



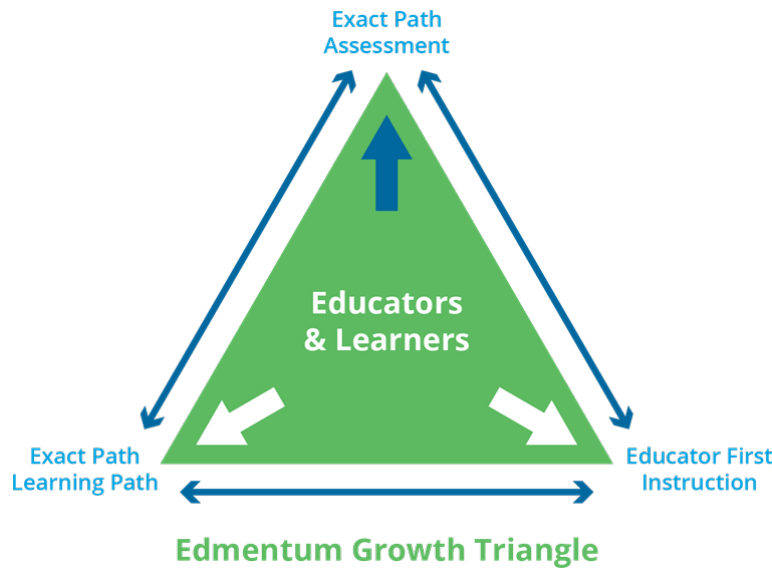
In its simplest form, growth can be defined as change. If we know where students start and how far they progress, we can look at that change to see how much they have grown over time. Supporting educators and students in understanding growth and setting meaningful growth targets is core to Edmentum's mission to be educators' most trusted partner in creating successful student outcomes everywhere learning occurs.

Educators observe change in student learning directly. By combining understanding of student growth observed during instruction with insights gained through assessment and curriculum programs, educators and students gain comprehensive insights and evidence of their students' academic knowledge and skills, and growth. This is referred to as the curriculum-instruction-assessment triad (Pellegrino, 2010).

This document is intended to support educators as they collect and triangulate evidence of growth based on each area of the triad as it relates to student performance on the Edmentum Exact Path assessment, placement and progress along the Exact Path learning path, and skills educators might consider in instruction. These are represented by the Edmentum Growth Triangle.

The **Edmentum Growth Triangle** supports educators in understanding and evaluating just how much students are growing academically by providing information about each of the three points (assessment, curriculum, and instruction) in the triangle. For Exact Path, these elements include the scores from the Exact Path adaptive diagnostic (assessment), location on the learning path (curriculum), and skills within the learning path (instruction). Further, these vertices represent:

- 1. Assessment:** The Exact Path adaptive diagnostic assessment provides a growth measure so that educators can see where students start (or the [scale score \[Kosh, 2019c\]](#) in their first test) and how much their scores change in the next test (growth score).
- 2. Curriculum:** For students who also participate in the Exact Path learning path, their assessment score provides a placement into the learning path. The location of their first placement and entry into the learning path is represented by the Learning Path Entry Grade, or LPEG. Students and educators can then monitor their progress along their learning paths.
- 3. Instruction:** Educators can also consider examples of instruction from Exact Path's learning path skills to see how far along the path is typical in terms of skills so as to target instruction.



## What growth goals should I set for my students?

There are many factors to consider when setting growth goals. For example, are growth goals being set for individual students or for whole groups? How are the growth measures being used (e.g., teacher accountability and student progress monitoring)?

To support educators and students in setting reasonable growth goals and triangulating data, this document provides key considerations in terms of the assessment, the curriculum, and instruction. Specific steps on the guidance of setting growth goals are provided at the end of this document.

