result in adequate progress.

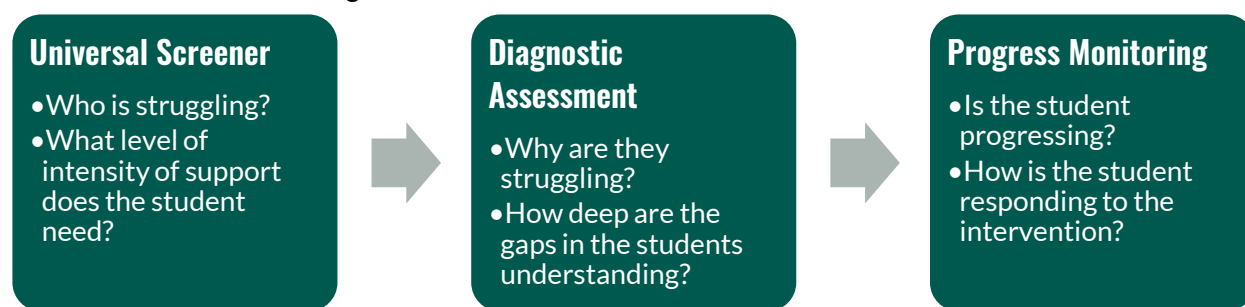**Figure 1.1: Assessments to Support Student Interventions**

Screening

Accurate universal screening sets the foundation for a successful tiered system of support and understanding student risk levels. In some cases, screening can be used to identify students who need intensive intervention right away.

If below cut point and/or identified as at-risk

Progress Monitoring

With progress monitoring, assessment is used to measure growth for students already at risk for poor learning or behavioral outcomes. Decision rules provided by the progress monitoring tool tell teachers when they should make an intervention change.

If non-responsive to standard and/or validated interventions

Diagnostic Testing

Diagnostic assessment tools help teachers identify a student's specific skill deficits and challenges, so that they can make targeted, individualized, and data-driven changes to the students intervention program.

Modify and continue progress monitoring

Source: National Center on Intensive Intervention[3]

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[1] [1] "Definition/Types of Assessment." Project IDEAL. http://www.projectidealonline.org/v/definition-type-assessment/ [2] "Data-Based Decision Making." Center on Response to Intervention. https://rti4success.org/essential-components-rti/data-based-decision-making [3] "Identifying Assessments." National Center on Intensive Intervention. https://intensiveintervention.org/tools-charts/identifying-assessments

[2] [1] "Identifying Assessments," Op. cit. [2] Hatfield, C., L. Perry, and M. Zhao. "Screeners, Diagnostics, and Progress Monitoring, Oh My!" Southern Methodist University. https://www.smu.edu/-/media/Site/Simmons/Research/RME/docs/2017Presentations/CAMT_2017_Assessment_SMU_FInal.pdf?la=en

[3] Figure text quoted from: "Identifying Assessments," Op. cit.

Figure 1.2: Goals of Formal Formative Assessments

Universal Screener		Diagnostic Assessment		Progress Monitoring
•Who is struggling? •What level of intensity of support does the student need?	→	•Why are they struggling? •How deep are the gaps in the students understanding?	→	•Is the student progressing? •How is the student responding to the intervention?

Source: Hatfield, Perry, and Zhao[4]

SCREENING

Screening assessments, sometimes referred to as universal screenings, are administered to all students with the goal of identifying students that may be at risk for academic struggle or unique challenges. Universal screeners should meet the following criteria:[5]

- Reliable, valid tools that demonstrate diagnostic accuracy

- Age-appropriate outcome measures that capture student ability

- Different screeners to assess different outcome measures

Section II of this report provides an overview of screening tools that have shown convincing evidence of reliability and validity by the National Center on Intensive Intervention (NCII).

Within an RtI or MTSS framework, screening tools are often used in a two-step process, beginning with a brief universal assessment of all students. The second stage of screening is conducted only for students with scores that fall below a specified "cut point" on the initial universal screener. Follow-up screeners, sometimes referred to as diagnostic assessments, are then used to assess students' specific gaps and needs through more in-depth testing to evaluate and determine their risk status.[6]

A cut point is a benchmark score in a screening process that identifies an initial pool of potentially at-risk students who may require specific interventions or additional screening. The cut point acts as a performance benchmark that indicates proficiency of a specific set of skills. Based on the benchmarks that have been set, certain cut points should be developed to separate students who are considered not to be at risk from those who are at risk and need additional support to reach mastery of certain skills.[7]

Districts should screen all students with a standardized tool two to three times per year throughout elementary school to ensure the identification of all struggling students.[8] The National Center on Response to Intervention (NCRtI) recommends that screening should be administered in the fall, winter, and spring.[9] Similarly, the Institute of Education Sciences (IES) emphasizes that *multiple* screenings can address concerns about students who fall just above or below cut scores on screening measures. In addition, subsequent screenings allow for growth comparisons. For example, a second or third screening "serves to identify any students who may have been at risk and grown substantially in their mathematics achievement – or those

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[4] Figure text taken verbatim from: Hatfield, Perry, and Zhao, Op. cit., p. 10.
[5] Bullet points adapted from: "RTI Implementer Webinar Series: What is Screening?" National Center on Response to Intervention. https://rti4success.org/video/implementer-series-what-screening
[6] "Essential Components of RTI - A Closer Look at Response to Intervention." National Center on Response to Intervention at American Institutes for Research, April 2010. p.2. http://www.rti4success.org/sites/default/files/rtiessentialcomponents_042710.pdf
[7] "Implementer Series: Using Screening Data for Decision Making." Center on Response to Intervention. https://rti4success.org/video/implementer-series-using-screening-data-decision-making
[8] Hughes, C. and D.D. Dexter. "Universal Screening Within a Response-to-Intervention Model." RTI Action Network. http://www.rtinetwork.org/learn/research/universal-screening-within-a-rti-model
[9] "Implementer Series: Using Screening Data for Decision Making," Op. cit.

who were on track at the beginning of the year but have not shown sufficient growth."[10]Districts should standardize screening tools and procedures used to enable objective comparisons between schools. Using the same screening tools allows the district to analyze results at the district level and implement instructional decisions and interventions for the entire district.[11]

PROGRESS MONITORING

Progress monitoring is critical to ensuring the effectiveness of student interventions, and experts recommend assessing students' progress regularly and continuously. Progress monitoring assesses students' academic performance and the effectiveness of instruction and the intervention.[12] Progress monitoring should occur at least monthly with the goals of:[13]

- Estimating rates of improvement;

- Identifying students who are not demonstrating adequate progress; and

- Comparing the efficacy of different forms of instruction to design more effective, individualized instruction.

Like screeners, progress monitoring tools should show validity and accuracy for its intended purpose. Section II of this report provides an overview of progress monitoring tools that have shown convincing evidence of reliability and validity by the NCII.

DIAGNOSTIC TESTING

Diagnostic testing is often used in situations where supports and interventions are not successful in order to better understand a student's underlying challenges and needs. Diagnostic testing may be used in conjunction with progress monitoring when students are not responsive to standard and validated interventions.[14] In such cases, diagnostic testing may also be used to develop adaptive interventions that account for the specific challenges of a student. Diagnostic data may be used to develop hypotheses about the root causes of prior failed interventions. Based on these hypotheses, teachers can make additions and modifications to the student's intervention plan and begin the process of diagnosing learning disabilities or other challenges that may benefit from more formal special education services.[15]

In some cases, diagnostic testing may also be used during the initial screening process when students fall below the specified cut point. Diagnostic testing is then used to determine a students' strengths and weaknesses and to inform placement in interventions or other additional support programs.[16]

ASSESSMENT PLANNING AND USE

Districts may create a comprehensive assessment plan to ensure the use of assessment data district-wide. The assessment plan should include information on the district's vision and goals for using assessment data, the processes and steps that are required and recommended, as well as the technical and knowledge-based infrastructure that will support implementation. The Pennsylvania Department of Education recommends creating an assessment plan that considers the goals of each assessment and provides a description of how

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[10] Gersten, R. et al. "Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools." Institute for Education Sciences, 2009. p.14. https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/rti_math_pg_042109.pdf

[11] Ibid., p.15.

[12] "Progress Monitoring." National Center on Response to Intervention at American Institutes for Research. http://www.rti4success.org/essential-components-rti/progress-monitoring

[13] Bullet points adapted from: "Essential Components of RTI – A Closer Look at Response to Intervention." National Center on Response to Intervention, April 2010, p. 9. https://rti4success.org/sites/default/files/rtiessentialcomponents_042710.pdf

[14] "Example Diagnostic Tools." National Center on Intensive Intervention. https://intensiveintervention.org/intensive-intervention/diagnostic-data/example-diagnostic-tools

[15] "Diagnostic Data." National Center on Intensive Intervention. https://intensiveintervention.org/intensive-intervention/diagnostic-data

[16] "Universal Screener and Diagnostic Assessment." Mississippi Department of Education. https://www.mdek12.org/OSA/USDA
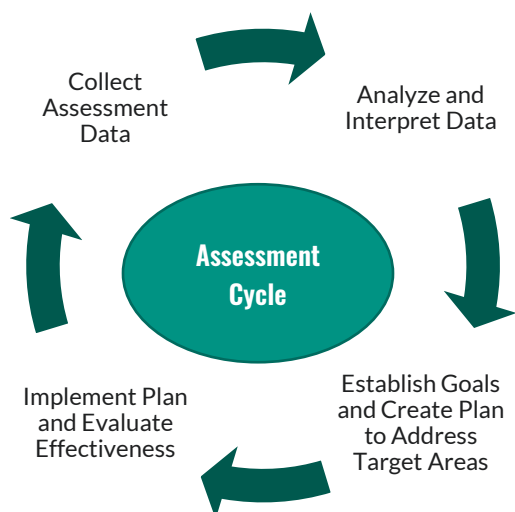
results will be made and used.[17] They recommend that school districts follow these steps when developing assessment plans in their schools:[18]

- **Determine what needs to be assessed.** To collect actionable data that can inform the purposeful design and implementation of assessment plans, districts are advised to identify their instructional goals as well as their learning objectives.

