DRAFT 2020 WYOMING MATH EXTENDED STANDARDS AND ACHIEVEMENT LEVEL DESCRIPTORS

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Counting and Cardinality	**Grade K**	
Know number names and the count sequence. (A) **K.CC.A.1** Count to 100 by ones and by tens. **A.** Count to 100 by ones and by tens. **B.** Count backwards by ones from 20.	**EEK.CC.A.1** Starting with one, count to 10 by ones.	**Level IV AA Students will:** **EEK.CC.A.1** Starting with one, count to 20 by ones. **Level III AA Students will:** **EEK.CC.A.1** Starting with one, count to 10 by ones. **Level II AA Students will:** **EEK.CC.A.1** Starting with one, count by ones to five. **Level I AA Students will:** **EEK.CC.A.1** Count from one to two.
K.CC.A.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	**EEK.CC.A.2** Count forward from a given number in a known sequence between 2 and 20.	**Level IV AA Students will:** **EEK.CC.A.2** Count forward from 19 to 30. **Level III AA Students will:** **EEK.CC.A.2** Count forward from a given number in a known sequence between 2 and 20. **Level II AA Students will:** **EEK.CC.A.2** Count forward from a given number in a known sequence between 2 and 10. **Level I AA Students will:** **EEK.CC.A.2** Count forward from 2 to 4.
K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 (Zero) representing a count of no objects).	**EEK.CC.A.3** Count a number of objects and match with the numerical symbol 1-10.	**Level IV AA Students will:** **EEK.CC.A.3** Count a given number of objects between 1-10 **and** write the numerical symbol. **Level III AA Students will:** **EEK.CC.A.3** Count a number of objects **and** match with the numerical symbol 1-10. **Level II AA Students will:** **EEK.CC.A.3** Match the numerical symbol to a quantity of objects up to 5. **Level I AA Students will:** **EEK.CC.A.3** Match the numerical symbol to a quantity of objects up to 2.
Count to tell the number of objects. (B) **K.CC.B.4** Understand the relationship between numbers and quantities; connect counting to cardinality. **A.** Use one-to-one correspondence when counting objects.	**EEK.CC.B.4** Demonstrate one-to-one correspondence, by counting 10 objects.	**Level IV AA Students will:** **EEK.CC.B.4** Demonstrate one-to-one correspondence counting any number of objects within 10 **and** show one more or one less. **Level III AA Students will:** **EEK.CC.B.4** Demonstrate one-to-one correspondence, by counting 10 objects. **Level II AA Students will:** **EEK.CC.B.4** Demonstrate one-to-one correspondence by counting 5 objects. **Level I AA Students will:**

B. Understand that the last number name said, tells the number of objects counted regardless of their arrangement. **C.** Understand that each successive number name refers to a quantity that is one more, and each previous number name refers to a quantity that is one less.		**EEK.CC.B.4** Demonstrate one-to-one correspondence by counting 2 objects.
K.CC.B.5 When counting: **A.** Answer the question "how many?" by counting up to 20 objects arranged in a line, a rectangular array, a circle, or as many as 10 objects in a scattered configuration. **B.** Given a number from 1-20, count out that many objects.	**EEK.CC.B.5** Answer the question "how many?" by counting 10 objects arranged in a line **or** 5 objects in a scattered configuration.	**Level IV AA Students will:** **EEK.CC.B.5** Given a number between 1-10, count out that many objects. **Level III AA Students will:** **EEK.CC.B.5** Answer the question "how many?" by counting 10 objects arranged in a line **or** 5 objects in a scattered configuration. **Level II AA Students will:** **EEK.CC.B.5** Answer the question "how many?" by counting 5 objects arranged in a line **or** 3 objects in a scattered configuration. **Level I AA Students will:** **EEK.CC.B.5** Answer the question "how many?" by counting 2 objects.
Compare numbers. (C) **K.CC.C.6** Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group. (Include groups with up to ten objects.)	groups of different quantities of objects, identify which group has more or less. (Include groups with up to 7 objects.)	**Level IV AA Students will:** **EEK.CC.C.6** Given two groups of different quantities of objects, identify which group has more, less, or equal. (Include groups with up to 7 objects.) **Level III AA Students will:** **EEK.CC.C.6** Given two groups of different quantities of objects, identify which group has more or less. (Include groups with up to 7 objects.) **Level II AA Students will:** **EEK.CC.C.6** Given two groups of different quantities of objects, identify which group has more. (With groups up to 7 objects). **Level I AA Students will:** **EEK.CC.C.6** Given a group of one and a group of 7 objects, identify which group has more.

K.CC.C.7 Compare two numbers between 1 and 10 presented as written numerals.	**EEK.CC.C.7** Compare two numerical symbols between 1-6 to determine more or less.	**Level IV AA Students will:** **EEK.CC.C.7** Compare two numerical symbols between 1-8 to determine more **and** less. **Level III AA Students will:** **EEK.CC.C.7** Compare two numerical symbols between 1-6 to determine more **or** less. **Level II AA Students will:** **EEK.CC.C.7** Compare two numerical symbols between 1-4 to determine which has more. **Level I AA Students will:** **EEK.CC.C.7** Given the numerical symbols "1" and "2" to determine which is more.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Operations and Algebraic Thinking	**Grade K**	
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. (D) **K.OA.D.1** Model situations that involve representing addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	**EEK.OA.D.1** Demonstrate addition as "putting together" or subtraction as "taking from" with quantities to 5.	**Level IV AA Students will:** **EEK.OA.D.1** Demonstrate addition as "putting together" and subtraction as "taking from" with quantities to 10. **Level III AA Students will:** **EEK.OA.D.1** Demonstrate addition as "putting together" or subtraction as "taking from" with quantities to 5. **Level II AA Students will:** **EEK.OA.D.1** Follow directions to "put together" by adding 1 and "take from" by taking away 1. **Level I AA Students will:** **EEK.OA.D.1** Follow directions to "put together" by adding 1.
K.OA.D.2 Solve word problems using objects and drawings to find sums up to 10 and differences within 10.	**EEK.OA.D.2** Using word problems, demonstrate addition as "putting together" or subtraction as "taking from" with quantities to 5.	**Level IV AA Students will:** **EEK.OA.D.2** Using word problems, demonstrate addition as "putting together" or subtraction as "taking from" with quantities to 7. **Level III AA Students will:** **EEK.OA.D.2** Using word problems, demonstrate addition as "putting together" or subtraction as "taking from" with quantities to 5. **Level II AA Students will:** **EEK.OA.D.2** Using word problems, demonstrate addition as "putting together" by adding one and subtraction as "taking from" by taking away 1. **Level I AA Students will:** **EEK.OA.D.2** Using word problems, demonstrate addition as "putting together" by adding one.

K.OA.D.3 Decompose numbers less than or equal to 10 in more than one way.	**EEK.OA.D.3** Decompose numbers into sub- parts to equal 5.	**Level IV AA Students will:** **EEK.OA.D.3** Decompose numbers less than or equal to 5 in more than one way. **Level III AA Students will:** **EEK.OA.D.3** Decompose numbers into sub-parts to equal 5. **Level II AA Students will:** **EEK.OA.D.3** Decompose numbers into sub-parts to equal 3. **Level I AA Students will:** **EEK.OA.D.3** Match sub-parts for a sum less than 3.
K.OA.D.4 For any number from 1 to 9, find the number that makes 10 when added to the given number.	**EEK.OA.D.4** For any number from 1 to 4, find the number that makes 5 when added to the given number.	**Level IV AA Students will:** **EEK.OA.D.4** For any number from 1 to 6, find the number that makes 7 when added to the given number. **Level III AA Students will:** **EEK.OA.D.4** For any number from 1 to 4, find the number that makes 5 when added to the given number. **Level II AA Students will:** **EEK.OA.D.4** For the numbers 1 or 2, find the number that makes 3 when added to the given number. **Level I AA Students will:** **EEK.OA.D.4** Match the numbers 1 and 2, to show the sum 3.
K.OA.D.5 Fluently add and subtract within 5.	**EEK.OA.D.5** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Number and Operation Base Ten	**Grade K**	
Work with numbers 11-19 to gain foundations for place value. (E) **K.NBT.E.1** Describe, explore, and explain how the counting numbers 11 to 19 is: **A.** Composed of ten ones and more ones. **B.** Decomposed into ten ones and more ones.	**EEK.NBT.E.1** Explore how the counting numbers between 6-10 is composed of 5 ones and more ones.	**Level IV AA Students will:** **EEK.NBT.E.1** Explore how counting numbers 6-10 is decomposed into 5 ones and more ones. **Level III AA Students will:** **EEK.NBT.E.1** Explore how counting numbers between 6-10 is composed of 5 ones and more ones. **Level II AA Students will:** **EEK.NBT.E.1** Demonstrate how the numbers 6 and 7 are composed of 5 ones and more ones. **Level I AA Students will:** **EEK.NBT.E.1** Demonstrate how to compose 7 by matching 5 ones and 2 more ones.

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2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Measurement and Data	**Grade K**	
Describe and compare measurable attributes. (F) **K.MD.F.1** Describe several measurable attributes of one or more objects.	**EEK.MD.F.1** Describe objects according to attributes big/small and short/long.	**Level IV AA Students will:** **EEK.MD.F.1** Describe objects according to attributes big/small, long/short, **and** heavy/light. **Level III AA Students will:** **EEK.MD.F.1** Describe objects according to attributes big/small **and** long/short. **Level II AA Students will:** **EEK.MD.F.1** Describe objects according to attributes big/small. **Level I AA Students will:** **EEK.MD.F.1** Match objects according to attributes big/small.
K.MD.F.2 Make direct comparisons of the length, capacity, weight, and temperature of objects, and recognize which object is shorter/longer, taller, lighter/heavier, warmer/cooler, and which holds more/less.	**EEK.MD.F.2** Make direct comparisons to determine which of 2 objects are bigger/smaller, longer/shorter **and** taller.	**Level IV AA Students will:** **EEK.MD.F.2** Make direct comparisons to determine which of 2 objects are bigger/smaller, longer/shorter, taller, **and** heavier/lighter. **Level III AA Students will:** **EEK.MD.F.2** Make direct comparisons to determine which of 2 objects are bigger/smaller, longer/shorter, **and** taller. **Level II AA Students will:** **EEK.MD.F.2** Make direct comparisons to determine which of 2 objects is bigger/smaller **or** taller. **Level I AA Students will:** **EEK.MD.F.2** Make direct comparisons to determine which of 2 objects is bigger.
Classify objects and count the number of objects in each category. (G) **K.MD.G.3** Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.)	**EEK.MD.G.3** Sort 5 objects into categories to determine which objects are bigger/smaller **and** longer/shorter.	**Level IV AA Students will:** **EEK.MD.G.3** Sort 5 objects into categories to determine which objects are bigger/smaller, longer/shorter, **and** heavier/lighter. **Level III AA Students will:** **EEK.MD.G.3** Sort 5 objects into categories to determine which objects are bigger/smaller **and** longer/shorter. **Level II AA Students will:** **EEK.MD.G.3** Sort 5 objects into categories to determine which objects are bigger/smaller. **Level I AA Students will:** **EEK.MD.G.3** Sort 3 objects into categories to determine which objects are bigger/smaller.

K.MD.G.4 Identify U.S. coins by name (pennies, nickels, dimes, and quarters).	**EEK.MD.G.4** When given a U.S. coin name, identify the correct coin (penny and quarter).	**Level IV AA Students will:** **EEK.MD.G.4** When given a U.S. coin name, identify 3 of 4 coins correctly. (e.g., penny, nickel, dime, or quarter). **Level III AA Students will:** **EEK.MD.G.4** When given a U.S. coin name, identify the correct coin (penny **and** quarter). **Level II AA Students will:** **EEK.MD.G.4** When given a U.S. coin name, identify the correct coin (penny **or** quarter). **Level I AA Students will:** **EEK.MD.G.4** Match a U.S. coin with the same coin (penny/penny **or** quarter/quarter).
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Geometry	**Grade K**	
Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). (H) **K.G.H.1** Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.	**EEK.G.H.1** Identify shapes (square, triangle, rectangle, and circle) and describe their positions in relation to another object in the environment using the terms (in, out, over, under).	**Level IV AA Students will:** **EEK.G.H.1** Identify shapes **and** describe their positions in relation to another object in the environment using the terms (in, out, over, under, on, **and** beside). **Level III AA Students will:** **EEK.G.H.1** Identify shapes (square, triangle, rectangle, **and** circle) **and** describe their positions in relation to another object in the environment using the terms (in, out, over, under). **Level II AA Students will:** **EEK.G.H.1** Imitate a teacher model of two shapes **and** their relative position. **Level I AA Students will:** **EEK.G.H.1** Imitate a teacher model of one shapes **and** its relative position.
K.G.H.2 Correctly name shapes regardless of their orientations or overall size. **K.G.H.3** Identify shapes as two-dimensional or three-dimensional.	**EEK.G.H.2-3** Correctly identify 4 shapes (circle, square, rectangle, and triangle).	**Level IV AA Students will:** **EEK.G.H.2-3** Correctly identify 4 two-dimensional shapes (circle, square, rectangle, **and** triangle) **and** 1 three-dimensional shape (cube, sphere, cylinder, cone). **Level III AA Students will:** **EEK.G.H.2-3** Correctly identify 4 shapes (circle, square, rectangle, **and** triangle). **Level II AA Students will:** **EEK.G.H.2-3** Correctly identify 2 out of 4 shapes (circle, square, rectangle, **or** triangle). **Level I AA Students will:** **EEK.G.H.2-3** Correctly match 2 out of 4 shapes (circle, square, rectangle, **or** triangle).

Analyze, compare, create, and compose shapes. (I) **K.G.I.4** Analyze and compare two- and three-dimensional shapes, using informal language to describe their similarities, differences, and attributes.	**EEK.G.I.4** Sort two- and three-dimensional shapes.	**Level IV AA Students will:** **EEK.G.I.4** Sort two- **and** three-dimensional shapes to describe similarities (square/cube **and** circle/sphere). **Level III AA Students will:** **EEK.G.I.4** Sort two- **and** three-dimensional shapes. **Level II AA Students will:** **EEK.G.I.4** Sort two-dimensional shapes. **Level I AA Students will:** **EEK.G.I.4** Match similar 2 two-dimensional shapes to each other.
K.G.I.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	**EEK.G.I.5** Model at least 2 different simple shapes by building simple shapes from components.	**Level IV AA Students will:** **EEK.G.I.5** Model or draw 2 or more different simple shapes by building or drawing simple shapes from components. **Level III AA Students will:** **EEK.G.I.5** Model at least 2 different simple shapes by building simple shapes from components. **Level II AA Students will:** **EEK.G.I.5** Model a simple shape by building a simple shape. **Level I AA Students will:** **EEK.G.I.5** Match simple shapes to each other.
K.G.I.6 Use simple shapes to compose squares, rectangles, and hexagons.	**EEK.G.I.6** Use 2-4 equally shaped parts to compose squares **and** rectangles with a template.	**Level IV AA Students will:** **EEK.G.I.6** Use 2-4 equally shaped parts to compose squares **or** rectangles without a template. **Level III AA Students will:** **EEK.G.I.6** Use 2-4 equally shaped parts to compose squares **and** rectangles with a template. **Level II AA Students will:** **EEK.G.I.6** Use simple shapes to compose a square **or** a rectangle using a template. **Level I AA Students will:** **EEK.G.I.6** Use simple shapes to compose a square using a template.

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2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Operations and Algebraic Thinking	**Grade 1**	
Represent and solve problems involving addition and subtraction. (A) **1.OA.A.1** Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, by using objects, drawings, or equations with a symbol for the unknown number to represent the problem.	**EE1.OA.A.1** When solving problems with sums up to 7, students will use math strategies of "putting together" and "taking from/taking apart."	**Level IV AA Students will:** **EE1.OA.A.1** When solving problems with sums up to 10, students will use math strategies of "putting together" and "taking from/taking apart." **Level III AA Students will:** **EE1.OA.A.1** When solving problems with sums up to 7, students will use math strategies of "putting together" and "taking from/taking apart." **Level II AA Students will:** **EE1.OA.A.1** When solving problems with sums up to 5, students will use math strategies of "putting together." **Level I AA Students will:** **EE1.OA.A.1** When solving problems with sums up to 3, students will use math strategies of "putting together."
1.OA.A.2 Solve word problems that call for the addition of three whole numbers whose sum is less than or equal to 20, by using objects, drawings, or equations.	**EE1.OA.A.2** Solve addition word problems with sums to 10.	**Level IV AA Students will:** **EE1.OA.A.2** Solve addition word problems with sums to 10 using 3 whole numbers. **Level III AA Students will:** **EE1.OA.A.2** Solve addition word problems with sums to 10. **Level II AA Students will:** **EE1.OA.A.2** Solve addition word problems with sums to 7. **Level I AA Students will:** **EE1.OA.A.2** Solve an addition problems with a sum to 5.
Understand and apply properties of operations and the relationship between addition and subtraction. (B) **1.OA.B.3** Apply commutative and associative properties of addition as strategies to add and subtract.	**EE1.OA.B.3** Use the commutative property of addition to solve for a missing addend.	**Level IV AA Students will:** **EE1.OA.B.3** Apply the commutative **and** associative properties to solve addition problems for missing addends. **Level III AA Students will:** **EE1.OA.B.3** Use the commutative property of addition to solve for a missing addend. **Level II AA Students will:** **EE1.OA.B.3** Demonstrate the commutative property of addition when given a set of 2 numbers. **Level I AA Students will:** **EE1.OA.B.3** Match the commutative property of addition.
1.OA.B.4 Understand subtraction as an unknown-addend problem.	**EE1.OA.B.4** Not applicable; skill is covered in other standards.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

Add and subtract within 20. (C) **1.OA.C.5** Relate counting to addition and subtraction using strategies, such as, by counting on and back.	**EE1.OA.C.5** Use "counting on" and "counting back" when solving addition and subtraction problems with numbers to 10.	**Level IV AA Students will:** **EE1.OA.C.5** Use "counting on" **and** "counting back" when solving addition **and** subtraction problems with numbers to 20. **Level III AA Students will:** **EE1.OA.C.5** Use "counting on" **and** "counting back" when solving addition **and** subtraction problems with numbers to 10. **Level II AA Students will:** **EE1.OA.C.5** Use "counting back" when solving subtraction problems with numbers to 5. **Level I AA Students will:** **EE1.OA.C.5** Use "counting on" when solving addition problems with numbers to 5.
1.OA.C.6 Add and subtract within 20, demonstrating fluency in addition and subtraction within 10. Use strategies such as counting on; making ten using the relationship between addition and subtraction.	**EE1.OA.C.6** Fluently add within 10.	**Level IV AA Students will:** **EE1.OA.C.6** Fluently add **and** subtract within 10. **Level III AA Students will:** **EE1.OA.C.6** Fluently add within 10. **Level II AA Students will:** **EE1.OA.C.6** Fluently add within 5. **Level I AA Students will:** **EE1.OA.C.6** Fluently add within 3.
Work with addition and subtraction equations. (D) **1.OA.D.7** Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.	**EE1.OA.D.7** Understand the meaning of the equal sign involving addition equations sums of 10.	**Level IV AA Students will:** **EE1.OA.D.7** Understand the meaning of the equal sign involving addition **and** subtraction equations with sums/differences to 20. **Level III AA Students will:** **EE1.OA.D.7** Understand the meaning of the equal sign involving addition equations with sums to 10. **Level II AA Students will:** **EE1.OA.D.7** Understand the meaning of the equal sign involving groups of no more than 5 objects. **Level I AA Students will:** **EE1.OA.D.7** Match equal groups using no more than 5 objects in each group.
1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.	**EE1.OA.D.8** Determine the unknown whole number in an addition equation relating 3 whole numbers to 10.	**Level IV AA Students will:** **EE1.OA.D.8** Determine the unknown whole number in addition **and** subtraction equations relating 3 whole numbers to10. **Level III AA Students will:** **EE1.OA.D.8** Determine the unknown whole number in an addition equation relating 3 whole numbers to 10. **Level II AA Students will:** **EE1.OA.D.8** Determine the unknown whole number in an addition equation relating 3 whole numbers to 5. **Level I AA Students will:**

		EE1.OA.D.8 Determine the unknown whole number in an addition equation relating 3 whole numbers to 3.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Number and Operations Base Ten	**Grade 1**	
Extend the counting sequence. (E) **1.NBT.E.1** Extend the number sequences to 120. In this range: **A.** Count forward and backward, starting at any number less than 12. **B.** Read numerals. **C.** Write numerals. **D.** Represent a number of objects with a written numeral.	**EE1.NBT.E.1a** Starting at a given number, other than 1, count forward by ones to 20. **EE1.NBT.E.1b** Count backwards from 10. **EE1.NBT.E.1c** Identify numbers 1-20. **EE1.NBT.E.1d** Count a number of objects then match with a numerical symbol 1-20.	**Level IV AA Students will:** **EE1.NBT.E.1a** Starting at a given number, other than 1, count forward by ones to 30. **EE1.NBT.E.1b** Count backwards from 20. **EE1.NBT.E.1c** Identify **and** write numbers 1-30. **EE1.NBT.E.1d** Count a number of objects then match with a numerical symbol 1-30. **Level III AA Students will:** **EE1.NBT.E.1a** Starting at a given number, other than 1, count forward by ones to 20. **EE1.NBT.E.1b** Count backwards from 10. **EE1.NBT.E.1c** Identify numbers 1-20. **EE1.NBT.E.1d** Count a number of objects then match with a numerical symbol 1-20. **Level II AA Students will:** **EE1.NBT.E.1a** Starting at a given number, other than 1, count forward by ones to 10. **EE1.NBT.E.1b** Count backwards from 5. **EE1.NBT.E.1c** Identify numbers 1-10. **EE1.NBT.E.1d** Count a number of objects then match with a numerical symbol 1-10. **Level I AA Students will:** **EE1.NBT.E.1a** Count forward by ones to 5. **EE1.NBT.E.1b** Count backwards from 3. **EE1.NBT.E.1c** Match numbers 1-10. **EE1.NBT.E.1d** Count a number of objects then match with a numerical symbol 1-5.
Understand place value. (F) **1.NBT.F.2** Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: **A.** 10 can be thought of as a bundle of ten ones – called a "ten." **B.** The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.	**EE1.NBT.F.2** Given a multiple of 10, create bundles of ten to represent that number.	**Level IV AA Students will:** **EE1.NBT.F.2** Compose numbers from 11-19 by using a set of ten and more ones, **or** create 20, 30, 40, or 50 using sets of ten. **Level III AA Students will:** **EE1.NBT.F.2** Given a multiple of 10, create bundles of ten to represent that number. **Level II AA Students will:** **EE1.NBT.F.2** Create one set of 10. **Level I AA Students will:** **EE1.NBT.F.2** Match a given set of 10 to another set of 10.

C. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).		
1.NBT.F.3 Compare pairs of two-digit numbers based on the values of the tens digit and the ones digits, recording the results of comparisons with the words "is greater than," "is equal to," "is less than," and with the symbols >, =, and <.	**EE1NBT.F.3** Compare two groups of items (10 or fewer) using the terms “greater than” **and** “less than.”	**Level IV AA Students will:** **EE1NBT.F.3** Compare two groups of items (10 or fewer) using the terms “greater than”, “less than”, **and** “equal to”. **Level III AA Students will:** **EE1NBT.F.3** Compare two groups of items (10 or fewer) using the terms “greater than” **and** “less than.” **Level II AA Students will:** **EE1NBT.F.3** Compare two groups of items (10 or fewer) using the terms “greater than” **or** “less than.” **Level I AA Students will:** **EE1NBT.F.3** Given a group of “2” objects and “6” objects, identify which group is “greater than.”
Use place value understanding and properties of operations to add and subtract. (G) **1.NBT.G.4** Add within 100, using concrete models or drawings and strategies based on place value: **A.** Including adding a two-digit number and a one-digit number. **B.** Adding a two-digit number and a multiple of 10. **C.** Understand that in adding two-digit numbers, add tens and tens, ones and ones; and sometimes it is necessary to compose a ten. **D.** Relate the strategy to a written method and explain the reasoning used.	within 15 using models or manipulatives based on “place value” and using one digit and two digit numbers.	**Level IV AA Students will:** **EE1.NBT.G.4** Add within 20 using models or manipulatives based on “place value” and using one digit and two digit numbers. **Level III AA Students will:** **EE1.NBT.G.4** Add within 15 using models or manipulatives based on “place value” and using one digit and two digit numbers. **Level II AA Students will:** **EE1.NBT.G.4** Identify the number(s) in the tens and ones places in an addition problem whose sum is greater than 10 but less than 15. **Level I AA Students will:** **EE1.NBT.G.4** Given a 2 digit number between 10 and 15, identify the tens and ones places.

1.NBT.G.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having a count; explain the reasoning used.	**EE1.NBT.G.5** Given the number 20 find "ten more" **and** "ten less" than the number.	**Level IV AA Students will:** **EE1.NBT.G.5** Given the number 30 find "ten more" **and** "ten less" than the number. **Level III AA Students will:** **EE1.NBT.G.5** Given the number 20 find "ten more" **and** "ten less" than the number. **Level II AA Students will:** **EE1.NBT.G.5** Given the number 20, show "ten more" than the number. **Level I AA Students will:** **EE1.NBT.G.5** Match the numbers 10, 20, 30 to the correct corresponding value.
1.NBT.G.6 Subtract multiples of 10 from an equal or larger multiple of 10 both in the range 10-90, using concrete models, drawings, and strategies based on place value.	**EE1.NBT.G.6** Subtract multiples of 10 from a larger multiple of ten no greater than 30 using models or manipulatives based on place value.	**Level IV AA Students will:** **EE1.NBT.G.6** Subtract multiples of 10 from a larger multiple of ten no greater than 40 using models or manipulatives based on place value. **Level III AA Students will:** **EE1.NBT.G.6** Subtract multiples of 10 from a larger multiple of ten no greater than 30 using models or manipulatives based on place value. **Level II AA Students will:** **EE1.NBT.G.6** Subtract multiples of 10 from a larger multiple of ten no greater than 20 using models or manipulatives based on place value. **Level I AA Students will:** **EE1.NBT.G.6** Match the numbers 30, 20, 10 to the correct corresponding value in reverse sequence.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Measurement and Data	**Grade 1**	
Measure lengths indirectly and by iterating length units. (H) **1.MD.H.1** Order three objects by length; compare the lengths of two objects indirectly by using a third object.	**EE1.MD.H.1** When presented with 3 objects, order those objects by length.	**Level IV AA Students will:** **EE1.MD.H.1** Order two objects by length; compare the lengths of those objects indirectly by using a third object. **Level III AA Students will:** **EE1.MD.H.1** When presented with 3 objects, order those objects by length. **Level II AA Students will:** **EE1.MD.H.1** When presented with 2 objects, order those objects by length. **Level I AA Students will:** **EE1.MD.H.1** Match different sized objects.

1.MD.H.2 Use nonstandard units to show the length of an object as the number of same size units of length with no gaps or overlaps.	**EE1.MD.H.2** Use nonstandard units to show the length of an object.	**Level IV AA Students will:** **EE1.MD.H.2** Use 2 different non-standard units to show the length of an object. **Level III AA Students will:** **EE1.MD.H.2** Use nonstandard units to show the length of an object. **Level II AA Students will:** **EE1.MD.H.2** Complete the measure of a model using the given non-standard units. **Level I AA Students will:** **EE1.MD.H.2** Match the non-standard units used to measure an object.
Tell and write time. (I) **1.MD.I.3** **A.** Tell and write time in hours and half-hours using analog and digital clocks. **B.** Identify U.S. coins by value (pennies, nickels, dimes, quarters).	**EE1.MD.I.3a** Tell time in hours using a digital clock. **EE1.MD.I.3b** Identify 2 out of 4 U.S. coins and their values (pennies, nickels, dimes, quarters).	**Level IV AA Students will:** **EE1.MD.I.3a** Tell time in hours using a digital clock **and** an analog clock. **EE1.MD.I.3b** Identify 3 out of 4 U.S. coins and their values (pennies, nickels, dimes, quarters). **Level III AA Students will:** **EE1.MD.I.3a** Tell time in hours using a digital clock. **EE1.MD.I.3b** Identify 2 out of 4 U.S. coins and their values (pennies, nickels, dimes, quarters). **Level II AA Students will:** **EE1.MD.I.3a** Match hour **and** half-hour times on a digital clock. **EE1.MD.I.3b** Sort U.S. coins according to value. **Level I AA Students will:** **EE1.MD.I.3a** Match hour times on a digital clock. **EE1.MD.I.3b** Match U.S. coin with a given U.S. coin.
Represent and interpret data. (J) **1.MD.J.4** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	**EE1.MD.J.4** Interpret data in two categories to determine whether there are more or less in each category.	**Level IV AA Students will:** **EE1.MD.J.4** Interpret data in two categories: identify how many in each category **and** determine whether there are more or less in each category. **Level III AA Students will:** **EE1.MD.J.4** Interpret data in two categories to determine whether there are more or less in each category. **Level II AA Students will:** **EE1.MD.J.4** Interpret data in two categories to determine which category has more. **Level I AA Students will:** **EE1.MD.J.4** Match a number of objects to data provided on a simple graph.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Geometry	**Grade 1**	
Reason with shapes and their attributes. (K) **1.G.K.1** Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); for a wide variety of shapes; build and draw shapes to possess defining attributes.	**EE.1.G.K.1** Identify the defining attributes of 2-dimensional shapes.	**Level IV AA Students will:** **EE.1.G.K.1** Identify the defining **and** non-defining attributes of 2-dimensional shapes. **Level III AA Students will:** **EE.1.G.K.1** Identify the defining attributes of 2-dimensional shapes. **Level II AA Students will:** **EE.1.G.K.1** Identify the defining attributes of a circle **and** a square. **Level I AA Students will:** **EE.1.G.K.1** Identify the defining attributes by matching a circle **and** a square.
1.G.K.2 Use two-dimensional shapes (rectangles, squares, trapezoids, rhombuses, and triangles) or three-dimensional shapes (cubes, rectangular prisms, cones, and cylinders) to create a composite figure, and create new figures from the composite figure.	**EE1.G.K.2** Use 2-dimensional shapes to build **or** draw new figures.	**Level IV AA Students will:** **EE1.G.K.2** Use a 2-dimensional shape **and** a 3-dimensional shape to build a new figure. **Level III AA Students will:** **EE1.G.K.2** Use 2-dimensional shapes to build or draw new figures. **Level II AA Students will:** **EE1.G.K.2** Given 2-dimensional shapes, fill in a template for a new figure. **Level I AA Students will:** **EE1.G.K.2** Match 2-dimensional shapes.
1.G.K.3 Partition circles and rectangles into two and four equal shares and: **A.** Describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and a quarter of. **B.** Describe the whole as two of, or four of the shares. **C.** Recognize that decomposing into more equal shares creates smaller shares.	**EE1.G.K.3** Partition circles **or** rectangles into two equal shares.	**Level IV AA Students will:** **EE1.G.K.3** Partition circles **and** rectangles into two and four equal shares. **Level III AA Students will:** **EE1.G.K.3** Partition circles **or** rectangles into two equal shares. **Level II AA Students will:** **EE1.G.K.3** Match 2 pieces to make a circle **and** a rectangle. **Level I AA Students will:** **EE1.G.K.3** Match 2 pieces to make a circle **or** a rectangle.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Operations and Algebraic Thinking	**Grade 2**	
Represent and solve problems involving addition and subtraction. (A) **2.OA.A.1** Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, by using drawings and equations with a symbol for the unknown number to represent the problem.	problems involving situations of adding to, taking from, putting together, and taking apart.	**Level IV AA Students will:** **EE2.OA.A.1** Use addition **and** subtraction within 40 to solve word problems involving situations of adding to, taking from, putting together, and taking apart. **Level III AA Students will:** **EE2.OA.A.1** Use addition **and** subtraction within 30 to solve word problems involving situations of adding to, taking from, putting together, and taking apart. **Level II AA Students will:** **EE2.OA.A.1** Use addition within 20 to solve word problems involving situations of adding to and putting together. **Level I AA Students will:** **EE2.OA.A.1** Use addition within 10 to solve word problems.
Add and subtract within 20. (B) **2.OA.B.2** Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know automatically all sums of two one-digit numbers based on strategies.	**EE2.OA.A.2** Fluently add to 20 and subtract within 10.	**Level IV AA Students will:** **EE2.OA.A.2** Fluently add to 20 **and** subtract within 20. **Level III AA Students will:** **EE2.OA.A.2** Fluently add to 20 **and** subtract within 10. **Level II AA Students will:** **EE2.OA.A.2** Fluently add to 10 **and** subtract within 5. **Level I AA Students will:** **EE2.OA.A.2** Fluently add to 5 **and** subtract within 3.
Work with equal groups of objects to gain foundations for multiplication. (C) **2.OA.C.3** Determine whether a group (up to 20) has an odd or even number of objects (i.e., by pairing objects or counting them by 2s). **A.** If the number of objects is even, then write an equation to express this as the sum of two equal addends. **B.** If the number of objects group is odd, then write an equation to express this as a	whether a group (up to 20) has an odd or even number of objects (i.e., by pairing objects or counting them by 2s).	**Level IV AA Students will:** **EE2.OA.C.3** Determine whether a group (up to 20) has an odd or even number of objects (i.e., by pairing objects or counting them by 2s) **and** make an addition equation using objects (up to 10). **Level III AA Students will:** **EE2.OA.C.3** Determine whether a group (up to 20) has an odd or even number of objects (i.e., by pairing objects or counting them by 2s). **Level II AA Students will:** **EE2.OA.C.3** Match objects by pairs of two using a template **and** determine if a group of objects is odd or even in number. **Level I AA Students will:** **EE2.OA.C.3** Match objects by pairs of two using a template.

sum of a near double (double plus 1).		
2.OA.C.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.	**EE2.OA.C.4** Use addition to find the total number of objects arranged within 3 rows and 3 columns.	**Level IV AA Students will:** **EE2.OA.C.4** Use addition to find the total number of objects arranged within 3 rows and 3 columns then make an equation to express the total as a sum of equal addends. **Level III AA Students will:** **EE2.OA.C.4** Use addition to find the total number of objects arranged within 3 rows and 3 columns. **Level II AA Students will:** **EE2.OA.C.4** Use addition to find the total number of objects arranged within 3 rows and 3 columns with a template. **Level I AA Students will:** **EE2.OA.C.4** Create equal groups of objects (up to 3).
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Number and Operations Base Ten	**Grade 2**	
Understand place value. (D) **2.NBT.D.1** Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; and demonstrate that: **A.** 100 can be thought of as a bundle of ten tens — called a “hundred.” **B.** The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). **C.** Three-digit numbers can be decomposed in multiple ways (e.g., 524 can be decomposed as 5 hundreds, 2 tens and 4 ones or 4	**EE2.NBT.D.1** Identify the digits in the one and tens place to 99. Demonstrate that 100 can be thought of as a bundle of 10 tens — called a “hundred.”	**Level IV AA Students will:** **EE2.NBT.D.1** Understand that bundles of two-digit objects represent ones and tens (from 50 - 99). Demonstrate that: ● 100 can be thought of as a bundle of 10 tens — called a “hundred.” ● The numbers 100, 200, 300, 400, or 500 can be thought of as bundles of 100. **Level III AA Students will:** **EE2.NBT.D.1** Identify the digits in the one **and** tens place to 99. Demonstrate that 100 can be thought of as a bundle of 10 tens — called a “hundred.” **Level II AA Students will:** **EE2.NBT.D.1** Match given digits to the correct ones **and** tens place to 50. Complete a model using bundles of 10 to show 50, 60, 70, 80, 90, **and** 100. **Level I AA Students will:** **EE2.NBT.D.1** Match bundles of ten to show 50.

hundreds, 12 tens, and 4 ones, etc.)		
2.NBT.D.2 Skip-count by 10s and 100s within 1000 starting at any given number.	**EE2.NBT.D.2** Count by tens to 100.	**Level IV AA Students will:** **EE2.NBT.D.2** Count by tens to 150 **or** count by hundreds to 500. **Level III AA Students will:** **EE2.NBT.D.2** Count by tens to 100. **Level II AA Students will:** **EE2.NBT.D.2** Count by tens to 50. **Level I AA Students will:** **EE2.NBT.D.2** Count by tens to 20.
2.NBT.D.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	**EE2.NBT.D.3** Identify numbers to 50.	**Level IV AA Students will:** **EE2.NBT.D.3** Identify **or** write numbers to 100. **Level III AA Students will:** **EE2.NBT.D.3** Identify numbers to 50. **Level II AA Students will:** **EE2.NBT.D.3** Identify numbers to 30. **Level I AA Students will:** **EE2.NBT.D.3** Identify numbers to 10.
2.NBT.D.4 Compare pairs of three-digit numbers based on meanings of the hundreds, tens, and ones digits, using the words "is greater than," "is equal to," "is less than" and with the symbols >, =, and < to record the results of comparisons.	**EE2.NBT.D.4** Compare sets of objects or numbers (up to 50) using appropriate vocabulary (“greater/more than”, “less than”, “equal to”).	**Level IV AA Students will:** **EE2.NBT.D.4** Compare numbers (up to 100) using appropriate vocabulary (“greater/more than”, “less than”, “equal to”) **and** the symbols “>”, “<”, “=”. **Level III AA Students will:** **EE2.NBT.D.4** Compare sets of objects **or** numbers (up to 50) using appropriate vocabulary (“greater/more than”, “less than”, “equal to”). **Level II AA Students will:** **EE2.NBT.D.4** Compare sets of objects **or** numbers (up to 30) using appropriate vocabulary (“greater/more than”, “less than”, “equal to”). **Level I AA Students will:** **EE2.NBT.D.4** Compare sets of objects **or** numbers (up to 15) using appropriate vocabulary (“greater/more than” or “less than”).

Use place value understanding and properties of operations to add and subtract. (E) **2.NBT.E.5** Add and subtract within 100 using strategies based on place value, properties of addition, and/or the relationship between addition and subtraction.	**EE2.NBT.E.5** Add and subtract within 30 using strategies based on place value, properties of addition, and/or the relationship between addition and subtraction.	**Level IV AA Students will:** **EE2.NBT.E.5** Add **and** subtract within 50 using strategies based on place value, properties of addition, **and/or** the relationship between addition and subtraction. **Level III AA Students will:** **EE2.NBT.E.5** Add **and** subtract within 30 using strategies based on place value, properties of addition, **and/or** the relationship between addition and subtraction. **Level II Students will:** **EE2.NBT.E.5** Add **and** subtract within 20 using strategies based on place value, properties of addition, **and/or** the relationship between addition and subtraction. **Level I AA Students will:** **EE2.NBT.E.5** Add **and** subtract within 10 using strategies based on place value, properties of addition, **and/o**r the relationship between addition and subtraction.
2.NBT.E.6 Add up to four two-digit numbers using strategies based on place value and/or properties of addition.	**EE2.NBT.E.6** Add 2 two-digit numbers (10 - 50) using strategies based on place value and/or properties of addition.	**Level IV AA Students will:** **EE2.NBT.E.6** Add 2 two-digit numbers (50 - 90) using strategies based on place value **and/or** properties of addition. **Level III AA Students will:** **EE2.NBT.E.6** Add 2 two-digit numbers (10 - 50) using strategies based on place value **and/or** properties of addition. **Level II AA Students will:** **EE2.NBT.E.6** Add a one digit (1-9) and a two-digit number (10 - 20) using strategies based on place value **and/or** properties of addition. **Level I AA Students will:** **EE2.NBT.E.6** Add 2 one digit numbers (1-9) using strategies based on place value **and/or** properties of addition.
2.NBT.E.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of addition, and/or the relationship between addition and subtraction: **A.** Relate the strategy to a written method and explain the reasoning used. **B.** Understand that in adding or subtracting three-digit numbers, add or subtract hundreds and hundreds, tens and tens, ones and ones.	**EE2.NBT.E.7** Add and subtract within 100, using concrete models, manipulatives, or drawings and strategies based on place value, or properties of addition.	**Level IV AA Students will:** **EE2.NBT.E.7** Add **and** subtract within 300, using concrete models, manipulatives, or drawings and strategies based on place value, or properties of addition. **Level III AA Students will:** **EE2.NBT.E.7** Add **and** subtract within 100, using concrete models, manipulatives, or drawings and strategies based on place value, or properties of addition. **Level II AA Students will:** **EE2.NBT.E.7** Add **and** subtract within 50, using concrete models, manipulatives, or drawings and strategies based on place value, or properties of addition. **Level I AA Students will:** **EE2.NBT.E.7** Add **and** subtract within 30, using concrete models, manipulatives, or drawings and strategies based on place value, or properties of addition.

C. Understand that sometimes it is necessary to compose or decompose tens or hundreds.		
2.NBT.E.8 Mentally: **A.** Add 10 or 100 to a given number 100-900, and **B.** Subtract 10 or 100 from a given number 100-900.	**EE2.NBT.E.8** Add or subtract ten to a given number from 10-100.	**Level IV AA Students will:** **EE2.NBT.E.8**. Add **and** subtract ten to a given number from 10-100. **Level III AA Students will:** **EE2.NBT.E.8** Add **or** subtract ten to a given number from 10-100. **Level II AA Students will:** **EE2.NBT.E.8** Count forwards **and** backwards by tens to 100. **Level I AA Students will:** **EE2.NBT.E.8** Count forward by tens to 100.
2.NBT.E.9 Explain why addition and subtraction strategies work, using place value and the properties of addition. (Explanations may be supported by drawings, objects, or written form.)	**EE2.NBT.E.9** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Measurement and Data	**Grade 2**	
Measure and estimate lengths in standard units. (F) **2.MD.F.1** Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	**EE2.MD.F.1** Measure an object to the nearest whole unit of length using a ruler, yardstick, or other tool.	**Level IV AA Students will:** **EE2.MD.F.1** Measure multiple objects to the nearest whole unit of length using a ruler, yardstick, measuring tape, or other tool. **Level III AA Students will:** **EE2.MD.F.1** Measure an object to the nearest whole unit of length using a ruler, yardstick, or other tool. **Level II AA Students will:** **EE2.MD.F.1** Match 2 unlike objects of the same length. **Level I AA Students will:** **EE2.MD.F.1** Match 2 like objects of the same length.

2.MD.F.2 Measure the same object or distance using a standard unit of one length and then a standard unit of a different length. Explain how the two measurements relate to the size of the unit chosen.	**EE2.MD.F.2** Measure one object or distance to the nearest whole unit of length using 2 standard units (ex. inches, feet).	**Level IV AA Students will:** **EE2.MD.F.2** Measure multiple objects or distances using 2 standard units (ex. inches, feet) to the nearest whole unit. **Level III AA Students will:** **EE2.MD.F.2** Measure one object or distance to the nearest whole unit of length using 2 standard units (ex. inches, feet). **Level II AA Students will:** **EE2.MD.F.2** Measure one object to the nearest whole using a ruler (inches). **Level I AA Students will:** **EE2.MD.F.2** Identify a ruler.
2.MD.F.3 Estimate lengths using units of inches, feet, centimeters, and meters. **2.MD.F.4** Measure in standard length units to determine how much longer one object is than another.	**EE2.MD.F.3-4** Given an object, determine the unit of measurement as inches or feet.	**Level IV AA Students will:** **EE2.MD.F.3-4** Estimate the length of multiple objects using inches **or** feet. **Level III AA Students will:** **EE2.MD.F.3-4** Given an object, determine the unit of measurement as inches **or** feet. **Level II AA Students will:** **EE2.MD.F.3-4** Given 3 objects, place objects in order by length from shortest to longest. **Level I AA Students will:** **EE2.MD.F.3-4** Given 3 objects, identify which is longer.
Relate addition and subtraction to length. (G) **2.MD.G.5** Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units.	**EE2.MD.G.5** Use addition to solve one-step word problems using lengths that are the same units.	**Level IV AA Students will:** **EE2.MD.G.5** Use subtraction to solve one-step word problems using lengths that are the same units. **Level III AA Students will:** **EE2.MD.G.5** Use addition to solve one-step word problems using lengths that are the same units. **Level II AA Students will:** **EE2.MD.G.5** Use addition to solve one-step word problems by adding a single unit to increase length. **Level I AA Students will:** **EE2.MD.G.5** Increase length by adding a single unit.
2.MD.G.6 Use a number line diagram with equally spaced points to: **A.** Represent whole-number sums and differences within 100 on a number line diagram.	**EE2.MD.G.6** Use a number line diagram with equally spaced points to locate the multiple of 10 before **or**	**Level IV AA Students will:** **EE2.MD.G.6** Use a number line diagram with equally spaced points to locate the multiple of 10 before **and** after a given number within 100. **Level III AA Students will:** **EE2.MD.G.6** Use a number line diagram with equally spaced points to locate the multiple of 10 before **or** after a given number within 100.

B. Locate the multiple of 10 before and after a given number within 100.	after a given number within 100.	**Level II AA Students will:** **EE2.MD.G.6** Use a number line to count backwards by tens from 100. **Level I AA Students will:** **EE2.MD.G.6** Use a number line to count backwards by ones from 10.
Work with time and money. (H) **2.MD.H.7** Tell and write time from analog and digital clocks in five minute increments using a.m. and p.m.	**EE2.MD.H.7** Tell **or** write time to the hour using an analog clock **or** digital clock.	**Level IV AA Students will:** **EE2.MD.H.7** Tell **o**r write time to the half-hour using an analog clock **or** digital clock. **Level III AA Students will:** **EE2.MD.H.7** Tell **or** write time to the hour using an analog clock **or** digital clock. **Level II AA Students will:** **EE2.MD.H.7** Identify which digit(s) **or** hand marks the hour on a clock. **Level I AA Students will:** **EE2.MD.H.7** Identify a measurement tool that tells time.
2.MD.H.8 Solve word problems up to $10 involving dollar bills, quarters, dimes, nickels, and pennies, using $ (dollars) and ¢ (cents) symbols appropriately.	**EE2.MD.H.8** Solve word problems up to $1, involving pennies and dimes, using the cents (¢) symbol.	**Level IV AA Students will:** **EE2.MD.H.8** Solve word problems up to $1 involving pennies, nickels, dimes, **and** quarters using the ¢ (cents) symbol. **Level III AA Students will:** **EE2.MD.H.8** Solve word problems up to $1, involving pennies **and** dimes, using the ¢ (cents) symbol. **Level II AA Students will:** **EE2.MD.H.8** Identify the values of coins (pennies, nickels, dimes, quarters) **and** identify the ¢ (cents) symbol. **Level I AA Students will:** **EE2.MD.H.8** Identify coins (pennies, nickels, dimes, quarters).
Represent and interpret data. (I) **2.MD.I.9** Generate measurement data based on whole units and show data by making a line plot.	**EE2.MD.I.9** Place 7 given data points on a template to complete a line plot.	**Level IV AA Students will:** **EE2.MD.I.9** When given 3 measurement data, create a line plot. **Level III AA Students will:** **EE2.MD.I.9** Place 7 given data points on a template to complete a line plot. **Level II AA Students will:** **EE2.MD.I.9** Place 3 given data points on a template to complete a line plot. **Level I AA Students will:** **EE2.MD.I.9** Identify a line plot from 3 random pictures.