### Growth Goals Based on Exact Path Assessment

It's important to understand how an assessment used for growth is scored and administered. The Exact Path assessment is a [computer-adaptive diagnostic assessment](#) that diagnoses just where students are in their learning regardless of grade level (Kosh, 2019b). The Exact Path assessment provides scores on a scale for each content area that ranges from 500 to 1500, where the score difference in one administration to the next is defined as the **growth score**.<sup>1</sup>

To set growth goals based on the growth scores in Exact Path, educators will need to consider when the tests were administered, and they may want to reference for comparison how much growth is typical of Exact Path students nationally.

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<sup>1</sup> To see how computer-adaptive assessments work and to learn more about assessment scale scores and measurement error, please see Edmentum's [Assessment Literacy](#) videos.



**Similar Testing Windows:** While schools and districts have the flexibility to determine their own testing windows (testing dates) for administering the diagnostic, it's important to consider setting growth goals and evaluating growth from tests given in similar testing windows. Otherwise, students who have more days between test administrations may have greater opportunity to learn and grow between tests than students who have a shorter amount of time.

For the calculation of typical growth in this guidance, only data from students who tested in each of the recommended testing windows by Edmentum were included. They are:

- Testing Window 1 (Fall): August 15 to October 14
- Testing Window 2 (Winter): December 1 to January 31
- Testing Window 3 (Spring): April 1 to May 31

If a district or school uses more than three testing windows, we recommend considering the testing dates within each of the listed windows for closest comparison.

**Typical Growth Nationally:** To determine the amount of growth that is typical of students nationally, students were grouped according to their first diagnostic score (starting scale score). The national sample included students in grades K through 8 who took at least two Exact Path diagnostic assessments during the 2018–19 school year. The average growth score was then calculated between their first and second tests, either fall to winter, winter to spring, or fall to spring. The following tables provide the resulting typical growth of the national sample by starting scale score, and the data can be used for students across grades, K–12.

*Note that this information is not a recommendation of how much growth is best. Rather, it simply provides average growth scores for students taking two or more Exact Path assessments, even if they are not actively engaged in Exact Path learning paths.*



## Typical Math Growth by Scale Score Group

Starting Scale Score Group*	Fall to Winter	Winter to Spring	Fall to Spring
500-550	131	-	189
551-600	115	107	158
601-650	92	91	139
651-700	77	73	119
701-750	59	56	98
751-800	51	44	83
801-850	42	34	71
851-900	38	28	65
901-950	35	27	59
951-1000	30	25	54
1001-1050	27	25	50
1051-1100	22	21	40
1101-1150	14	12	24
1151-1200	-3	-2	6
1201-1250	-12	-17	-7

\* For scale score groups at the upper and lower ends of the scales, there were insufficient data to reliably report.



## Typical reading growth by scale score group

Starting Scale Score Group*	Fall to Winter	Winter to Spring	Fall to Spring
600–650	110	–	157
651–700	89	88	130
701–750	69	67	109
751–800	59	54	96
801–850	50	40	85
851–900	45	32	70
901–950	44	26	61
951–1000	33	22	49
1001–1050	29	14	42
1051–1100	24	10	35
1101–1150	19	6	26
1151–1200	9	2	17
1201–1250	2	-3	12
1251–1300	4	-2	12
1301–1350	3	-2	11
1351–1400	-8	-13	-12

\*For scale score groups at the upper and lower ends of the scales, there were insufficient data to reliably report.



## Typical language arts growth by scale score group

Starting Scale Score Group*	Fall to Winter	Winter to Spring	Fall to Spring
600–650	101	114	139
651–700	82	84	119
701–750	73	66	102
751–800	60	49	84
801–850	39	26	62
851–900	35	18	57
901–950	31	17	45
951–1000	26	14	38
1001–1050	19	10	31
1051–1100	14	6	22
1101–1150	4	-3	13
1151–1200	-10	-17	-8
1201–1250	-33	-34	-43

\*For scale score groups at the upper and lower ends of the scales, there were insufficient data to reliably report.