- **Select appropriate assessments.** Other than selecting appropriate assessments per grade level, districts should consider providing a short summary that outlines information on the timeline for data collection and the purpose of the evaluation.

- **Align assessment and instructional priorities.** Districts should ensure all student data is promptly used to inform instructional decisions. For instance, if student data is not used, districts should assess the reasons behind this choice.

ASSESSMENT CYCLES

Once the district or school decides on what assessments to select and administer, they should consider how to implement an effective plan to analyze and interpret the data. Assessment cycles are helpful to determine steps to take once the assessment is administered at a school-wide level.[19] Figure 1.3 outlines the four stages of an effective assessment cycle. It is essential to communicate the results of the assessments routinely and frequently with the entire student community, including parents, students, educators, and administrators.[20]

Figure 1.3: Key Components of Effective Assessment Cycles

Collect Assessment Data

Analyze and Interpret Data

Assessment Cycle

Implement Plan and Evaluate Effectiveness

Establish Goals and Create Plan to Address Target Areas

Effective assessment cycles include four stages. During the data collection stage, educators and school administrators collect relevant information to assess student outcomes and achievement levels. After data collection is completed, data is analyzed and interpreted. The purpose of the analysis is to assess learning outcomes and progress growth, determine what factors impact student learning, and identify target areas for improvement. The analysis provides the foundational basis to identify instructional practices the district needs to improve and support systems for at-risk students. Further, the analysis drives the development of an implementation plan to achieve learning goals. Finally, the implemented district-wide and school-wide plans need to be evaluated to assess effectiveness. [21]

EFFECTIVE USE OF DATA

In conjunction with the selection of specific assessment tools and processes to facilitate screening, progress monitoring, and diagnostics, districts should also develop a common understanding of how assessment data will be used to make decisions about student supports and interventions. IES outlines five recommendations

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[17] Ankrum, J. et al. "The Comprehensive Literacy Plan - Pennsylvania." Pennsylvania Department of Education, December 2014.
    http://static.pdesas.org/content/documents/PA%20Comprehensive%20Literacy%20Plan.pdf
[18] Bulleted list adapted from: Ibid.
[19] Ibid., p. 146.
[20] Ibid.
[21] "Developing a Thriving Reader From the Early Years: A Continuum of Effective Literacy Practices." Read On Arizona, 2014. p. 16.
    http://readonarizona.org/wp-content/themes/read-on/PDF/continuum-project-web.pdf
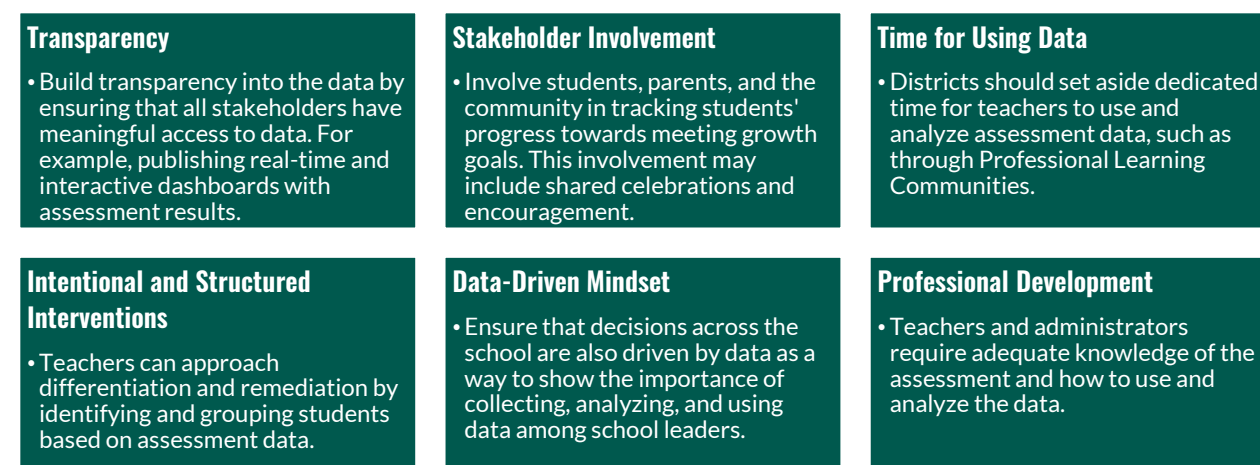
for the effective use of data in instructional decision making. Several of these recommendations relate to building a common understanding of how and when data will be used across the district or school.[22]

Figure 1.4: Effective Use of Data in Instructional Decision Making

| Make data part of an ongoing cycle of instructional improvement | Teach students to examine their own data and set learning goals | Establish a clear vision for school-wide data use | Provide supports that foster a data-driven culture within the school | Develop and maintain a district-wide data system |

Source: IES

Schools and districts with a strong culture of data-driven instructional decision making often share the following key characteristics:

Transparency
- Build transparency into the data by ensuring that all stakeholders have meaningful access to data. For example, publishing real-time and interactive dashboards with assessment results.

Stakeholder Involvement
- Involve students, parents, and the community in tracking students' progress towards meeting growth goals. This involvement may include shared celebrations and encouragement.

Time for Using Data
- Districts should set aside dedicated time for teachers to use and analyze assessment data, such as through Professional Learning Communities.

Intentional and Structured Interventions
- Teachers can approach differentiation and remediation by identifying and grouping students based on assessment data.

Data-Driven Mindset
- Ensure that decisions across the school are also driven by data as a way to show the importance of collecting, analyzing, and using data among school leaders.

Professional Development
- Teachers and administrators require adequate knowledge of the assessment and how to use and analyze the data.
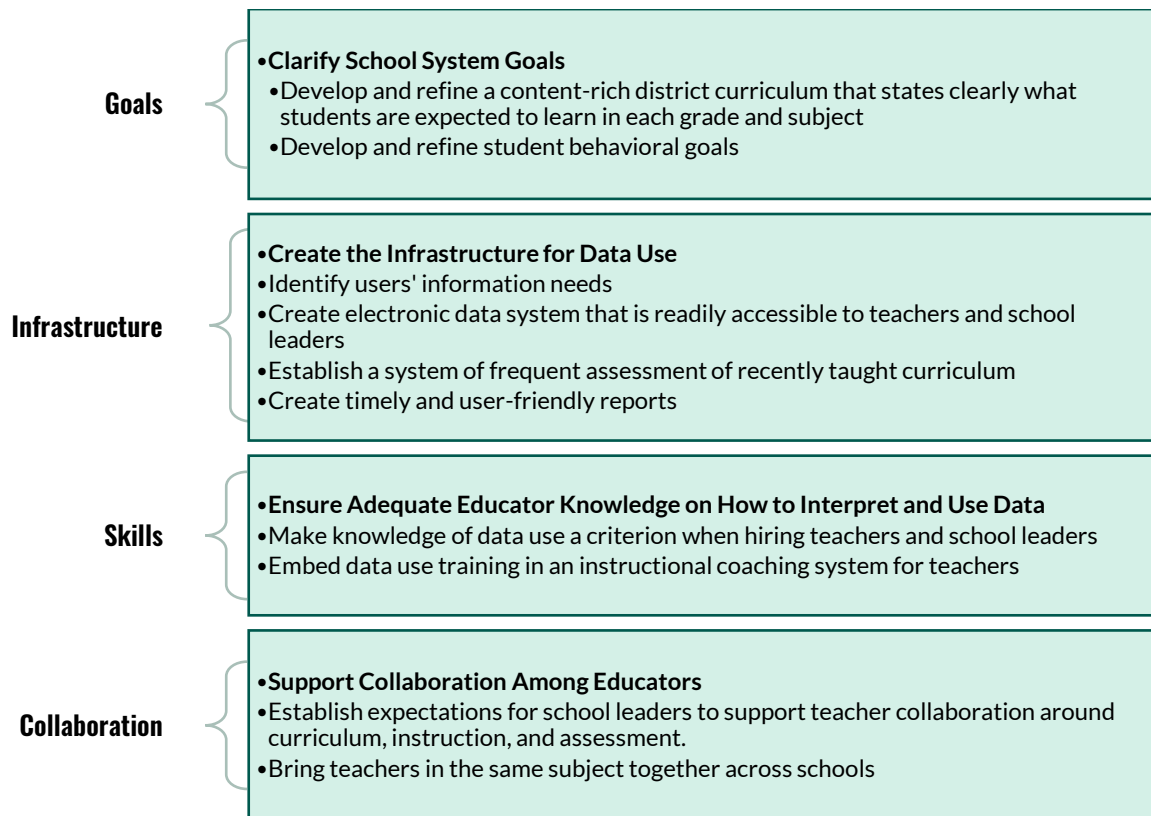
Source: Getting Smart[23]

Once an assessment plan is in place, district and school leaders can shift towards supporting the implementation and use of data-driven decision making across schools and classrooms. Key tasks during implementation should include clarifying goals, creating supportive data infrastructure, ensuring adequate knowledge and skills, and supporting collaboration. Many of these tasks directly relate to or support the creation of a data-driven culture. The following ten action items can be used to drive and improve the use of data in decision making around instruction.[24]