2.MD.I.10 Use data to: **A.** Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. **B.** Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	**EE2.MD.I.10** Place given objects (data) on to a template to complete picture graph.	**Level IV AA Students will:** **EE2.MD.I.10** Use data to draw or create a picture graph **or** a bar graph to represent a data set. **Level III AA Students will:** **EE2.MD.I.10** Place given objects (data) on to a template to complete picture graph. **Level II AA Students will:** **EE2.MD.I.10** Match objects (data) on a completed picture **or** bar graph. **Level I AA Students will:** **EE2.MD.I.10** Identify a picture **and** bar graph from a group of 3 pictures.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Geometry	**Grade 2**	
Reason with shapes and their attributes. **2.G.J.1** Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. (Sizes are compared directly or visually, not compared by measuring.)	**EE2.G.J.1** Identify triangles, squares, pentagons, octagons. Recognize **and** create shapes having specified attributes.	**Level IV AA Students will:** **EE2.G.J.1** Identify triangles, squares, pentagons, octagons. Recognize **and** create shapes having specified attributes. Identify the number of angles in a given shape. **Level III AA Students will:** **EE2.G.J.1** Identify triangles, squares, pentagons, octagons. Recognize **and** create shapes having specified attributes. **Level II AA Students will:** **EE2.G.J.1** Identify 3 shapes (triangles, squares, pentagons, octagons). Recognize **or** create shapes having specified attributes. **Level I AA Students will:** **EE2.G.J.1** Match shapes (triangles, squares, pentagons, octagons) to each other.
2.G.J.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	**EE2.G.J.2** Given a partitioned rectangle, count the number of same-sized squares.	**Level IV AA Students will:** **EE2.G.J.2** Given a partitioned rectangle, count the number of same-sized squares, columns, **and** rows. **Level III AA Students will:** **EE2.G.J.2** Given a partitioned rectangle, count the number of same-sized squares. **Level II AA Students will:** **EE2.G.J.2** Given a partitioned rectangle, place same-sized squares to complete the interior of the figure. **Level I AA Students will:** **EE2.G.J.2** Given a partitioned rectangle, match the same-sized squares to the interior of the figure.

2.G.J.3 Partition circles and rectangles into two, three, or four equal shares by: **A.** Describing the shares using the words halves, thirds, half of, a third of, etc. **B.** Describing the whole as two halves, three thirds, four fourths. **C.** Recognizing that equal shares of identical wholes need not have the same shape.	**EE2.G.J.3** Partition circles and rectangles into two and four equal shares.	**Level IV AA Students will:** **EE2.G.J.3** Partition circles **and** rectangles into two, three, **and** four equal shares. Describe the shares using the words halves, thirds, **and** fourths. **Level III AA Students will:** **EE2.G.J.3** Partition circles **and** rectangles into two **and** four equal shares. **Level II AA Students will:** **EE2.G.J.3** Partition circles **and** rectangles into two **or** four equal shares. **Level I AA Students will:** **EE2.G.J.3** Match 2 or 4 pieces to make a circle **or** a rectangle.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Operations and Algebraic Thinking	**Grade 3**	
Represent and solve problems involving multiplication and division. (A) **3.OA.A.1** Represent the concept of multiplication of whole numbers using models including, but not limited to, equal-sized groups ("groups of"), arrays, area models, repeated addition, and equal "jumps" on a number line.	**EE3.OA.A.1** Identify appropriate models for multiplication of whole numbers (i.e., arrays, repeating addition, area models).	**Level IV AA Students will:** **EE3.OA.A.1** Match a multiplication equation to an appropriate model. **Level III AA Students will:** **EE3.OA.A.1** Identify appropriate models for multiplication of whole numbers (i.e., arrays, repeating addition, area models). **Level II AA Students will:** **EE3.OA.A.1** Combine equal groups to find the total whole number. **Level I AA Students will:** **EE3.OA.A.1** Identify equal groups of whole numbers with factors 1, 2, 5, 10.
3.OA.A.2 Represent the concept of division of whole numbers (resulting in whole number quotients) using models including, but not limited to, partitioning, repeated subtraction, sharing, and inverse of multiplication.	**EE3.OA.A.2** Identify appropriate models for division of whole numbers (i.e., arrays, repeating subtraction, area models).	**Level IV AA Students will:** **EE3.OA.A.2** Match a division equation to an appropriate model. appropriate models for division of whole numbers (i.e., arrays, re **Level III AA Students will:** **EE3.OA.A.2** Identify appropriate models for division of whole numbers (i.e., arrays, repeating subtraction, area models)**.** **Level II AA Students will:** **EE3.OA.A.2** Create equal groups from a given whole number with divisors of 2, 5. **Level I AA Students will:** **EE3.OA.A.2** Identify equal groups of whole numbers with divisors of 2, 5.
3.OA.A.3 Solve multiplication and division word problems within 100 using appropriate modeling strategies and equations.	**EE3.OA.A.3** Solve given multiplication and division problems within a 100 using appropriate modeling strategies.	**Level IV AA Students will:** **EE3.OA.A.3** Solve a one-step multiplication **or** division word problem within 20. **Level III AA Students will:** **EE3.OA.A.3** Solve given multiplication **and** division problems within a 100 using appropriate modeling strategies. **Level II AA Students will:** **EE3.OA.A.3** Solve given multiplication **or** division problems within a 100 using appropriate modeling strategies. **Level I AA Students will:** **EE3.OA.A.3** Identify an equation as multiplication or division problem.
3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is a missing factor,	**EE3.OA.A.4** Identify multiplication and division facts when	**Level IV AA Students will:** **EE3.OA.A.4** Find the unknown whole number in a multiplication **or** division equation when given a set of numbers.

product, dividend, divisor, or quotient. (Students need not know formal terms.)	given three whole correlating numbers.	**Level III AA Students will:** **EE3.OA.A.4** Identify multiplication **and** division facts when given three whole correlating numbers (i.e., given numbers 3, 10, 30: students will produce 3x10=30, 10x3=30, 30/3=10, 30/10=3). **Level II AA Students will:** **EE3.OA.A.4** Identify multiplication **or** division facts when given three whole correlating numbers (i.e., given numbers 3, 10, 30: students will produce 3x10=30, 10x3=30, or, 30/3=10, 30/10=3). **Level I AA Students will:** **EE3.OA.A.4** Solve multiplication **and** division problems with whole number factors 0-10.
Understand properties of multiplication and the relationship between multiplication and division. (B) **3.OA.B.5** Apply properties of multiplication as strategies to multiply and divide. (Students need not use formal terms for these properties.)	**EE 3.OA.B.5** Use an appropriate strategy to multiply **or** divide within 100.	**Level IV AA Students will:** **EE3.OA.B.5** Use an appropriate strategy to multiply **and** divide within 100. **Level III AA Students will:** **EE3.OA.B.5** Use an appropriate strategy to multiply **or** divide within 100. **Level II AA Students will:** **EE3.OA.B.5** Identify a strategy to multiply **and** divide within 100. **Level I AA Students will:** **EE3.OA.B.5** Identify a strategy to multiply **or** divide within 100.
3.OA.B.6 Understand division as an unknown-factor problem.	**EE3.OA.B.6** Not applicable. Benchmark is addressed in EE3.OA.B.2-5.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Multiply and divide within 100. (C) **3.OA.C.7** Fluently multiply and divide with factors 1 - 10 using mental strategies. By end of Grade 3, know automatically all products of one-digit factors based on strategies.	**EE3.OA.C.7** Multiply **and** divide with factors 1-10 using strategies.	**Level IV AA Students will:** **EE3.OA.C.7** Fluently multiply **or** divide with factors 1-10 using strategies. **Level III AA Students will:** **EE3.OA.C.7** Multiply **and** divide with factors 1-10 using strategies. **Level II AA Students will:** **EE3.OA.C.7** Multiply **o**r divide with factors 1-10 using strategies. **Level I AA Students will:** **EE3.OA.C.7** Multiply **or** divide with factors 1-5 using strategies.

Solve problems involving the four operations, and identify and explain patterns in arithmetic. (D) **3.OA.D.8** Solve two-step word problems (limited to the whole number system) using the four basic operations. Students should apply the Order of Operations when there are no parentheses to specify a particular order. **A.** Represent these problems using equations with a symbol standing for the unknown quantity. **B.** Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	**EE3.OA.D.8** Solve one-step addition/subtraction **and** multiplication/ division word problems by representation **or** using models. *Committee chose not to address A or B; it is taught in 5th grade.	**Level IV AA Students will:** **EE3.OA.D.8** Solve two step addition/subtraction **or** multiplication/division word problems by representation **or** using models. **Level III AA Students will:** **EE3.OA.D.8** Solve one step addition/subtraction **and** multiplication/division word problems by representation **or** using models. **Level II AA Students will:** **EE3.OA.D.8** Solve one step addition/subtraction **or** multiplication/division word problems by representation **or** using models. **Level I AA Students will:** **EE3.OA.D.8** Identify one step word problems as addition/subtraction.
3.OA.D.9 Identify arithmetic patterns and explain the relationships using properties of operations.	**EE3.OA.D.9** Identify arithmetic patterns in addition **and** multiplication.	**Level IV AA Students will:** **EE3.OA.D.9** Expand arithmetic patterns in addition **and** multiplication. **Level III AA Students will:** **EE3.OA.D.9** Identify arithmetic patterns in addition **and** multiplication. **Level II AA Students will:** **EE3.OA.D.9** Expand an arithmetic pattern in addition **or** multiplication. **Level I AA Students will:** **EE3.OA.D.9** Identify an arithmetic pattern in addition **or** multiplication.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Numbers and Operations Base Ten	**Grade 3**	
Use place value understanding and properties of operations to perform multi-digit arithmetic (a range of algorithms may be used). (E) **3.NBT.E.1** Use place value understanding to round whole numbers to the nearest 10 or 100.	**EE3.NBT.E.1** Recognize the value of the number in the ones and tens place.	**Level IV AA Students will:** **EE3.NBT.E.1** When given one whole number, round to the nearest tens place. **Level III AA Students will:** **EE3.NBT.E.1** Recognize the value of the number in the ones **and** tens place. **Level II AA Students will:** **EE3.NBT.E.1** Identify if a number in the ones place is greater than, less than or equal to five. **Level I AA Students will:** **EE3.NBT.E.1** Identify the number in the ones **and** tens place.
3.NBT.E.2 Fluently add and subtract within 1000 using strategies and	**EE3.NBT.E.2** Add **or** subtract from 51-100	**Level IV AA Students will:** **EE3.NBT.2.** Add **and** subtract from 51-100 using strategies or algorithms.

algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	using strategies or algorithms.	**Level III AA Students will:** **EE3.NBT.2.** Add **or** subtract from 51-100 using strategies or algorithms. **Level II AA Students will:** **EE3.NBT.2.** Add **and** subtract within 50 using strategies or algorithms. **Level I AA Students will:** **EE3.NBT.2.** Add **or** subtract within 50 using strategies or algorithms.
3.NBT.E.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of multiplication.	**EE3.NBT.E.3** Match a given multiple of ten to a visual model.	**Level IV AA Students will:** **EE3.NBT.3.** Multiply one digit whole numbers by 10. **Level III AA Students will:** **EE3.NBT.3.** Match a given multiple of ten to a visual model. **Level II AA Students will:** **EE3.NBT.3.** Create groups of ten (e.g., manipulatives). **Level I AA Students will:** **EE3.NBT.3.** When given a visual model, show groups of ten.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Numbers and Operations – Fractions	**Grade 3**	
Develop understanding of fractions as numbers. (F) (Limited to denominators 2, 3, 4, 6, and 8) *use horizontal fractions **3.NF.F.1** Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*.	**EE3.NF.F.1** Create a whole using halves, thirds and fourths.	**Level IV AA Students will:** **EE3.NF.F.1** Identify a given fractional part of a whole (i.e.., ½, ⅓, ¼). **Level III AA Students will:** **EE3.NF.F.1** Create a whole using halves, thirds, and fourths. **Level II AA Students will:** **EE3.NF.F.3.** Given a whole using halves, thirds, and fourths, identify how many equal parts. **Level I AA Students will:** **EE3.NF.F.1** Identify the whole.
3.NF.F.2 Understand and represent fractions on a number line diagram. **A.** Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size 1/*b* and that the endpoint of the part based at 0 locates the number 1/*b* on the number line. **B.** Represent a fraction *a*/*b* on a number line diagram by marking off a lengths 1/*b* from	**EE3.NF.F.2** Identify fractions with a denominator of 2, 3, & 4 on a number line.	**Level IV AA Students will:** **EE3.NF.F.2** On an open number line place the fraction one-half **and** one-fourth. **Level III AA Students will:** **EE3.NF.F.2** Identify fractions with a denominator of 2, 3, 4 on a number line. **Level II AA Students will:** **EE3.NF.F.2** Identity 0, 1, and ½ on the number line. **Level I AA Students will:** **EE3.NF.F.2** Match fractions with their models on the number line.

0. Recognize that the resulting interval has size *a*/*b* and that its endpoint locates the number *a*/*b* on the number line.		
3.NF.F.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. **A.** Understand two fractions as equivalent if they are the same size, or the same point on a number line. **B.** Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. **C.** Compare two fractions with the same numerator or the same denominator, by reasoning about their size. **D.** Recognize that valid comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions.	**EE3.NF.F.3** Use a visual fraction model to compare fractions with denominators of 2, 3, & 4.	**Level IV AA Students will:** **EE3.NF.F.3** Use a visual fraction model to compare fractions with denominators of 2, 3, & 4. **Level III AA Students will:** **EE3.NF.F.3** Use a visual fraction model to identify fractions with denominators of 2, 3, & 4. **Level II AA Students will:** **EE3.NF.F.3** Use a visual fraction model to compare one whole **and** one half. **Level I AA Students will:** **EE3.NF.F.3** Use a visual fraction model to identify one whole **and** one half.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Measurement and Data	**Grade 3**	

Solve problems involving measurement and estimation of intervals of time, liquid, volumes and masses of objects. (G) **3.MD.G.1** Use analog clocks to tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes.	**EE3.MD.G.1** Tell **or** write time to the half-hour using an analog clock **or** digital clock.	**Level IV AA Students will:** **EE3.MD.G.1** Tell **or** write time from an analog **or** digital clock in five minute increments. **Level III AA Students will:** **EE3.MD.G.1** Tell **or** write time to the half-hour using an analog clock **or** digital clock. **Level II AA Students will:** **EE3.MD.G.1** Using an analog or digital clock, tell time to the hour. **Level I AA Students will:** **EE3.MD.G.1** Identify which digit(s) or hand marks the half-hour on a clock.
3.MD.G.2 Measure and estimate liquid volumes and masses of objects using grams (*g*), kilograms (*kg*), and liters (*L*). (Excludes compound units such as cm^3 and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. (Excludes multiplicative comparison problems involving notions of "times as much.")	**EE3.MD.G.2** Identify standard units of measure for mass and liquid using grams (g) and liters (L).	**Level IV AA Students will:** **EE3.MD.G.2.** Add **or** subtract like units of measurement (i.e., grams (g) and liters (L) for mass and liquid. **Level III AA Students will:** **EE3.MD.G.2** Identify standard units of measure for mass and liquid using grams (g) and liters (L). **Level II AA Students will:** **EE3.MD.G.2** Select the appropriate tool to measure a solid **or** a liquid. **Level I AA Students will:** **EE3.MD.G.2** Match a liquid to the correct measurement unit (e.g., liter).
Represent and interpret data. (H) **3.MD.H.3** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled graphs.	**EE3.MD.H.3** Use a completed picture graph **or** bar graph to determine which has more and which has less (e.g., colors, weather, candy, shoes, height).	**Level IV AA Students will:** **EE3.MD.H.3** Compare data on a completed picture graph **or** bar graph to tell how many more and how many less. **Level III AA Students will:** **EE3.MD.H.3** Use a completed picture graph **or** bar graph to determine which has more and which has less (e.g., colors, weather, candy, shoes, height). **Level II AA Students will:** **EE3.MD.H.3** Use a picture graph **or** bar graph to sort a given data set (e.g., colors, weather, candy, shoes, height). **Level I AA Students will:** **EE3.MD.H.3** Use a picture graph **or** bar graph to sort 2 given data sets (e.g., colors, weather, candy, shoes, height).

3.MD.H.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Use the data to create a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	**EE3.MD.H.4** Use a ruler to measure objects to the nearest inch.	**Level IV AA Students will:** **EE3.MD.H.4** Use a ruler to measure objects to the nearest half-inch. **Level III AA Students will:** **EE3.MD.H.4** Use a ruler to measure objects to the nearest inch. **Level II AA Students will:** **EE3.MD.H.4** Given a picture model, interpret the given measurement for the object to the nearest inch. **Level I AA Students will:** **EE3.MD.H.4** Select an appropriate tool for measuring length.
Geometric measurement: understand concepts of area and relate area to multiplication and addition. (I) **3.MD.I.5** Understand area as an attribute of plane figures and understand concepts of area measurement, such as square units without gaps or overlaps.	**EE3.MD.I.5** Identify the length and width of a rectangle.	**Level IV AA Students will:** **EE3.MD.I.5** Label the length **or** width of a rectangle. **Level III AA Students will:** **EE3.MD.I.5** Identify the length **and** width of a rectangle. **Level II AA Students will:** **EE3.MD.I.5** Identify the length **or** width of a rectangle. **Level I AA Students will:** **EE3.MD.I.5** Identify a rectangle.
3.MD.I.6 Measure areas by counting unit squares (*square cm*, *square m*, *square in*, *square ft*, and improvised units). **3.MD.I.7** Relate area to the operations of multiplication and addition. **A.** Find the area of a rectangle with whole-number side lengths (dimensions) by multiplying them. Show that this area is the same as when counting unit squares. **B.** Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. **C.** Use area models to represent the distributive property in mathematical reasoning. Use tiling to show in a concrete case that the area of a rectangle with	**EE3.MD.I.6-7** Find the area of rectangles with whole number side lengths by counting unit squares of an area up to 30.	**Level IV AA Students will:** **EE3.MD.6-7** Find the length **and** width of a rectangle using unit squares of an area up to 30. **Level III AA Students will:** **EE3.MD.6-7** Find the area of rectangles with whole number side lengths by counting unit squares of an area up to 30. **Level II AA Students will:** **EE3.MD.6-7** Find the area of rectangles with whole number side lengths by counting unit squares of an area up to 20. **Level I AA Students will:** **EE3.MD.6-7** Find the area of rectangles with whole number side lengths by counting unit squares of an area up to 10.

whole-number side lengths *a* and *b* + *c* is the sum of *a* × *b* and *a* × *c*.		
Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. (J) **3.MD.J.8** Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	**EE3.MD.J.8** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Geometry	**Grade 3**	
Reason with shapes and their attributes. (K) **3.G.K.1** Use attributes of quadrilaterals to classify rhombuses, rectangles, and squares. Understand that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	**EE3.G.K.1** Identify rhombuses, rectangles, **and** squares.	**Level IV AA Students will:** **EE3.G.K.1** Compare rhombuses, rectangles, **and** squares. **Level III AA Students will:** **EE3.G.K.1** Identify rhombuses, rectangles, **and** squares. **Level II AA Students will:** **EE3.G.K.1** Identify rhombuses, rectangles, **or** squares. **Level I AA Students will:** **EE3.G.K.1** When given a set of shapes, match like shapes (e.g., rhombuses, rectangles, **and** squares).
3.G.K.2 Partition rectangles, regular polygons, and circles into parts with equal areas. Express the area of each part as a unit fraction of the whole.	**EE3.G.K.2** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Operations and Algebraic Thinking	**Grade 4**	
Use the four operations with whole numbers to solve problems. (A) **4.OA.A.1** Intentionally removed in general ed. standard.	**EE4.OA.A.1 Intentionally removed.**	
4.OA.A.2 Multiply or divide to solve word problems involving multiplicative comparison, by using strategies including, but not limited to, drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. **4.OA.A.3** Solve multi-step word problems posed with whole numbers, including problems in which remainders must be interpreted. **A.** Represent these problems using equations with a letter standing for the unknown quantity. **B.** Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	**EE4.OA.A.2-3** Solve given multiplication and division problems using appropriate strategies. *This standard is intentionally repeated from **3.OA.A.3**.	** Standard 4.OA.2-3 were combined due to the similar nature of solving word problems. **Level IV AA Students will:** **EE4.0A.A.2-3** Match a given multiplication **or** division equation with an appropriate one-step word problem. **Level III AA Students will:** **EE4.0A.A.2-3** Solve given multiplication **and** division problems using appropriate strategies. **Level II AA Students will:** **EE4.0A.A.2-3** Solve given multiplication **or** division problems using appropriate modeling strategies. **Level I AA Students will:** **EE4.0A.A.2-3** Identify an equation as a multiplication **or** division problem.
Gain familiarity with factors and multiples. (B) **4.OA.B.4** Demonstrate an understanding of factors and multiples. **A.** Find all factor pairs for a whole number in the range 1-100. **B.** Recognize that a whole number is a multiple of each of its factors. **C.** Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. **D.** Determine whether a given whole number in the range 1-100 is prime or composite.	**EE.4.OA.B.4** Identify the first five multiples of 1, 2, 5, and 10.	**Level IV AA Students will:** **EE.4.OA.B.4** Identify the first ten multiples of 1, 2, 5, **and** 10. **Level III AA Students will:** **EE.4.OA.B.4** Identify the first five multiples of 1, 2, 5, **and** 10. **Level II AA Students will:** **EE.4.OA.B.4** Identify the first five multiples of 1 **and** 10, as well as 2 **o**r 5. **Level I AA Students will:** **EE.4.OA.B.4** Identify the first five multiples of 1 **and** 10.