## How do I compare growth of students within each grade?

Even though the Exact Path assessment and scale score groups are not grade specific, students and educators are! To really understand how students in each grade are performing relative to other students in their same grade, educators can look to the grade-based national norms for students from kindergarten to high school found in [math \(Edmentum, 2019b\)](#), [reading \(Edmentum, 2019c\)](#), and [language arts \(Edmentum, 2019a\)](#). In terms of growth by grade, the following tables are provided that show the average growth from the national sample that have been grouped by their grade level. Growth across the full school year, from the first to the third testing window, is represented by the last column (fall to spring).

### Typical Math Growth by Grade

Grade	Fall to Winter	Winter to Spring	Fall to Spring
K	52	47	99
1	58	46	102
2	48	32	79
3	46	32	80
4	34	34	66
5	31	28	58
6	29	19	46
7	25	12	35
8	28	14	38



## Typical Reading Growth by Grade

Grade	Fall to Winter	Winter to Spring	Fall to Spring
K	46	44	86
1	49	46	100
2	49	32	83
3	42	23	64
4	35	15	49
5	28	12	39
6	20	11	30
7	17	5	19
8	19	3	19

## Typical Language Arts Growth by Grade

Grade	Fall to Winter	Winter to Spring	Fall to Spring
K	39	46	78
1	40	38	83
2	47	28	77
3	42	21	62
4	35	17	51
5	27	13	36
6	24	9	34
7	15	8	21
8	18	-4	14





## Why are the growth values different by score, grade, and test window?

As one might expect, students grow most over the whole school year from fall to the spring, no matter their initial scale score or grade. What may not be expected is that growth is not constant across scores or grades. Students with scores at the lower ends of the scale also grow more than students with scores at the higher ends of the scale. A similar pattern is seen in terms of grade, where growth at lower grades is higher than growth at the upper grades. This is consistent with research that suggests that growth, in terms of average effect sizes, diminishes as grade levels increase (Bloom et al, 2008).

## Why is there negative growth?

It may be a surprise to see some growth decreasing or expressed as negative numbers. In some cases, growth may decline and growth scores can even be negative. Negative growth can be unsettling and confusing. Negative growth can occur especially at the upper ends of any test scale, including on many other tests in the market.

When evaluating growth and to minimize the possibility for negative growth values, it's most important to make sure that students are supported and encouraged to give their best effort each time and to confirm that the test environment is as standardized as possible. There are helpful visualizations on the Student Summary Report in Exact Path that can provide insight into the comparability of the test administrations, as well as student effort.

## What are the considerations in evaluating growth?

To accurately compare scale scores and to interpret growth scores from one test to the next, the tests should be developed to support comparability, the test administration environment should be similar, and student effort should be similar. Edmentum developers, educators, and students all contribute to ensuring that test development, administration, and effort are comparable.

**Test Development:** Edmentum developers have designed the assessments to be comparable in terms of test content and the way in which the test adapts to each student during testing. The items are developed, reviewed, and analyzed to make sure that they are fair, valid, and aligned to standards-based expectations. In addition, the adaptive algorithm ensures the balance of items from different domains and gives students items as close as possible to their overall ability. An adaptive algorithm like Exact Path's is the most expedient way to narrow in on student knowledge, including what they may *not* know and where they are ready to learn more. The Exact Path algorithm stops testing when the algorithm is most sure about student ability, and where no more than 65 items are given.



**Administration and Testing Environments:** Educators can help make sure that the test environment is similar during each administration. Ideally, students should take the test in as few sessions as possible, across as few days as possible, and at about the same time during a given testing window. When test sessions are broken up too much or when a session is started and many days pass between test sessions, students can find it difficult to reengage and do their best. This makes the test scores from one test time to the next less comparable. In addition, when interpreting growth across groups of students, educators should take care that the growth data are based on students tested in the same test window and ideally, near the same testing week within the window.