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[22] "Using Student Achievement Data to Support Instructional Decision Making." Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, 2009, p. 8. https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/dddm_pg_092909.pdf
[23] Figure text adapted from: Berkeley, M. "6 Hallmarks to Building Data Culture." Getting Smart, April 2019. https://www.gettingsmart.com/2019/04/6-hallmarks-to-building-data-culture/
[24] Dougherty, C. "How School District Leaders Can Support Use of Data to Improve Teaching and Learning." ACT, Inc., 2015, p. 2-4. http://www.act.org/content/dam/act/unsecured/documents/Use-of-Data.pdf

Figure 1.5: Steps to Improve Data Use to Improve Teaching and Learning

Goals
- **Clarify School System Goals**
  - Develop and refine a content-rich district curriculum that states clearly what students are expected to learn in each grade and subject
  - Develop and refine student behavioral goals

Infrastructure
- **Create the Infrastructure for Data Use**
- Identify users' information needs
- Create electronic data system that is readily accessible to teachers and school leaders
- Establish a system of frequent assessment of recently taught curriculum
- Create timely and user-friendly reports

Skills
- **Ensure Adequate Educator Knowledge on How to Interpret and Use Data**
- Make knowledge of data use a criterion when hiring teachers and school leaders
- Embed data use training in an instructional coaching system for teachers

Collaboration
- **Support Collaboration Among Educators**
- Establish expectations for school leaders to support teacher collaboration around curriculum, instruction, and assessment.
- Bring teachers in the same subject together across schools

Source: ACT, Inc.[25]

DATA TEAMS

Schools and districts can use data teams to support teachers in using and interpreting assessment data as well as to build a culture of data use. Data teams may function at the school or district level to provide the central functions outlined in Figure 1.6 on the following page. While the scale and scope of these functions may differ between district- and school-level data teams, the overall goals remain the same.

Data teams should include administrators and staff members that are already responsible for data use and management within the district or school as well as data users. A school-level data team may include the principal or assistant principal, the school's data manager, special education staff or coordinators, department heads or lead teachers, instructional coaches, and teachers. Data teams may also include a single chairperson that serves as a "Data Champion" and can assist the team in ensuring that their work is communicated out to the necessary staff members and that any requirements and policies are enforced.[26]

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[25] Figure text taken verbatim from: Ibid.
[26] Geier, R. and S. Smith. "District and School Data Team Toolkit." Washington Office of Superintendent of Public Instruction, Washington School Information Processing Cooperative, and Public Consulting Group, 2012, p. 15. https://www.esd105.org/cms/lib3/WA01920102/Centricity/Domain/42/Full%20Toolkit_10.19.12.pdf

Figure 1.6: Data Team Functions

Vision and Policy Management
Creates and articulates the vision for data use.
Sets and models expectations.
Implements and upholds policies for data use.

Data Management
Identifies data to be collected.
Manages data infrastructure and access.
Designs meaningful data displays.

Inquiry, Analysis, and Action
Selects or develops models for inquiry and data use.
Models the inquiry process publicly.

Professional Development
Provides training and professional development to support district departments, principals, school data teams, and teachers in the use of data.
Uses data to identify professional development needs.

Monitoring and Communication
Monitors progress towards achieving a vision for data use.
Establishes lines of communication necessary for the sharing of results and best practices.
Communicates with stakeholders to determine their specific needs for data and training.

Source: Washington School Information Processing Cooperative[27]

Data teams should be well supported by school and district leadership. Research shows that leadership support is a critical component of successful data teams and driving data-driven decision making in schools. One study on leadership behaviors that support and inhibit the work of data teams identified the following "building blocks" for creating and sustaining effective data teams (Figure 1.7).[28]

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[27] Table text taken verbatim from: Ibid., p. 4.
[28] Schildkamp, K., et. al. "How school leaders can build effective data teams." *Journal of Educational Change,* July 2019. https://link.springer.com/content/pdf/10.1007/s10833-019-09345-3.pdf

Figure 1.7: Leadership Building Blocks for Effective Data Teams

Establishing and communicating a vision, norms, and goals	Providing individualized support	Intellectual stimulation through knowledge sharing and autonomy

Creating a climate for data use focused on improvement rather than accountability	Networking to connect different parts of the school in their commitment to data use
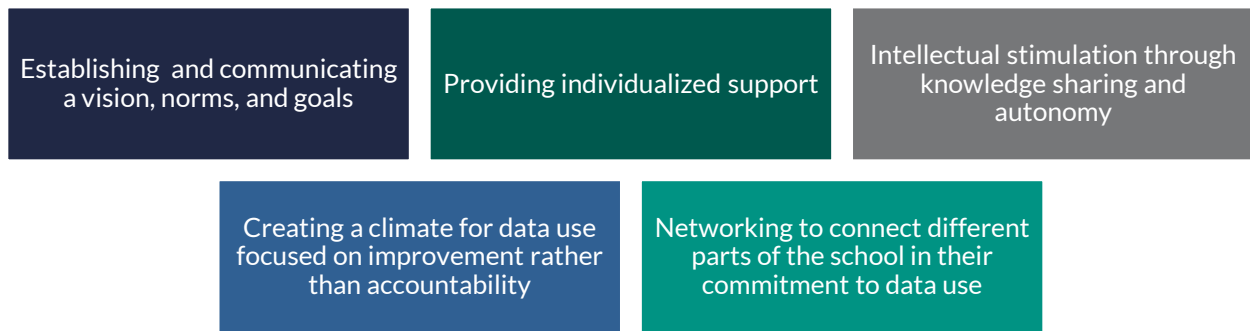
Source: Journal of Educational Change[29]

ADDITIONAL RESEARCH

Hanover Digital offers many reports and resources on topics related to supporting data-driven decision making and the effective use of assessment data. The table below describes several relevant reports available via Hanover Digital. Login is required to view and download reports.

Report Title	Description	Link
Best Practices for Data Facilitation and Data Teams	Describes practices and strategies for the data facilitator role and school- and district-based data teams designed to support instructional staff in analyzing, interpreting, and using assessment data to inform instruction	
Formative Literacy Assessment in Early Childhood Grades	Examines components of effective early literacy assessments, identifies common metrics and assessments used by states and districts for evaluating early literacy	
Best Practices in Response to Intervention	Describes best practices in conducting universal screening and progress monitoring in Response to Intervention (RtI) and describes instructional strategies and interventions that can be used for students with learning disabilities and gifted students	
Best Practice in Data Warehousing	Provides an overview of data warehousing in K-12 education, including implementation considerations	
Annotated Bibliography: Digital Data Access for Families	Lists and describes 22 sources related to the impact, effectiveness, and considerations related to providing families with online access to student data	

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[29] Figure text adapted from: Ibid., p. 283.

SECTION II: ASSESSMENT TOOLS

This section summarizes five packaged assessment tools that districts can use to support data collection and data-driven decision making around student academic supports. These assessments were selected based on data from the National Center on Intensive Intervention (NCII). NCII maintains a list of academic screening and progress monitoring tools along with summary details and technical details. NCII's Technical Review Committee, comprised of national experts in the field, reviews each assessment for evidence of reliability and validity. For both reliability and validity, assessments are rated as having either convincing evidence, partially convincing evidence, or unconvincing evidence. In most cases, assessment validity and reliability ratings were given for each individual subject area and grade level (i.e., each assessment is given multiple reliability and validity ratings). In many cases individual ratings are the same across all or most grade levels and subject areas, however this is not always the case.[30]

View NCII Screener Tools Chart

View NCII Progress Monitoring Tools Chart

In order to identify potentially relevant assessment tools to highlight for DISTRICT, Hanover reviewed and compared the NCII screener and progress monitoring tool charts to identify assessments that generally meet the following criteria:

- Assessments classified by NCII as both screener and progress monitoring tools, given the district's interest in identification, diagnostic, and adjustment of supports;
- Assessments that cover both English language arts and math; and
- Assessments with mostly NCII ratings of convincing evidence or partially convincing evidence for both reliability and validity.

The following tools were selected based on the above criteria for this report. Additional details on each assessment are summarized in this section. Click on the boxes below to access each assessment's main website.

FastBridge	MAP Growth	IStation	i-Ready	STAR

RELIABILITY AND VALIDITY

As discussed above, each of these five assessments were selected based in part on their high levels of reliability and validity as rated by NCII's Technical Review Committee. However, some assessments received more consistency in ratings across grade level and subject area versions. Figure 1.1 summarizes the validity and reliability ratings for each of the five assessments. Ratings are also broken out by screener and progress monitoring functions, as NCII reviewed these capabilities separately.