Generate and analyze patterns. (C) **4.OA.C.5** Given a pattern, explain the rule that the pattern follows and extend the pattern. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	**EE4.OA.C.5** Identify arithmetic patterns in addition and multiplication. *This benchmark is intentionally a repeat of **EE3.OA.D.9.**	**Level IV AA Students will:** **EE4.OA.C.5** Expand arithmetic patterns in addition **and** multiplication. **Level III AA Students will:** **EE4.OA.D.5** Identify arithmetic patterns in addition **and** multiplication. **Level II AA Students will:** **EE4.OA.C.5** Expand an arithmetic pattern in addition **or** multiplication. **Level I AA Students will:** **EE4.OA.C.5** Identify an arithmetic pattern in addition **or** multiplication.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Number and Operations Base Ten	**Grade 4**	
Generalize place value understanding for multi-digit whole numbers. (D) **(limited to numbers less than or equal to 1,000,000)** **4.NBT.D.1** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.	**EE4.NBT.D.1** Recognize the value of the number in the ones, tens, and hundreds places. [Extended expectations in this domain are limited to whole numbers up to but not including 1,000].	**Level IV AA Students will:** **EE4.NBT.D.1.** Recognize the value of the number in the tens place is greater than the number in the ones place. **Level III AA Students will:** **EE4.NBT.D.1** Recognize the value of the number in the ones, tens, **and** hundreds places. **Level II AA Students will:** **EE4.NBT.D.1.** Recognize the value of the number in the ones, tens, **or** hundreds places. **Level I AA Students will:** **EE4.NBT.D.1.** Identify the digits in the ones, tens, **and** hundreds places.
4.NBT.D.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols.	**EE4.NBT.D.2** Compare 2 multi-digit numbers within one thousand. [Extended expectations in this domain are limited to whole numbers up to but not including 1,000].	**Level IV AA Students will:** **EE4.NBT.D.2** Use symbols to compare 2 multi-digit numbers within one thousand (<, >, =). **Level III AA Students will:** **EE4.NBT.D.2** Compare 2 multi-digit numbers within one thousand. **Level II AA Students will:** **EE4.NBT.D.2** Compare 2 multi-digit numbers within one hundred. **Level I AA Students will:** **EE4.NBT.D.2** Compare 2 two-digit numbers within fifty.
4.NBT.D.3 Use place value understanding to round multi-digit whole numbers to any place.	**EE4.NBT.D.3** Round two-digit numbers from 10-100, to the nearest 10. [Extended expectations in this domain are limited to whole	**Level IV AA Students will:** **EE4.NBT.D.3** Round three-digit numbers to the nearest 100. **Level III AA Students will:** **EE4.NBT.D.3** Round two-digit numbers from 10-100, to the nearest 10. **Level II AA Students will:** **EE4.NBT.D.3** Round two-digit numbers from 10-50, to the nearest 10. **Level I AA Students will:**

	numbers up to but not including 1,000].	**EE4.NBT.D.3** When given numbers 1-9, determine if the given number is rounded down to 0 or up to 10.
Use place value understanding and properties of operations to perform multi-digit arithmetic. (E) **4.NBT.E.4** Add and subtract multi-digit whole numbers using place value strategies including the standard algorithm.	**EE4.NBT.E.4** Add or subtract within 1000 using strategies **or** algorithms.	**Level IV AA Students will:** **EE4.NBT.E.4** Add **and** subtract within 1000 using strategies **or** algorithms. **Level III AA Students will:** **EE4.NBT.E.4** Add **or** subtract within 1000 using strategies **or** algorithms. **Level II AA Students will:** **EE4.NBT.E.4** Add **and** subtract within 100 using strategies **or** algorithms. **Level I AA Students will:** **EE4.NBT.E.4.** Add **or** subtract within 100 using strategies **or** algorithms.
4.NBT.E.5 Use strategies based on place value and the properties of multiplication to: **A.** Multiply a whole number of up to four digits by a one-digit whole number. **B.** Multiply a pair of two-digit numbers. **C.** Use appropriate models to explain the calculation, such as by using equations, rectangular arrays, and/or area models.	**EE4.NBT.E.5** Multiply one digit by two digit numbers by using arrays, equations, or models.	**Level IV AA Students will:** **EE4.NBT.E.5** Multiply one digit by three digit numbers. **Level III AA Students will:** **EE4.NBT.E.5** Multiply one digit by two digit numbers by using arrays, equations, **or** models. **Level II AA Students will:** **EE4.NBT.E.5** Build **and** use an array to demonstrate a one digit by one digit multiplication problem. **Level I AA Students will:** **EE4.NBT.E.5** Use a multiplication table to multiply one digit numbers with one digit numbers.
4.NBT.E.6 Use strategies based on place value, the properties of multiplication, and/or the relationship between multiplication and division to find quotients and remainders with up to four-digit dividends and one-digit divisors. Use appropriate models to explain the calculation, such as by using equations, rectangular arrays, and/or area models.	**EE4.NBT.E.6** Given a number up to 30, determine if a number is divisible by 5 and 10, using strategies, arrays **or** area models.	**Level IV AA Students will:** **EE4.NBT.E.6** Given a number up to 50, determine if a number is divisible by 2, 5, **and** 10. **Level III AA Students will:** **EE4.NBT.E.6** Given a number up to 30, determine if a number is divisible by 5 **and** 10, using strategies, arrays **or** area models. **Level II AA Students will:** **EE4.NBT.E.6** Use repeated addition to solve a given division problem with dividends to 20. **Level I AA Students will:** **EE4.NBT.E.6** When given multiples of 10 break it into equal groups of 5 or 10.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Number and Operations – Fractions	**Grade 4**	
Extend understanding of fraction equivalence and ordering. (F) (limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100) **4.NF.F.1** Explain why a fraction a/b is equivalent to a fraction ($n \times a$)/($n \times b$) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. **4.NF.F.2** Compare two fractions with different numerators and different denominators by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. A. Recognize that comparisons are valid only when the two fractions refer to the same whole. B. Record the results of comparisons with symbols >, =, or <. C. Justify the conclusions by using a visual fraction model. **Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. (G)** **4.NF.G.3** Understand a fraction *a*/*b* with *a* > 1 as a sum of unit fractions (1/*b*). **A.** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. **B.** Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions by using a visual fraction model. **C.** Add and subtract mixed numbers with like denominators by replacing each mixed number with an equivalent fraction, and/or by using properties of addition and the relationship between addition and subtraction. **D.** Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.	**EE4.NF.F.1-3** Use a visual fraction model to identify fractions with denominators of 2,3,4,5, and 10. [Extended expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 10].	**Level IV AA Students will:** **EE4.NF.F.1-3** Use a visual fraction model to compare equivalent fractions with denominators of 2, 3, 4, 5 and 10. **Level III AA Students will:** **EE4.NF.F.1-3** Use a visual fraction model to identify fractions with denominators of 2,3,4,5, and 10. **Level II AA Students will:** **EE4.NF.F.1-3** Use a visual fraction model to compare one whole and one half. **Level I AA Students will:** **EE4.NF.F.1-3** Use a visual fraction model to identify one whole and one half.
4.NF.G.4 Apply and extend an understanding of multiplication by multiplying a whole number and a fraction. **A.** Understand a fraction *a*/*b* as a multiple of 1/*b*. **B.** Understand a multiple of *a*/*b* as a multiple of 1/*b*, and use this understanding to multiply a fraction by a whole number. **C.** Solve real-world problems involving multiplication of a fraction by a whole number, using visual fraction models and equations to represent the problem.	**EE4.NF.G.4** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

Understand decimal notation for fractions and compare decimal fractions. (H) **4.NF.H.5** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.	**EE4.NF.H.5** Match a fraction with a denominator of ten with its equivalent model.	**Level IV AA Students will:** **EE4.NF.H.5** Match a fraction with a denominator of one hundred with its equivalent model. **Level III AA Students will:** **EE4.NF.H.5** Match a fraction with a denominator of ten with its equivalent model. **Level II AA Students will:** **EE4.NF.H.5** Using a fraction model, compare fractions in units of ten. **Level I AA Students will:** **EE4.NF.H.5** Using a fraction model, identify fractions in units of ten.
4.NF.H.6 Use decimal notation for fractions with denominators 10 or 100. **4.NF.H.7** Compare and order decimal numbers to hundredths and justify by using concrete and visual models. Record the results of comparisons with the words "is greater than," "is equal to," "is less than," and with the symbols >, =, and <.	**EE4.NF.H.6-7** Identify the hundredths place.	**Level IV AA Students will:** **EE4.NF.H.6-7** Identify a fraction with a denominator of ten as a decimal. **Level III AA Students will:** **EE4.NF.H.6-7** Identify the hundredths place. **Level II AA Students will:** **EE4.NF.H.6-7** Identify the tenths place. **Level I AA Students will:** **EE4.NF.H.6-7** Identify a decimal.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Measurement and Data	**Grade 4**	
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. (I) **4.MD.I.1** Know relative sizes of measurement units within one system of units including, but not limited to, *km*, *m*, *cm*; *kg*, *g*; *lb*, *oz*.; *L*, *ml*; *hr*, *min*, *sec*; *ft*, *in*, *gal*, *qt*, *pt*, *c*. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. **4.MD.I.2** Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. **Assessment Boundary:** Use denominators of 2, 4, 8 and decimals up to hundredths.	objects using standard units within one system of units including, but not limited to, *km*, *m*, *cm*; *kg*, *g*; *lb*, *oz*.; *L*, *ml*; *hr*, *min*, *sec*; *ft*, *in*, *gal*, *qt*, *pt*, *c*.	**Level IV AA Students will:** **EE4.MD.I 1-2** Solve simple addition or subtraction problems using the same standard units of measurement including, but not limited to, *km*, *m*, *cm*; *kg*, *g*; *lb*, *oz*.; *L*, *ml*; *hr*, *min*, *sec*; *ft*, *in*, *gal*, *qt*, *pt*, *c*. **Level III AA Students will:** **EE4.MD.I 1-2** Measure objects using standard units within one system of units including, but not limited to, *km*, *m*, *cm*; *kg*, *g*; *lb*, *oz*.; *L*, *ml*; *hr*, *min*, *sec*; *ft*, *in*, *gal*, *qt*, *pt*, *c*. **Level II AA Students will:** **EE4.MD.I 1-2** Identify standard units of measure using objects within one system of units including, but not limited to, *km*, *m*, *cm*; *kg*, *g*; *lb*, *oz*.; *L*, *ml*; *hr*, *min*, *sec*; *ft*, *in*, *gal*, *qt*, *pt*, *c*. **Level I AA Students will:** **EE4.MD.I 1-2** Select the appropriate tool to measure a solid or a liquid.
4.MD.I.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	**EE4.MD.I.3** Find the perimeter of a rectangle within the range of 4-20.	**Level IV AA Students will:** **EE4.MD.I.3** Find the perimeter of a rectangle within the range of 4-50. **Level III AA Students will:** **EE4.MD.I.3** Find the perimeter of a rectangle within the range of 4-20. **Level II AA Students will:** **EE4.MD.I.3** Identify a strategy to find the perimeter of a rectangle. **Level I AA Students will** **EE4.MD.I.3** Identify the perimeter of a rectangle.

Represent and interpret data. (J) **4.MD.J.4** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	**EE4.MD. J.4** Given a line plot with whole numbers, place given half numbers to complete the line plot.	**Level IV AA Students will:** **EE4.MD. J.4** Make a line plot to display a data set of whole **and** half numbers. **Level III AA Students will:** **EE4.MD. J.4** Given a line plot with whole numbers, place given half numbers to complete the line plot. **Level II AA Students will:** **EE4.MD. J.4** Identify whole **and** half numbers on a line plot. **Level I AA Students will:** **EE4.MD. J.4** Identify a line plot.
Geometric measurement: understand concepts of angle and measure angles. (K) **4.MD.K.5** Regarding angles: **A.** Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint. **B.** Understand concepts of angle measurement. An angle is measured with reference to a circle with its center at the common endpoint of the rays.	**EE4.MD.K.5** Identify an angle.	**Level IV AA Students will:** **EE4.MD.K.5** Identify angles within a geometric shape. **Level III AA Students will:** **EE4.MD.K.5** Identify an angle. **Level II AA Students will:** **EE4.MD.K.5** Identify that two rays with a common endpoint form an angle. **Level I AA Students will:** **EE4.MD.K.5** Identify a ray.
4.MD.K.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	**EE4.MD.K.6** Identify the measurement of a labeled angle.	**Level IV AA Students will:** **EE4.MD.K.6** Measure **or** sketch angles of various sizes. **Level III AA Students will:** **EE4.MD.K.6** Identify the measurement of a labeled angle. **Level II AA Students will:** **EE4.MD.K.6** Identify that angles can be different sizes. **Level I AA Students will:** **EE4.MD.K.6** Identify an angle.
4.MD.K.7 Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems.	**EE4.MD.K.7** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Geometry	**Grade 4**	
Draw and identify lines and angles and classify shapes by properties of their lines and angles. (L) **4.G.L.1** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. **4.G.L.2** Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	**EE4.G.L.1-2** Identify points, lines, angles.	**Level IV AA Students will:** **EE4.G.L.1-2** Draw one of the following: point, line **or** angle. **Level III AA Students will:** **EE4.G.L.1-2** Identify points, lines, angles. **Level II AA Students will:** **EE4.G.L.1-2** Identify two of the following: point, line or angles. **Level I AA Students will:** **EE4.G.L1-2** Identify one of the following: point, line or angles.
4.G.L.3 Identify line-symmetric figures. Recognize and draw lines of symmetry for two-dimensional figures.	**EE4.G.L.3** Not applicable, skill is covered in fractions.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.

DRAFT 2020 WYOMING MATH EXTENDED STANDARDS AND ACHIEVEMENT LEVEL DESCRIPTORS

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Operations and Algebraic Thinking	**Grade 5**	
Write and interpret numerical expressions. (A) **5.OA.A.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. **5.OA.A.2** Write simple expressions requiring parentheses that record calculations with numbers, and interpret numerical expressions without evaluating them.	**EE5.OA.A.1-2** Identify the first step in solving a two-step number sentence using parentheses.	**Level IV AA Students will:** **EE5.OA.A.1-2** Solve the first step in a two-step number sentence with parentheses. **Level III AA Students will:** **EE5.OA.A.1-2** Identify the first step in solving a two-step number sentence using parentheses. **Level II AA Students will:** **EE5.OA.A.1-2** Identify parentheses in a number sentence. **Level I AA Students will:** **EE5.OA.A.1-2** Solve single digit addition **and** subtraction problems within a sum or difference of 10 to 20.
Analyze patterns and relationships. (B) **5.OA.B.3** Generate two numerical patterns with each pattern having its own rule. Explain informally the relationship(s) between corresponding terms in the two patterns. **A.** Form ordered pairs consisting of corresponding terms from the two patterns. **B.** Graph the ordered pairs on a coordinate plane.	**EE5.OA.B.3.a-b** Match a rule to its appropriate whole number pattern. *Removed coordinate plane from benchmark.	**Level IV AA Students will:** **EE5.OA.B.3.a-b** When given a one-step rule, extend the whole number pattern. **Level III AA Students will:** **EE5.OA.B.3.a-b** Match a rule to its appropriate whole number pattern. **Level II AA Students will:** **EE5.OA.B.3.a-b** Identify the given rule of a one-step whole number pattern. **Level I AA Students will:** **EE5.OA.B.3.a-b** Identify a whole number pattern.
Numbers and Operations in Base Ten	**Grade 5**	
Understand the place value system. (C) **5.NBT.C.1** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	**EE5.NBT.C.1** Identify the tenths, hundredths, and thousandths place value.	**Level IV AA Students will:** **EE5.NBT.C.1** Identify the value of the digit in the tenths place. **Level III AA Students will:** **EE5.NBT.C.1** Identify the tenths, hundredths, **and** thousandths place value. **Level II AA Students will:** **EE5.NBT.C.1** Identify the tenths **and** hundredths place value. **Level I AA Students will:** **EE5.NBT.C.1** Identify the tenths **or** hundredths place value.

5.NBT.C.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	**EE 5.NBT.C.2** Order multiples of thousands ranging from 1000-9000, from least to greatest.	**Level IV AA Students will:** **EE5.NBT.C.2** Using multiples of ten, hundreds, or thousands, and extend a pattern within the range of 10 to 9000. **Level III AA Students will:** **EE 5.NBT.C.2** Order multiples of thousands ranging from 1000-9000, from least to greatest. **Level II AA Students will:** **EE 5.NBT.C.2** Order multiples of hundreds ranging from 100-900, from least to greatest. **Level I AA Students will:** **EE 5.NBT.C.2** Order multiples of ten ranging from 10-90, from least to greatest.
5.NBT.C.3 Read, write, and compare decimals to thousandths. **A.** Read and write decimals to thousandths using base-ten numerals, number names, and expanded form. **B.** Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols. **5.NBT.C.4** Use place value understanding to round decimals to any place to a given place. **Assessment Boundary:** Given place value to the thousandths.	**EE 5.NBT.C.3-4** Read and write decimals to the tenths place.	**Level IV AA Students will:** **EE 5.NBT.C.3-4** Compare two decimal models to the tenths place using >, =, **and** < symbols. **Level III AA Students will:** **EE 5.NBT.C.3-4** Read **and** write decimals to the tenths place. **Level II AA Students will:** **EE 5.NBT.C.3-4** Read **or** write a decimal to the tenths place. **Level I AA Students will:** **EE 5.NBT.C.3-4** Identify a decimal.
Perform operations with multi-digit whole numbers and with decimals to hundredths. (D) **5.NBT.D.5** Multiply multi-digit whole numbers using place value strategies including the standard algorithm. **5.NBT.D.6** Find whole-number quotients with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of multiplication, and/or the relationship between multiplication and division, including the standard algorithm. Use appropriate models to Illustrate and explain the calculation, such as equations, rectangular arrays, and/or area models. **Assessment Boundary:** The standard algorithm for division will not be assessed.	**EE5.NBT.D.5-6** Multiply and divide three digit by one digit numbers with no remainders.	**Level IV AA Students will:** **EE5.NBT.D.5-6** Multiply **and** divide four digit by one digit numbers with no remainders. **Level III AA Students will:** **EE5.NBT.D.5-6** Multiply **and** divide three digit by one digit numbers with no remainders. **Level II AA Students will:** **EE5.NBT.D.5-6** Multiply **and** divide two digit by one digit numbers with no remainders. **Level I AA Students will:** **EE5.NBT.D.5-6** Multiply **and** divided one digit by one digit numbers with no remainders.

5.NBT.D.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	**EE5.NBT.D.7** Add decimals in the tenths place.	**Level IV AA Students will:** **EE5.NBT.D.7** Add **and** subtract decimals in the tenths place. **Level III AA Students will:** **EE5.NBT.D.7** Add decimals in the tenths place. **Level II AA Students will:** **EE5.NBT.D.7** Match decimal models of addition **and** subtraction to their sum or difference. **Level I AA Students will:** **EE5.NBT.D.7** Identify decimals to the tenths place.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Number and Operations - Fractions	**Grade 5**	
Use equivalent fractions as a strategy to add and subtract fractions. (E) **5.NF.E.1** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. **5.NF.E.2** Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.	**5.NF.E.1-2** Add fractions with like denominators (halves, thirds, fourths).	**Level IV AA Students will:** EE5.NF.E.1-2 Add **and** subtract fractions with like denominators (halves, thirds, fourths). **Level III AA Students will:** **EE5.NF.E.1-2** Add fractions with like denominators (halves, thirds, fourths). **Level II AA Students will:** **EE5.NF.E.1-2** Identify halves, thirds, **and** fourths. **Level I AA Students will:** **EE5.NF.E.1-2** Match halves, thirds, and fourths. **Word problems are not applicable to this group of students

Apply and extend previous understandings of multiplication and division to multiply and divide fractions. (F) **5.NF.F.3** Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers by using visual fraction models or equations to represent the problem. **5.NF.F.4** Extend the concept of multiplication to multiply a fraction or whole number by a fraction. **A.** Recognize the relationship between multiplying fractions and finding the areas of rectangles with fractional side lengths. **B.** Interpret multiplication of a fraction by a whole number and a whole number by a fraction and compute the product. **C.** Interpret multiplication in which both factors are fractions less than one and compute the product. **5.NF.F.5** Justify the reasonableness of a product when multiplying with fractions. **A.** Estimate the size of the product based on the size of the two factors. **B.** Explain why multiplying a given number by a number greater than 1 (improper fractions, mixed numbers, whole numbers) results in a product larger than the given number. **C.** Explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number. **D.** Explain why multiplying the numerator and denominator by the same number has the same effect as multiplying the fraction by 1. **5.NF.F.6** Solve real world problems involving multiplication of fractions and mixed numbers by using visual fraction models or equations to represent the problem. **5.NF.F.7** Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations. **A.** Interpret division of a unit fraction by a non-zero whole number and compute the quotient. **B.** Interpret division of a whole number by a unit fraction and compute the quotient. **C.** Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions by using visual fraction models and equations to represent the problem.	**EE5.NF.F.3-7** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Measurement and Data	**Grade 5**	
Convert like measurement units within a given measurement system. (G) **5.MD.G.1** Solve multi-step real world problems by converting among different-sized standard measurement units within a given measurement system.	**EE5.MD.G.1** Categorize measurement including *m*, *cm*; *kg*, *g*; *lb*, *oz*.; *L*, *gal*, *qt*, *pt*, *c*.	**Level IV AA Students will:** **EE5.MD.G.1** Order like units of measurement from greatest to least including but not limited to, *km*, *m*, *cm*; *kg*, *g*; *lb*, *oz*.; *L*, *ml*; *hr*, *min*, *sec*; *ft*, *in*, *gal*, *qt*, *pt*, *c*. **Level III AA Students will:** **EE5.MD.G.1** Categorize like units of measurement including but not limited to, *km*, *m*, *cm*; *kg*, *g*; *lb*, *oz*.; *L*, *ml*; *hr*, *min*, *sec*; *ft*, *in*, *gal*, *qt*, *pt*, *c*. **Level II AA Students will:** **EE5.MD.G.1** Match 5 units with its appropriate measurement tool. **Level I AA Students will:** **EE5.MD.G.1** Identify 5 units of measurement.
Represent and interpret data. (H) **5.MD.H.2** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions to solve problems involving information presented in line plots.	**EE5.MD.H.2** Place given wholes, halves, and fourths on a line plot.	**Level IV AA Students will:** **EE5.MD.H.2** Make a line plot to display a data set of wholes, halves, **and** fourths. **Level III AA Students will:** **EE5.MD.H.2** Place given wholes, halves, **and** fourths on a line plot. **Level II AA Students will:** **EE5.MD.H.2** Identify whole, halves, **and** fourths on a line plot. **Level I AA Students will:** **EE5.MD.H.2** Identify wholes **and** halves line plot.