By administering tests in a similar way and at a similar time for all students, students are likely to be more attentive, and scores are much more comparable. A consistent test administration allows educators to have confidence that changes in scale scores, either positive or negative, are an accurate reflection of students' real abilities.

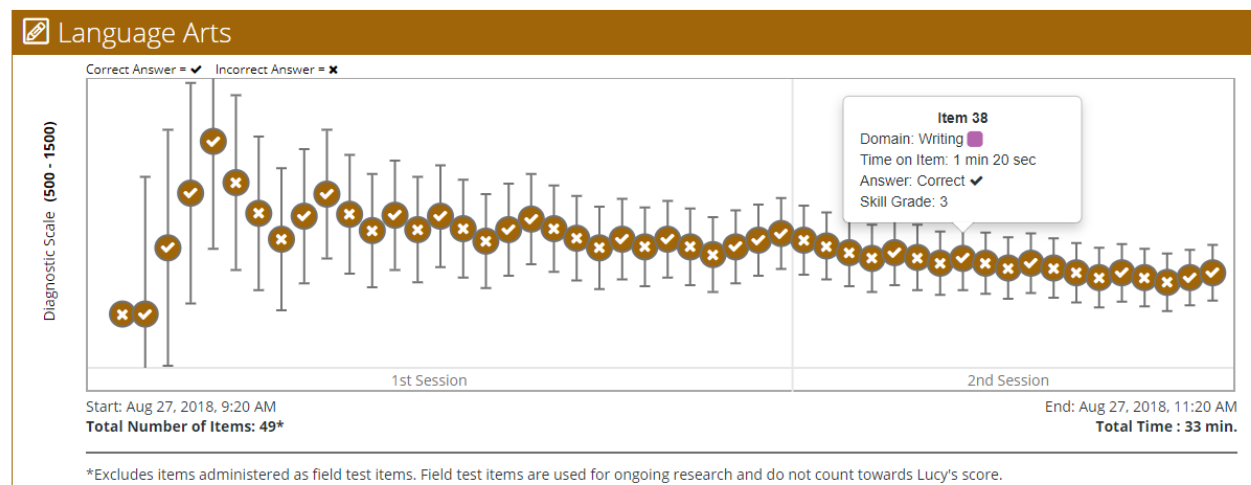
Edmentum provides [administration guidelines \(Edmentum, 2017\)](#), as well as [tips for administering the Exact Path assessment](#) (Kosh, 2019a).

To help educators compare the test administrations, the new Exact Path diagnostic experience visual, available on Student Summary Reports, provide information about each test session. These new visuals, an example of which is provided below, show the test start and end date, the total test time, the number of test sessions, the number of items, and even the time the student spent on each item. By considering this one visualization, educators can also see if the test administrations were similar before interpreting growth.

Language Arts Diagnostic 1 Experience

[Learn More](#)

Hover over each item from Lucy's diagnostic test to reveal information about the domain, time on item, correct/incorrect response, and skill grade level. Notice how the estimate of Lucy's language arts ability bounces up and down and the confidence bars tighten as the test narrows in on Lucy's precise language arts ability.



**Student Effort:** Students can also impact score comparability. Students may show greater (or less) effort on the first test than subsequent tests. Students should be reminded that,



unlike an exam or unit test, the Exact Path test is testing them on things they know and things they don't know. Reminding them that they will get questions they don't know may help them feel more engaged and able to give their best effort, even on questions they may not know. As a result, students and educators will have valid information about skills students are ready to learn.

## What about SEMs?

No assessment is 100 percent precise. Each assessment has some amount of imprecision that is expressed as measurement error. The [standard error of measurement](#), or SEM, gives context around a score and is an interval to convey how much confidence there is around the score (Kosh, 2019e). How much wiggle above or below the score might really be due to measurement error? In Exact Path, the SEMs are around 30 points for students in grades 2 and up, and around 40 points for students in grades K-1. This means that there is no way to be 100 percent precise that a single scale score would be repeated if a student took the test again that same day in the same conditions.