Three of the five assessments (i-Ready, STAR, and MAP Growth) showed the greatest consistency in convincing evidence for both reliability and validity, with few instances of partially convincing evidence and

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[30] [1] "Academic Screening Tools Chart." National Center on Intensive Intervention."
https://charts.intensiveintervention.org/ascreening [2] "Academic Progress Monitoring Tools Chart." National Center on Intensive Intervention. https://charts.intensiveintervention.org/aprogressmonitoring [3] "About the Charts – Tools Chart Resources."
National Center on Intensive Intervention. https://intensiveintervention.org/about-charts-resources

none rated as unconvincing. The IStation and FAST assessments received a somewhat more diverse range of ratings, including some areas with unconvincing evidence.[31]

Figure 2.1: Summary of Assessment Tool Reliability and Validity Ratings

Assessment & Publisher	NCII Reliability Ratings		NCII Validity Ratings	
	Screener	**Progress Monitoring**	**Screener**	**Progress Monitoring**
i-Ready *Curriculum Associates*	**Convincing evidence for all versions reviewed** – Reading (K-8) and Math (3-8)	**Convincing evidence for all versions reviewed** – Reading (K-8) and Math (3-8)	**Convincing evidence for all versions reviewed with three exceptions** – Reading K, 1, 2 (all rated partially convincing)	**Convincing evidence for all versions reviewed** – Reading (K-8) and Math (3-8)
STAR *Renaissance*	**Convincing evidence for all versions reviewed** - Reading and Math (1-11) and CMB (1-6)	**Convincing evidence for all Reading and Math** (1-11) and partially convincing for all CMB (1-6)	**Convincing evidence for all versions reviewed with two exceptions** - Math Grade 11, CMB Grade 6 (both rated as partially convincing)	**Convincing evidence for all versions reviewed with two exceptions** - Math Grade 10, CMB Grade 6 (both rated as partially convincing)
MAP Growth *NWEA*	**Convincing evidence for all versions reviewed** – Reading (K-8) and Math (2-8)	*MAP Growth not reviewed as progress monitoring tool, though this is a capability.*	**Convincing evidence for all versions reviewed** – Reading (K-8) and Math (2-8)	*MAP Growth not reviewed as progress monitoring tool, though this is a capability.*
Istation *Imagination Station*	**Convincing evidence for all versions reviewed** – Reading (K-8) and Math (K-8)	**Convincing evidence for all versions reviewed** – Reading (K-8) *(Math not reviewed for progress monitoring)*	Convincing evidence for 9 versions, partially convincing evidence for 3 versions, unconvincing evidence for 3 versions	Partially convincing evidence for Reading 4-8, unconvincing evidence for Reading K-3
FAST *FastBridge*	Convincing evidence for Adaptive Math K-5, Adaptive Reading 1-5, Early Math and Reading K-1, and CBM Reading 4-5, Partially convincing evidence for CBM Reading 1-3, Unconvincing for CBM Reading 6.	Convincing evidence for 5 versions, partially convincing evidence for 13 versions, unconvincing evidence for 1 version	Convincing evidence for 11 versions, partially convincing evidence for 7 versions, unconvincing evidence for 3 versions	Convincing evidence CBM Reading 1-6, unconvincing evidence for all but two other versions

Note: CBM = Content-Based Mastery. Assessment tools ordered broadly from most to least convincing evidence of reliability and validity. **Green boxes** indicate instances where all versions of the assessment were rated as convincing evidence; **Blue boxes** indicate instances where most versions were rated as convincing evidence, while the remaining few were rated as partially convincing; **Grey boxes** indicate instances were some versions were rated as convincing evidence, while others were rated as either partially convincing or unconvincing.
Source: NCII

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[31] [1] "Academic Screening Tools Chart.," Op cit. (2) "Academic Progress Monitoring Tools Chart," Op. cit.

ASSESSMENT DETAILS

The remainder of this section summarizes the features and implementation needs of the five assessments – i-Ready, Star, MAP Growth, IStation, and FAST. Each section draws on publicly available information from the assessment creators and publishers.

I-READY ASSESSMENT

Curriculum Associate's i-Ready assessment is compatible for Kindergarten through Grade 12, and functions online as a computer-adaptive, standards-based, diagnostic assessment.[32] There is no information available on the time it takes to complete the i-Ready assessment on the Curriculum Associates website, nor on the recommended frequency of assessment implementation. However, Curriculum Associates state on the i-Ready webpage that the assessment "offers a complete picture of student performance and growth, eliminating the need for multiple, redundant tests."[33] This statement might indicate that i-Ready is not meant to be administered frequently and that it could be comprehensive or lengthy.

Figure 2.2: Logistical Features of i-Ready

GRADE LEVELS OFFERED	Grades K to 12
ASSESSMENT FREQUENCY	There is limited information on the Curriculum Associates website that indicates the frequency of administration. However, the assessment webpage states that i-Ready offers a more holistic view of student progress and achievement, thus **"eliminating the need for multiple, redundant tests."** This statement may indicate that i-Ready is not administered frequently.
ASSESSMENT FORMAT	Online, computer-adaptive
TIME REQUIRED TO COMPLETE	There is no information on the Curriculum Associates website that indicates the amount of time required to complete the i-Ready assessment.

Source: Curriculum Associates[34]

The i-Ready assessment is divided into two different components: i-Ready Diagnostic and i-Ready Standards Mastery. These two components work together to provide teachers with robust assessment data that can help them inform their decision-making and instructional individualization.[35] Specifically, the two assessment components are described as follows:[36]

- **Diagnostic**: *i-Ready Diagnostic* is an adaptive assessment designed to provide teachers with actionable insight into student needs. It offers a complete picture of student performance and growth. By adapting to student responses and assessing a broad range of skills—including skills above and below a student's chronological grade—the *i-Ready Diagnostic* pinpoints student ability level, identifies the specific skills students need to learn and accelerate their growth, and charts a personalized learning path for each student.

- **Standards Mastery:** *i-Ready Standards Mastery* provides flexible assessments designed to measure specific grade-level standards. Built to map to a teacher's scope and sequence, *i-Ready Standards Mastery* allows educators to quickly identify when reteaching or remediation is needed as standards are covered across the year. The program's reports visualize student performance on recently-taught material and highlight misconceptions that may prevent progress.

Each of the different assessment components generates reports that target the specific measures of each component of i-Ready. The Diagnostic component provides data reports that help teachers to understand

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[32] "I-Ready | Assessments." Curriculum Associates. https://www.curriculumassociates.com/products/i-ready/assessment
[33] Ibid.
[34] Figure contents adapted from Ibid.
[35] Ibid.
[36] Bulleted text was quoted verbatim with modifications from Ibid.

student performance and measure and monitor student growth. Insights from the Diagnostic data should help teachers alter their instruction as-needed. The Standards Mastery component produces data reports that identify the skills students have mastered or the areas where students are struggling the most. Insights from the Standards Mastery data should help teachers close learning gaps and provide reteaching or remediation. Further information on content alignment and data reporting features of i-Ready is presented in Figure 2.3 below.

Figure 2.3: Content Alignment, Adaptations, and Data Reporting Features of i-Ready

ALIGNMENT TO LEARNING STANDARDS	There are two versions of the i-Ready assessment: ▪ i-Ready Standards Mastery: allows educators to assess specific *standards* as they are covered in the **classroom**. This assessment is built to match the rigor of **state tests.** ▪ i-Ready Diagnostic: designed to provide teachers with insights into student needs in terms of **classroom culture** and **instruction**. i-Ready Standards Mastery and i-Ready Diagnostic are both aligned to **state standards**. Reports generated from these assessments can be **adapted** in terms of student achievement according to specific state standards.
DATA REPORTING FEATURES	Each assessment communicates student assessment data in reports for both math and reading. The reports generated for each type of assessment differ in the following ways: ▪ i-Ready Standards Mastery: the standards mastery assessments can communicate **classroom-wide data or individual student data** by **achievement** in specific topics within each subject. ▪ i-Ready Diagnostic: diagnostic reports communicate **classroom-wide data or individual student data** by estimated **grade-level**, **growth rate**, and **content knowledge**. The diagnostic reports also automatically separate students into groups of similar needs to support teachers' **differentiation** and **individualization** efforts.
ADAPTATIONS OFFERED	There is no information on the Curriculum Associates website that indicates the available adaptations offered for the i-Ready assessment.

Source: Curriculum Associates[37]

Curriculum Associates offers a **document** on the technology and system requirements for i-Ready that details the browser and hardware recommendations that support the functionality of i-Ready assessments. Additionally, Curriculum Associates supports its customers through their customer service E-mail and phone options. Furthermore, schools and districts must contact Curriculum Associates' customer service support mechanisms to learn about pricing packages for the i-Ready assessments. Further details on the technology and implementation requirements for i-Ready are described in Figure 2.4 below.

Figure 2.4: Technology and Implementation Features of i-Ready

PRODUCT SUPPORT FEATURES	The Curriculum Associates website includes a **downloadable document** on the technology and system requirements for i-Ready. Additionally, the i-Ready webpage features technology support contact information, with an **E-mail address** and customer service **phone numbers**.

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[37] Figure contents were adapted from [1] Ibid. [2] "I-Ready | Standards Mastery." Curriculum Associates. https://www.curriculumassociates.com/products/i-ready/assessment/standards-mastery [3] "I-Ready | Diagnostics." Curriculum Associates. https://www.curriculumassociates.com/products/i-ready/assessment/diagnostic

REQUIRED TECHNOLOGY	The most recent system requirements state that **Microsoft Edge**, **Safari**, **Firefox**, and **Google Chrome** are all supported browsers for **Windows**, **Mac**, and **Google** operating systems (with 1024 x 768 pixel screen resolution and 1.6Ghz or faster bandwidth). Notably, "for the best user experience, Curriculum Associates recommends Google Chrome." Curriculum Associates also offers i-Ready for Students and i-Ready Learning Games **iPad apps**, that are compatible with iOS 11 or above. These apps are free downloads in the Apple App Store. i-Ready also requires Adobe Reader. JavaScript, cookies, and pop-ups must be enabled.
IMPLEMENTATION TIME	There is no information on the Curriculum Associates website that indicates the amount of time required to implement and operate i-Ready.
IMPLEMENTATION COST	To purchase i-Ready, schools must **contact Curriculum Associates** to learn about the pricing packages. Notably, schools must be prepared to purchase a minimum of **150 student licenses** for operation.

Source: Curriculum Associates[38]

Curriculum Associates offers comprehensive teacher resources that pair with the i-Ready assessments to effectively address student needs. There are three distinct teacher resources offered on the Curriculum Associates website, which are:[39]

- **Tools for Instruction:** provide actionable, in-the-moment resources for addressing students' skill gaps in small group and one-to-one settings. Directly tied to Diagnostic results, *Tools for Instruction* offer instant options for remediation and reteaching.

- **Ready Teacher Toolbox:** differentiating instruction is made easier with this online support tool that gives teachers a full range of K-8 instructional resources at their fingertips, regardless of what grade they teach, for students performing below, on, or above grade level.