Geometric measurement: understand concepts of volume and relate volume to multiplication and addition. (I) **5.MD.I.3** Recognize volume as an attribute of three-dimensional figures and understand concepts of volume measurement such as "unit cube" and a volume of *n* cubic units. **5.MD.I.4** Measure volumes by counting unit cubes, using *cubic cm*, *cubic in*, *cubic ft*, and improvised units. **5.MD.I.5** Relate volume to the operations of multiplication and solve real world and mathematical problems involving volume. **A.** Find the volume of a right rectangular prism with whole number dimensions by multiplying them. Show that this volume is the same as when counting unit cubes. **B.** Find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems given the formulas *V* =(*l*)(*w*)(*h*) and *V* = (*B*)(*h*) for rectangular prisms.	**EE5.MD.I.3-5** Determine the volume of a rectangular prism by counting unit cubes up to a total volume of 30.	**Level IV AA Students will:** **EE5.MD.I.3-5** Determine that volume can be measured in different units: including but not limited to *cubic cm*, *cubic in*, *cubic ft.* **Level III AA Students will:** **EE5.MD.I.3-5** Determine the volume of a rectangular prism by counting unit cubes up to a total volume of 30. **Level II AA Students will:** **EE5.MD.I.3-5** Identify three-dimensional figures have volume. **Level I AA Students will:** **EE5.MD.I.3-5** Identify three-dimensional figures.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Geometry	**Grade 5**	
Graph points on the coordinate plane to solve real-world and mathematical problems. (J) **5.G.J.1** Understand a coordinate system. **A.** The *x*- and *y*- axes are perpendicular number lines that intersect at 0 (the origin). **B.** Any point on the coordinate plane can be represented by its coordinates. **C.** The first number in an ordered pair is the *x*-coordinate and represents the horizontal distance from the origin. **D.** The second number in an ordered pair is the *y*-coordinate and	**EE5.G.J.1-2** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

represents the vertical distance from the origin. **5.G.J.2** Plot and interpret points in the first quadrant of the coordinate plane to represent real-world and mathematical situations.		
Classify two-dimensional figures into categories based on their properties. (K) **5.G.K.3** Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. **Assessment Boundary:** Use polygons only. **5.G.K.4** Classify polygons in a hierarchy based on properties.	**EE5.G.K.3-4** Sort attributes of quadrilaterals and triangles.	**Level IV AA Students will:** **EE5.G.K.3-4** Compare attributes of quadrilaterals **and** triangles. **Level III AA Students will:** **EE5.G.K.3-4** Sort attributes of quadrilaterals **and** triangles. **Level II AA Students will:** **EE5.G.K.3-4** Identify attributes of quadrilaterals **and** triangles. **Level I AA Students will:** **EE5.G.K.3-4** Identify quadrilaterals **and** triangles. ** Standards 5.G.3 and 5.G.4 require complementary skills; therefore, they were combined.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Ratios and Proportional Relationships	**Grade 6**	
Understand ratio concepts and use ratio reasoning to solve problems. (A) **6.RP.A.1** Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.	**EE6.RP.A.1** Describe relationships between two quantities.	**Level IV AA Students will:** **EE6.RP.A.1** Use ratio language to describe a relationship using numbers **or** objects. **Level III AA Students will:** **EE6.RP.A.1** Describe ratio relationships between two quantities. **Level II AA Students will:** **EE6.RP.A.1** Match items according to a simple ratio relationship. **Level I AA Students will:** **EE6.RP.A.1.** Identify a one-to-one relationship. (Indicate each object using touch, hand over hand, eye gaze, etc.).
6.RP.A.2 Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship.	**EE6.RP.A.2** Understand a unit rate can be expressed in two forms. a/b associated with a ratio a:b with $b \neq 0$.	**Level IV AA Students will:** **EE6.RP.A.2** Determine the unit rate between two quantities. **Level III AA Students will:** **EE6.RP.A.2** Understand a unit rate can be expressed in two forms. a/b associated with a ratio a:b with $b \neq 0$. **Level II AA Students will:** **EE6.RP.A.2** Match equal unit rates in the form of a/b or a:b using numerical values. **Level I AA Students will:** **EE6.RP.A.2** When given a unit rate, use objects to represent the ratio.
6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems. **A.** Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. **B.** Solve unit rate problems including those involving unit pricing and constant speed. **C.** Understand that a percentage is a rate per 100 and use this to solve problems involving	**EE6.RP.A.3** Understand that a percentage is a rate per 100 involving wholes, parts, and percentages.	**Level IV AA Students will:** **EE6.RP.A.3** Understand that a percentage is a rate per 100 and apply to solve real world problems involving wholes, parts, and percentages. **Level III AA Students will:** **EE6.RP.A.3** Understand that a percentage is a rate per 100 involving wholes, parts, and percentages. **Level II AA Students will:** **EE6.RP.A.3** Recognize a percent from a rate per 100. **Level I AA Students will:** **EE6.RP.A.3** Select the percent sign from a variety of math symbols/signs.

wholes, parts, and percentages. **D.** Use ratio reasoning to convert measurement units; convert units appropriately when multiplying or dividing quantities.		
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
The Number System	**Grade 6**	
Apply and extend previous understandings of multiplication and division to divide fractions by fractions. (B) **6.NS.B.1** Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions by using visual fraction models and equations to represent the problem.	**EE6.NS.B.1** Use a fraction model to compute the quotient of a natural number, up to 20, divided by a fraction. Limit divisors to ¼, ⅓, ½.	**Level IV AA Students will:** **EE6.NS.B.1** Solve a word problem using a fraction model to compute the quotient of a natural number, up to 20, divided by a fraction. Limit divisors to ¼, ⅓, ½. **Level III AA Students will:** **EE6.NS.B.1** Use a fraction model to compute the quotient of a natural number, up to 20, divided by a fraction. Limit divisors to ¼, ⅓, ½. **Level II AA Students will:** **EE6.NS.B.1** Use a fraction model to divide a natural number, up to 10, into halves and quarters with no remainders. **Level I AA Students will:** **EE6.NS.B.1** Match a fraction to the corresponding model of the fraction.
Compute fluently with multi-digit numbers and find common factors and multiples. (C) **6.NS.C.2** Divide multi-digit numbers using efficient and generalizable procedures including, but not limited to the standard algorithm. **Assessment Boundary:** Use up to 5-digit dividend, 2-digit divisors.	**EE6.NS.C.2** Divide a two-digit number by a one-digit number without remainders.	**Level IV AA Students will:** **EE6.NS.C.2** Divide a three-digit number by a one- or two-digit numbers without remainders. **Level III AA Students will:** **EE6.NS.C.2** Divide a two-digit number, between 21 and 99, by a one-digit number without remainders. **Level II AA Students will:** **EE6.NS.C.2** Divide a two-digit number, up to 20, by a one-digit number without remainders. **Level I AA Students will:** **EE6.NS.C.2** Divide a one-digit number by a one-digit number without remainders.
6.NS.C.3 Add, subtract, multiply, and divide manageable multi-digit decimals using efficient and generalizable procedures including, but not limited to the standard algorithm for each operation.	**EE6.NS.C.3** Add and subtract two multi-digit numbers with decimals up to the hundredths place.	**Level IV AA Students will:** **EE6.NS.C.3** Multiply two multi-digit numbers with decimals up to the tenths place. **Level III AA Students will:** **EE6.NS.C.3** Add and subtract two multi-digit numbers with decimals up to the hundredths place. **Level II AA Students will:** **EE6.NS.C.3** Add and subtract two multi-digit numbers up to the tenths place without regrouping.

		Level I AA Students will: **EE6.NS.C.3** Add two multi-digit numbers up to the tenths place without regrouping.
6.NS.C.4 Find common factors and multiples using two whole numbers. **A.** Find the greatest common factor of two whole numbers less than or equal to 100. **B.** Find the least common multiple of two whole numbers less than or equal to 12. **C.** Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor.	**EE6.NS.C.4** Find common factors and multiples using two whole numbers. A.) Find the greatest common factor of two whole numbers less than or equal to 100 with factors of 2, 5, and/or 10. B.) Find the least common multiple of two whole numbers each of which is less than or equal to 10.	**Level IV AA Students will:** **EE6.NS.C.4** Use the distributive property to express a sum of two whole numbers 1–50 with a common factor as a multiple of a sum of two whole numbers with no common factor. **Level III AA Students will:** **EE6.NS.C.4** Find common factors and multiples using two whole numbers. A. Find the greatest common factor of two whole numbers less than or equal to 100 with factors of 2, 5, and 10. B. Find the least common multiple of two whole numbers each of which is less than or equal to 10. **Level II AA Students will:** **EE6.NS.C.4** List the factors of two whole numbers less than or equal to 50 with factors of 2, 5, and 10. **Level I AA Students will:** **EE6.NS.C.4** Identify multiples of 2, 5, and 10.
Apply and extend previous understandings of numbers to the system of rational numbers. (D) **6.NS.D.5** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values and use them to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	**EE6.NS.D.5** Using a model, locate positive and negative numbers and their opposite values.	**Level IV AA Students will:** **EE6.NS.D.5** Apply positive and negative numbers in real-world contexts. **Level III AA Students will:** **EE6.NS.D.5** Using a model, locate positive and negative numbers and their opposite values. **Level II AA Students will:** **EE6.NS.D.5** Using a model, locate positive and negative numbers and their opposite values. **Level I AA Students will:** **EE6.NS.D.5** Using a model, locate positive numbers.
6.NS.D.6 Extend the understanding of the number line to include all rational numbers and apply this concept to the coordinate plane. **A.** Understand the concept of opposite numbers, including zero, and their relative locations on the number line. **B.** Understand that signs of numbers in ordered pairs indicate locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by	**EE6.NS.D.6** When given a coordinate plane with a scale of 1, understand that signs of numbers in ordered pairs represent locations in quadrants.	**Level IV AA Students will:** **EE6.NS.D.6** When given an ordered pair with integers, find the position on a coordinate plane with a scale of 1. **Level III AA Students will:** **EE6.NS.D.6** When given a coordinate plane with a scale of 1, understand that signs of numbers in ordered pairs represent locations in quadrants. **Level II AA Students will:** **EE6.NS.D.6** When given an ordered pair (a,b), a and b > 0, understand the value of the numbers in the ordered pair represent positions (a,0) on the horizontal axis and (0,b) and the vertical axis. **Level I AA Students will:** **EE6.NS.D.6** Label the horizontal axis, vertical axis, and quadrants on a coordinate plane.

signs, the locations of the points are related by reflections across one or both axes. **C.** Find and position rational numbers on a horizontal or vertical number line diagram; find and position pairs of rational numbers on a coordinate plane.		
6.NS.D.7 Understand ordering and absolute value of rational numbers. **A.** Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. **B.** Write, interpret, and explain statements of order for rational numbers in real-world contexts. **C.** Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. **D.** Distinguish comparisons of absolute value from statements about order.	**EE6.NS.D.7** Understand ordering of rational numbers using a model.	**Level IV AA Students will:** **EE6.NS.D.7** Interpret statements of inequality using rational numbers in real-world contexts. **Level III AA Students will:** **EE6.NS.D.7** Understand ordering of rational numbers using a model. **Level II AA Students will:** **EE6.NS.D.7** Understand ordering of positive rational numbers using a model. **Level I AA Students will:** **EE6.NS.D.7** Understand ordering of whole numbers using a model.
6.NS.D.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Find distances between points with the same first coordinate or the same second coordinate; relate absolute value and distance.	**EE6.NS.D.8** Find the vertical and horizontal distance from (0,0) to given points in the coordinate plane.	**Level IV AA Students will:** **EE6.NS.D.8** Find the vertical and horizontal distance from (0, 0) to given points in the coordinate plane in a real-world context. **Level III AA Students will:** **EE6.NS.D.8** Find the vertical and horizontal distance from (0, 0) to given points in the coordinate plane. **Level II AA Students will:** **EE6.NS.D.8** Find the vertical or horizontal distance from (0, 0) to a given point in the coordinate plane. **Level I AA Students will:**

		EE6.NS.D.8 Identify (0,0) in a coordinate plane.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Expressions and Equations	**Grade 6**	
Apply and extend previous understandings of arithmetic to algebraic expressions. (E) **6.EE.E.1** Write and evaluate numerical expressions involving whole-number exponents.	**EE6.EE.E.1** Write a numerical expression using 2, 3, 4, and 5 as exponents.	**Level IV AA Students will:** **EE6.EE.E.1** Evaluate a numerical expression using 2 and 3 as exponents. **Level III AA Students will:** **EE6.EE.E.1** Write a numerical expression using 2, 3, 4, and 5 as exponents. **Level II AA Students will:** **EE6.EE.E.1** Match an exponential expression to its expanded form. **Level I AA Students will:** **EE6.EE.E.1** Identify the exponent in an exponential expression.
6.EE.E.2 Write, read, and evaluate expressions in which letters stand for numbers. **A.** Write expressions that record operations with numbers and with letters standing for numbers. **B.** Identify parts of an expression using mathematical terms (sum, difference, term, product, factor, quotient, coefficient, constant). **C.** Use Order of Operations to evaluate algebraic expressions at using positive rational numbers and whole-number exponents. Include expressions that arise from formulas in real-world problems.	**EE6.EE.E.2a** Evaluate an expression in which a letter stands for a number. **EE6.EE.E.2b** Use Order of Operations to list the sequence of operations needed to evaluate algebraic expressions with whole numbers.	**Level IV AA Students will:** **EE6.EE.E.2a** Write and evaluate an expression in which a letter stands for a number. **EE6.EE.E.2b** Use Order of Operations to list the sequence of operations needed to evaluate algebraic expressions with whole numbers and whole number exponents. **Level III AA Students will:** **EE6.EE.E.2a** Evaluate an expression in which a letter stands for a number. **EE6.EE.E.2b** Use Order of Operations to list the sequence of operations needed to evaluate algebraic expressions with whole numbers. **Level II AA Students will:** **EE6.EE.E.2a** Given an expression with an unknown, produce a model which represents the expression. **EE6.EE.E.2b** Use Order of Operations, not including exponents and parentheses, to list the sequence of operations needed to evaluate algebraic expressions with whole numbers. **Level I AA Students will:** **EE6.EE.E.2a** Use a picture to give meaning to a letter that represents a number. **EE6.EE.E.2b** Use Order of Operations, not including exponents and parentheses, to list the sequence of operations needed to evaluate algebraic expressions with whole numbers.
6.EE.E.3 Apply the properties of operations to generate equivalent expressions. **6.EE.E.4** Identify when two expressions are equivalent.	**EE6.E.E.3-4** When comparing two equivalent expressions, select which one property of operations is used.	**Level IV AA Students will:** **EE6.E.E.3-4** Formulate an expression that represents one of the properties of operations. **Level III AA Students will:** **EE6.E.E.3-4** When comparing two equivalent expressions, select which one property of operations is used. **Level II AA Students will:**

		EE6.E.E.3-4 When comparing two equivalent expressions, determine whether the distributive or commutative property is used. **Level I AA Students will:** **EE6.E.E.3-4** Match equivalent expressions using the commutative property.
Reason about and solve one-variable equations and inequalities. (F) **6.EE.F.5** Understand a solution to an equation or an inequality makes the equation or inequality true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	**EE6.EE.F.5** Use substitution to determine whether a given natural number in a specified set is a solution to an equation.	**Level IV AA Students will:** **EE6.EE.F.5** Use substitution to determine whether a given natural number in a specified set makes an equation or inequality true. **Level III AA Students will:** **EE6.EE.F.5** Use substitution to determine whether a given natural number in a specified set is a solution to an equation. **Level II AA Students will:** **EE6.EE.F.5** Use substitution to determine whether a given natural number in the set {1, 2, ...10} is a solution to an equation. **Level I AA Students will:** **EE6.EE.F.5** Determine whether a given list of statements is true or false. ex. 2 = 2 is true, 2 = 3 is false; ex. 1 elephant = 1 elephant is true
6.EE.F.6 Use variables to represent unknown numbers and write expressions when solving a real-world or mathematical problem.	**EE6.EE.F.6** When given a real-world problem, use a variable to represent an unknown number.	**Level IV AA Students will:** **EE6.EE.F.6** Use a variable to write an expression that represents a real-world problem. **Level III AA Students will:** **EE6.EE.F.6** When given a real-world problem, use a variable to represent an unknown number. **Level II AA Students will:** **EE6.EE.F.6** Match models to a set of variables. **Level I AA Students will:** **EE6.EE.F.6** Match a model to a specified variable.
6.EE.F.7 Write and solve real-world and mathematical problems in the form of one-step, linear equations involving non negative rational numbers.	**EE6.EE.F.7** Recognize a one-step linear equations in a real-world context.	**Level IV AA Students will:** **EE6.EE.F.7** Solve a one-step linear equation in a real-world context. **Level III AA Students will:** **EE6.EE.F.7** Recognize a one-step linear equation in a real-world context. **Level II AA Students will:** **EE6.EE.F.7** Recognize a one-step linear equation involving natural numbers. **Level I AA Students will:** **EE6.EE.F.7** Identify a linear pattern.
6.EE.F.8 Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions;	**EE6.EE.F.8** Choose the one-step inequality that is modeled by a number line.	**Level IV AA Students will:** **EE6.EE.F.8** Illustrate the one-step inequality that is modeled by a number line. **Level III AA Students will:** **EE6.EE.F.8** Choose the one-step inequality that is modeled by a number line. **Level II AA Students will:** **EE6.EE.F.8** Identify one solution to a one-step inequality.

represent solutions of such inequalities on number line diagrams.		**Level I AA Students will:** **EE6.EE.F.8** Select inequalities from a given list that includes one-step equations.
Represent and analyze quantitative relationships between dependent and independent variables. (G) **6.EE.G.9** Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity (dependent variable), in terms of the other quantity (independent variable). Analyze their relationship using graphs and tables, and relate these to the equation.	**EE6.EE.G.9** Use a table of values to plot at least three integer ordered pairs on a coordinate plane.	**Level IV AA Students will:** **EE6.EE.G.9** Given a graph, complete a table of values. **Level III AA Students will:** **EE6.EE.G.9** Use a table of values to plot at least three integer ordered pairs on a coordinate plane. **Level II AA Students will:** **EE6.EE.G.9** Match a table of values to a graph. **Level I AA Students will:** **EE6.EE.G.9** Identify one ordered pair from a graph.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Geometry	**Grade 6**	
Solve real-world and mathematical problems involving area, surface area, and volume. (H) **6.G.H.1** Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	**EE6.G.H.1** Given formulas and a labeled diagram with height, find the area of triangles and quadrilaterals.	**Level IV AA Students will:** **EE6.G.H.1** Given formulas, find the area of triangles and quadrilaterals in a real-world context. **Level III AA Students will:** **EE6.G.H.1** Given formulas and a labeled diagram with height, find the area of triangles and quadrilaterals. **Level II AA Students will:** **EE6.G.H.1** Given formulas and a labeled diagram with height, find the area of a square and rectangle. **Level I AA Students will:** **EE6.G.H.1** Given a formula and a labeled diagram, find the area of a square.
6.G.H.2 Find the volume of a right rectangular prism with fractional edge lengths in the context of solving real-world and mathematical problems by applying the formulas $V = (l)(w)(h)$ and $V = (B)(h)$, and label with appropriate units.	**EE6.G.H.2** Given a labeled diagram, find the volume of a right rectangular prism with natural number side lengths by applying the formula $V = (l)(w)(h)$.	**Level IV AA Students will:** **EE6.G.H.2** Given a labeled diagram, find the volume of a right rectangular prism with natural numbers by applying the formula $V = (l)(w)(h)$, and label with appropriate units. **Level III AA Students will:** **EE6.G.H.2** Given a labeled diagram, find the volume of a right rectangular prism with natural number side lengths by applying the formula $V = (l)(w)(h)$. **Level II AA Students will:** **EE6.G.H.2** Given a labeled diagram, find the volume of a cube with natural numbers by applying the formula $V = (l)(w)(h)$.

		Level I AA Students will: **EE6.G.H.2** Given a diagram of a cube and rectangular prism, label the length, width, and height. **EE6.G.H.2** Given a labeled diagram, find the volume of a cube with natural numbers by applying the formula $V = (l)(w)(h)$.
6.G.H.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.	**EE6.G.H.3** Connect the coordinates of a rectangle and determine each side length.	**Level IV AA Students will:** **EE6.G.H.3** Draw quadrilaterals in the coordinate plane given coordinates for the vertices, and find the length of each side. **Level III AA Students will:** **EE6.G.H.3** Connect the coordinates of a rectangle and determine each side length. **Level II AA Students will:** **EE6.G.H.3** Determine each side length of a given rectangle on a coordinate plane. **Level I AA Students will:** **EE6.G.H.3** Given two adjacent sides of a plotted rectangle, complete the figure.
6.G.H.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures in the context of solving real-world and mathematical problems.	**EE6.G.H.4** Represent three-dimensional figures using nets made up of rectangles. Given formulas, use the nets to find the surface area.	**Level IV AA Students will:** **EE6.G.H.4** In a real-world context, represent three-dimensional figures using nets made up of rectangles. Given formulas, use the nets to find the surface area. **Level III AA Students will:** **EE6.G.H.4** Represent three-dimensional figures using nets made up of rectangles. Given formulas, use the nets to find the surface area. **Level II AA Students will:** **EE6.G.H.4** Represent a cube using a net made up of squares. Given formulas, use the net to find the surface area. **Level I AA Students will:** **EE6.G.H.4** Sort three-dimensional shapes and two-dimensional shapes.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Statistics and Probability	**Grade 6**	
Develop understanding of statistical variability. (I) **6.SP.I.1** Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.	**EE6.SP.I.1** Recognize a statistical question related to given data represented in a chart.	**Level IV AA Students will:** **EE6.SP.I.1** Given a list of questions about a data represented in a chart, sort the statistical questions from the non-statistical questions. **Level III AA Students will:** **EE6.SP.I.1** Recognize a statistical question related to given data represented in a chart. **Level II AA Students will:** **EE6.SP.I.1** Ask two questions about the data on a given graph or table. **Level I AA Students will:** **EE6.SP.I.1** Select a statement that relates to the given data.

6.SP.I.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. **6.SP.I.3** Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	**EE6.SP.I.2-3** Recognize data can be summarized using a single number to answer a statistical question.	**Level IV AA Students will:** **EE6.SP.I.2-3** Discuss the center, spread, and/or shape of the data as it relates to a statistical question. **Level III AA Students will:** **EE6.SP.I.2-3** Recognize data can be summarized using a single number to answer a statistical question. **Level II AA Students will:** **EE6.SP.I.2-3** Create a summarizing statement about the data provided. **Level I AA Students will:** **EE6.SP.I.2-3** Select a statement that summarizes the data provided.
Summarize and describe distributions. (J) **6.SP.J.4** Display numerical data in plots on a number line, including dot plots, stem-and-leaf plots, histograms, and box plots.	**EE6.SP.J.4** Recognize a visual example of a number line, dot plot (line plot), and histogram.	**Level IV AA Students will:** **EE6.SP.J.4** Display data using one of the following charts: number line, dot plot (line plot), or histogram. **Level III AA Students will:** **EE6.SP.J.4** Recognize a visual example of a number line, dot plot (line plot), and histogram. **Level II AA Students will:** **EE6.SP.J.4** Recognize a visual example of two of the following three representations: a number line, dot plot (line plot), or histogram. **Level I AA Students will:** **EE6.SP.J.4** Recognize a visual example of one of the following three representations: a number line, dot plot (line plot), or histogram.

