APPENDIX Q
MCAS-ALT SKILLS SURVEY

MCAS-Alt SKILLS SURVEY

Introduction

The MCAS-Alt Skills Survey is a standardized component of the statewide alternate assessment (MCAS-Alt) that must be administered by the teacher to each student **BEFORE** selecting an entry point or access skill in the subject required for assessment. The survey will help determine a student's current level of knowledge, skills, and abilities so that challenging entry points can be selected in each strand. The survey will also familiarize teachers with the range of entry points in a strand/domain that may be selected for the assessment.

The results of the Skills Survey should be used as the basis for selecting an entry point or access skill listed in the *Resource Guide to the Massachusetts Curriculum Framework for Students with Disabilities*. A follow-up skills survey will <u>not</u> be required after teaching the skill, although it may be helpful to conduct the survey after the skill has been taught, especially if the student will attend a different classroom the following year.

<u>Instructions for Completing the Skills Survey</u>:

Conduct a brief assessment of each skill in the required strand/domain for a student in that grade. Check one box (A–E) for each skill in the required strand/domain(s). Teachers may use any combination of the following methods to conduct a brief assessment of each skill:

a) observations, informal assessments, progress reports, or classroom work; OR
b) 2–4 tasks, based on the **examples** provided in the survey form; or **tasks designed by the teacher** that are accommodated for each student's instructional level and needs.

If using specific tasks or activities to assess the student, please use the following protocol for each skill:

1) Present the first task to the student.
2) If the student does not respond on the first attempt, repeat the task with a verbal reminder or other prompt (if needed), but do not give the answer. (Note: If a prompt is given, the response may be accurate, but is <u>not</u> independent.)
3) If the student responds to the first task, give a second, more complex task. Repeat with a prompt if needed. Make notes on the survey form to remind you of the student's performance of each task.
4) If the student does not respond to the second task, even with a prompt, do not introduce a third task. Simply mark an "X" in the column (A, B, C, D, or E) that most closely describes his or her performance of the skill.
5) Introduce the next task in the survey. Repeat steps 2 through 4 until all skills in the required strand/domain are assessed.

Once the survey has been completed for each required strand/domain, review the results and proceed as follows:

- **Select a related or higher-level-of-complexity entry point from the Resource Guide based on any skill that has been checked in columns A, B, or C**.

- **Do not select an entry point for any skills checked in columns D or E**.

- **If column A ("unable to perform the skill") is checked for <u>all</u> skills in the strand/domain**, consider assessing an access skill (i.e., a motor or communication skill).

- **If columns D and/or E are checked for most of the skills in the strand/domain**, then the IEP team should consider whether the standard MCAS test (paper or online) or grade-level/competency portfolio would be more appropriate for the student in that subject.

<u>Submit a completed MCAS-Alt Skills Survey for each assessed strand in the student's portfolio, just after the Strand Cover Sheet.</u> A strand without a Skills Survey will be considered <u>incomplete</u>.

Descriptors for each column listed on the following pages:

A	B	C	D	E
Student is **unable** to perform this skill. ---------OR-------- Teacher is unable to assess student on this skill.	Student is just starting to learn this skill and demonstrates the skill only **rarely** without support. --- Student performs this skill accurately with **0-25% independence**. ---------OR-------- Student performs this skill independently with **0-25% accuracy**.	Student demonstrates this skill **intermittently** and only **occasionally** without support. --- Student performs this skill accurately with **26-50% independence**. ---------OR-------- Student performs this skill independently with **26-50% accuracy**.	Student demonstrates this skill **more often than not** without support. --- Student performs this skill accurately with **51-75% independence**. ---------OR-------- Student performs this skill independently with **51-75% accuracy**.	Student demonstrates this skill **almost all the time** without support. --- Student performs this skill accurately with **76-100% independence**. --------OR--------- Student performs this skill independently with **76-100% accuracy**.

* % Independence refers to the average percent of unprompted responses by the student.

Student's Name_____ Grade_____ Date of Survey_____

ELA—All Grades

Language (Vocabulary Acquisition and Use)

Based on exposure to vocabulary during academic activities, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Communicate answers to simple questions about familiar objects.					
2. Identify familiar objects/actions by name.					
3. Match given words or symbols to pictures that mean the same or similar thing.					
4. Answer questions about the meaning of words found in stories, poems, or during other academic activities.					
5. Identify words/symbols/pictures that are opposite in meaning.					
6. Identify words/symbols/pictures that are similar in meaning.					
7. Use phrases to express a need, request, idea, or response during an academic activity.					
8. Describe key attributes of different objects (e.g., the flower is colorful).					
9. Communicate using common temporal words (e.g., before, after, now, later, first, next).					
10. Identify examples of figurative language (e.g., idiom, metaphor, simile, hyperbole, or personification) used in a text.					

Student's Name_____ Grade_____ Date of Survey_____

ELA—All Grades

Reading (Informational or Literary Text)

Based on a literary or informational text read by or to the student, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Identify the main character(s) in the text.					
2. Identify the setting of the text.					
3. State key details from the text.					
4. Identify events (or ideas) presented in the text.					
5. Identify the central (main) idea of the text.					
6. Explain *why* or *how* something occurred in the text.					
7. Identify and define unknown words in the text; or match words or phrases from the text to their meaning.					
8. Differentiate between a fact and the author's opinion.					
9. Describe the author's point of view.					