- **Ready Instruction:** *Ready Mathematics* and *Ready Reading* provide K-8 teacher-led instruction to complement the personalized instruction students get from their i-Ready assessment results-personalized learning path. The step-by-step instructional approach aims to achieve student gains in the classroom.

Further details on the i-Ready content and instructional features are described in Figure 2.5 below.

Figure 2.5: Content and Instructional Features of i-Ready

TOPICS	- Math - Reading
TEACHER INSTRUCTIONAL SUPPORT	**i-Ready Instruction** is a series of online lessons that are specifically targeted toward students' learning goals based on students' i-Ready assessment scores. The insights from i-Ready assessments help teachers determine the best i-Ready Instruction lessons that will support student needs. Additionally, i-Ready **Teacher Resources** offer teachers **tools** for identifying and addressing students' needs, **differentiating instruction**, conducting classroom activities, and providing classroom instruction.

Source: Curriculum Associates[40]

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[38] Figure contents were adapted from [1] "I-Ready | Systems Requirements." Curriculum Associates. https://cdn.i-ready.com/instruction/content/system-check/iReady_System_Requirements.pdf [2] "I-Ready | Purchasing Information." Curriculum Associates. https://www.curriculumassociates.com/products/i-ready/pricing-and-purchasing

[39] Bulleted text was quoted verbatim with modifications from "I-Ready | Teacher Resources." Curriculum Associates. https://www.curriculumassociates.com/products/i-ready/teacher-resources

[40] Figure contents were adapted from [1] "I-Ready | Assessments." Curriculum Associates. https://www.curriculumassociates.com/products/i-ready/assessment [2] "I-Ready | Standards Mastery." Curriculum Associates.

RENAISSANCE STAR

Districts can administer Star Reading and Star Math assessments in Grades K to 12. These assessments are computer-adaptive, and only require, according to Renaissance approximations, "less than 20 minutes" to complete.[41] Star Reading contains 25 test items and Star Math contains 24 test items. The assessments require 60 second limits for each reading question and three minute limits for each math questions.[42] Renaissance recommends "administering [the assessments] two to five times a year for most purposes and more frequently when used for progress monitoring."[43] Star Reading and Star Math can be completed "at different times for different students and at different frequencies" depending on student needs, as determined by the teacher.[44] As opposed to summative and formative assessments, Star Reading and Star Math are considered interim assessments. Formative assessments are brief and frequent progress monitoring tools and summative assessments measure whether students meet a set of standards. Interim assessments, on the other hand, "represent the middle ground, in terms of duration and frequency, and can serve [a variety of specific] purposes, including informing instruction, evaluating curriculum and student responsiveness to intervention, and forecasting performance on high-stakes summative year-end tests."[45] These logistical considerations for the Star Reading and Star Math assessments are summarized in Figure 2.6 below.

Figure 2.6: Logistical Features of Star Reading and Star Math

GRADE LEVELS OFFERED	Grades K to 12
ASSESSMENT FREQUENCY	Interim: two-to-five times per year, depending on student needs
ASSESSMENT FORMAT	Computer-adaptive
TIME REQUIRED TO COMPLETE	Less than 20 minutes. 24-25 questions.

Source: Renaissance Learning, Inc.[46]

Renaissance provides technical papers detailing how each Star assessment aligns with, and can predict success on, each major state assessment (**see the paper on Star assessment alignment with the California Assessment of Student Performance and Progress (CAASPP)**.[47] Data reporting mechanisms for Star Reading and Star Math support school staff in "accurately [predicting] students' performance on state summative tests and college entrance exams."[48] In addition to alignment data, Star Reading and Star Math score reporting is also norm-referenced in that it measures student performance against that of their peers and student performance over time.[49]

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https://www.curriculumassociates.com/products/i-ready/assessment/standards-mastery [3] "I-Ready | Diagnostics." Curriculum Associates. https://www.curriculumassociates.com/products/i-ready/assessment/diagnostic [4] "I-Ready | i-Ready Instruction." Curriculum Associates. https://www.curriculumassociates.com/products/i-ready/online-instruction [5] "I-Ready | Teacher Resources." Curriculum Associates. https://www.curriculumassociates.com/products/i-ready/teacher-resources

[41] "Renaissance Star 360." Renaissance Learning, Inc. https://www.renaissance.com/products/assessment/star-360/

[42] [1] "Star Reading Technical Manual." Renaissance Learning, Inc., 2019. pp. 10–13. https://help.renaissance.com/US/PDF/SR/SRRPTechnicalManual.pdf [2] "Star Math Technical Manual." Renaissance Learning, Inc., 2019. pp. 7–8. https://help.renaissance.com/US/PDF/SM/SMRPTechnicalManual.pdf

[43] "Relating Star Reading® and Star Math® to California Assessment of Student Performance and Progress (CAASPP) (Smarter Balance)." Technical Paper. Renaissance Learning, Inc., 2015. p. 9. http://doc.renlearn.com/KMNet/R004490804GK4385.pdf

[44] Bulut, O. and D.C. Cormier. "Validity Evidence for Progress Monitoring With Star Reading: Slope Estimates, Administration Frequency, and Number of Data Points." *Frontiers in Education*, 3, 2018. https://www.frontiersin.org/articles/10.3389/feduc.2018.00068/full

[45] "Relating Star Reading® and Star Math® to California Assessment of Student Performance and Progress (CAASPP) (Smarter Balance)," Op. cit., p. 4.

[46] Figure contents were adapted from [1] "Renaissance Star 360," Op. cit. [2] "Relating Star Reading® and Star Math® to California Assessment of Student Performance and Progress (CAASPP) (Smarter Balance)," Op. cit. [3] "Star Reading Technical Manual," Op. cit. [4] "Star Math Technical Manual," Op. cit.

[47] " Relating Star Reading® and Star Math® to California Assessment of Student Performance and Progress (CAASPP) (Smarter Balance)," Op. cit.

[48] "Renaissance Star 360," Op. cit.

[49] [1] "Renaissance Star Reading." Renaissance Learning, Inc., 2019. p. 2. https://p.widencdn.net/6ef2st/300804-Star-Reading-flyer [2] "Renaissance Star Math." Renaissance Learning, Inc., 2019. p. 2. https://p.widencdn.net/lgrgsf/300804-Star-Math-flyer

The Renaissance Star assessment data reporting system, the Renaissance Mastery Model, "tracks student data from multiple sources, including Star Assessments...and state summative tests...all in one place to provide a unified measure of mastery, helping [districts] make informed decisions and guide [their] students toward success."[50] The Mastery Model measures student progress in mastering a wide range of reading and math skills. The model also "automates the tracking and reporting of student data from a wide variety of sources, and converts that data into a continuous, unified measure of mastery, helping teachers make timely and informed decisions about all students' learning."[51] For more information on the Mastery Model, please see the **Renaissance Mastery Model white paper**.

With the Mastery Model, schools can report Renaissance assessment scores in a variety of formats:[52]

- Overarching summaries and dashboard overviews
- Screening
- Progress monitoring
- State performance
- Student growth over time
- Mastery dashboards
- Parent reports
- Instructional planning recommendations
- Student needs diagnostics

Star Reading and Star Math assessments are available in both English and Spanish. ELLs must complete both the English and the Spanish versions of the assessments, which typically takes no longer than 40 minutes. Data reports feature side-by-side comparisons of student performance on the English versus the Spanish assessments to understand student performance in their native language and how student performance differs in English.[53] Figure 2.7 below contains a brief summary of the content alignment, language adaptation, and data reporting features of Star Reading and Star Math.

Figure 2.7: Content Alignment, Adaptations, and Data Reporting Features of Star Reading and Star Math

ALIGNMENT TO LEARNING STANDARDS	Renaissance Star assessments align with state summative tests and college admissions exams
DATA REPORTING FEATURES	The Mastery Model supports a variety of data reports and dashboards that track student progress through their education. Dashboards also measure student performance against their peers and against state and college admissions assessment standards.
ADAPTATIONS OFFERED	Assessments are offered in both English and Spanish

Source: Renaissance Learning, Inc.[54]

To support school staff in administering the Star Reading and Star Math assessments, the Renaissance website includes a variety of how-to videos that demonstrate to clients the purpose and function of each product. Additionally, the website features product support E-mail and phone information.[55] Further technology and administration support features for Star Reading and Star Math are listed in Figure 2.8 below, which also includes a hyperlink to additional resources.

Figure 2.8: Technology and Implementation Features of Star Reading and Star Math

PRODUCT SUPPORT FEATURES	The Renaissance website includes how-to videos and virtual demonstrations that support the function and purpose of each product. There is also information available for E-mail and phone support.

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[50] "Renaissance Star 360," Op. cit.
[51] "The Renaissance® Mastery Model." Special Report. Renaissance Learning, Inc., 2017. p. 1. http://doc.renlearn.com/KMNet/R60385.pdf
[52] Bulleted text was adapted from "Renaissance Star 360," Op. cit.
[53] Ibid.
[54] Figure contents were adapted from [1] "Relating Star Reading® and Star Math® to California Assessment of Student Performance and Progress (CAASPP) (Smarter Balance)," Op. cit. [2] "Renaissance Star 360," Op. cit. [3] "The Renaissance® Mastery Model," Op. cit.
[55] "Renaissance Star 360," Op. cit.

