



Diagnostic Guide

Grade 7

What this document covers

Section 1 Diagnostic Assessment Interface.

Section 2 Guide to Diagnostic Skill Entry Points (Tables 1–3).

Overview and Purpose

The Beginning-of-Year (BOY) Screener is a targeted diagnostic assessment consisting of 22 questions designed to evaluate student mastery of prerequisite standards from the prior grade level. For Grade 7, the screener specifically assesses Grade 6 TEKS to determine each student's readiness for on-grade-level instruction.

This diagnostic tool serves three primary functions:

1. **Snapshot of Readiness:** Measures student mastery of the previous grade's standards to establish a baseline for instruction.
2. **Actionable Insights:** Highlights specific strengths and areas of growth for both whole-class planning and individual student intervention.
3. **Automated Recommendations:** Assessment data automatically generates initial Practice Mode recommendations, assigning the specific skill entry points and interventions detailed in this guide.

How to Use This Guide

Based on the actionable insights generated by the screener, educators should use the following tables to identify and assign the appropriate skill entry points and interventions:

- **For Targeted Practice (Table 1):** Assign these Practice Cards for students who need a focused refresher on specific discrete skills (e.g., below 70% proficiency on individual questions). These can be used for independent work, station activities, or homework.
- **For Comprehensive Reteaching (Table 2):** Use these Grade 6 instructional chapters and sections for students demonstrating significant gaps across an entire domain (e.g., below 50% proficiency). These resources provide the conceptual foundation and guided instruction necessary to rebuild understanding before attempting Grade 7 content.
- **For Vertical Alignment (Table 3):** Refer to this matrix to see how each prerequisite skill connects to upcoming Grade 7 TEKS and chapters. Use this to prioritize interventions that are most critical for the specific Grade 7 content currently being taught.

Section 1: Diagnostic Assessment Interface

The figure below demonstrates the teacher's view of the Grade 7 BOY Screener. This digital interface captures the student response data necessary to generate the recommended skill entry points and interventions detailed in Tables 1, 2, and 3.

Figure 1. Grade 7 Beginning-of-Year Diagnostic Screener — Teacher View

Texas Screeners > Grade 7 > ☐ Grade 7 - BOY - TX

☐ Mild

1. The table shows the temperatures recorded in four towns on the same winter day. Order the towns from coldest to warmest.

Town	Temperature (°C)
Springfield	-2.35
Elk Grove	$-\frac{5}{2}$
Mapleton	2.45
Red Hill	$\frac{6}{2}$

☐ Springfield
☐ Elk Grove

☐ Mapleton
☐ Red Hill

2. Calculate.
 $7 + (-12) - (-5) =$

3. Calculate.
 $-3 \times (-6) \div (-2) =$

4. Multiply.
 $3.6 \times 1.2 =$

5. Divide and simplify the answer. Answer with a mixed number.
 $2\frac{1}{2} \div \frac{3}{4} =$

6. Two cyclists are training for a race. Paul rides 70 feet every 3 minutes. Noah rides 95 feet every 4 minutes. After 12 minutes, how far has the faster cyclist traveled?

7. In a survey, 62% of customers said they were satisfied with the service. Which two values also represent the portion of customers that were satisfied?

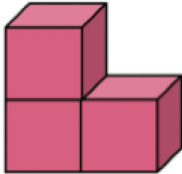
☐ $\frac{62}{100}$
☐ 0.062

☐ $\frac{62}{1000}$
☐ 6.2

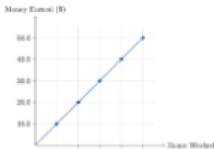
☐ 0.62
☐ $\frac{62}{10}$

9. A community center received a donation of 80 quarts of juice. They used the equation below to determine how many gallons of juice they received.
 $\frac{4 \text{ quarts}}{1 \text{ gallon}} = \frac{80 \text{ quarts}}{g}$
How many gallons of juice did the center receive?

10. The blocks represent 15% of the whole. How many blocks are 40% of the whole?



11. Emma earns money by walking dogs. The graph shows how much she earns, y , for walking dogs for x number of hours. What equation represents the relationship between Emma's earnings and the number of hours she works?