Student's Name_____ Grade_____ Date of Survey_____

ELA—All Grades

Writing (Text Type and Purposes)

Does the student use a communication system* to express ideas, requests, and responses? ϒ YES ϒ NO If YES, student can use their communication system to:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Initiate expressive communication using a single word or symbol.					
2. Respond to questions or writing prompts with single words.					
3. Respond to questions or writing prompts with sentence fragments (i.e., phrases).					
4. Respond to questions or writing prompts with one complete sentence.					
5. Respond to questions or writing prompts with at least one paragraph (three or more sentences).					
6. Retell at least three events in chronological order.					
7. Express an opinion on a topic and gives at least one reason.					
8. Express at least two relevant facts or details based on a given topic or text.					
9. Respond to questions or writing prompts using descriptive language and connecting words or phrases.					

Communication systems may include verbal/gestural/symbolic/or iconic expression using a keyboard, handwriting, dictation, symbol-based system, assistive technology, ASL or other sign system, Braille, etc.

Student's Name_____ Grade_____ Date of Survey_____

Grade 3 Mathematics

Operations and Algebraic Thinking (OA)

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Count up to 5 objects to answer questions about "how many all together."					
2. Match numerals (up to 10) with the number of objects/pictures displayed.					
3. Add two or more objects, or take away two or more objects, from a set of up to 5 objects and express "how many are left?"					
4. Create two sets with an equal number of objects in each set.					
5. Compare two groups of objects and indicate which has "more" and which has "less."					
Using standard numerals, symbols, and notation, student can:					
6. Plot three single-digit numbers on a number line relative to each other.					
7. Solve addition problems involving one-digit numbers up to a total of 10 (e.g., 1+3; 2+5; 4+6)					
8. Solve one-step word problems using addition within 100.					
9. Solve one-step word problems using subtraction within 100.					
10. Identify the missing number in a problem involving addition and subtraction (up to 15), with an unknown quantity (e.g., 12 -? = 5).					
11. Show equalities in number sentence (e.g., 2 + 4 = 4 + 2; 3 + 1 = 2 + 2).					
12. Count by 2's to 20.					
13. Count by 5's to 25.					
14. Identify the missing number in a problem involving multiplication and division (within 25), with an unknown quantity (e.g., 2 X? = 20; 20 ÷? = 5).					
15. Use estimation to approximate the solution to a one-step word problem (e.g., if I have 12 marbles and I add 9 more, about how many marbles will I have in all?).					

Student's Name_____ Grade_____ Date of Survey_____

Grade 3 Mathematics

Measurement and Data

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Given two objects, identify the object that is bigger.					
2. Count the number of objects with a similar characteristic (e.g., count the number of red objects; count the objects with straight edges).					
3. Compare up to three objects based on length, width, or height (longer, shorter, tallest, shortest).					
4. Tell time to the nearest hour using analog clocks.					
5. Identify up to three U.S. coins either by name or value.					
6. Express the value of a combination of at least two coins up to 99 cents.					
7. Measure the length of objects using a pre-selected standard tool (e.g., ruler).					
8. Express time on an analog clock to the nearest minute.					
9. Find the area of a rectangle by multiplying side lengths.					
10. Calculate the perimeter of straight-edged polygons.					
11. Solve word problems involving the addition or subtraction of distances (e.g., miles, yards) and/or money (e.g., dollars, cents).					
12. Represent a set of data graphically (e.g., on a list, table, bar graph, or circle graph, etc.).					

Student's Name_____ Grade_____ Date of Survey_____

Grade 4 Mathematics

Operations and Algebraic Thinking (OA)

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Add ("put together") or subtract ("take away") one object from a set of objects and express the resulting quantity.					
2. Add two or more objects, or take away two or more objects, from a set of 5 objects and express the resulting quantity.					
3. Create sets with an equal number of objects in each set.					
4. Compare two groups of objects and indicate which has "more" and which has "less."					
5. Answer questions about "how many altogether" (up to 10 objects).					
6. Sort or group objects by multiples of two.					
7. Match numerals (up to 10) with the number of objects/pictures displayed.					
Using standard numerals, symbols, or notations, student can:					
8. Plot at least three single-digit numbers on a number line.					
9. Solve addition problems involving one-digit numbers up to a total of 10.					
10. Identify the missing number in a problem involving subtraction (up to 15) (e.g., 12 -? = 5).					
11. Show equalities in number sentences (e.g., 2 + 4 = 4 + 2; 3 + 1 = 2 + 2).					
12. Count by 2's to 20.					
13. Count by 5's to 25.					
14. Determine the unknown quantity in a multiplication problem (within 20) (e.g., how many groups of 5 objects is equal to 15?).					
15. Solve multiplication problems with multipliers of 1–10.					
16. Solve division problems within 100 with divisors of 1–10.					
17. Identify the missing number in a word problem involving multiplication and division (within 25), with unknowns in all positions (e.g., 20 ÷? = 5).					
18. Create or extend a numerical pattern based on a given rule (e.g., "begin with 7, then the rule is to add 4").					