REQUIRED TECHNOLOGY	Star Reading and Star Math are computer-based assessments that require Broadband internet connection, such as DSL, satellite, or cable. Though the assessments are best-supported by computers with at least 1024 x 768 screen resolution, they are also compatible with tablets and Chromebooks. Star Reading and Star Math are also supported by Windows and Macintosh programs, which include: ▪ Windows: Internet Explorer, Firefox, Chrome ▪ Macintosh: Safari, Firefox, Chrome
IMPLEMENTATION TIME	While the assessments themselves only require a maximum of 20 minutes to administer, there is no information available on the time requirements for implementing the program software and coordinating proctoring roles with school staff. However, the many demonstrations, resources, and how-to videos available on the Renaissance website indicate that the Star Reading and Star Math products are live tools—simple to implement, administer, and evaluate in real-time.
IMPLEMENTATION COST	There is limited information on assessment costs and pricing options available on the Renaissance website. However, the site does **include robust resources on a wide variety of funding options** for schools.

Source: Renaissance Learning, Inc.[56]

STAR READING

The Star Reading assessment, specifically, evaluates students in general foundational skills, literature, informational text, and language. Renaissance supports educators in addressing student needs in the Star Reading subject areas through their data reporting systems and their instructional resources. [57] The Renaissance Mastery Model, the all-encompassing data-reporting system for Star Reading and Star Math assessments, includes diagnostic data that helps "teachers make timely and informed decisions about all students' learning," whereas data monitoring helps teachers and students "set attainable goals, develop a growth plan, monitor progress, and celebrate accomplishments."[58] Renaissance data reports and content alignment help teachers plot Star Reading assessment scores on a "continuum of reading strategies and skills needed for students to reach grade-level proficiency and achieve mastery."[59] As teachers aim to provide targeted instruction for students based on the needs identified in the Star Reading assessment, they may access a variety of **instructional reading resources from the Renaissance website**. These instructional and content features of Star Reading are summarized in Figure 2.9 on the following page, which includes a hyperlink to additional resources.

Figure 2.9: Content and Instructional Features of Star Reading

TOPICS	▪ Foundational Skills ▪ Phonics and Word Recognition ▪ Inflectional Endings/Affixes ▪ Fluency ▪ Purpose of Reading; Reading with Comprehension ▪ Literature ▪ Informational Text ▪ Language
TEACHER INSTRUCTIONAL SUPPORT	▪ Student diagnostic data to target and prioritize student needs ▪ Real-time data monitoring ▪ **Instructional Reading Resources**

Source: Renaissance Learning, Inc.[60]

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[56] Figure contents were adapted from [1] Ibid. [2] "Renaissance Technical Recommendations." Renaissance Learning, Inc., 2019. http://doc.renlearn.com/KMNet/R004312127GJB43D.pdf

[57] "Renaissance Star Reading." Renaissance Learning, Inc. https://www.renaissance.com/products/assessment/star-360/star-reading-skills/

[58] [1] "The Renaissance® Mastery Model," Op. cit. [2] "Renaissance Star Reading," Op. cit.

[59] "Renaissance Star Reading," Op. cit.

[60] Figure contents were adapted from [1] Ibid. [2] "Renaissance Star Reading," Op. cit. [3] "The Renaissance® Mastery Model," Op. cit.

STAR MATH

The Star Math assessment features subjects at all grade levels, specifically separated into two grade ranges: Grades K to 8 and Grades 9 to 12.[61] In addition to the Renaissance data reporting and monitoring features, and content alignment to state standards and tests described in the previous subsection, teachers can also access **instructional resources for math-specific learning needs**. These instructional and content features of Star Math for K-8 are summarized in Figure 2.10 below, which includes a hyperlink to additional resources.

Figure 2.10: Content and Instructional Features of Star Math

TOPICS & SUBJECT AREAS	Grades K to 8: ■ Counting and cardinality ■ Operations and algebraic thinking ■ Geometry ■ Functions ■ Expressions and Equations ■ Ratios and Proportional relationships ■ The number system ■ Measurement and data Statistics and probability
TEACHER INSTRUCTIONAL SUPPORT	■ Student diagnostic data to target and prioritize student needs ■ Real-time data monitoring ■ **Instructional Math Resources**

Source: Renaissance Learning, Inc.[62]

MAP GROWTH ASSESSMENT

Districts can administer MAP growth in Grades K to 11 as a core assessment. MAP is an untimed computer-adaptive assessment that can take approximately three hours to complete (each subject area requires around 45 minutes in isolation). According to NWEA, MAP Growth is meant to serve as an interim assessment—educators should aim to administer the MAP Growth assessment in the Fall, Winter, Spring, and Summer—to "measure growth, project proficiency on high-stakes tests, and inform how educators differentiate instruction, evaluate programs, and structure curriculum."[63] Logistical considerations for the MAP Growth assessment are summarized in Figure 2.11 below.

Figure 2.11: Logistical Features of MAP Growth

GRADE LEVELS OFFERED	■ Core Assessment: Grades K to 11 ■ Remediation Assessment: Grades 10 to 12
ASSESSMENT FREQUENCY	Interim: Fall, Winter, Spring, and Summer
ASSESSMENT FORMAT	Computer-adaptive
TIME REQUIRED TO COMPLETE	Untimed. Approximately three hours total, 45 minutes per subject-area.

Source: NWEA[64]

The MAP Growth assessment aligns not only to Common Core, American Education Reaches Out (AERO), and Next Generation Science Standards, but also individual state standards. Importantly, MAP Growth assessment questions and score data are "calibrated to [the MAP Growth] proprietary RIT (Rausch Unit)

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[61] "Renaissance Star Math," Op. cit., p. 2.
[62] Figure contents were adapted from [1] "Renaissance Star Math." Renaissance Learning, Inc. https://www.renaissance.com/products/assessment/star-360/star-math-skills/ [2] "Renaissance Star Math," Op. cit. [3] "The Renaissance® Mastery Model," Op. cit.
[63] [1] "MAP Growth Fact Sheet." NWEA, 2019. https://www.nwea.org/resource-library/fact-sheets/map-growth-fact-sheet [2] "Measures of Academic Progress Interim Assessments for Grades K-12." Overview of Services. NWEA, 2015. p. 5. https://in.lcms.org/wp-content/uploads/2016/09/NWEA-Overview-of-Services.pdf
[64] Figure contents were adapted from [1] "MAP Growth Fact Sheet," Op. cit. [2] "Measures of Academic Progress Interim Assessments for Grades K-12," Op. cit.

scale, which is...[an] equal-interval scale [that] is continuous across grades."[65] For more information on the RIT scale, please see the **RIT scale reference charts and RIT score alignment brochure**. The RIT scores are connected to MAP Growth and NWEA resources, so teachers may use students RIT scores for the following purposes:[66]

- Zoom in on a student's missing skills with MAP Skills

- Connect to instructional resources aligned to student RIT scores

- Track longitudinal growth over a student's entire career

- Group students for differentiated instruction based on RIT score ranges

- Inform lesson planning based on what instructional areas student RIT Scores reveal them to be ready to learn

- Set growth goals with students

Notably, MAP Growth "reveals how much growth has occurred between testing events and, when combined with [RIT] norms, shows projected proficiency."[67] With these projections, middle school teachers may be able to estimate a student's placement level in English, math, and science in high school. In addition to performance projections, MAP Growth score and data reports "transform raw data into insights that help educators take action. Teachers use them to differentiate instruction and pinpoint individual student needs. Higher-level reports give administrators the context to drive improvement across entire school systems."[68]

MAP Growth is available in a variety of adaptation options including: refreshable Braille, screen reader compatibility, color contrast adjustments, Universal Design for Learning.[69] NWEA also released a new MAP Spanish assessment option, which is "included as part of MAP Growth and MAP Reading Fluency [to] help [educators] understand where Spanish-speaking students are—and what [they are] ready to learn next—with a rigorous measure of reading, math, and early literacy skills."[70]

Figure 2.12 below contains a brief summary of the content alignment, accessibility adaptation, and data reporting features of MAP Growth.

Figure 2.12: Content Alignment, Adaptations, and Data Reporting Features of MAP Growth

ALIGNMENT TO LEARNING STANDARDS	- State standards - Common Core - Next Generation Science Standards - AERO	
DATA REPORTING FEATURES	The MAP Growth RIT Scale is an equal interval scale that is calibrated to all NWEA MAP Growth resources to ensure accurate reporting of student progress and targeted resources to address student needs.	
ADAPTATIONS OFFERED	- Spanish - Refreshable Braille - Screen Reader	- Color Contrast Adjustments - Universal Design for Learning

Source: NWEA[71]

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[65] "MAP Growth Fact Sheet," Op. cit., p. 1.
[66] Bulleted text was quoted verbatim with minimal modifications from "Normative Data & RIT Scores." NWEA. https://www.nwea.org/normative-data-rit-scores/
[67] Quoted with added hyperlink from "MAP Growth." NWEA. https://www.nwea.org/map-growth/
[68] "MAP Growth Fact Sheet," Op. cit., p. 1.
[69] Ibid.
[70] "MAP Spanish." NWEA. https://www.nwea.org/map-growth/map-spanish/
[71] Figure contents were adapted from [1] "MAP Growth Fact Sheet," Op. cit. [2] "MAP Growth," Op. cit.

To support school staff in administering the MAP Growth assessment, the NWEA website includes a **Partner Support** page that features support articles, demonstration videos, and technical resources. This Partner Support page on the NWEA website also includes a contact feature where partners can submit an E-mail request, start a live chat, or call support staff.[72] Additionally, NWEA also includes a MAP help center on their website where partners can access materials and video tutorials on the purpose, function, and technology required for the MAP Growth assessment and other MAP assessments.[73] Further technology and administration support features for MAP Growth are listed in Figure 2.13 on the following page, which includes hyperlinks to additional resources.