*A 30-point SEM may sound like a lot. Some other tests might report much smaller SEMs. Comparing SEMs from one test to the other is not applicable. Each test has its own scale. Some scales are wide and some are much more narrow. The Exact Path scale is very wide. It ranges from 500 to 1,500, a full 1,000 points. Other scales may only range 100 or 200 points. The range is set based on the perspective of the test developers. That means 30 points on one test could be less than 5 points on another! Exact Path provides the SEM with each score reported so that educators can consider the confidence (wiggle) that might occur in the scores.*

## Growth Goals Based on Exact Path Learning Path

Each student's learning journey is unique. What's most important to consider is what kinds of skills students have the opportunity to learn and how growth can be grounded in instruction and learning. For students using Exact Path's learning path, once they take an assessment, they are placed into the learning path. The earliest point of entry into the learning path is referred to as the Learning Path Entry Grade, or LPEG. The LPEG for each student or group of students can be used to set growth goals as well. For example, a class or student may have a growth goal to increase the LPEG by one or more grade levels.

When students do use Exact Path as part of their learning, the more skills they complete, the greater their growth. A [third-party study by Century Analytics \(Randel, 2018\)](#) found that students showed statistically significant growth on their Exact Path assessments when interacting with the content in Exact Path as part of their learning. The study shows that students who complete more skills in the Exact Path learning path show greater growth than students with fewer skills completed.



## Growth in Terms of Instruction

Whether using the Exact Path learning path or not, educators need to know what a change in scale score means in terms of instruction. How different are the skills for different amounts of growth? The tables on the following pages illustrate several skills one might see for a student utilizing and passing skills within the Exact Path learning path and showing an average rate of growth over one school year. Educators can refer to these skills when considering the national growth values while setting growth goals so that the goals align to the kinds of skills they plan to cover or what skill advancements they expect students to make.

Educators are central to evaluating and making an impact on the growth of a student. Educators can leverage growth data from the assessment and the distance or change in location along the learning path and consider what those changes mean in terms of instruction. Ultimately, by triangulating observations and assessments during learning, adjusting instruction in real time, meeting students where they are, and providing positive learning environments, educators hold the keys to how much a student is or isn't growing throughout the year.



## Math

### Fall Scale Score Range

### Fall to Spring Growth Skill Examples

#### 500 to 699

- Use models to solve addition and subtraction problems within 10; add and subtract fluently within 5
- Use understanding of addition and subtraction to decompose numbers from 0 to 10 into pairs in more than one way or, when given a number from 1 to 9, to find the number that makes 10 when added to the given number
- Use addition and subtraction to solve word problems within 20

#### 700 to 899

- Determine if an addition or subtraction equation is true or false, and determine the unknown whole number that makes a one-step addition or subtraction equation true in mathematical and real-world problems
- Fluently add and subtract within 20
- Use addition and subtraction within 100 to solve one- and two-step real-world problems

#### 900 to 1099

- Use properties of multiplication and division, as well as the inverse relationship between multiplication and division, as strategies to multiply and divide (limited to products of two whole numbers within 10 and related quotients)
- Use properties of multiplication and division, as well as the inverse relationship between multiplication and division, to fluently multiply two numbers within 10 and find related quotients
- Use the four operations to represent and solve two-step real-world problems

#### 1100 to 1299

- Use substitution to solve one-variable equations and inequalities
- Write and solve one-variable linear equations and inequalities that represent real-world situations
- Use the properties of integer exponents to generate equivalent expressions

Note: For scale score groups at the upper and lower ends of the scales, there were insufficient data to reliably report.