Student's Name_____ Grade_____ Date of Survey_____

Grade 4 Mathematics

Number and Operations—Fractions

Identify/recognize fractions:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Identify ½ and whole using manipulatives and/or familiar objects.					
2. Partition a whole into 1/2, 1/3, and 1/4 equal parts.					
3. Compare parts of the same whole (quarter, third, half) to determine the relative size of each.					
4. Compare fractions of the same whole with like denominators to determine which is greater (e.g., ¼ or ¾).					
5. Label points on a number line with simple fractions with like denominators (e.g., label 1/6, 3/6, 5/6 on the same number line).					
6. Demonstrate one or more fractions that are equivalent to ½ using models or manipulatives (e.g., 2/4, 3/6, 4/8).					
7. Compare two fractions with unlike denominators and indicate which is greater or less (1/3 or 3/5).					
Operations with fractions:					
8. Add and subtract "unit fractions" with like denominators (e.g., ¼ + ¼ = ?).					
9. Add and subtract fractions with like denominators (e.g., 1/8 + 3/8 =? and 5/8 – 3/8 = ?).					
10. Multiply simple fractions by a whole number (e.g., 3/5 X 5 = 15/5 = 3).					
11. Multiply fractions by fractions (e.g., 2/4 X 4/5 = 8/20).					
12. Convert simple decimals to simple fractions and vice versa (e.g., .25 = ¼; ½ = .50).					

Student's Name_____ Grade_____ Date of Survey_____

Grade 5 Mathematics

Number and Operations in Base Ten (NBT)

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Count by ones to 10.					
2. Represent up to 5 objects with numerals, including 0.					
3. Compose numbers from 1 to 9 to create 10, using objects.					
4. Count by tens to 100.					
5. Count forward beginning from a given number up to 100 (e.g., count on from 23).					
6. Identify "ten more" (or "ten less") than a given two-digit number.					
7. Add and subtract single-digit numbers.					
8. Add and subtract two-digit numbers.					
9 Round a given amount of money to the nearest dollar (e.g., $2.57 rounds to $3.00).					
10. Round whole three-digit numbers to the nearest 100.					
11. Multiply a one-digit number by a two-digit number.					
12. Divide a three-digit number by a one-digit number (without remainders).					

Student's Name_____ Grade_____ Date of Survey_____

Grade 5 Mathematics

Number and Operations—Fractions

		A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
Identify/recognize fractions:						
1.	Identify ½ and whole using manipulatives and/or familiar objects.					
2.	Partition a whole into ½, ⅓, and ¼ equal parts.					
3	Compare parts of the same whole (½, ⅓, and ¼) to determine the relative size of each.					
4.	Compare fractions of the same whole with like denominators to determine which is greater (e.g., ¼ or ¾).					
5.	Label points on a number line with simple fractions with like denominators (e.g., label 1/6, 3/6, 5/6 on the same number line).					
6.	Demonstrate one or more fractions that are equivalent to ½ using models or manipulatives (e.g., 2/4, 3/6, 4/8).					
7.	Compare two fractions with unlike denominators and indicate which is greater or less (1/3 or 3/5).					
Operations with fractions:						
8.	Add and subtract "unit fractions" with like denominators (e.g., ¼ + ¼ = ?).					
9.	Add and subtract fractions with like denominators (e.g., 1/8 + 3/8 =? and 5/8 – 3/8 = ?).					
10.	Multiply simple fractions by a whole number (e.g., 3/5 x 5 = 15/5 = 3).					
11.	Multiply fractions by fractions (e.g., 2/4 x 4/5 = 8/20).					
12.	Convert simple decimals to simple fractions and vice versa (e.g., .25 = ¼; ½ = .50).					

Student's Name_____ Grade_____ Date of Survey_____

Grade 6 Mathematics

Statistics and Probability

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Record responses to a survey.					
2. Represent a simple set of data graphically, either from a survey or based on observations (e.g., on a table, chart, tally, bar graph, or circle graph).					
3. Describe what is being shown in a simple data display (e.g., in a table or on a bar, line, or circle graph).					
4. Answer questions related to the data shown in a data display (e.g., do more students have brown eyes or blue eyes?).					
5. Order a set of numerical data.					
6. Find the median in an ordered set of numerical data.					
7. Calculate the range (spread) of a given set of data (e.g., by finding the difference of the greatest and least values).					
8. Given two sets of numerical data, decide which has the greatest mean.					
9. Calculate the mean of a given set of data.					

Student's Name_____ Grade_____ Date of Survey_____

Grade 6 Mathematics

The Number System

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Match visual representation of a simple fraction to the fraction itself (e.g., match one-third of a pie to "$\frac{1}{3}$").					
2 Distinguish ¼ from ½ of the same object.					
3. Locate positive whole numbers on a number line.					
4. Add and subtract one-digit whole numbers.					
5. Multiply and divide one-digit whole numbers					
6. Add and subtract two-digit whole numbers.					
7. Add and subtract fractions with like denominators.					
8. Multiply two-digit whole numbers by one-digit whole numbers.					
9. Multiply two- and three-digit whole numbers by two-digit whole numbers.					
10. Divide two-digit numbers by one-digit whole numbers.					
11. Multiply fractions by whole numbers (e.g., $4 \times \frac{2}{3}$).					
12. Multiply fractions by fractions (e.g., ¼ x ⅜).					
13. Solve word problems involving fractions (e.g., I have 2/3 cup of water. Paul has half as much as me. How much water does Paul have?).					
14. Identify numbers that are multiples of 2 or 3 from a list of numbers.					
15. Add and subtract numbers including decimals to tenths (e.g., 3.6 + 4.7).					
16. Multiply and divide decimals by whole numbers to tenths (e.g., 7.4 X 4; 4.8 ÷ 6).					
17. Locate and plot points in the first quadrant of a coordinate plane (e.g., plot and/or locate the points (4, 5), (8, 12), (6,3) on a graph).					