Figure 2.13: Technology and Implementation Features of MAP Growth

PRODUCT SUPPORT FEATURES	The NWEA website includes Partner Support and MAP Help Center web pages that guide viewers to video tutorials, operational materials, and resources that communicate the purpose and function of the MAP Growth assessment. There is also a support contact feature that allows viewers to E-mail, call, or live-chat with support staff.
REQUIRED TECHNOLOGY	MAP Growth is a computer-based assessment that requires Broadband internet connection with a bandwidth of 2 Mbps for every 30 computers concurrently testing in Grades 3 and higher, and a bandwidth of 3 Mbps for every 30 computers concurrently testing in Grades K to 2 (due to audio and interactive features). MAP Growth is compatible with Windows, Macintosh, iPad, and Chromebook, and requires a secure testing browser, or "lockdown browser" for safe and fair testing. Lockdown browsers prevent students from accessing other websites while completing the MAP Growth assessment. These lockdown browsers are provided by NWEA and function as computer applications.
IMPLEMENTATION TIME	NWEA supports school staff and assessment proctors in implementing MAP Growth via proprietary online professional learning tools that outline specific implementation requirements. School staff and assessment coordinators will execute the following implementation timeline: ▪ **Choose Dates for Testing** (approximately three weeks in advance) ▪ **Set Testing Rules** ▪ **Prepare Proctors** ▪ **Oversee and Complete Testing**
IMPLEMENTATION COST	Hanover was unable to confirm pricing information for MAP Growth. However, Hanover was able to access a 2018-2019 contract from another education agency that indicates the MAP Growth licensing fee is $1,500, and the cost per pupil is approximately $13.50. According to this district contract, MAP Growth professional learning costs $3,500 per session.

Sources: NWEA, Ohio Department of Education[74]

The MAP Growth assessment evaluates students of all grade levels on their performance in reading, math, language usage, and science.[75] To support educators in preparing students for these assessments and addressing students' identified needs, NWEA offers robust **professional learning tools for MAP Growth** implementation.[76] The MAP Foundation Series workshops support teachers by connecting students' scores

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[72] "Partner Support." NWEA. https://community.nwea.org/community/partner-support

[73] "MAP Help Center." NWEA. https://teach.mapnwea.org/impl/maphelp/Content/MAPHelpCenter.htm

[74] Figure contents were adapted from [1] "Partner Support," Op. cit. [2] "MAP Help Center," Op. cit. [3] "System and Technology Guide." NWEA, 2019. https://teach.mapnwea.org/impl/PGM2_System_Technology_Guide.pdf [4] "Online MAP Growth Basics." NWEA, 2018. https://community.nwea.org/servlet/JiveServlet/downloadBody/2241-102-7-8899/OnlineMGB_Overview.pdf [5] "Vendor Information with Ohio Department of Education Guidelines for Approved Assessments 2018-2019." Ohio Department of Education, 2018. http://education.ohio.gov/getattachment/Topics/Common-Application-for-Requests-for-Qualifications/NWEA-MAP-Growth.pdf?lang=en-US

[75] "MAP Growth Fact Sheet," Op. cit.

[76] "Professional Development for Teachers." NWEA. https://www.nwea.org/professional-learning-overview/

and assessment data to instruction, programming, and teachers' planning needs. NWEA professional learning tools can support the following stakeholders:[77]

- **Teachers and Teacher Leaders**: increase the ability to interpret MAP Growth data to inform instruction and goal-setting.

- **Instructional Coaches**: develop skills to support teachers in instructional applications of MAP Growth data.

- **School and District Leaders**: gain expertise in using MAP Growth reports to build a data-informed culture and set long-term goals.

Additionally, as explained previously, the RIT scale helps educators to identify specific instructional support resources for students based on their MAP Growth scores.[78] These instructional and content features of MAP Growth are summarized in Figure 2.14 below, which includes hyperlinks to additional resources.

Figure 2.14: Content and Instructional Features of MAP Growth

TOPICS & SUBJECT AREAS	■ Reading ■ Math	■ Language Usage ■ Science
TEACHER INSTRUCTIONAL SUPPORT	■ RIT data to target and address specific student needs ■ **Online professional learning tools**	

Source: NWEA[79]

IStation Assessment

IStation is an integrated assessment and intervention program designed to assess students and provide online intervention instruction sequentially. IStation offers a formative assessment that can be used to measure student growth in reading, math, and Spanish literacy. The assessment is computer-adaptive and can be used for screening, progress monitoring, and diagnostic purposes. IStation is designed to be administered once a month for progress monitoring. The assessment takes 30 minutes to complete for a single subject area. The assessments use nationally normed IStation's Indicators of Progress (ISIP) to track growth across multiple skill areas. The assessments are designed to be used in conjunction with online, game-like instructional programs that are specifically tailored to student need based on assessment results.[80] Information on the logistical features of the IStation assessment is summarized in Figure 2.15 below.

Figure 2.15: Logistical Features of IStation Assessment

GRADE LEVELS OFFERED	Grades PreK-8 (Reading and Math) Grades PreK-5 (Spanish literacy)
ASSESSMENT FREQUENCY	The IStation assessment is designed to be administered monthly
ASSESSMENT FORMAT	Computer-adaptive, online
TIME REQUIRED TO COMPLETE	30 minute per subject area

Source: Istation[81]

IStation aligns to and is approved by multiple state departments of education, though not currently in California.[82] However, IStation provides documentation on how its assessment and instructional resources

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[77] Bulleted text was quoted verbatim with modifications from "MAP Growth Fact Sheet," Op. cit.
[78] "NWEA," Op. cit.
[79] Figure contents were adapted from [1] "MAP Growth Fact Sheet," Op. cit. [2] "Professional Development for Teachers," Op. cit. [3] "NWEA," Op. cit.
[80] [1] "IStation." Imagination Station. https://www.istation.com/ [2] "Formative Assessments." Imagination Station. https://www.istation.com/SuperSeven/FormativeAssessments
[81] Ibid.
[82] "State Specifics." Imagination Station. https://www.istation.com/About/StateApprovals

align to Common Core standards and state standards, including those in California. For California, IStation outlines alignment with the state's common core standards for preschool learning foundations (PreK reading), K-5 and 6-8 reading, K-1 and 2-5 math, and K-5 Spanish language arts and literacy.[83]

Assessment data is reported as ISIPs at three tiers based on nationally normed percentiles. The tiers are associated with a typical three-tiered RtI or MTSS structure to indicate the necessary level of intervention. The program's adaptive curriculum seamlessly connects to the assessment results to provide students with targeted online instruction to meet their identified areas of support.[84] Results are available in a web-based interface for teachers and administrators. Results can be viewed at multiple levels:[85]

- **Priority Reports** of a small group of students identified for intervention or support
- **Student-Level Reports** with results for an individual student
- **Classroom Summary Reports** that group and track students across a whole class
- **Executive Summary Reports** for school and district leaders to view site-wide results and growth
- **Usage Trend Reports** to show usage by month and by intervention tier
- **Skill Growth Reports** that aggregate class-level results and growth around a particular skill area

Figure 2.16: Content Alignment, Adaptations, and Data Reporting Features of IStation

ALIGNMENT TO LEARNING STANDARDS	- State standards - Common Core
DATA REPORTING FEATURES	Results are reported as IStation's Indicators of Progress (ISIP), which are nationally normed. The assessment groups students into three tiers based on percentile scores: - Tier 1 Performing at grade level (above 40th percentile) - Tier 2 Performing moderately below grade level and in need of intervention (between 40th and 20th percentile) - Tier 3 Performing seriously below grade level and in need of intensive intervention.
ADAPTATIONS OFFERED	- None specified - Spanish literacy version offered

Source: Imagination Station[86]

IStation offers technical and product support through online tips and FAQs as well as a support team available via phone and e-mail.[87] IStation is supported by multiple devices, including those running Mac, Windows, Chrome, and Android platforms. Once the program is installed on devices it can support multiple student users at a time, with no limit given. [88]

Figure 2.17: Technology and Implementation Features of IStation

PRODUCT SUPPORT FEATURES	Assistance available through IStation support team, tips, and FAQs.

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[83] "State Standard Correlations." Imagination Station. https://www.istation.com/Product/Correlations
[84] "Adaptive Curriculum." Imagination Station. https://www.istation.com/SuperSeven/AdaptiveCurriculum
[85] Bullet points adapted from: "Personalized Data Profiles." Imagination Station. https://www.istation.com/SuperSeven/PersonalizedDataProfiles
[86] Figure contents were adapted from [1] Ibid. [2] "Studies." Imagination Station. https://www.istation.com/Studies
[87] "Download & Technical Info." Imagination Station. https://www.istation.com/Support
[88] "Additional Technical Information." Imagination Station. https://www.istation.com/Support#technical

REQUIRED TECHNOLOGY	IStation is a computer-based assessment that requires an internet connection (1.5 Mbps+) and browser. The following browsers are supported: Chrome (67+), Microsoft Edge (41+), and Safari (11.1.2+). IStation is compatible with the following platforms: iPad, Android, Chrome, Windows, and Macintosh.
IMPLEMENTATION TIME	Hanover was unable to determine the lead-time required for implementation of IStation.
IMPLEMENTATION COST	Hanover was unable to confirm pricing information for IStation. However, a review from EdSurge notes that the ISIP assessment license is available for $5 per student.

Sources: Imagination Station [89]

While IStation is designed to seamlessly transition from assessment to online intervention activities, the program also provides teachers with a range of resources to support their instructional practices. Resources include:[90]

- **Istation Cards** provide tips and tools that help teachers gain insight into student data and more.
- **Online lesson libraries** include searchable supplemental instruction and digital lessons.
- **Interactive tools** help teachers lead classes and engage with animated content.
- **Fully scripted teacher-directed lessons** include printables and instructional tools.
- **Lexile® Find a Book** lists appropriate supplemental reading materials based on student abilities.
- **Assignments** allow teachers to give homework and independent classwork, track completion, and measure progress.