## Reading

### Fall Scale Score Range

### Fall to Spring Growth Skill Examples

#### 500 to 699

- Ask and answer questions to demonstrate understanding of an informational text
- Describe what is conveyed in an illustration and how an illustration connects to a text
- Identify the main topic in an informational text

#### 700 to 899

- Compare and contrast information and illustrations in two informational texts about a similar topic
- Identify the reasons used by an author to support points in a text
- Know and use various text features

#### 900 to 1099

- Ask and answer questions to demonstrate understanding of an informational text using textual evidence to support answers
- Determine an author's point of view in a text, and distinguish one's own point of view from that of the author
- Determine the main idea and supporting details of an informational text

#### 1100 to 1299

- Cite textual evidence in an informational text to explain explicit and implicit information
- Use context to determine technical meanings of words or phrases in an informational text
- Determine an author's point of view or purpose in a text, and analyze how an author responds to conflicting evidence

#### 1300 to 1500

- Analyze what a text says implicitly; cite strong textual evidence in an expository or argumentative text to support analysis of inferences, including where the text leaves matters uncertain
- Analyze two or more central ideas in exposition or argument, including how the author develops them over the course of the text
- Analyze a complex set of ideas in exposition or argument; explain how specific individuals, ideas, or events interact and develop over the course of the text

Note: For scale score groups at the upper and lower ends of the scales, there were insufficient data to reliably report.



## Language Arts

### Fall Scale Score Range

### Fall to Spring Growth Skill Examples

<b>500 to 699</b>	<ul style="list-style-type: none"> <li>• Tell about events in a story in sequential order</li> <li>• Recall information from experiences or gather information from a source to answer a question</li> <li>• Strengthen writing by adding details</li> </ul>
<b>700 to 899</b>	<ul style="list-style-type: none"> <li>• Spell simple words using letter-sound correspondence</li> <li>• Use common, proper, and possessive nouns, and match singular and plural nouns with the correct verb in a sentence</li> <li>• Demonstrate effective use of determiners in a sentence</li> </ul>
<b>900 to 1099</b>	<ul style="list-style-type: none"> <li>• Recognize the correct use of capitalization, including words in a title</li> <li>• Demonstrate effective use of a variety of verb tenses</li> <li>• Demonstrate effective use of pronouns, especially relative pronouns, in a sentence</li> </ul>
<b>1100 to 1299</b>	<ul style="list-style-type: none"> <li>• Use a semicolon with a conjunctive adverb to link two or more closely related independent clauses</li> <li>• Demonstrate understanding of subject-verb agreement, recognizing that the number of a verb must agree with the subject that accompanies it (i.e., the verb must be singular or plural based on the subject)</li> <li>• Demonstrate correct use of clauses that convey meaning in speaking and writing, including independent, dependent, noun, relative, and adverbial clauses</li> </ul>
<b>1300 to 1500</b>	<ul style="list-style-type: none"> <li>• Understand the difference between indicative, imperative, conditional, and subjunctive mood and how to use each mood in writing and speaking</li> <li>• Resolve issues of complex or contested usage by consulting appropriate style and usage references</li> <li>• Demonstrate command of standard English grammar and usage conventions</li> </ul>

Note: For scale score groups at the upper and lower ends of the scales, there were insufficient data to reliably report.



## Setting Growth Goals in Exact Path

Educators have a lot to consider when setting growth goals. By considering multiple data points, as well as the context for setting goals, educators can make informed decisions that combine appropriate data to meet their unique needs. Follow the steps below to help set appropriate student, class, and grade-level goals that incorporate multiple Exact Path measures.

Use the worksheet **Setting Student Growth Targets Worksheet** on page 18 to compile information and make final recommendations on what student growth targets are appropriate for your students. See two examples of completed worksheets here: [elementary math](#) (whole class goal setting) (Edmentum, 2019e). and [high school reading](#) (individual student goal setting) (Edmentum, 2019d).