Grade 7 Mathematics

Ratios and Proportional Relationships

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Create a part-to-part ratio among objects already pre-sorted into sets or categories (e.g., the ratio of red to blue objects is 5:3).					
2. Express a part-to-whole ratio (e.g., If 5 of 9 students are boys, then the part-to-whole ratio is 5:9).					
3. Identify two or more equivalent fractions ($\frac{1}{2} = \frac{3}{6}$).					
4 Convert quantities from one measurement unit to another (e.g., 6 feet = 2 yards; 18 inches = 1½ feet).					
5. Calculate a percentage of a given quantity (e.g., What is 25 percent of 48?).					
6. Calculate a unit rate using real-world examples (e.g., If 5 apples cost $2.00, the unit rate is $0.40 per apple).					
7. Determine the percentage given the quantities (e.g., 10 is what percent of 50; 9 is what percent of 45?).					
8. Solve one-step equations using multiplication (e.g., $3x = 45$ or $4x = 36$).					
9. Create a table given a ratio (e.g., given the ratio 1:3, make a table with 2:?; 3:?; and 4:?).					
10. Express a percent as a fraction equivalent. (e.g., 75% = $\frac{75}{100}$ or $\frac{3}{4}$).					
11. Solve proportions where one quantity is represented by a variable (e.g., $\frac{3}{5} = \frac{x}{15}$).					

Student's Name_____ Grade_____ Date of Survey_____

Grade 7 Mathematics

Geometry

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Find a shape that is round.					
2. Partition a shape into two equal parts.					
3. Match identical two-dimensional shapes (e.g., drawings of squares, triangles).					
4. Match identical three-dimensional shapes (e.g., ball/sphere; box/cube).					
5. Demonstrate the relative positions of objects. (e.g., besides, inside, next to, above, below).					
6. Sort two-dimensional shapes (e.g., squares, circles, and triangles).					
7. Identify simple shapes by name (circle, square, triangle, box/cube, ball/sphere).					
8. Sort two- and three-dimensional shapes by attribute, such as color, shape, and size.					
9 Identify and label a line and an angle.					
10. Identify angles as either acute, obtuse, or right.					
11. Plot a given number on a horizontal number line.					
12. Plot a given ordered pair in the first quadrant of a coordinate plane (e.g., (4, 5); (8, 12); (8, 3)).					
13. Calculate the area of a square or rectangle.					

Student's Name_____ Grade_____ Date of Survey_____

Grade 8 Mathematics

Expressions and Equations

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Express the meaning of "equal to, "greater than," or "less than" by comparing groups of objects.					
2. Compare number quantities using the symbols <, =, or >.					
3. Represent repeated addition using groups of objects with equal amounts (e.g., given 12 objects, create 2 groups of 6; 3 groups of 4; etc.).					
4. Create equivalent expressions using commutative property (e.g., 4 + 2 = 2 + 4; 5 X 3 = 3 X 5).					
5. Solve addition and subtraction equations where the sum or difference is represented by a variable. (e.g., $5 + 7 = r$).					
6. Identify the missing number in an equation involving addition or subtraction (e.g., $8 + ? = 13$).					
7. Solve multiplication and division equations where the product or quotient is represented by a variable (e.g., $6 \times 7 = t$; $32 \div 8 = n$).					
8. Identify the missing factor in an equation involving multiplication (e.g., $4 \times ? = 28$).					
9. Identify equivalent numerical expressions. (e.g., $8 + 8 + 8$ can be written as 3×8 or 8×3).					
10. Evaluate expressions with numbers and letters involving addition and subtraction, given the value of an unknown number. (e.g., What is 7-p, if p=2; p=3; p=5?).					
11. Generate a number pattern given an initial value and an addition rule (e.g., initial value is 6, rule is "add 4," determine the next 5 numbers in the pattern).					
12. Solve a one-step equation involving multiplication and/or division, with no remainder (e.g., $14 \div n = 7$).					

Student's Name_____ Grade_____ Date of Survey_____

Grade 8 Mathematics

Geometry

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Find a shape that is round.					
2. Match identical two-dimensional shapes (e.g., drawings of squares, triangles).					
3. Match identical three-dimensional shapes e.g., ball/sphere; box/cube).					
4. Match similar shapes of different sizes.					
5. Distinguish squares, circles, and triangles.					
6. Communicate the names of simple shapes.					
7. Describe the relative positions of objects (e.g., besides, inside, next to, above, below).					
8. Sort two- and three-dimensional shapes by attribute, such as color, shape, and size.					
9. Partition a shape into two equal parts.					
10. Identify and label a line and an angle.					
11. Identify angles as either acute, obtuse, or right.					
12. Plot numbers on a horizontal number line.					
13. Plot ordered pairs in the first quadrant of a coordinate plane (e.g., (4, 5); (8, 12); (8, 3)).					
14. Calculate the area of a square or rectangle.					

Student's Name_____ Grade_____ Date of Survey_____

Grade 10 Mathematics
(Conduct the skills survey only in the three Conceptual Categories selected for the grade 10 MCAS-Alt.)