6.SP.J.5 Summarize numerical data sets in relation to their real-world context. **A.** Report the sample size. **B.** Describe the context of the data under investigation, including how it was measured and its units of measurement. **C.** Find quantitative measures of center (median, mode and mean) and variability (range and interquartile range). Describe any overall pattern (including outliers, clusters, and distribution), with reference to the context in which the data was gathered. **D.** Justify the choice of measures of center (median, mode, or mean) based on the shape of the data distribution and the context in which the data was gathered.	**EE6.SP.J.5** Find data attributes which include outliers, clusters, sample size, mean, median, mode, and range from a visual representation of the data.	**Level IV AA Students will:** **EE6.SP.J.5** Find and discuss data attributes which include outliers, clusters, sample size, mean, median, mode, and range from a visual representation of the data in a real-world context. **Level III AA Students will:** **EE6.SP.J.5** Find data attributes which include outliers, clusters, sample size, mean, median, mode, and range from a visual representation of the data. **Level II AA Students will:** **EE6.SP.J.5** Identify any outliers, clusters, and the sample size from a visual representation. **Level I AA Students will:** **EE6.SP.J.5** Identify any outliers and clusters from a visual representation.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Ratios and Proportional Relationships	**Grade 7**	
Analyze proportional relationships and use them to solve real-world and mathematical problems. Analyze proportional relationships and use them to solve real-world and mathematical problems. (A) **7.RP.A.1** Compute unit rates, including those involving complex fractions, with like or different units.	**EE7.RP.A.1** Compute whole number unit rates with natural numbers.	**Level IV AA Students will:** **EE7.RP.A.1** Compute unit rates with natural numbers. **Level III AA Students will:** **EE7.RP.A.1** Compute whole number unit rates with natural numbers. **Level II AA Students will:** **EE7.RP.A.1** Recognize the components of a unit rate problem. **Level I AA Students will:** **EE7.RP.A.1** Select a unit rate from a list of rates.
7.RP.A.2 Recognize and represent proportional relationships between quantities. **A.** Decide whether two quantities in a table or graph are in a proportional relationship. **B.** Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. **C.** Represent proportional relationships with equations. **D.** Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.	**EE7.RP.A.2** Discuss a proportional relationship for a given representation.	**Level IV AA Students will:** **EE7.RP.A.2.** Decide whether two quantities in a table or graph are in a proportional relationship. **Level III AA Students will:** **EE7.RP.A.2** Discuss a proportional relationship for given multiple representations. **Level II AA Students will:** **EE7.RP.A.2** Select a proportional relationship for a given representation. **Level I AA Students will:** **EE7.RP.A.2** Define a proportional relationship.
7.RP.A.3 Solve multi step real world and mathematical problems involving ratios and percentages.	**EE7.RP.A.3** Solve a real-world two-step problem involving percentages.	**Level IV AA Students will:** **EE7.RP.A.3**.Solve a real-world two-step problem involving ratios and percentages. **Level III AA Students will:** **EE7.RP.A.3**.Solve a real-world two-step problem involving percentages. **Level II AA Students will:** **EE7.RP.A.3** Solve a two-step problem involving percentages. **Level I AA Students will:** **EE7.RP.A.3**. Given a list of numbers identify the numbers with the percent symbol.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
The Number System	**Grade 7**	
Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. (B) **7.NS.B.1** Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers. **A.** Describe situations in which opposite quantities combine to make zero (the additive identity). **B.** Understand that $p + q$ represents the distance $\|q\|$ from p whose placement is determined by the sign of q. Interpret sums of rational numbers by describing real-world contexts. **C.** Show that a number and its opposite have a sum of 0 (are additive inverses). Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Apply this principle in real-world contexts. **D.** Apply properties of addition as strategies to add and subtract rational numbers.	**EE7.NS.B.1** Understand that a number and its opposite sum to zero and a number plus zero does not change the value of the original number.	**Level IV AA Students will:** **EE7.NS.B.1** Use a model to illustrate that a number and its opposite sum to zero and a number plus zero does not change the value of the original number in a real world context. **Level III AA Students will:** **EE7.NS.B.1** Understand that a number and its opposite sum to zero and a number plus zero does not change the value of the original number. **Level II AA Students will:** **EE7.NS.B.1** When given a list of integer values, identify their opposites. **Level I AA Students will:** **EE7.NS.B.1** Identify opposite values of integers using a visual representation.
Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. **7.NS.B.2** Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. **A.** 1. Understand that the multiplicative inverse of a number is its reciprocal and their product is equal to one (the multiplicative identity). 2. Understand positive and negative sign rules for multiplying rational numbers. Interpret products of rational numbers by describing real-world contexts.	**EE7.NS.B.2a** Understand that a number and its reciprocal multiply to one and that a number multiplied by one does not change the value of the original number. **EE7.NS.B.2b** Understand positive and negative sign rules for multiplying and dividing	**Level IV AA Students will:** **EE7.NS.B.2a** Develop equations to illustrate that a number and its reciprocal multiply to one, or that a number times one does not change the value of the original number. **EE7.NS.B.2b** Understand positive and negative sign rules for multiplying and dividing integers where zero is not the divisor. Interpret products of integers by describing real-world contexts. **EE7.NS.B.2c** Simplify expressions using properties of multiplication to multiply of rational numbers. **EE7.NS.B.2d** Convert a rational number to a decimal. Recognize that the decimal is terminating or repeating. **Level III AA Students will:**

B. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers is a rational number. Recognize that if p and q are integers then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts. **C.** Apply properties of multiplication (commutative, associative, distributive, or properties of identity and inverse elements) to multiply and divide rational numbers. **D.** Convert a rational number to a decimal. Recognize that rational numbers can be written as fractions or decimal numbers that terminate or repeat.	integers where zero is not the divisor. **EE7.NS.B.2c** Simplify expressions using properties of multiplication of integers. **EE7.NS.B.2d** Convert a rational number to a decimal.	**EE7.NS.B.2a** Understand that a number and its reciprocal multiply to one and that a number multiplied by one does not change the value of the original number. **EE7.NS.B.2b** Understand positive and negative sign rules for multiplying and dividing integers where zero is not the divisor. **EE7.NS.B.2c** Simplify expressions using properties of multiplication of integers. **EE7.NS.B.2d** Convert a rational number to a decimal. **Level II AA Students will:** **EE7.NS.B.2a** Identify the reciprocal values of integers. **EE7.NS.B.2b** Understand positive and negative sign rules for multiplying or dividing integers where zero is not the divisor. **EE7.NS.B.2c** Simplify expressions. **EE7.NS.B.2d** Convert a rational number to a decimal, such as ¼, ½, 1/10. **Level I AA Students will:** **EE7.NS.B.2a** Identify the reciprocal values of positive integers. **EE7.NS.B.2b** Multiplying integers. **EE7.NS.B.2c** Identify expressions. **EE7.NS.B.2d** Match a decimal to its fractional equivalent.
7.NS.B.3 Solve real-world and mathematical problems involving the four arithmetic operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)	**EE7.NS.B.3** Solve two-step real-world mathematical problems involving the four arithmetic operations with rational numbers.	**Level IV AA Students will:** **EE7.NS.B.3** Solve multiple-step real-world mathematical problems involving the four arithmetic operations with rational numbers. **Level III AA Students will:** **EE7.NS.B.3** Solve two-step real-world mathematical problems involving the four arithmetic operations with rational numbers. **Level II AA Students will:** **EE7.NS.B.3** Solve one-step real-world mathematical problems involving the four arithmetic operations with rational numbers. **Level I AA Students will:** **EE7.NS.B.3** Solve one-step real-world mathematical problems involving the four arithmetic operations with integers.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Expressions and Equations	**Grade 7**	
Use properties of operations to generate equivalent expressions. (C) **7.EE.C.1** Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. **7.EE.C.2** Recognize that algebraic expressions may have a variety of equivalent forms that reveal different information, and determine an appropriate form for a given real-world situation.	**EE7.EE.C.1-2** Use the relationship within addition and/or multiplication to illustrate that two expressions are equivalent.	**Level IV AA Students will:** **EE7.EE.C.1-2** Use the relationship within addition and/or multiplication to illustrate that two expressions are equivalent for a given real-world situation. **Level III AA Students will:** **EE7.EE.C.1-2** Use the relationship within addition and/or multiplication to illustrate that two expressions are equivalent. **Level II AA Students will:** **EE7.EE.C.1-2** Match two equivalent expressions. **Level I AA Students will:** **EE7.EE.C.1-2** Identify if two expressions are equivalent.
Solve real-life and mathematical problems using numerical and algebraic expressions and equations. (D) **7.EE.D.3** Solve multi-step real-world and mathematical problems involving rational numbers. Include fraction bars as a grouping symbol.	**EE7.EE.D.3** Solve two-step real-world and mathematical addition and subtraction equations using rational numbers.	**Level IV AA Students will:** **EE7.EE.D.3** Solve two-step real-world and mathematical equations using rational numbers. **Level III AA Students will:** **EE7.EE.D.3** Solve two-step real-world and mathematical addition and subtraction equations using rational numbers. **Level II AA Students will:** **EE7.EE.D.3** Solve two-step real-world and mathematical equations using integers. **Level I AA Students will:** **EE7.EE.D.3** Solve one-step real-world and mathematical equations using integers.
7.EE.D.4 Apply the concepts of linear equations and inequalities in one variable to real-world and mathematical situations. **A.** Write and fluently solve linear equations of the form $ax + b = c$ and $a(x + b) = c$ where a, b, and c are rational numbers. **B.** Write and solve multi-step linear equations that include the use of the distributive property and combining like terms. Exclude equations that contain variables on both sides.	**EE7.EE.D.4** Solve one-step linear equations with one variable.	**Level IV AA Students will:** **EE7.EE.D.4** Solve one-step linear equations with one variable and graph. **Level III AA Students will:** **EE7.EE.D.4** Solve one-step linear equations with one variable. **Level II AA Students will:** **EE7.EE.D.4** Identify the solution to a one-step linear equation with one variable on a graph. **Level I AA Students will:** **EE7.EE.D.4** Identify a linear graph.

C. Write and solve two-step linear inequalities. Graph the solution set on a number line and interpret its meaning. **D.** Identify and justify the steps for solving multi-step linear equations and two-step linear inequalities.		
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Geometry	**Grade 7**	
Draw, construct, and describe geometrical figures and describe the relationships between them. (E) **7.G.E.1** Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing.	problems involving scale drawings of geometric figures, including measuring actual lengths and drawing of a triangle or a rectangle.	**Level IV AA Students will:** **EE7.G.E.1** Solve problems involving scale drawings of geometric figures, including measuring actual lengths and areas from a scale drawing of a regular shape. **Level III AA Students will:** **EE7.G.E.1** Solve problems involving scale drawings of geometric figures, including measuring actual lengths and areas from a scale drawing of a triangle or a rectangle. **Level II AA Students will:** **EE7.G.E.1** Given a scale drawings of geometric figure of a triangle, identify the base and height. **Level I AA Students will:** **EE7.G.E.1** Given a scale drawings of geometric figure of a rectangle, identify the base and height.
7.G.E.2 Draw geometric shapes with given conditions using a variety of tools (e.g., ruler and protractor, or technology). Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	**EE7.G.E.2** Construct triangles, given side lengths or angles measures.	**Level IV AA Students will:** **EE7.G.2** Construct triangles, given side lengths and angles measures. **Level III AA Students will:** **EE7.G.2** Construct triangles, given side lengths or angles measures. **Level II AA Students will:** **EE7.G.2** Identify triangle attributes. **Level I AA Students will:** **EE7.G.2** Determine if a given figure is a triangle.
7.G.E.3 Describe the two-dimensional figures that result from slicing three-dimensional figures parallel to the base, as in plane sections of right rectangular prisms and right rectangular pyramids.	**EE7.G.3** Match a two-dimensional shape with a three- dimensional shape that shares an attribute.	**Level IV AA Students will:** **EE7.G.3** Match slices of a three-dimensional figure to the whole three-dimensional figure. **Level III AA Students will:** **EE7.G.3** Match a two-dimensional shape with a three- dimensional shape that shares an attribute. **Level II AA Students will:** **EE7.G.3** Describe common attributes of two- and three-dimensional shapes.

		Level I AA Students will: **EE7.G.3** Replicate the two-dimensional cross-section of a three-dimensional shape (cube, pyramid, rectangular prism) when given a complete shape.
Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. (F) **7.G.F.4** Investigate the concept of circles. **A.** Demonstrate an understanding of the proportional relationships between diameter, radius, and circumference of a circle. **B.** Understand that pi is defined by the constant of proportionality between the circumference and diameter. **C.** Given the formulas for circumference and area of circles, solve real-world and mathematical problems.	**EE7.G.4 A-C.** Given the formulas for the area and circumference of a circle use them to solve problems.	**Level IV AA Students will:** **EE7.G.4** Given the formulas for the area and circumference of a circle, use them to solve problems for real-world problems. **Level III AA Students will:** **EE7.G.4**Given the formulas for the area and circumference of a circle, use them to solve problems. **Level II AA Students will:** **EE7.G.4 I**dentify the parts of a circle within the formulas for area and circumference. **Level I AA Students will:** **EE7.G.4** Identify the parts of a circle (diameter, radius, and circumference).
7.G.F.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	**EE7.G.5** Find the missing angle given a relationship (adjacent, supplementary, and complementary) of two angles and one of their measures.	**Level IV AA Students will:** **EE7.G.5** Find the missing angle given a relationship (adjacent, supplementary, vertical, and complementary) of two angles and one of their measures. **Level III AA Students will:** **EE7.G.5**-Find the missing angle given a relationship (adjacent, supplementary, and complementary) of two angles and one of their measures. **Level II AA Students will:** **EE7.G.5** Find the missing angle given a relationship (supplementary and complementary) of two angles and one of their measures. **Level I AA Students will:** **EE7.G.5** Find the missing angle given a relationship (complementary) of two angles and one of their measures.
7.G.F.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	**EE7.G.F.6** Solve mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, rectangles, cubes, rectangular prisms, triangular	**Level IV AA Students will:** **EE7.G.6** Solve real-world mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, rectangles, cubes, rectangular prisms, triangular prisms when given the formulas. **Level III AA Students will:** **EE7.G.6** Solve mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, rectangles, cubes, rectangular prisms, triangular prisms when given the formulas. **Level II AA Students will:**

	prisms when given the formulas.	**EE7.G.6** Solve mathematical problems involving area and volume of two- and three-dimensional objects composed of triangles, rectangles, cubes, rectangular prisms, triangular prisms when given the formulas. **Level I AA Students will:** **EE7.G.6** Recognize the difference between volume and area.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Statistics and Probability	**Grade 7**	
Use random sampling to draw inferences about a population. (G) **7.SP.G.1** Solve real-world and mathematical problems involving: **A.** Understand that a sample is a subset of a population. **B.** Differentiate between random and non-random sampling. **C.** Understand that generalizations from a sample are valid only if the sample is representative of the population. **D.** Understand that random sampling is used to gather a representative sample and tends to support valid inferences about the population.	**EE7.SP.G.1** Understand how sampling different populations can produce different results.	**Level IV AA Students will:** **EE7.SP.G.1** Select which sample provides for more valid generalization when provided with two sets of information based on different sample sizes. **Level III AA Students will:** **EE7.SP.G.1** Understand how sampling different populations can produce different results. **Level II AA Students will:** **EE7.SP.G.1** Understand that a sample is a group within a population. **Level I AA Students will:** **EE7.SP.G.1** Identify a group of a population.
7.SP.G.2 Draw inferences about a population by collecting multiple random samples of the same size to investigate variability in estimates of the characteristic of interest.	**EE7.SP.G.2** Collect data to answer a given question about a population's characteristics.	**Level IV AA Students will:** **EE7.SP.G.2** Collect sample data sets to answer questions about a population's characteristics in real-world settings. **Level III AA Students will:** **EE7.SP.G.2** Collect data to answer a given question about a population's characteristics. **Level II AA Students will:** **EE7.SP.G.2** Given data about a population answer a question about that data collection. **Level I AA Students will:** **EE7.SP.G.2** When given data, separate the population into multiple groups.
Draw informal comparative inferences about two populations. (H) **7.SP.H.3** Visually compare the centers, spreads, and overlap of two displays of	**EE7.SP.H.3** Compare two sets of data within a single data display (such as a picture graph, line plot, or bar	**Level IV AA Students will:** **EE7.SP.H.3** Compare data from two picture graphs, two line plots, or two bar graphs, and make three or more inferences based on the comparison. **Level III AA Students will:**

data (e.g., back-to-back stem and leaf plots, dot plots, histograms, box plots) that are graphed on the same scale and draw inferences about this data.	graph) and make two inferences based on the comparison.	**EE7.SP.H.3** Compare two sets of data within a single data display such as a picture graph, line plot, or bar graph, and make two inferences based on the comparison. **Level II AA Students will:** **EE7.SP.H.3** Summarize data on a graph or table in one way. **Level I AA Students will:** **EE7.SP.H.3** Read data from one given source.
7.SP.H.4 Given measures of center and variability (mean, median and/or mode; range, interquartile range, and/or standard deviation), for numerical data from random samples, draw appropriate informal comparative inferences about two populations.	**EE7.SP.H.4** Given measures of center and variability (mean, median and/or mode; and range), for numerical data make inferences about populations.	**EE7.SP.H.4 Level IV AA Students will:** Given measures of center and variability (mean, median and/or mode; range), for numerical questions make inferences about populations in real-world situations. **EE7.SP.H.4 Level III AA Students will:** Given measures of center and variability (mean, median and/or mode; and range), for numerical data make inferences about populations. **EE7.SP.H.4 Level II AA Students will:** Given measures of center and variability (mean, and range), for numerical data make inferences about populations. **EE7.SP.H.4 Level I AA Students will:** Given measures of center and variability (mean and range), for numerical data answer questions about populations.
Investigate chance processes and develop, use, and evaluate probability models. (I) **7.SP.I.5** Find and interpret the probability of a random event. Understand that the probability of a random event is a number between, and including 0 and 1 that expresses the likelihood of the event occurring.	**EE7.SP.I.5** Understand that the probability of a random event occurring expresses the likelihood of the event.	**EE7.SP.I.5 Level IV AA Students will:** Understand that the probability of a random event occurring expresses the likelihood of the event in a real-world situation. **EE7.SP.I.5 Level III AA Students will:** Understand that the probability of a random event occurring expresses the likelihood of the event. **EE7.SP.I.5 Level II AA Students will:** Given a set of data understand that the probability of an event occurring expresses the likelihood of the event. **EE7.SP.I.5 Level I AA Students will:** Identify a probability.

7.SP.I.6 Collect multiple samples to compare the relationship between theoretical and experimental probabilities for simple events.	**EE7.SP.I.6** When given a question, do an experiment multiple times then compare the outcomes to the expected results of an event occurring.	**Level IV AA Students will:** **EE7.SP.I.6** Create a question then do an experiment multiple times then compare the outcomes to the expected results of an event occurring. **Level III AA Students will:** **EE7.SP.I.6** When given a question, do an experiment multiple times then compare the outcomes to the expected results of an event occurring. **Level II AA Students will:** **EE7.SP.I.6** Given data about an experiment done multiple times compare the outcomes to the expected results of an event occurring. **Level I AA Students will:** **EE7.SP.I.6** Match the probability to an outcome of an event.
7.SP.I.7 Apply the concepts of theoretical and experimental probabilities for simple events. **A.** Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. **B.** Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. **C.** Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancies**.** **7.SP.I.8** Find probabilities of compound events using organized lists, tables, and tree diagrams. **A.** Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. **B.** Represent sample spaces for compound events using methods such as organized lists, tables, and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.	**EE7.SP.I.7-8** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
The Number System	**Grade 8**	
Know that there are numbers that are not rational, and approximate them by rational numbers. (A) **8.NS.A.1** Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. Explore the real number system and its appropriate usage in real-world situations. **A.** Make comparisons between rational and irrational numbers. **B.** Understand that all real numbers have a decimal expansion. **C.** Model the hierarchy of the real number system, including natural, whole, integer, rational, and irrational numbers. **D.** Convert repeating decimals to fractions.	**EE8.NS.A.1** Identify both terminating and repeating decimal patterns as rational.	**Level IV AA Students will:** **EE8.NS.A.1** Identify decimals that neither terminate nor repeat as irrational, such as Pi or sq. root (^{2}). **Level III AA Students will:** **EE8.NS.A.1** Identify both terminating and repeating decimal patterns as rational. **Level II AA Students will:** **EE8.NS.A.1** Identify a terminating decimal as rational. **Level I AA Students will:** **EE8.NS.A.1** Convert simple fractions to decimal form, such as ½, ¼, ⅕, ⅛, 1/10.
8.NS.A.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions.	**EE8.NS.A.2** Locate fractional and decimal representations on a number line.	**Level IV AA Students will:** **EE8.NS.A.2** Approximately locate irrational representations on a number line, such as Pi or sq. root (^{2}). **Level III AA Students will:** **EE8.NS.A.2** Locate fractional and decimal representations on a number line. **Level II AA Students will:** **EE8.NS.A.2** Plot a decimal that falls between two whole numbers (e.g., 0.75, 1.5, 4.25). **Level I AA Students will:** **EE8.NS.A.2** Locate whole numbers on a number line.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Expressions and Equations	**Grade 8**	
Work with radicals and integer exponents. (B) **8.EE.B.1** Understand and apply the laws of exponents (i.e., product rule, quotient rule, power to a power, product to a power, quotient to a power, zero power property, negative exponents) to generate equivalent numerical expressions limited to integer exponents.	**EE8.EE.B.1** Deconstruct single-digit whole numbers with integer exponents into multiplication expressions and calculate the product.	**Level IV AA Students will:** **EE8.EE.B.1** Know and apply the product rule of positive integer exponents to whole numbers greater than 1. e.g., 3^2 * 3^3 = 3^5. **Level III AA Students will:** **EE8.EE.B.1** Deconstruct single-digit whole numbers with integer exponents into multiplication expressions and calculate the product. e.g., 3^4 = 3*3*3*3 = 81 **Level II AA Students will:** **EE8.EE.B.1** Deconstruct single-digit whole numbers with integer exponents into multiplication expressions. (e.g., 3^4 = 3*3*3*3) **Level I AA Students will:** **EE8.EE.B.1** Identify the exponent.
8.EE.B.2 Investigate concepts of square and cube roots. A. Use radical notation, if applicable, to represent the exact solutions to equations of the form $x^2 = p$ and $x^3 = q$ where p is a positive rational number and q is any rational number. B. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. C. Recognize that square roots of non-perfect squares and the cube roots of non-perfect cubes are irrational. **Assessment boundary:** Include perfect squares up to 144 and perfect cubes up to 125.	**EE8.EE.B.2** Find the square root of perfect squares up to 100.	**Level IV AA Students will:** **EE8.EE.B.2** Demonstrate taking a square root as the opposite operation (inverse) of squaring. **Level III AA Students will:** **EE8.EE.B.2** Find the square root of perfect squares up to 100. **Level II AA Students will:** **EE8.EE.B.2** Students will identify the square root of a number as a number that can be multiplied by itself to get the original number before being square rooted. **Level I AA Students will:** **EE8.EE.B.2** Identify the radical symbol, related to a square root.