- 1. Decide where to start:** Goals should be set one subject and student population (e.g., individual, class, grade level) at a time.
- 2. Consider testing windows:** Keep in mind that the longer the time between tests, the greater the growth values are likely to be. And, always provide a testing environment that is comparable and encourages students to give their best effort every time. To use the tables in this document, it's best if the testing dates fall into one of the testing windows below.
  - Testing Window 1 (Fall): August 15 to October 14
  - Testing Window 2 (Winter): December 1 to January 31
  - Testing Window 3 (Spring): April 1 to May 31
- 3. Review diagnostic reports:** Following administration of the first diagnostic, review your diagnostic reports in Exact Path. Locate the individual test score or class average test score depending on the goal you want to set. Locate the NPR ([national percentile rank](#)) to see how that scale score compares to a nationally representative sample of students (Kosh, 2019d). Locate the Learning Path Entry Grade (LPEG) to see the grade level of the skills where students begin their learning paths.
- 4. Consider typical growth by scale score:** Using the Typical Growth by Scale Score Group tables, find which scale score group the first score falls into, and determine how much growth is typical for the given score group.
- 5. Consider typical growth by grade:** Using the Typical Growth by Grade Tables, find which grade level applies to the student(s) you are setting growth goals for, and determine how much growth is typical for that grade.





- 6. Determine target growth derived from NPR:** The 50th percentile represents the approximate average for students in each grade level in the spring. If your goal is to have about average scores compared to the rest of the nation by the end of the school year, you could set a goal of reaching the 50th percentile. Then, you can use the national norm tables to determine the scale score for the targeted national percentile rank: [math](#) (Edmentum, 2019b), [reading](#) (Edmentum, 2019c), and [language arts](#) (Edmentum, 2019a). Subtract the original scale score from the target test score to arrive at a growth goal. More or less ambitious growth goals can be set by adjusting the target national percentile rank.
- 7. Pinpoint placement into curriculum:** For students using the Exact Path learning paths, locate the *lowest* Learning Path Entry Grade, or LPEG, on Exact Path diagnostic reports. Consider this the minimum grade level for placement, and think about how many grades higher you might expect the student or group to attain.
- 8. Consider how growth translates into actual skills:** Use the tables provided to consider the kinds of skills that will be covered in instruction. Based on the scale score of the student or group, do the skills shown as examples demonstrate targets of growth you would expect for your curriculum, your instructional goals, and the students?
- 9. Set reasonable growth targets:** By considering typical growth based on assessment scores, placement into curriculum, and the translation of instruction into skills knowledge, you have a balanced set of information to support each individual student.



## Setting Student Growth Targets Worksheet

Gather Student Information	
<b>Student Population</b> Individual Student's Name or Class?	
<b>Enrolled Grade Level</b>	
<b>Test Scale Score</b> Individual Student's Scale Score or Class Average	
<b>NPR (National Percentile Rank)</b> of the Test Score	
<b>LPEG (Learning Path Entry Grade)</b> Individual Student's LPEG or Description of Class Distribution	

Understand Typical Growth Using Growth Guidance Tables	
<b>Typical Growth by Scale Score Group</b> Determine Based on Tables on pages 4–6	
<b>Typical Growth by Grade</b> Determine Based on Tables on pages 7–8 (K-8 only)	

Calculate a Growth Target Derived from NPR	
1. Reference the starting NPR for the test score 2. Set a target percentile (50th percentile = about average) 3. Using the norm tables ( <a href="#">math, reading, and language arts</a> ), what is the target scale score of that percentile? 4. Target scale score - current score = growth target	

Set Growth Target(s)	
Based on Scale Scores	
1. Compare typical growth information to the growth targets you calculated yourself 2. Decide if you want to recalibrate your goal based on what you know is appropriate for your students and how that compares to typical growth reported from 2018–19 data	
Based on Learning Path	
1. Consider LPEG compared to the student's enrolled grade level 2. Determine an LPEG goal (e.g., increase LPEG by 1 grade level by spring) or a goal related to activity in the learning path (e.g., master all grade 4 skills by the end of the school year)	



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