Number and Quantity

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Locate positive whole numbers on a number line.					
2. Match visual representation of a simple fraction to the fraction itself (e.g., match one-third of a pie to "$\frac{1}{3}$").					
3. Compare two fractions and communicate whether one is "less than," equal to," or "greater than" the other.					
4. Add and subtract one-digit whole numbers.					
5. Multiply and divide one-digit whole numbers.					
6. Add and subtract two-digit whole numbers.					
7. Add and subtract fractions with like or unlike denominators.					
8. Multiply two-digit whole numbers by one- and two-digit whole numbers.					
9. Identify perfect squares and their square roots up to 10. (e.g., $6^2 = 36$; $\sqrt{36} = 6$).					
10. Divide two-digit numbers by one-digit whole numbers.					
11. Multiply fractions by whole numbers (e.g., $4 \times \frac{2}{3}$).					
12. Multiply fractions by fractions (e.g., ¼ x ⅜)					
13. Divide fractions by fractions (e.g., $\frac{1}{3} \cdot \frac{3}{5} = \frac{3}{15}$; $\frac{1}{3} \div \frac{3}{5} = \frac{5}{9}$)					
14. Solve word problems involving fractions (e.g., I have 2/3 cup of water. Paul has half as much as me. How much water does Paul have?)					
15. Identify numbers that are multiples of 2 or 3 from a list of numbers.					
16. Add and subtract numbers including decimals to tenths (e.g., 3.6 + 4.7).					
17. Multiply and divide decimals by whole numbers to tenths (e.g., 7.4 X 4; 4.8 ÷ 6).					
18. Plot and locate points on a coordinate grid (e.g., plot and/or locate the points (3, -2), (-4, 6), (-7, -3) on a graph).					
19. Round a five-digit number (e.g., 25, 331) to the nearest hundred (e.g., 25, 300) and nearest thousand (e.g., 25,000).					

Student's Name_____ Grade_____ Date of Survey_____

Grade 10 Mathematics

(Conduct the skills survey only in the three Conceptual Categories selected for the grade 10 MCAS-Alt.)

Algebra

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Compare number quantities using the symbols <, =, or >.					
2. Create groups of objects with equal amounts in multiple ways (e.g., given 12 objects, create 2 groups of 6; 3 groups of 4 etc.).					
3. Create equivalent expressions using the commutative property (e.g., 4 + 2 = 2 + 4; 5 X 3 = 3 X 5).					
4. Solve addition and subtraction equations where the sum or difference is represented by a variable (e.g., $5 + 7 = r$).					
5. Solve multiplication and division equations where the product or quotient is represented by a variable (e.g., $6 \times 7 = t$; 54 , 7 = n).					
6. Identify the missing number in an equation involving addition or subtraction (e.g., $? + 8 = 13$).					
7. Identify equivalent numerical expressions. (e.g., $8 + 8 + 8$ can be written as 3×8).					
8. Solve one- and two-step equations with one variable (e.g., solve for x, if 3x=15; 5x + 7 = 42).					
9. Multiply a two-digit number by a one-digit number.					
10. Evaluate expressions with numbers and letters involving addition and subtraction, given the value of an unknown number (e.g., 7-p, if p=2; p=3; p=5).					
11. Extend a simple arithmetic sequence. (e.g., 7, 10, 13,?,?).					
12. Determine the point of intersection of two lines graphed on a coordinate plane by observation (e.g., the point of intersection of two lines is $(5, -1)$).					

Grade 10 Mathematics

(Conduct the skills survey only in the three Conceptual Categories selected for the grade 10 MCAS-Alt.)

Functions

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Create a part-to-part ratio among objects already pre-sorted into sets or categories (e.g., the ratio of red to blue objects is 5:3).					
2. Express a part-to-whole ratio (e.g., If 5 of 9 students are boys, then 5/9 of the students are boys; or part-to-whole ratio is 5:9).					
3. Identify two or more equivalent fractions ($\frac{1}{2} = \frac{3}{6}$).					
4. Calculate a percentage of a given quantity (e.g., What is 25 percent of 48?).					
5. Calculate a unit rate using real-world examples (e.g., If 5 apples cost $2.00, the unit rate is $0.40 per apple).					
6. Determine the percentage given the quantity (e.g., 9 is what percent of 45? what is 40 percent of 300?).					
7. Express a percent as a fraction equivalent (e.g., 75% = $\frac{75}{100}$).					
8. Solve proportions where one quantity is represented by a variable (e.g., $\frac{3}{5} = \frac{x}{15}$).					
9. Complete missing values on an input-output table (or use manipulatives) when given the function rule and input values (e.g., Rule: ribbon costs $1.25 per yard; what is cost for 3 yards? 12 yards; etc.).					
10. Create a table of ordered pairs (or generate a number pattern) representing a real-life relationship (e.g., based on $.95 cost of one donut, create a table of ordered pairs when multiple donuts are bought; or miles traveled over different periods of time at 60 mph).					
11. Complete a table (or extend a number pattern) based on an initial value and an addition or subtraction rule.					
12. Determine the addition or subtraction rule of an input/output table, given the ordered pairs.					

Student's Name_____ Grade_____ Date of Survey_____

Grade 10 Mathematics
(Conduct the skills survey only in the three Conceptual Categories selected for the grade 10 MCAS-Alt.)