Istation also offers customizable professional development to assist classroom teachers with how to implement and optimize their use of the IStation assessment, interventions, resources, and data reports. Professional development sessions are offered regionally and online and are facilitated by training and intervention specialists.[91]

Figure 2.18: Content and Instructional Features of IStation

TOPICS & SUBJECT AREAS	▪ Early Reading ▪ Math ▪ Advance Reading ▪ Spanish Literacy
TEACHER INSTRUCTIONAL SUPPORT	▪ Online teacher resources for instruction, differentiation, and interventions in small- and whole-group settings. ▪ Customizable professional development sessions

Source: Imagination Station[92]

FAST ASSESSMENT

FastBridge Learning's FAST assessment connects curriculum-based measures with computer-adaptive testing to create a meaningful assessment of reading, math, and behavior for students in Kindergarten through Grade 12. [93] The FAST assessment employs curriculum-based measures to support progress monitoring and the computer-adaptive component to support universal screening. These two components of FAST can be administered together or separately. The universal screening can take place tri-annually, or every fall, winter, and spring, and takes about 15 to 30 minutes to complete. The progress monitoring portion

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[89] [1] "Download & Technical Info," Op. cit. [2] "Additional Technical Information," Op. cit. [3] "Istation Reading." EdSurge. https://www.edsurge.com/product-reviews/istation-reading

[90] Bullet points taken verbatim from: "Teacher Resources." Imagination Station. https://www.istation.com/SuperSeven/TeacherResources

[91] "Professional Development » Imagination Station. https://www.istation.com/SuperSeven/ProfessionalDevelopment

[92] [1] "Istation," Op. cit. [2] "Teacher Resources," Op. cit. [3] "Professional Development," Op. cit.

[93] "FAST | The FAST Approach." FastBridge Learning. https://www.fastbridge.org/products-the-fast-approach/

can be administered weekly or bi-weekly, and only takes about one minute to complete.[94] The information on the logistical features of the FAST assessment is summarized in Figure 2.19 below.

Figure 2.19: Logistical Features of FAST

GRADE LEVELS OFFERED	Grades K to 12.
ASSESSMENT FREQUENCY	▪ FAST computer-adaptive assessments are intended to be tri-annual assessments, to be administered during the fall, winter, and spring. ▪ Curriculum-based measurements can be delivered weekly or bi-weekly.
ASSESSMENT FORMAT	Computer-adaptive, online. Also available in a paper option for the curriculum-based measure.
TIME REQUIRED TO COMPLETE	▪ The core computer-adaptive assessments typically take 15-30 minutes for individuals or groups. ▪ The curriculum-based measurement component takes individuals one minute each for math and reading.

Source: FastBridge Learning[95]

The computer-adaptive, universal screening component of the FAST assessment, along with the curriculum-based, progress-monitoring component of the assessment are both aligned to Common Core English language arts and mathematics standards. [96] The resulting data reports from the completed FAST assessments are grouped into three categories of findings: [97]

- ▪ **Screening & Problem Identification**: these data reports, the Group Screening, Group Growth, Screening to Intervention, and Impact reports, identify students and groups by risk and applicable interventions.

- ▪ **Analysis & Planning**: these data reports, the Individual Skills and Group Skills reports, provide itemized lists of specific benchmarks and students' or groups' risk-level relative to each benchmark. These reports help facilitate more effective differentiation for individuals and groups.

- ▪ **Intervention & Monitoring**: the Individual Benchmark Comparison, Progress Monitoring, and Student-at-a-Glance reports monitor students' progress toward learning goals, and compare student achievement across local and national norms.

These details on data reports and content alignment are described further in Figure 2.20 below.

Figure 2.20: Content Alignment, Adaptations, and Data Reporting Features of FAST

ALIGNMENT TO LEARNING STANDARDS	Aligned to Common Core ELA and math standards.

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[94] "FAST | CBM & CAT in One." FastBridge Learning. https://www.fastbridge.org/research-labs/cbm-and-cat-in-one/
[95] Figure contents were adapted from [1] "FAST | The FAST Approach." FastBridge Learning. https://www.fastbridge.org/products-the-fast-approach/ [2] "FAST | CBM & CAT in One." FastBridge Learning. https://www.fastbridge.org/research-labs/cbm-and-cat-in-one/
[96] "FAST | CBM & CAT in One." FastBridge Learning. https://www.fastbridge.org/research-labs/cbm-and-cat-in-one/
[97] Bulleted text was adapted from "FAST | Classroom Reporting." FastBridge Learning. https://www.fastbridge.org/reporting-classrooms/

	FAST reports provide a variety of insights for teachers to use in classroom instruction and individual differentiation:
DATA REPORTING FEATURES	■ **Group Screening Report**: identifies and groups students by risk. ■ **Group Growth Report**: highlights the rate of improvement based on beginning-of-year benchmarks and provides goals and comparisons by class, school, district, and national norms. ■ **Screening to Intervention Report**: offers a built-in Recommendation Engine that guides teachers to applicable interventions available within the school and district. ■ **Impact Report**: Aggregates data at the district level, with the ability to narrow down to school, grade, class, and student level. ■ **Individual Skills Report**: provides an overview of students' risks related to itemized benchmarks. ■ **Group Skills Report**: Summarizes skills by student and group, can help facilitate better differentiated instructional grouping. ■ **Individual Benchmark Comparison Report**: reports students' risks by benchmark and performance compared to local and national norms. ■ **Progress Monitoring Report**: provides details on individual student performance by intervention, rate of improvement, date, trend, and goal. ■ **Student-at-a-Glance Report**: Details all assessment activity over time.
ADAPTATIONS OFFERED	All FAST assessments are also offered in Spanish.

Source: FastBridge Learning[98]

FastBridge Learning does not provide any information on the technology, implementation time, or cost required to implement and administer the FAST assessment. However, once schools or districts purchase the FAST assessment, teachers and administrators will have access to the FAST Knowledge Base, which is FastBridge Learning's repository for all technical support, customer service, and training resources to help schools and districts maximize their use of the FAST assessment. Further details on the technology and implementation requirements for FAST are presented in Figure 2.21 below.

Figure 2.21: Technology and Implementation Features of FAST

PRODUCT SUPPORT FEATURES	With the purchase of FastBridge Learning's FAST assessment, administrators have access to the FAST Knowledge Base, which is a repository for all user support materials, how-to guides, and videos. Additionally, for any support needs, administrators can submit a ticket by sending an e-mail to the help desk, chat with a customer support specialist online, or call the information phone number.
REQUIRED TECHNOLOGY	Beyond the designation of computer-based assessment, there is no information on the FastBridge Learning website that describes the technology required to operate the FAST assessment.
IMPLEMENTATION TIME	There is no information on the FastBridge Learning website that indicates the amount of time required to implement and operate FAST assessments.
IMPLEMENTATION COST	There is no information on the FastBridge Learning website that indicates the costs required to implement and operate FAST assessments.

Source: FastBridge Learning[99]

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[98] Figure contents were quoted verbatim with adaptations from [1] "FAST | CBM & CAT in One," Op. cit. [2] "FAST | Classroom Reporting." FastBridge Learning. https://www.fastbridge.org/reporting-classrooms/

[99] Figure contents adapted from "FAST | Customer Support." FastBridge Learning. https://www.fastbridge.org/customer-support/

FastBridge Learning promotes FAST assessments as tools that support MTSS implementation in schools. Teachers can use FAST assessment results to guide instruction and social-emotional learning at all levels of MTSS:[100]

- Tier 1: FAST assessment scores can help teachers screen students to make core instruction more effective for every student and determine what students know and still need to learn. Screening with the FAST assessment reveals each student's knowledge and risk levels, skill deficits compared to other students, and growth over time.

- Tier 2: FAST assessment scores can help teachers identify the students that need interventions. Teachers can coordinate groups of students with the same needs to match differentiation needs better and monitor progress in specific learning goals.

- Tier 3: Teachers can use FAST assessment scores to make special education eligibility decisions and apply interventions for students who require intensive, one-to-one intervention. Specific benchmark indicators and progress monitoring from the FAST assessment can quickly identify students with high risk.

Teachers can use FastBridge Learning's On-Demand Training and Resources webpage to access guides to applying interventions based on FAST assessment insights. Further details on instructional support features are described in Figure 2.22 below.

Figure 2.22: Content and Instructional Features of FAST

TOPICS	- Reading - Math - Behavior
TEACHER INSTRUCTIONAL SUPPORT	In districts that purchase FAST assessments, teachers have access to all of FastBridge Learning's on-demand training and resources. These resources support teachers in MTSS and differentiation in the following ways: • **Reports Overlay**: provides teachers with detailed guidance on how to navigate, customize, and interpret student data. • **To-Do List**: recommends timely actions and tasks based on best practices for implementing successful MTSS programs. • **Flexible Certifications**: free online training courses that help educators use FAST tools and data correctly to maximize assessment accuracy. • **Virtual Coaching**: virtual coaches guide teachers through screening and progress monitoring to fit FAST assessment results into MTSS frameworks. Additionally, the data reports help teachers identify specific student needs and automatically group students based on similar needs and levels to support group based differentiation.

Source: FastBridge Learning[101]

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[100] Bulleted text was quoted verbatim with modifications from "FAST | Our MTSS Solution." FastBridge Learning. https://www.fastbridge.org/solutions/our-mtss-rti-solution/

[101] Figure contents were quoted verbatim with modifications from [1] "FAST | The FAST Approach," Op. cit. [2] "FAST | On-Demand Resources for Training and Troubleshooting." FastBridge Learning. https://www.fastbridge.org/professional-learning/professional-training-and-resources/

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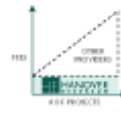200+ analysts with multiple methodology research expertise

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