12. Fill in the blank to express the number as a product of prime factors.
 $72 = 2^3 \times \underline{\hspace{1cm}}$

13. Select the expression not equivalent to $24x + 18y - 36$.

☐ A. $6(4x + 3y - 6)$
☐ B. $18y - 36 + 24x$

☐ C. $24 \cdot 1 + 18y - 36$
☐ D. $(24x + 18y) - 36$

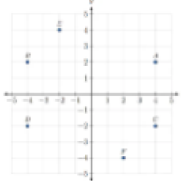
☐ A
☐ B

☐ C
☐ D

16. Solve for x .
 $\frac{x}{4} = 9$

17. Solve for x .
 $x + 7 < 15$

18. Which point has the coordinates $(-4, 2)$?



☐ A
☐ B

☐ C
☐ D

☐ E
☐ F

19. The math test scores for a class are shown below.
75, 80, 85, 85, 90, 95, 99
What is the difference between the mean and the median?

20. The number of books read by a group in the last month is listed below.
2, 3, 3, 5, 7, 8, 10
What is the difference between the range and interquartile range (IQR)?

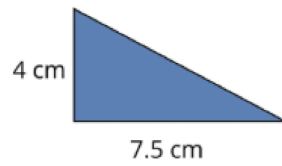
21. The table shows the number of students who chose different favorite subjects by grade level. What percentage of students chose math or science?

Subject	Grade	
	6	7
Math	12	15
Science	8	10
English	10	5

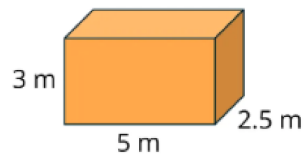
8. Write in meters.

$$345 \text{ cm} = \underline{\hspace{1cm}} \text{ m}$$

14. Find the area of the triangle with a height of 4 cm and a width of 7.5 cm.



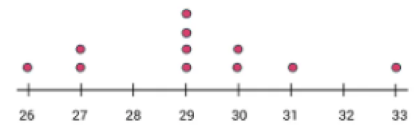
15. Find the volume of the rectangular prism with a Height of 3 m, a width of 5 m, and a depth of 2.5 m.



22. The line plot represents the number of students per class in a school.

What share of classes had more than 29 students?

Number of Students per Classroom



Section 2: Guide to Diagnostic Skill Entry Points

Table 1: Diagnostic Intervention Guide — Recommended Practice Cards

This table maps each diagnostic question to targeted Practice Cards within the curriculum. These resources are designed for immediate, focused intervention—allowing students to practice the specific discrete skills identified as gaps (e.g., below 70% proficiency) without pausing the entire class for a full reteach. Teachers can assign these cards as independent work, station activities, or homework to efficiently close skill gaps.

Diagnostic Strand	Question(s)	Prerequisite TEKS (Grade 6)	Recommended Practice Cards
Number System and Place Value	Q1	6.2.D	• Order rational numbers
	Q7	6.4.G	• Convert between number forms
Operations	Q2, Q3	6.3.D	• Add and subtract integers • Multiply and divide integers
	Q4, Q5	6.3.E	• Multiply rational numbers • Solve multi-step problems with rational numbers
Algebraic Reasoning	Q6	6.4.B	• Relate unit rates to ratios
	Q10	6.5.B	• Find percent of a whole number
	Q11	6.6.C	• Write line equations in slope-intercept form
	Q12	6.7.A	• Create equivalent numerical expressions using exponents
	Q13	6.7.D	• Simplify expressions using distributive property
	Q16, Q17	6.10.A	• Solve one-step equations with nonnegative numbers • Solve problems using one-variable inequalities
Geometry and Measurement	Q8, Q9	6.4.H	• Convert units using ratio reasoning
	Q14, Q15	6.8.D	• Calculate right rectangular prism volume with fractional edges
	Q18	6.11	• Plot points in all four quadrants
Data Analysis	Q19, Q20	6.12.C	• Describing data center • Describe data spread
	Q21	6.12.D	• Summarize data with two-way frequency tables
	Q22	6.13.A	• Interpret data in diagrams

Table 2: Prerequisite Reteach Guide — Grade 6 Instructional Alignment

For students demonstrating significant gaps (e.g., below 50% proficiency) across an entire domain, targeted practice alone may not be sufficient. This table directs educators to the full Grade 6 instructional chapters and sections required for deep reteaching. These resources provide the conceptual foundation and guided instruction necessary to rebuild prerequisite understanding before students attempt Grade 7 content.