Geometry

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Find a shape that is round.					
2. Match identical two-dimensional shapes (e.g., drawings of squares, triangles).					
3. Match identical three-dimensional shapes (e.g., ball/sphere; box/cube).					
4. Match similar shapes of different sizes.					
5. Distinguish squares, circles, and triangles.					
6. Communicate the names of simple shapes.					
7. Describe the relative positions of objects (e.g., besides, inside, next to, above, below).					
8. Sort two- and three-dimensional shapes by attribute, such as color, shape, and size.					
9. Partition a shape into two equal parts.					
10. Identify and label a line and an angle.					
11. Identify angles as either acute, obtuse, or right.					
12. Plot numbers on a horizontal number line.					
13. Graph ordered pairs in the first quadrant of a coordinate plane (e.g., (4, 5); (8, 12); (8, 3)).					
14. Calculate the area of a square or rectangle.					
15. Identify lines of symmetry within a two-dimensional figure.					
16. Use the Pythagorean Theorem to find the length of the hypotenuse of a right triangle, given the length of the two other sides.					
17. Calculate the area of a circle (πr^2), given its diameter or radius (e.g., find the area of a circle with a radius of 3; find the area of a circle with a diameter of 8).					

Student's Name_____ Grade_____ Date of Survey_____

Grade 10 Mathematics

(Conduct the skills survey only in the three Conceptual Categories selected for the grade 10 MCAS-Alt.)

Statistics and Probability

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Order a set of numerical data from least to greatest.					
2. Identify the minimum and maximum values in a set of numbers.					
3. Identify the range of numerical data in a set of numbers arranged from least to greatest.					
4. Identify the median (i.e., the middle value) for a set of numerical data.					
5. Answer simple questions related to data represented on a data display (e.g., numbers on a pie chart showing the number of sunny days to rainy days in a given month).					
6. Calculate the mean of a set of numerical data.					

Student's Name_____ Grade_____ Date of Survey_____

Next Generation (Next-Gen) Science and Technology/Engineering (STE):
Grade 5 and 8 – All Strands
High School – Biology and Introductory Physics ONLY

Complete the skills survey **once** for each student in <u>all eight science practices</u> listed below.
Note: The Science Practices are the same across all next-gen STE strands and grade spans.

Before selecting entry points for the student, teachers should assess each student's skills and abilities in each Science Practice, checking the box if the student can perform the skill <u>independently, at least some of the time.</u>

The STE Skills Survey is based on the student's ability to independently perform a science skill (for example ask a question, follow directions, describe something), rather than on specific science content.

Teachers should select entry points at the highest grade span in which the checked boxes appear.
Teachers may select entry points from <u>different grade spans</u>, depending on the results of the skills survey. For example, a student in grade 8 may be able to perform one science practice listed in grade span 6-8, while performing another science practice in grade span 3-5.

NOTE: High School Chemistry and Technology/Engineering are legacy, rather than next-gen, assessments that will be conducted as they have been in previous years (i.e., by submitting a data chart with at least eight dates; plus at least two pieces of evidence in each strand). This is the last year legacy science will be offered.

(revised 6/2/20)

SCIENCE and TECHNOLOGY/ENGINEERING (STE) SKILLS SURVEY

Instructions: For grades 5 and 8 STE and high school Biology and Introductory Physics, check the boxes below in each of the eight numbered Science Practices that the student can perform <u>independently, at least some of the time</u>. Select an entry point from each science practice in the highest grade span in which the checked boxes appear.

		1. Asking Questions and Defining Problems
Less Complex ↑ ↓ More Complex	PreK–Grade 2	☐Ask clarifying questions about a topic or idea. ☐Use observations to ask relevant questions. ☐Define a simple problem related to a topic.
	Grades 3–5	☐Use observations and/or data (for example, multiple-word descriptors, descriptions or drawings of observations, counted observations, measurements) to ask a question about a topic or idea. ☐Identify questions on a topic that can be answered by an investigation. ☐Define a simple problem that can be solved related to a topic.
	Grades 6–8	☐Identify scientific (testable) and non-scientific (non-testable) questions. ☐Generate scientific questions about a topic based on research and/or observations.
	Grades 9–12	☐Evaluate a scientific question to determine if it is testable and/or relevant to a topic. ☐Generate a scientific question about a topic that is testable using available resources.
		☐My student cannot perform any of the skills in this science practice

		2. Planning and Carrying Out Investigations
Less Complex ↑ ↓ More Complex	PreK–Grade 2	☐Choose how to collect data and/or observations (for example, using one-word descriptors, yes/no observations) on a topic. ☐Follow the steps of an investigation to collect data and/or observations (for example, using one-word descriptors, yes/no observations) on a topic. ☐Record observations (for example, based on first-hand experiences or through the media) on a topic. ☐Use pictures and/or drawings to collect observations related to a topic.
	Grades 3–5	☐Choose how to collect data and/or observations (for example, using multiple-word descriptors, descriptions or drawings of observations, counted observations, measurements) on a topic. ☐Follow the steps of an investigation to collect data and/or observations (for example, multiple-word descriptors, descriptions or drawings of observations, counted observations, measurements) on a topic. ☐From multiple options, select the best method to collect data and/or observations on a topic. ☐Record observations (for example, based on first-hand experiences, or through the media) to collect data on a topic.
	Grades 6–8	☐Choose how to collect data to serve as evidence (for example, descriptions or drawings of observations over time, measurements that may show a pattern). ☐Follow the steps of an investigation on a topic to produce data to serve as evidence (for example, descriptions or drawings of observations over time, measurements that may show a pattern). ☐Select and use appropriate methods and/or tools (for example, ruler, graduated cylinder, thermometer, carbon dioxide sensor) for collecting data in an investigation. ☐Record observations and/or measurements to produce data to serve as evidence for an investigation. ☐Test two different models of the same proposed design solution to determine which better meets the criteria for success.