8.EE.B.3 Explore the relationship between quantities in decimal and scientific notation. **A.** Express very large and very small quantities, *p*, in scientific notation in the form $a \times 10^b = p$ where 1 is less than or equal to *a* and *a* is less than 10 and *b* is an integer. **B.** Translate between decimal notation and scientific notation. **C.** Estimate and compare the relative size of two quantities in scientific notation.	**EE8.EE.B.3** Translate decimal notation and scientific notation. Limit values from millions to thousandths range using single digits.	**Level IV AA Students will:** **EE8.EE.B.3** Translate decimal notation and scientific notation. **Level III AA Students will:** **EE8.EE.B.3** Translate decimal notation and scientific notation. Limit values from millions to thousandths range using single digits. **Level II AA Students will:** **EE8.EE.B.3** Given multiple numbers in scientific notation put them in ascending and/or descending order. **Level I AA Students will:** **EE8.EE.B.3** Given scientific notation match this notation to its decimal equivalent.
8.EE.B.4 Apply the concepts of decimal and scientific notation to real-world and mathematical problems. **A.** Select appropriate units of measure when representing answers in scientific notation. **B.** Interpret scientific notation that has been generated by a variety of technologies.	**EE8.EE.B.4** Use mathematical problems to convert very large or very small quantities to scientific notation and simplify using metric conversions. Limit quantities from millions to thousandths.	**Level IV AA Students will:** **EE8.EE.B.4** Use mathematical problems to convert very large or very small quantities to scientific notation and simplify using metric conversions. **Level III AA Students will:** **EE8.EE.B.4** Use mathematical problems to convert very large or very small quantities to scientific notation and simplify using metric conversions. Limit quantities from millions to thousandths. **Level II AA Students will:** **EE8.EE.B.4** Matching multiple equivalent expressions with scientific notation across different metric units. **Level I AA Students will:** **EE8.EE.B.4** Match a given metric decimal unit to its simplest form. (e.g., 1000g to 1kg)
Understand the connections between proportional relationships, lines, and linear equations. (C) **8.EE.C.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	**EE8.EE.C.5** When given data, create a graph and determine if the rate of change has a positive or negative relationship.	**Level IV AA Students will:** **EE8.EE.C.5**Collect data, create a graph and determine if the rate of change has a positive or negative relationship. **Level III AA Students will:** **EE8.EE.C.5** When given data, create a graph and determine if the rate of change has a positive or negative relationship. **Level II AA Students will:** **EE8.EE.C.5** When given multiple graphs determine which graphs have a rate of change that is positive/negative. **Level I AA Students will:** **EE8.EE.C.5** Given a graph determine if the relationship is positive or negative.
8.EE.C.6 Explain why the slope *m* is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and	**EE8.EE.C.6** Write a linear equation given the slope and	**Level IV AA Students will:** **EE8.EE.C.6** Given a simple integer based graph that goes through the origin write the linear equation. **Level III AA Students will:**

the equation $y = mx + b$ for a line intercepting the vertical axis at (0,b).	intercept in y = mx + b form.	**EE8.EE.C.6** Write a linear equation given the slope and intercept in y = mx + b form. **Level II AA Students will:** **EE8.EE.C.6** Identify slope and intercept given a linear equation. **Level I AA Students will:** **EE8.EE.C.6** Identify the slope.
Analyze and solve linear equations and pairs of simultaneous linear equations. (D) **8.EE.D.7** Extend concepts of linear equations and inequalities in one variable to more complex multi-step equations and inequalities in real-world and mathematical situations. **A.** Solve linear equations and inequalities with rational number coefficients that include the use of the distributive property, combining like terms, and variable terms on both sides. **B.** Recognize the three types of solutions to linear equations: one solution, infinitely many solutions, or no solutions. **C.** Generate linear equations with the three types of solutions. **D.** Justify why linear equations have a specific type of solution.	**EE8.EE.D.7** Given an inequality match it to the appropriate graph given a selection of graphs and determine if an ordered pair is a solution.	**Level IV AA Students will:** **EE8.EE.D.7** Given an inequality match it to the graph then find an ordered pair that is a solution for the graph. **Level III AA Students will:** **EE8.EE.D.7** Given an inequality match it to the appropriate graph given a selection of graphs and determine if an ordered pair is a solution. **Level II AA Students will:** **EE8.EE.D.7** Given a coordinate and a graph to determine if it is a solution for a given inequality. **Level I AA Students will:** **EE8.EE.D.7** Identify an inequality given an inequality graph and a linear graph.
8.EE.D.8 Analyze and solve pairs of simultaneous linear equations. **A.** Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. **B.** Solve systems of two linear equations in two variables with integer solutions by graphing the equations. **C.** Solve simple real-world and mathematical problems leading to two linear equations in two variables given $y = mx + b$ form with integer solutions.	**EE8.EE.D.8** Given a graph of two linear equations name the solution as an ordered pair.	**Level IV AA Students will:** **EE8.EE.D.8** Given two equations graph and solve the system. **Level III AA Students will:** **EE8.EE.D.8** Given a graph of two linear equations name the solution as an ordered pair. **Level II AA Students will:** **EE8.EE.D.8** Given an ordered pair determine which graph represents the solution. **Level I AA Students will:** **EE8.EE.D.8** Given a graph of two linear equations identify their intersection.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Functions	**Grade 8**	
Define, evaluate, and compare functions. (E) **8.F.E.1** Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Function notation is not required in Grade 8.)	**EE8.F.E.1** Given a table, graph the ordered pairs and determine if it is a function.	**Level IV AA Students will:** **EE8.F.E.1** Given a variety of tables and graphs, determine which ones are functions. **Level III AA Students will:** **EE8.F.E.1** Given a table, graph the ordered pairs and determine if it is a function. **Level II AA Students will:** **EE8.F.E.1** Given a series of graphs determine which ones represent functions. **Level I AA Students will:** **EE8.F.E.1** Given a graph determine if it represents a function.
8.F.E.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). **8.F.E.3** Interpret the equation $y = mx + b$ as defining a linear function whose graph is a straight line; give examples of functions that are not linear.	**EE8.F.E.2-3** Compare two functions (non-linear vs linear) using the same representation (graphs, tables).	**Level IV AA Students will:** **EE8.F.E.2-3** Compare two different representations of functions (graphs, tables, equations). **Level III AA Students will:** **EE8.F.E.2-3** Compare two functions (non-linear vs linear) using the same representation (graphs, tables). (e.g., exponential vs linear functions) **Level II AA Students will:** **EE8.F.E.2-3** Compare two linear functions using the same representation (graphs, tables). **Level I AA Students will:** **EE8.F.E.2-3** Given two graphs identify the linear function.
Use functions to model relationships between quantities. (F) **8.F.F.4** Apply the concepts of linear functions to real-world and mathematical situations. **A.** Understand that the slope is the constant rate of change and the *y*-intercept is the point where $x = 0$. **B.** Determine the slope and the *y*-intercept of a linear function given multiple representations, including two points, tables, graphs, equations, and verbal descriptions. **C.** Construct a function in slope-intercept form that models a linear relationship between two quantities.	**EE8.F.F.4** Given a linear graph determine the slope and y-intercept.	**Level IV AA Students will:** **EE8.F.F.4** Given a linear graph, construct a function in slope-intercept form and relate it to a real-world situation. **Level III AA Students will:** **EE8.F.F.4** Given a linear graph, determine the slope and y-intercept. **Level II AA Students will:** **EE8.F.F.4** Given a linear graph through the origin determine the slope and y-intercept. **Level I AA Students will:** **EE8.F.F.4** When given a linear graph, determine the slope.

D. Interpret the meaning of the slope and the *y*-intercept of a linear function in the context of the situation.		
8.F.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph where the function is increasing, decreasing, constant, linear, or nonlinear. Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	**EE8.F.F.5** When given a graph(s), determine if the function(s) is increasing or decreasing and/or linear or nonlinear.	**Level IV AA Students will:** **EE8.F.F.5** When given a graph(s), explain how the function(s) is increasing or decreasing and/or linear or nonlinear. **Level III AA Students will:** **EE8.F.F.5** When given a graph(s), determine if the function(s) is increasing or decreasing and/or linear or nonlinear. **Level II AA Students will:** **EE8.F.F.5** When given linear graphs, determine if the functions are increasing or decreasing. **Level I AA Students will:** **EE8.F.F.5** When given two linear graphs, identify which is increasing/decreasing.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Geometry	**Grade 8**	
Understand congruence and similarity using physical models, transparencies, or geometry software. (G) **8.G.G.1** Verify experimentally the properties of rotations, reflections, and translations. **A.** Lines are taken to lines, and line segments to line segments of the same length. **B.** Angles are taken to angles of the same measure. **C.** Parallel lines are taken to parallel lines.	**EE8.G.G.1** Draw and transform a figure describing whether you used rotation, reflection, or translation.	**Level IV AA Students will:** **EE8.G.G.1** Demonstrate understanding of rotation, reflection, and translation by drawing the three on graph paper. **Level III AA Students will:** **EE8.G.G.1** Draw and transform a figure describing whether you used rotation, reflection, or translation. **Level II AA Students will:** **EE8.G.G.1** Draw and transform a figure using reflection or translation. **Level I AA Students will:** **EE8.G.G.1** When given a transformation determine if it is a reflection or translation.
8.G.G.2 Recognize through visual comparison that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	**EE8.G.G.2** Use a transformation to align two objects to determine if they are congruent.	**Level IV AA Students will:** **EE8.G.G.2** Use transformations to align objects to determine which objects are congruent to one another. **Level III AA Students will:** **EE8.G.G.2** Use a transformation to align two objects to determine if they are congruent. **Level II AA Students will:** **EE8.G.G.2** Use transformation to align two congruent objects. **Level I AA Students will:** **EE8.G.G.2** Determine if two objects are congruent.

8.G.G.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.		**Level IV AA Students will:** **EE8.G.G.3** Given coordinates, create a two-dimensional figure and demonstrate dilation. **Level III AA Students will:** **EE8.G.G.3** When provided with a two-dimensional figure and a dilation, provide an explanation of how the figure is dilated. **Level II AA Students will:** **EE8.G.G.3** Manipulate shapes to demonstrate dilation. **Level I AA Students will:** **EE8.G.G.3** When given a shape, identify whether a comparison shape is a dilation.
8.G.G.4 Recognize through visual comparison that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	**EE8.G.G.4** Determine what sequence of two transformations were used to transform one figure to another.	**Level IV AA Students will:** **EE8.G.G.4** Determine what sequence of multiple transformations, including a dilation, were used to transform one figure to another. **Level III AA Students will:** **EE8.G.G.4** Determine what sequence of two transformations were used to transform one figure to another. **Level II AA Students will:** **EE8.G.G.4** Given two figures match which two sequences formed the similar translated figure. **Level I AA Students will:** **EE8.G.G.4** Identify if two figures are similar.
8.G.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.	**EE8.G.G.5** When given a diagram of a triangle with the measurements for 2 angles within a triangle, find the measurement of the third angle.	**Level IV AA Students will:** **EE8.G.G.5.** Given a diagram of a triangle with an interior angle and two exterior angles find the missing interior angles. **Level III AA Students will:** **EE8.G.G.5** When given a diagram of a triangle with the measurements for 2 angles within a triangle, find the measurement of the third angle. **Level II AA Students will:** **EE8.G.G.5** Understand that all angles of a triangle add up to 180°. **Level I AA Students will:** **EE8.G.G.5** When shown a right triangle, determine which angle is a right angle and apply the right angle symbol.
Understand and apply the Pythagorean Theorem. (H) **8.G.H.6** Use models or diagrams to explain the Pythagorean Theorem and its converse.	**EE8.G.H.6** Label the hypotenuse and legs of a right triangle.	**Level IV AA Students will:** **EE8.G.H.6** Using the variables and terms in the Pythagorean theorem label the legs and hypotenuse (a, b, c). **Level III AA Students will:** **EE8.G.H.6** Label the hypotenuse and legs of a right triangle. **Level II AA Students will:** **EE8.G.H.6** Identify the longest leg of the right triangle.

		Level I AA Students will: **EE8.G.H.6** Identify a right triangle.
8.G.H.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems.	**EE8.G.H.7** Use the Pythagorean theorem to calculate the length of the hypotenuse given side a and side b.	**Level IV AA Students will:** **EE8.G.H.7** Use the Pythagorean theorem to calculate the length of a side given a side and hypotenuse. **Level III AA Students will:** **EE8.G.H.7** Use the Pythagorean theorem to calculate the length of the hypotenuse given side a and side b. **Level II AA Students will:** **EE8.G.H.7** Put in the values for sides a, b, and c into the correct locations for the Pythagorean theorem. **Level I AA Students will:** **EE8.G.H.7** Given the Pythagorean formula with numbers entered for the values of a, b, and c have the student determine which value is the hypotenuse.
8.G.H.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	**EE8.G.H.8** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres. (I) **8.G.I.9** Given the formulas, solve real-world and mathematical problems involving volume and surface area of cylinders.	**EE8.G.I.9** Find the volume of a given a picture of a cylinder with its measurements labeled and the formula.	**Level IV AA Students will:** **EE8.G.I.9** Given the formula, find the volume of a given cylinder in a real-world setting. **Level III AA Students will:** **EE8.G.I.9** Find the volume of a given a picture of a cylinder with its measurements labeled and the formula. **Level II AA Students will:** **EE8.G.I.9** Identify the height and the radius of the cylinder. **Level I AA Students will:** **EE8.G.I.9** Given a variety of three dimensional objects identify the cylinder.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Statistics and Probability	**Grade 8**	
Investigate patterns of association in bivariate data. (J) **8.SP.J.1** Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe the association by form (linear / nonlinear), direction (positive / negative), strength (correlation), and unusual features.	**EE8.SP.J.1** Interpret scatter plots by describing the association between two quantities by form (linear/nonlinear) and direction (positive/negative).	**Level IV AA Students will:** **EE8.SP.J.1** Interpret scatter plots by describing the association between two quantities by form (linear/nonlinear), direction (positive/negative), strength (correlation), and unusual features. **Level III AA Students will:** **EE8.SP.J.1** Interpret scatter plots by describing the association between two quantities by form (linear/nonlinear) and direction (positive/negative). **Level II AA Students will:** **EE8.SP.J.1** When provided with a scatter plot, interpret the display by making at least one inference. **Level I AA Students will:** **EE8.SP.J.1** When provided with a scatter plot, determine if the direction is positive/negative.
8.SP.J.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	**EE8.SP.J.2** Use a straight lines within scatter plots to suggest a linear association by judging the closeness of the data points to the line.	**Level IV AA Students will:** **EE8.SP.J.2** Select a straight line of best fit within a scatter plot given multiple lines to suggest a linear association and describe the association. **Level III AA Students will:** **EE8.SP.J.2** Use a straight lines within scatter plots to suggest a linear association by judging the closeness of the data points to the line. **Level II AA Students will:** **EE8.SP.J.2** Determine if a straight line could be placed on a scatter plot to show a linear association. **Level I AA Students will:** **EE8.SP.J.2** Determine if a graph is a scatter plot.
8.SP.J.3 Use an equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	**EE8.SP.J.3** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
8.SP.J.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. **A.** Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.	**EE8.SP.J.4** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

B. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.		

2018 Wyoming Mathematics Content Standards **NOTE: (+)** designated for complex mathematics (advanced courses). These were not extended in the Extended Standards to the right of this document. A Table of the (+) standards can be found at the end of this document.	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Number and Quantity - The Real Number System	**High School**	
Extend the properties of exponents to rational exponents. (A) **N.RN.A.1** Explain how the meaning of the definition of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.	**EEN.RN.A.1** Not applicable**.**	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
N.RN.A.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents.	**EEN.RN.A.2** Match the radical representation to its rational exponent form. Exponents limited to ½, ⅓, ¼.	**Level IV AA Students will:** **EEN.RN.A.2** Given either the radical or rational exponent representation, write its equivalent representation. **Level III AA Students will:** **EEN.RN.A.2** Match the radical representation to its rational exponent form. Exponents limited to ½, ⅓, ¼. (e.g., sq. root (x) = x^(½)) **Level II AA Students will:** **EEN.RN.A.2** Identify the radical representation and/or rational exponential form. **Level I AA Students will:** **EEN.RN.A.2** Recognize the radical representation.
Use properties of rational and irrational numbers. (B) **N.RN.B.3** Explain why the sum or product of rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	**EEN.RN.B.3** Not applicable**.**	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Number and Quantity - Quantities	**High School**	
Reason quantitatively and use units to solve problems. (C) **N.Q.C.1** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. **N.Q.C.2** Define appropriate quantities for the purpose of descriptive modeling. **N.Q.C.3** Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	**EEN.Q.C.1-3** Choose and use an appropriate unit of measure to model and/or solve problems.	**Level IV AA Students will:** **EEN.Q.C.1-3** Choose and use an appropriate unit of measure to model and/or solve multi-step problems. **Level III AA Students will:** **EEN.Q.C.1-3** Choose and use an appropriate unit of measure to model and/or solve problems. **Level II AA Students will:** **EEN.Q.C.1-3** Identify the attribute to be measured (e.g., weight, length, temperature) and select the appropriate unit of measure. **Level I AA Students will:** **EEN.Q.C.1-3** Identify measurement tools.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Number and Quantity - The Complex Number System	**High School**	
Perform arithmetic operations with complex numbers. (D) **N.CN.D.1** Know there is a complex number i such that i2 = − 1, and every complex number has the form a + bi with a and b real.	**EEN.CN.D.1** Not applicable**.**	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
N.CN.D.2 Use the relation $i^2 = –1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers. **N.CN.D.3 (+) STANDARD FOR ADVANCED COURSES**	**EEN.CN.D.2-3** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Represent complex numbers and their operations on the complex plane. (E) **N.CN.E.4-6 (+) STANDARD FOR ADVANCED COURSES**	**EEN.CN.E.4-6** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Use complex numbers in polynomial identities and equations. (F) **N.CN.F.7** Solve quadratic equations with real coefficients that have complex solutions. **N.CN.F.8-9 (+) STANDARD FOR ADVANCED COURSES**	**EEN.CN.F.7-9** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Number and Quantity - Vector and Matrix Quantities	**High School**	
Represent and model with vector quantities. (G) N.VM.G.1-12 (+) STANDARD FOR ADVANCED COURSES	**EEN.CN.D.1** Not applicable**.**	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Algebra – Seeing Structure in Expressions	**High School**	
Interpret the structure of expressions. (A) **A.SSE.A.1** Interpret expressions that represent a quantity in terms of its context. **A.** Interpret parts of an expression, such as terms, factors, and coefficients. **B.** Interpret complicated expressions by viewing one or more of their parts as a single entity.	**EEA.SSE.A.1** Identify the terms, factors and coefficients related to expression.	**Level IV AA Students will:** **EEA.SSE.A.1** Identify the terms, factors and coefficients related to expressions within a context. **Level III AA Students will:** **EEA.SSE.A.1** Identify the terms, factors and coefficients related to expressions. **Level II AA Students will:** **EEA.SSE.A.1** Determine the number of terms within an expression. **Level I AA Students will:** **EEA.SSE.A.1** Recognize that a coefficient is a number.
A.SSE.A.2 Use the structure of an expression to identify ways to rewrite it.	**EEA.SSE.A.2** Write an equivalent expression involving a variable.	**Level IV AA Students will:** **EEA.SSE.A.2** Demonstrate multiple ways to write an equivalent expression involving variables. **Level III AA Students will:** **EEA.SSE.A.2** Write an equivalent expression involving a variable. **Level II AA Students will:** **EEA.SSE.A.2** Write an equivalent expression. **Level I AA Students will:** **EEA.SSE.A.2** Identify an equivalent expression.

Write expressions in equivalent forms to solve problems. (B) **A.SSE.B.3** Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. **A.** Factor a quadratic expression to reveal the zeros of the function it defines. **B.** Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. **C.** Use the properties of exponents to transform expressions for exponential functions. Apply the concepts of decimal and scientific notation to solve real-world and mathematical problems. *i*. Multiply and divide numbers expressed in both decimal and scientific notation. *ii*. Add and subtract numbers in scientific notation with the same integer exponent.	**EEA.SSE.B.3** Given an equation in slope-intercept form, identify the constant as the y-intercept and coefficient as the slope of a line.	**Level IV AA Students will:** **EEA.SSE.B.3** Given an equation in slope-intercept form, identify the constant as the y-intercept and coefficient as the slope of a line, which may be increasing (positive), decreasing (negative), or constant (zero). **Level III AA Students will:** **EEA.SSE.B.3** Given an equation in slope-intercept form, identify the constant as the y-intercept and coefficient as the slope of a line. **Level II AA Students will:** **EEA.SSE.B.3** Given an equation in slope-intercept form, identify both the constant and coefficient. **Level I AA Students will:** **EEA.SSE.B.3** Given an equation in slope-intercept form, identify the constant.
A.SSE.B.4 Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems.	**EEA.SSE.B.4** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Algebra – Arithmetic with Polynomials and Rational Expressions	**High School**	
Perform arithmetic operations on polynomials. (C) **A.APR.C.1** Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	**EEA.APR.C.1** Add and subtract polynomials.	**Level IV AA Students will:** **EEA.APR.C.1** Add, subtract, and multiply polynomials. **Level III AA Students will:** **EEA.APR.C.1** Add and subtract polynomials. **Level II AA Students will:** **EEA.APR.C.1** Add polynomials. **Level I AA Students will:** **EEA.APR.C.1** Identify a polynomial, limited to monomial, binomial and trinomial.

Understand the relationship between zeros and factors of polynomials (D) **A.APR.D.2** Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a, the remainder on division by $x – a$ is $p(a)$, so $p(a) = 0$ if and only if $(x – a)$ is a factor of $p(x)$. **A.APR.D.3** Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.	**EEA.APR.D.2-3** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.
Understand polynomial identities to solve problems (E) **A.APR.E.4** Prove polynomial identities and use them to describe numerical relationships. **A.APR.E.5 (+) STANDARD FOR ADVANCED COURSES**	**EEA.APR.E.4-5** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.
Rewrite rational expressions (F) **A.APR.F.6** Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$ using inspection, long division, or, for the more complicated examples, a computer algebra system. (i.e., rewriting a rational expression as the quotient plus the remainder over divisor). **A.APR.F.7 (+) STANDARD FOR ADVANCED COURSES**	**EEA.APR.F.6-7** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Algebra – Creating Equations	**High School**	
Create equations that describe numbers or relationships. (G) **A.CED.G.1** Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.	**EEA.CED.G.1** Solve a one-step equation or inequality with one variable.	**Level IV AA Students will:** **EEA.CED.G.1** Create and solve an equation or inequality with one variable. **Level III AA Students will:** **EEA.CED.G.1** Solve a one-step equation or inequality with one variable. **Level II AA Students will:** **EEA.CED.G.1** Solve a one-step equation with one variable. **Level I AA Students will:** **EEA.CED.G.1** Identify the variable within an equation.

A.CED.G.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	**EEA.CED.G.2** Given an equation in slope-intercept form and its related table, graph a line.	**Level IV AA Students will:** **EEA.CED.G.2** Given an equation in slope-intercept form, graph a line. **Level III AA Students will:** **EEA.CED.G.2** Given an equation in slope-intercept form and its related table, graph a line. **Level II AA Students will:** **EEA.CED.G.2** Given an equation in slope-intercept form and its related table, plot the y-intercept. **Level I AA Students will:** **EEA.CED.G.2** Recognize points in a table as ordered pairs (x, y).
A.CED.G.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. **A.CED.G.4** Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	**EEA.CED.G.3-4** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Algebra – Reasoning with Equations and Inequalities	**High School**	
Understand solving equations as a process of reasoning and explain the reasoning. (H) **A.REI.H.1** Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	**EEA.REI.H.1** Show steps in solving a simple equation.	**Level IV AA Students will:** **EEA.REI.H.1** Show steps and provide justification to a solution. **Level III AA Students will:** **EEA.REI.H.1** Show steps in solving a simple equation. **Level II AA Students will:** **EEA.REI.H.1** Identify the inverse operation needed to solve the equation. **Level I AA Students will:** **EEA.REI.H.1** Identify the operation within the equation.
A.REI.H.2 Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	**EEA.REI.H.2** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.
Solve equations and inequalities in one variable. (I) **A.REI.I.3** Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	**EEA.REI.I.3** Solve a two-step, linear equation in one variable.	**Level IV AA Students will:** **EEA.REI.I.3** Solve a two-step, linear inequality in one variable, containing a positive, whole number coefficient. **Level III AA Students will:** **EEA.REI.I.3** Solve a two-step, linear equation in one variable.

		Level II AA Students will: **EEA.REI.I.3** Solve a one-step equation containing a whole number coefficient. (e.g., 15 = 3x) **Level I AA Students will:** **EEA.REI.I.3** Solve a one-step equation using addition or subtraction. (e.g., 5 = x + 2)
A.REI.I.4 Solve quadratic equations in one variable. **A.** Use the method of completing the square to transform any quadratic equation in *x* into an equation of the form $(x – p)^2 = q$ that has the same solutions. **B.** Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers *a* and *b*. **C.** **(+)** Derive the quadratic formula from the general form of a quadratic equation.	**EEA.REI.I.4** Not applicable**.**	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Solve systems of equations (J) **A.REI.J.5** Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.	**EEA.REI.J.5** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
A.REI.J.6 Estimate solutions graphically and determine algebraic solutions to linear systems, focusing on pairs of linear equations in two variables.	**EEA.REI.J.6** Locate the solution to a system of linear equations by naming the point of intersection.	**Level IV AA Students will:** **EEA.REI.J.6** Create two intersecting lines and estimate the point of intersection. **Level III AA Students will:** **EEA.REI.J.6** Locate the solution to a system of linear equations by naming the point of intersection. (e.g., a graph showing two lines that intersect) **Level II AA Students will:** **EEA.REI.J.6** Locate both the x- and y- axes. **Level I AA Students will:** **EEA.REI.J.6** Locate the intersection.
A.REI.J.7 Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. **A.REI.J.8-9 (+) STANDARD FOR ADVANCED COURSES**	**EEA.REI.J.7-9** Not applicable**.**	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Represent and solve equations and inequalities graphically. (K)	**EEA.REI.K.10** Identify a solution to a linear equation, represented	**Level IV AA Students will:** **EEA.REI.K.10** Create a line and name multiple solutions.