Diagnostic Strand	Question(s)	Prerequisite TEKS (Grade 6)	Recommended Chapter	Recommended Sections
Number System and Place Value	Q1	6.2.D	Understanding and Representing Rational Numbers	- Comparing integers - Comparing decimals - Comparing rational numbers - Ordering fractions - Ordering rational numbers
	Q7	6.4.G	Percent	- Converting between fractions, decimals, and percents - Converting between percents and decimals - Converting between percents and fractions
Operations	Q2, Q3	6.3.D	Operations on Integers	- Adding integers - Dividing integers - Multiplying integers - Subtracting integers
	Q4, Q5	6.3.E	Operations on Positive Rational Numbers	- Dividing decimals - Dividing fractions - Dividing mixed and whole numbers - Multiplying fractions - Multiplying decimals - Multiplying mixed and whole numbers
Algebraic Reasoning	Q6	6.4.B	Understanding Proportional Relationships	- Comparing unit rates - Equivalent ratios - Rates and unit rates - Understanding ratios
	Q10	6.5.B	Percent	- Find part with percents - Find percents - Find whole with percents
	Q11	6.6.C	Linear Equations and Inequalities	Represent a situation for $y=kx$ or $y=x+b$
	Q12	6.7.A	Expressions	- Equivalent expressions using exponents - Order of operations with exponents - Order of operations with integers - Prime factorization
	Q13	6.7.D	Expressions	Equivalent expressions using properties of operations

Diagnostic Strand	Question(s)	Prerequisite TEKS (Grade 6)	Recommended Chapter	Recommended Sections
	Q16, Q17	6.10.A	Linear Equations and Inequalities	- Solving one-step equations with addition and subtraction - Solving one-step equations with multiplication and division - Solving one-step inequalities with addition and subtraction - Solving one-step inequalities with multiplication and division
Geometry and Measurement	Q8, Q9	6.4.H	Converting Units	- Converting length, customary - Converting length, metric, with decimals - Converting volume, metric, with decimals - Converting weight, customary - Converting weight, metric, with decimals
	Q14, Q15	6.8.D	Geometry	- Area of parallelograms - Area of rectangles with fractional lengths - Area of right triangles - Area of trapezoids - Area of triangles - Volume of right rectangular prisms - Volume of right rectangular prisms with fractional side lengths
	Q18	6.11	Displaying and Interpreting Data	- Plotting points with rational coordinates - Quadrants
Data Analysis	Q19, Q20	6.12.C	Statistical Measures	- Identifying outliers - Interquartile range - Mean - Mean, median, mode, and range - Median - Range
	Q21	6.12.D	Statistical Measures	5-number summary - Box plots - Mode - Percent bar graphs - Two-way tables
	Q22	6.13.A	Displaying and Interpreting Data	- Box plots - Dot plots - Histograms - Stem and leaf plots

Table 3: Vertical Alignment Matrix — Connecting Prerequisites to Grade 7 Content

This matrix illustrates the instructional bridge between the Grade 6 prerequisite skills assessed in the diagnostic and the upcoming Grade 7 Target TEKS. It provides the rationale for intervention by showing exactly which Grade 7 chapters and units rely on these prerequisites. Educators should use this table to prioritize interventions that are most critical for the specific Grade 7 content currently being taught.

Diagnostic Strand	Question(s)	Prerequisite TEKS (Grade 6)	Aligned Target TEKS (Grade 7)	Chapters Addressed
Number System and Place Value	Q1	6.2.D	7.2	• Operations on Rational Numbers
	Q7	6.4.G	7.4	• Proportional Relationships • Solving Percent Problems
Operations	Q2, Q3	6.3.D	7.3	• Operations on Rational Numbers
	Q4, Q5	6.3.E	7.3	• Operations on Rational Numbers
Algebraic Reasoning	Q6	6.4.B	7.4	• Proportional Relationships • Solving Percent Problems
	Q10	6.5.B	7.4	• Proportional Relationships • Solving Percent Problems
	Q11	6.6.C	7.7	• Linear Relationships
	Q12	6.7.A	7.11	• Equations and Inequalities
	Q13	6.7.D	7.11	• Equations and Inequalities
	Q16, Q17	6.10.A	7.11	• Equations and Inequalities
Geometry and Measurement	Q8, Q9	6.4.H	7.4	• Proportional Relationships • Solving Percent Problems
	Q14, Q15	6.8.D	7.9	• Volume • Circles • Area and Surface Area
	Q18	6.11	7.7	• Linear Relationships
Data Analysis	Q19, Q20	6.12.C	7.12	• Data and Statistical Inferences
	Q21	6.12.D	7.6	• Data and Statistical Inferences • Probability
	Q22	6.13.A	7.12	• Data and Statistical Inferences