	Grades 9–12	☐Choose how to collect data to serve as evidence (for example, measurements, or descriptions of observations comparing an experimental and control group over time). ☐Follow the steps of an investigation to produce data to serve as evidence (for example, measurements, or descriptions of observations comparing an experimental and control group over time). ☐Select appropriate tools (for example, ruler, graduated cylinder, thermometer, carbon dioxide sensor) to conduct an investigation on a topic. ☐Select and/or create the appropriate organizer (for example, table, chart, graphic organizer) to collect data from an investigation.
		☐My student cannot perform any of the skills in this science practice

3. Analyzing and Interpreting Data		
Less Complex	PreK–Grade2	☐Display data (for example, one-word descriptors, number/tally of yes/no observations) visually using a simple graph, table, or picture to show information on a topic. ☐Identify patterns by grouping information/data by similar observable properties. ☐Make predictions on a topic prior to collecting data/observations.
	Grades 3–5	☐Represent data (for example, counted observations, measurements) on a data display. ☐Answer questions based on a representation (for example, data display) of a data set. ☐Make predictions about an outcome in order to compare predictions to actual data and/or observations. ☐Compare predictions to actual data and/or observations from an investigation. ☐Use data and/or observations (for example, multiple-word descriptors, descriptions or drawings of observations, counted observations, measurements) to identify patterns about a topic. ☐Use data and/or observations to identify relationships between topics, ideas, or concepts. ☐From tests of an object or tool, evaluate data and/or observations (for example, multiple-word descriptors, descriptions or drawings of observations, counted observations, measurements) to determine if it works as intended. ☐Construct a conclusion based on evidence or observations (for example, from an investigation).
More Complex	Grades 6–8	☐Use data and/or observations (for example, descriptions or drawings of observations over time, measurements that may show a pattern) from an investigation to interpret features of the data or develop conclusions. ☐Describe one or more patterns (for example, using multiple-word descriptors) in a data set. ☐Analyze/interpret data (for example, descriptions or drawings of observations over time, measurements that may show a pattern) to make sense of a topic. ☐Compare and contrast two data sets. ☐Use observations and/or data (for example, descriptions or drawings of observations over time, measurements that may show a pattern) to evaluate and/or refine a design solution.
	Grades 9–12	☐Analyze/interpret data from a table or graph, citing details and/or evidence from the data display. ☐Create two or more appropriate visual representations of the same data set (for example, line graph, bar graph, circle graph, table, etc.).
		☐My student cannot perform any of the skills in this science practice.

4. Using Mathematics and Computational Thinking		
Less Complex ↑↓ More Complex	PreK–Grade2	☐Use counting and numbers to show data on a topic (for example, count/tally the number of yes/no observations or responses from the class). ☐Identify qualitative (i.e., using words) information about objects or data. ☐Identify quantitative (i.e., using numbers) information about objects or data.
	Grades 3–5	☐Use counting and numbers to show data on a topic (for example, measurements). ☐Describe, measure, and/or compare quantitative (i.e., numerical) attributes of objects or data. ☐Identify patterns in quantitative (i.e., numerical) data about a topic.
	Grades 6–8	☐Organize simple data sets (for example, data table, chart, graph) to reveal patterns. ☐Evaluate whether qualitative (i.e., descriptive) or quantitative (i.e., numerical) data is best to collect as evidence in an investigation about a topic. ☐Use computations (for example, addition, subtraction, division, multiplication) to analyze data (for example, averages, totals, differences).
	Grades 9–12	☐Use given formulas to solve for relevant quantities (for example, speed, density). ☐Apply mathematical concepts and/or processes (for example, ratios, rates, percentages, proportions, and/or basic operations) to answer questions or solve problems.
		☐My student cannot perform any of the skills in this science practice.

5. Developing and Using Models		
Less Complex ↑↓ More Complex	PreK–Grade2	☐Label a model that shows or explains a topic. ☐Illustrate a model to show or explain a topic. ☐Compare a model of an object with the actual object and identify similarities and differences.
	Grades 3–5	☐Given directions, construct a model to show or explain a topic. ☐Develop or create a model to show/explain a topic. ☐Distinguish between a model and the actual object, process, or event. ☐Compare two (or more) models of the same topic (for example, compare models of human body systems to identify common features and differences).
	Grades 6–8	☐Revise a model to more clearly show or explain a topic. ☐Show or explain a topic using a model.
	Grades 9–12	☐Refine an existing model by suggesting revisions. ☐Evaluate a model citing details about clarity and accuracy of the model.
		☐My student cannot perform any of the skills in this science practice.

		6. **Constructing Explanations and Designing Solutions**
Less Complex ↕ More Complex	PreK– Grade2	☐Show/express one or more observations or characteristics of a familiar topic or object. ☐Show/express the relationship between two objects or topics.
	Grades 3–5	☐Describe one or more characteristics of a topic or object based on observations. ☐Identify a design problem and a potential solution using words, pictures, or drawings. ☐Draw and/or explain a design solution for a content-related problem.
	Grades 6–8	☐Explain how a familiar object, device, or machine works. ☐Construct conclusions based on evidence from an investigation of a topic. ☐Generate a solution to a design problem using pictures or drawings. ☐Use tools (for example, ruler/tape measure, scissors, hammer) and/or materials to build a prototype that solves a specific problem. ☐Use observations and data from investigations (for example, descriptions or drawings of observations over time, measurements that may show a pattern) to design a solution to a problem.
	Grades 9–12	☐Construct an explanation of how an object, prototype, or machine works based on information from a variety of sources (for example, model, research, investigation, simulation) ☐Generate multiple solutions to a design problem. ☐Compare multiple solutions to a design problem.
		☐My student cannot perform any of the skills in this science practice.