A.REI.K.10 Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane.	graphically as a line.	**Level III AA Students will:** **EEA.REI.K.10** Identify a solution to a linear equation, represented graphically as a line. (e.g., given a line and a point on the line, identify the solution) **Level II AA Students will:** **EEA.REI.K.10** Locate both the x- and y- axes. **Level I AA Students will:** **EEA.REI.K.10** Locate a point on a line.
A.REI.K.11 Explain why the *x*-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. **A.REI.K.12** Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	**EEA.REI.K.11-12** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Functions – Interpreting Functions	**High School**	
Understand the concept of a function and use function notation. (A) **F.IF.A.1** Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If *f* is a function and *x* is an element of its domain, then $f(x)$ denotes the output of *f* corresponding to the input *x*. The graph of *f* is the graph of the equation $y = f(x)$.	**EEF.IF.A.1** Given a function table and rule, determine missing input and output values.	**Level IV AA Students will:** **EEF.IF.A.1** Determine whether a table containing data is a function. **Level III AA Students will:** **EEF.IF.A.1** Given a function table and rule, determine missing input and output values. **Level II AA Students will:** **EEF.IF.A.1** Using a table and provided an input, find the output. **Level I AA Students will:** **EEF.IF.A.1** Identify the input and output values within a table.
F.IF.A.2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. **F.IF.A.3** Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.	**EEF.IF.A.2-3** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Interpret functions that arise in applications in terms	**EEF.IF.B.4** For a	**Level IV AA Students will:**

of the context. (B) **F.IF.B.4** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.	function, interpret key features of a graph and/or table, including whether the function is increasing, decreasing, or constant.	**EEF.IF.B.4** Interpret key features of a graph and/or table, which may include intercepts and/or intervals. **Level III AA Students will:** **EEF.IF.B.4** For a function, interpret key features of a graph and/or table, including whether the function is increasing, decreasing, or constant. **Level II AA Students will:** **EEF.IF.B.4** Using a graph, identify whether a function is increasing, decreasing, or constant. **Level I AA Students will:** **EEF.IF.B.4** Using a graph, recognize whether a function is increasing.
F.IF.B.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. **F.IF.B.6** Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	**EEF.IF.5-6.** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Analyze functions using different representations. (C) **F.IF.C.7** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. **A.** Graph linear and quadratic functions and show intercepts, maxima, and minima. **B.** Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. **C.** Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. **D.** **(+)** Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior. **E.** Graph exponential and logarithmic functions, showing intercepts and end behavior. **F.** **(+)** Graph trigonometric functions, showing period, midline, and amplitude.	**EEF.IF.C.7** Not applicable**.**	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
F.IF.C.8 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. **A.** Use the process of factoring and completing the square in a quadratic function to show zeros, extreme	**EEF.IF.C.8** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

values, and symmetry of the graph, and interpret these in terms of a context. **B.** Use the properties of exponents to interpret expressions for exponential functions.		
F.IF.C.9 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	**EEF.IF.C.9** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Functions – Building Functions	**High School**	
Build a function that models a relationship between two quantities. (D) **F.BF.D.1** Write a function that describes a relationship between two quantities. **A.** Determine an explicit expression, a recursive process, or steps for calculation from a context. **B.** Combine standard function types using arithmetic operations. **C.** **(+)** Compose functions. For example, if $T(y)$ is the temperature in the atmosphere as a function of height, and $h(t)$ is the height of a weather balloon as a function of time, then $T(h(t))$ is the temperature at the location of the weather balloon as a function of time.	**EEF.BF.D.1** Match a function that describes a relationship between the input and output, within a context.	**Level IV AA Students will:** **EEF.BF.D.1** Write a function that describes the relations, within a context. **Level III AA Students will:** **EEF.BF.D.1** Match a function that describes a relationship between the input and output, within a context. **Level II AA Students will:** **EEF.BF.D.1** Describe how the input and output are related. **Level I AA Students will:** **EEF.BF.D.1** Identify key information.
F.BF.D.2 (+) Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms. **(+) STANDARD FOR ADVANCED COURSES**	**EEF.BF.D.2** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Build new functions from existing functions. (E) **F.BF.E.3** Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. **F.BF.E.4** Find inverse functions. **A.** Write an expression for the inverse of a simple, invertible function $f(x)$. Understand that an inverse function can be obtained by expressing the dependent variable of one function as the independent variable of	**EEF.BF.3-5.** Not applicable**.**	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

another, as *f* and *g* are inverse functions, if and only if, $f(x) = y$ and $g(y) = x$, for all values of *x* in the domain of *f* and all values of *y* in the domain of *g*. **B.** **(+)** Verify by composition that one function is the inverse of another. **C.** **(+)** Read values of an inverse function from a graph or a table, given that the function has an inverse. **D.** **(+)** Produce an invertible function from a non-invertible function by restricting the domain. **F.BF.E.5 (+) STANDARD FOR ADVANCED COURSES**		
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Functions – Linear, Quadratic, and Exponential Models	**High School**	
Construct and compare linear, quadratic, and exponential models and solve problems. (F) **F.LE.F.1** Distinguish between situations that can be modeled with linear functions and with exponential functions. **A.** Verify that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals. **B.** Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. **C.** Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	**EEF.LE.F.1** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
F.LE.F.2 Construct linear and exponential functions using a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	**EEF.LE.F.2** Construct a linear function using a table.	**Level IV AA Students will:** **EEF.LE.F.2** Construct a linear function using a situation, or rule. **Level III AA Student will:** **EEF.LE.F.2** Construct a linear function using a table. **Level II AA Students will:** **EEF.LE.F.2** Using x- and y- coordinates from a table, plot one point. **Level I AA Students will:** **EEF.LE.F.2** Identify the input and output as the x- and y-coordinates, respectively.
F.LE.F.3 Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.	**EEF.LE.3-4.** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

F.LE.F.4 For exponential models, express as a logarithm the solution to $ab^{ct} = d$ where *a, c,* and *d* are numbers and the base *b* is 2, 10, or *e;* evaluate the logarithm using technology.		
F.LE.F.5 Interpret the parameters in a linear or exponential function in terms of a context.	**EEF.LE.F.5** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Functions – Trigonometric Functions	**High School**	
F.TF.H.1 - F.TFJ.9 **(+) STANDARD FOR ADVANCED COURSES**	**EEF.TF.H.1-9** Not applicable**.**	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population.**
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Geometry – Congruence	**High School**	
Experiment with transformations in the plane. (A) **G.CO.A.1** Apply precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.	**EEG.CO.A.1** Recognize perpendicular lines, parallel lines, and line segments, angles, and circles.	**Level IV AA Students will:** **EEG.CO.A.1** Distinguish between two geometric representations, which may include perpendicular lines, parallel lines, and line segments, angles, and circles. **Level III AA Students will:** **EEG.CO.A.1** Recognize perpendicular lines, parallel lines, and line segments, angles, and circles. **Level II AA Students will:** **EEG.CO.A.1** Match a simple geometric definition to its visual representation, including perpendicular lines, parallel lines, and line segments, angles, and circles. **Level I AA Students will:** **EEG.CO.A.1** Identify points, lines, and arcs.
G.CO.A.2 Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).	**EEG.CO.A.2** Not applicable**.**	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
G.CO.A.3 Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.	**EEG.CO.A.3** Not applicable**.**	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or**

		they have been covered in previous standards.
G.CO.A.4 Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. **G.CO.A.5** Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.	**EEG.CO.A.4-5** Recognize rotations, reflections, and translations.	**Level IV AA Students will:** **EEG.CO.A.4-5** Recognize and/or demonstrate a combination of simple rotations, reflections, and translations. **Level III AA Students will:** **EEG.CO.A.4-5** Recognize rotations, reflections, and translations. **Level II AA Students will:** **EEG.CO.A.4-5** Match a geometric figure with its rotation, reflection, or translation. **Level I AA Students will:** **EEG.CO.A.4-5** Identify a rotation, reflection, or translation for an object which is moved.
Understand congruence in terms of rigid motions. (B) **G.CO.B.6** Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.	**EEG.CO.B.6** Recognize that rigid transformations maintain congruence.	**Level IV AA Students will:** **EEG.CO.B.6** Demonstrate that using multiple rigid transformations maintain congruency. **Level III AA Students will:** **EEG.CO.B.6** Recognize that rigid transformations maintain congruency. **Level II AA Students will:** **EEG.CO.B.6** Identify congruent parts from its pre-image to image. **Level I AA Students will:** **EEG.CO.B.6-8.** Match shapes that are congruent.
G.CO.B.7 Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent. **G.CO.B.8** Explain how the criteria for triangle congruence (*ASA*, *SAS*, and *SSS*) follow from the definition of congruence in terms of rigid motions.	**EEG.CO.7-8.** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Prove geometric theorems. (C) **G.CO.C.9** Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints. **G.CO.C.10** Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180 degrees; base angles of isosceles triangles are congruent; the	**EEG.CO.C.9-11.** Not applicable**.**	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point. **G.CO.C.11** Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.		
Make geometric constructions. (D) **G.CO.D.12** Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.	**EEG.CO.D.12.** Create geometric figures using tools (e.g., ruler, protractor, compass and straightedge, string, reflective devices, paper folding, dynamic geometric software).	**Level IV AA Students will:** **EEG.CO.D.12** Construct a geometric figure using mathematical tools. **Level III AA Students will:** **EEG.CO.D.12** Create geometric figures using tools (e.g., ruler, protractor, compass and straightedge, string, reflective devices, paper folding, dynamic geometric software). **Level II AA Students will:** **EEG.CO.D.12.** Without tracing. **Level I AA Students will:** **EEG.CO.D.12** Trace geometric figures.
G.CO.D.13 Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.	**EEG.CO.D.13** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Geometry – Similarity, Right Triangles, and Trigonometry	**High School**	
Understand similarity in terms of similarity transformations. (E) **G.SRT.E.1** Understand similarity in terms of similarity transformations. Verify heuristically the properties of dilations given by a center and a scale factor. **A.** A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. **B.** The dilation of a line segment is longer or shorter in the ratio given by the scale factor. **G.SRT.E.2** Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides. **G.SRT.E.3** Use the properties of similarity transformations to establish the *AA* criterion for two triangles to be similar.	**EEG.SRT.E.1-3** Not applicable**.**	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.
Prove theorems involving similarity. (F) **G.SRT.F.4** Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity. **G.SRT.F.5** Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	**EEG.SRT.F.4-5** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.
Define trigonometric ratios and solve problems involving right triangles. (G) **G.SRT.G.6** Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles. **G.SRT.G.7** Explain and use the relationship between the sine and cosine of complementary angles. **G.SRT.G.8** Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. **G.SRT.H.9-11 (+) STANDARD FOR ADVANCED COURSES**	**EEG.SRT.G.6-11** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Geometry – Circles	**High School**	
Understand and apply theorems about circles. (I) **G.C.I.1** Prove that all circles are similar. **G.C.I.2** Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.	**EEG.C.I.1-2** Identify properties of circles, including center, diameter, radius, circumference, chord, and central angles.	**Level IV AA Students will:** **EEG.C.I.1-2** Use a property of circles to describe how circles are similar. **Level III AA Students will:** **EEG.C.I.1-2** Identify properties of circles, including center, diameter, radius, circumference, chord, and central angles. **Level II AA Students will:** **EEG.C.I.1-2** Identify properties of circles, including center, diameter, radius, and circumference. **Level I AA Students will:** **EEG.C.I.1-3.** Identify circles both as representations and in real life applications.
G.C.I.3 Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle. **G.C.I.4 (+)** Construct a tangent line from a point outside a given circle to the circle.	**EEG.C.I.3-4.** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Find arc lengths and areas of sectors of circles. (J) **G.C.J.5** Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.	**EEG.C.J.5** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Geometry – Expressing Geometric Properties with Equations	**High School**	
Translate between the geometric description and the equation for a conic section. (K) **G.GPE.K.1** Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation. **G.GPE.K.2-3 (+) STANDARD FOR ADVANCED COURSES**	**EEG.GPE.K.1-3** Not applicable**.**	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Use coordinates to prove simple geometric theorems algebraically. (L)	**EEG.GPE.L.4** Not applicable**.**	*****The Extended Standards Educator Committee determined there are no real-world applications for this**

G.GPE.L.4 Use coordinates to prove simple geometric theorems algebraically.		**standard that are appropriate for this population and/or they have been covered in previous standards.**
G.GPE.L.5 Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point). **G.GPE.L.6** Find the point on a directed line segment between two given points that partitions the segment in a given ration.	**EEG.GPE.L.5-6.** Not applicable**.**	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
G.GPE.L.7 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, (e.g., using the distance formula).	**EEG.GPE.L.7** Provided formulas and measurements, calculate the perimeter and area of squares and rectangles to solve real-world problems.	**Level IV AA Students will:** **EEG.GPE.L.7** Calculate the perimeter and area of squares and rectangles to solve real-world problems. **Level III AA Students will:** **EEG.GPE.L.7** Provided formulas and measurements, calculate the perimeter and area of squares and rectangles to solve real-world problems. **Level II AA Students will:** **EEG.GPE.L.7** Find perimeter or area by counting on a grid. **Level I AA Students will:** **EEG.GPE.L.7** On a grid, identify the inside of a figure as the area and edges of a figure as the perimeter.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Geometry – Geometric Measurement and Dimension	**High School**	
Explain volume formulas and use them to solve problems. (M) **G.GMD.M.1** Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments. **G.GMD.M.2 (+)** Give an informal argument using Cavalieri's Principle for the formulas for the volume of a sphere and other solid figures.	**EEG.GMD.M.1-2** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

G.GMD.M.3 Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.	**EEG.GMD.M.3** Provided formulas and measurements, calculate the volume of three dimensional objects including cubes, rectangular prisms, cylinders, spheres, or cones to solve real-world problems.	**Level IV AA Students will:** **EEG.GMD.M.3** Provided formulas and measurements, predict volumes of non-similar, three-dimensional objects and verify the prediction through calculation. **Level III AA Students will:** **EEG.GMD.M.3** Provided formulas and measurements, calculate the volume of three dimensional objects including cubes, rectangular prisms, cylinders, spheres, or cones to solve real-world problems. **Level II AA Students will:** **EEG.GMD.M.3** Using two similar, three-dimensional objects, predict which has a greater volume and verify the prediction. (e.g., fill containers with water, rice, use a formula). **Level I AA Students will:** **EEG.GMD.M.3** Match the three-dimensional object with its appropriate math term.
Visualize relationships between two-dimensional and three-dimensional objects. (N) **G.GMD.N.4** Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional object.	**EEG.GMD.N.4** Identify the shapes of two-dimensional cross-sections of three-dimensional objects.	**Level IV AA Students will:** **EEG.GMD.N.4** Identify multiple shapes within two-dimensional cross-sections of three-dimensional objects. **Level III AA Students will:** **EEG.GMD.N.4** Identify the shapes within two-dimensional cross-sections of three-dimensional objects. **Level II AA Students will:** **EEG.GMD.N.4** Identify the two-dimensional bases of three-dimensional objects. **Level I AA Students will:** **EEG.GMD.N.4.** Identify two-dimensional versus three-dimensional shapes.

2018 Wyoming Mathematics Content Standards	2020 Wyoming Math Extended Standards	Instructional Achievement Level Descriptor (ALDs)
Geometry - Modeling with Geometry	**High School**	
Apply geometric concepts in modeling situations. (O) **G.MG.O.1** Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder). **G.MG.O.2** Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).	**EEG.MG.O.1** Describe real-life items using geometric shapes or objects.	**Level IV AA Students will:** **EEG.MG.O.1** Create a real-life item composed of geometric shapes or objects and describe its geometric parts. **Level III AA Students will:** **EEG.MG.O.1** Describe real-life items using geometric shapes or objects. **Level II AA Students will:** **EEG.MG.O.1** Describe characteristics of three-dimensional geometric objects. **Level I AA Students will:** **EEG.MG.O.1** Identify two-dimensional geometric shapes.
G.MG.O.3 Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).	**EEG.MG.2-3** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Statistics and Probability – Interpreting Categorical and Quantitative Data	**High School**	
Summarize, represent, and interpret data on a single count or measurement variable. (A) **S.ID.A.1** Represent data with plots on the real number line (dot plots, histograms, and box plots) by hand or using technology.	**EES.ID.A.1** Match the given data to its graphical representation, which may include dot plots, bar graphs, or pie charts.	**Level IV AA Students will:** **EES.ID.A.1** Given data, construct a simple graph, such as a dot plot, bar graph, or pie chart. **Level III AA Students will:** **EES.ID.A.1** Match the given data to its graphical representation, which may include dot plots, bar graphs, or pie charts. **Level II AA Students will:** **EES.ID.A.1** Identify the type of graph. **Level I AA Students will:** **EES.ID.A.** Identify the parts of a simple graph.

S.ID.A.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. **S.ID.A.3** Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	**EES.ID.A.2-3** Given a graph, determine measures of central tendency, which may include mean, median, mode, or other measures such as range or outliers.	**Level IV AA Students will:** **EES.ID.A.2-3** Given a graph or data, describe how an outlier would impact any measure of central tendency. **Level III AA Students will:** **EES.ID.A.2-3** Given a graph or data, determine measures of central tendency, which may include mean, median, mode, or other measures such as range or outliers. **Level II AA Students will:** **EES.ID.A.2-3** Given a graph or data, determine the mean or median. **Level I AA Students will:** **EES-ID.A.2-3** Given a graph or data, determine the mode.
S.ID.A.4 (+) Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use the Empirical Rule, calculators, spreadsheets, and/or tables to estimate areas under the normal curve.	**EES.ID.A.4** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
Summarize, represent, and interpret data on two categorical and quantitative variables. (B) **S.ID.B.5 (+)** Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations in the data, and use inferential statistical techniques to show association.	**EES.ID.B.5.** Not applicable.	*****The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
S.ID.B.6 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. **A.** Use a function to describe data trends to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models. **B.** **(+)** Informally assess the fit of a function by plotting and analyzing residuals. **C.** Using technology, fit a least squares linear regression function for a scatter plot that suggests a linear association.	**EES.ID.B.6** Given multiple linear trendlines, determine which one best represents the data.	**Level IV AA Students will:** **EES.ID.B.6** Given a scatter plot, place a linear trendline and justify its placement. **Level III AA Students will:** **EES.ID.B.6** Given multiple linear trendlines, determine which one best represents the data. **Level II AA Students will:** **EES.ID.B.6** Differentiate between a scatter plot that is increasing versus decreasing. **Level I AA Students will:** **EES.ID.B.6** Identify a scatter plot that is increasing.

Interpret linear models. (C) **S.ID.C.7** Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.	**EES.ID.C.7** Given a graph, identify the slope as increasing (positive), decreasing (negative), or constant (zero) and find the y-intercept.	**Level IV AA Students will:** **EES.ID.C.7** Given a graph, interpret the slope or y-intercept within a context. **Level III AA Students will:** **EES.ID.C.7** Given a graph, identify the slope as increasing (positive), decreasing (negative), or constant (zero) and find the y-intercept. **Level II AA Students will:** **EES.ID.C.7** Identify the y-intercept as the point where a line intersects the y-axis. **Level I AA Students will:** **EES.ID.C.7** Identify the slope of a line as increasing (positive) or decreasing (negative).
S.ID.C.8 Compute (using technology) and interpret the correlation coefficient of a linear fit. **S.ID.C.9** Distinguish between correlation and causation.	**EES.ID.C.8-9** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Statistics and Probability – Making Inferences and Justifying Conclusions	**High School**	
Understand and evaluate random processes underlying statistical experiments. (D) **S.IC.D.1-6 (+) STANDARD FOR ADVANCED COURSES**	**EES.IC.D.1-2** Not applicable.	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Statistics and Probability – Conditional Probability and the Rules of Probability	**High School**	
Understand independence and conditional probability and use them to interpret data. (F) **S.CP.F.1** Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not"). **S.CP.F.2-4 (+) STANDARD FOR ADVANCED COURSES**	**EES.CP.F.1** List the possible outcomes of an event.	**Level IV AA Students will:** **EES.CP.F.1** Compare theoretical and experimental outcomes. **Level III AA Students will:** **EES.CP.F.1** List the possible outcomes of an event. **Level II AA Students will:** **EES.CP.F.1** Identify the chance of an event as more, less, or equally likely. **Level I AA Students will:** **EES.CP.F.1** Identify the chance of an event as impossible, possible, or certain.

S.CP.F.5 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.	**EES.CP.F.5** Use everyday language and situations to compare when events are independent or dependent.	**Level IV AA Students will:** **EES.CP.F.5** Identify a personal experience representing dependent events and provide an explanation of how one event influenced another event. **Level III AA Students will:** **EES.CP.F.5** Use everyday language and situations to compare when events are independent or dependent. **Level II AA Students will:** **EES.CP.F.5** Identify an event that will influence another event. **Level I AA Students will:** **EES.CP.F.5** Identify an event that is likely to occur.
Use the rules of probability to compute probabilities of compound events in a uniform probability model. (G) **S.CP.G.6-9 (+) STANDARD FOR ADVANCED COURSES**	**EES.CP.G.6-9** Not applicable**.**	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**
2018 Wyoming Mathematics Content Standards	**2020 Wyoming Math Extended Standards**	**Instructional Achievement Level Descriptor (ALDs)**
Statistics and Probability – Using Probability to Make Decisions	**High School**	
Calculate expected values and use them to solve problems. (H) **S.MD.H.1-7 (+) STANDARD FOR ADVANCED COURSES**	**EES.MD.H.1-7** Not applicable**.**	***The Extended Standards Educator Committee determined there are no real-world applications for this standard that are appropriate for this population and/or they have been covered in previous standards.**

High School Mathematics Standards

NOTE: This table shows the Advanced Level Standards that are designated with a (+) in the general education Math Standards, which were not included in the Extended Standards. The (+) standards are designated for complex, advanced-level math courses.

2018 Math Standard Code(s)	Cluster Heading
N.CN.3-6, 8-9	The Complex Number System
N.VM.1-12	Vector & Matrix Quantities
A.APR.5&7	Arithmetic with Polynomial & Rational Expressions
A.REI.8-9	Reasoning with Equalities and Inequalities
F.IF.7d	Interpreting Functions
F.BF.1c, 2, 4b-d, 5	Building Functions
F.TF.1-9	Trigonometric Functions
G.SRT.9-11	Similarities, Right Triangles, & Trigonometry
G.C.4	Circles
G.GMD.2	Geometric Measurement & Dimension
S.ID.4-5 & 6b	Interpreting Categorical and Quantitative Data
S.IC.1-6	Making Inferences and Justifying Conclusions
S.CP.2-4 & 6-9	Conditional Probability & the Rules of Probability
S.MD.1-7	Using Probability to Make Decisions