		7. **Engaging in Argument from Evidence**
Less Complex ↕ More Complex	PreK– Grade2	☐Use scientific evidence (for example, data, observations from an investigation) to support an argument about a topic from the grades PreK-2 STE standards (see core ideas at each grade).
	Grades 3–5	☐Use scientific evidence to support a claim about a topic from the grades 3-5 STE standards (see core ideas at each grade). ☐Use scientific evidence to support a claim for or against a design solution.
	Grades 6–8	☐Use scientific evidence to support an argument about a topic from the grades 6-8 STE standards (see core ideas at each grade). ☐Compare and critique two arguments about a scientific topic or idea. ☐Defend a claim about the merits of a particular design solution, citing relevant evidence.
	Grades 9–12	☐Use scientific evidence and observations to construct an argument about a topic from the high school STE standards (see core ideas at each grade). ☐Make and defend a claim based on scientific evidence about a topic or idea. ☐Evaluate competing design solutions for a problem using evidence related to the criteria for success and the constraints of the resources.
		☐My student cannot perform any of the skills in this science practice.

		8. **Obtaining, Evaluating, and Communicating Information**
Less Complex ↕ More Complex	PreK–Grade2	☐Research (for example, using media or informational text) and present information (for example, show or express) on a topic from the grades preK-2 STE standards (see core ideas at each grade). ☐Communicate information or ideas (orally, graphically, textually, and/or mathematically) on a topic from grades preK-2 STE standards (see core ideas at each grade). ☐Compare fictional and non-fictional resources on a topic. ☐Recall (retell) important information from a text or from observations.
	Grades 3–5	☐Research (for example, using media or informational text) and present information on a topic from the grades 3-5 STE standards (see core ideas at each grade). ☐Communicate information or ideas (for example, orally, graphically, textually, and/or mathematically) on a topic from grades 3-5 STE standards (see core ideas at each grade). ☐Compare two informational sources (for example, using media, informational text, data display) to determine similarities and differences in how information was presented.
	Grades 6–8	☐Research and present information on a topic from grades 6-8 STE standards (see core ideas at each grade). ☐Communicate information or ideas (for example, orally, graphically, textually, and/or mathematically) on a topic from grades 6-8 STE standards (see core ideas at each grade). ☐Combine scientific information from multiple sources (for example, media, informational text, data display, observations from an investigation) to explain scientific information or phenomena.
	Grades 9–12	☐Research and present information on a topic from grades 9-12 STE standards (see core ideas at each grade). ☐Communicate information or ideas (orally, graphically, textually, and/or mathematically) on a topic from grades 9-12 STE standards (see core ideas at each grade span). ☐Evaluate the validity and reliability of information provided in multiple texts/media on the same topic.
		☐My student cannot perform any of the skills in this science practice.

Student's Name_____ Grade_____ Date of Survey_____

High School Science and Technology/Engineering (STE)

Chemistry (Legacy standards)

(Note: For this high school STE discipline, conduct the Skills Survey below.)

Illustrate, demonstrate, or respond verbally to:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Group objects by one similar observable property (e.g., size, shape, color, weight, or texture)					
2. Identify three properties of three different objects/materials (e.g., the ball is round, smooth, and blue; water is cold, wet, and clear)					
3. Identify up to 3 given materials/objects as either solid, liquid, or gas					
4. Give examples of a physical versus chemical change (i.e., a physical change doesn't change the substance (melting an ice cube, tearing paper, mixing flour and an egg); in a chemical change (e.g., combustion), a new substance is formed and energy is either given off or absorbed) (e.g., rusting iron, baking a cake, burning wood)					
5. Give examples of each basic form of energy (i.e., light, sound, heat, electrical, and/or magnetic)					
6. Classify up to three substances as either a mixture (e.g., soil, sand, coffee with milk, sugar and water) or a pure substance (e.g., air, water, diamonds, table salt, sugar)					

Student's Name_____ Grade_____ Date of Survey_____

High School Science and Technology/Engineering (STE)

Technology/Engineering (Legacy standards)

(Note: For this high school STE discipline, conduct the Skills Survey below.)

		A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
Illustrate, demonstrate, or respond verbally to:						
1.	Name three tools and what they were designed to do.					
2.	Identify parts of the human body that act as tools (e.g., teeth for cutting, fingers for grasping).					
3.	Match various tools to their intended purpose.					
4.	Determine whether given objects are natural or human-made.					
5.	Identify different means of transportation.					
6.	Draw or describe a picture/diagram of a specific object you would like to construct.					
7.	Describe the materials you would use to build the object you would like to construct and why you chose those materials.					
8.	Name or describe at least one tool you would use to construct the object you chose and describe why you chose the tool.					
9.	Match a symbol (without text) used to communicate an idea to its message or meaning (e.g., symbols used for wheelchair access, danger, bicycle lane).					
10.	Calculate the actual length of an object from a scaled drawing.					