E MĀUI

BE MĀUI - HAVE THE DESIRE TO STIR UP, ACTIVATE AND ELEVATE

KA ʻUMEKE KĀʻEO LEARNING EXPECTATIONS

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KA ʻUMEKE KĀʻEO LEARNING EXPECTATIONS

At Ka ʻUmeke Kāʻeo high expectations are not only for the haumāna but for the entire learning ʻohana. Your haumāna has specific learning expectations in key content areas that align with the educational vision of Ka ʻUmeke Kāʻeo. The Mākau ʻŌlelo and Makemakika expectations are based on Common Core standards, and this year the Papakū Makawalu Professional Learning Committee will align its expectations to the Next Generation Science Standards. Each year the haumāna will build upon these skills in order to insure they are prepared to enter and successfully complete college.

Along with the school-wide expectations Ka ʻUmeke has also developed the following learning goals:

- 75% of haumāna participating in our Pre-K programs will be prepared for Papa Mālaaʻo.

- 80% of Papa ʻEkolu will be at grade level or higher in Reading and Math.

- 70% of Papa ʻEwalu will be academically prepared to engage in self-directed research based on the Papakū Makawalu methodology.

- 100% of seniors will graduate on time and will be prepared for college.

These expectations will be measured utilizing the following assessments: in-class observations, Singapore Math unit tests, NWEA, Ke Au reading and language comprehension assessment and the Papakū Makawalu Competency assessment.

At least twice a year ʻohana will participate in a kumu, haumāna and mākua conference to share your keikiʻs achievements and areas for improvement. ʻOhana involvement is critical to your keikiʻs achievement, and these conferences will focus on strategies kumu are using in their classrooms, that you can also use at home.

PAPA MĀLAAʻO

Papakū Makawalu

Wae ʻAno

Identify various polygons (circle, oval, square, rectangle, triangle, heart) that comprise the shape of things in nature

Distinguish between living and non-living things

Categorize things in 2 papa (PHL, PHM)

Introduce the 3rd papa once the 2 papa are mastered

Kilo

Draw a picture of things in nature using correct polygons (i.e., drawn w/an oval body and triangle tail.)

Use visual and auditory senses to observe things in the environment.

Collect and record simple observations using a data sheet.

Makawalu

Understand simple conclusions drawn by the kumu based on observations and data. (i.e., identifying which plant grew the most)

Mākau ʻŌlelo

Heluhelu

Demonstrate understanding of the organization and basic features of print.

Follow words from left to right, top to bottom, and page by page.

Recognize that spoken words are represented in written language by specific sequences of letters.

Understand that words are separated by spaces in print.

Recognize and name all upper- and lowercase letters of the alphabet.

Use Hakalama to decode grade level appropriate material.

Read emergent reader texts with purpose and understanding.

Collect and record simple observations using a data sheet.

With prompting and support, ask and answer questions about key details in a text.

With prompting and support, retell familiar stories, including key details.

Ask and answer questions about unknown words in a text.

With prompting and support, describe the relationship between illustrations and the story in which they appear.

Actively engage in group reading activities with purpose and understanding.

With prompting and support, relate mele/oli/hula to our nohona.

With prompting and support, asks and answer questions about key details in a text; identify main topic and retell key details.

Kākau

Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

Develop simple conclusions that provide rationale for findings with prompts.

Categorize all things into the 3 papa.

Record observations on a data sheet utilizing check boxes, diagrams & short written descriptions.

With kumu guidance, write sentences explicitly describing data gathered. (3 pipipi wale nō i ʻike ʻia ma Puhi akā naʻe, laha nā pupukolea.)

Write sentences reflecting on observations made.

Language

Demonstrates understanding of word relationships and nuances in word meanings.

- Identify real-life connections between words and their use (‘awa‘awa, mu‘emu‘e, momona...).
- Distinguish shades of meaning among closely related verbs (nou, kiloi, kiolaola) and closely related adjectives (wīwī, hakahaka, emi, hiwihiwi)

‘Ōlelo a Ho‘olohe

Explain (verbally) the rationale behind the categorization of things into the 3 papa.

Memorize a speech introducing themselves.
Able to show and tell information gathered through kumu-guided research.

Makemakika

Counting and Cardinality

Count to 100 by ones.
Count to 100 by tens.
Count forward from a given number within the known sequence.

Represent a number of objects with a written numeral 0-10.
Represent a number of objects with a written numeral 11-20.

Understand the relationship between numbers and quantities.

Given a number 1-20 count that many objects.

Identify whether the number of objects in one group greater than, less than, or equal to the number of objects in another group. Compare two numbers between 1 and 10 when presented as a written numeral.

Operations and Algebraic Thinking

With guidance and support, represent addition in a variety of ways.

With guidance and support, represent subtraction in a variety of ways.

Add within 10.

Subtract within 10.

Decompose numbers less than or equal to 10 into pairs in more than one way and record each pair using a drawing or equation.

Find the number that makes 10 and record the answer with a drawing or equation.

Fluently add and subtract within 1-5.

Recognize duplicates and extend patterns.

Number and Operations in Base Ten

Show and understand that numbers from 11-19 represent a group of ten ones and 1, 2...9 ones.

Measurement and Data

Describe measurable attributes of objects (length, weight)
Directly compare two objects to decide which object has more or less of a common attribute (i.e. lengths of 2 pencils) and describe the difference.

Classify objects into different categories; count the numbers of objects in each category and sort the categories by count.

Geometry

Describe the positions of objects using terms such as above, below, beside, in front of, behind and next to.

Identify various shapes in the environment.

Correctly name shapes (in Hawaiian) regardless of their orientations or size.

Combine simple shapes to form larger shapes.

1

PAPA ʻEKAHI

Papakū Makawalu

Wae ʻAno

Categorize all things into the 3 papa.

Kilo

Conduct 5-minute guided observations.

Illustrate simple observations.

Write one simple sentence describing an observation.

Record simple observations using a data sheet.

Makawalu

Follow along (with understanding) in kumu-led data analysis.

Create simple questions that compare data sets.

Understand conclusions (presented by the kumu) drawn from data sets.

Mākau ʻŌlelo

Heluhelu

Demonstrate understanding of the organization and basic features of print.

Follow words from left to right, top to bottom, and page by page.

Recognize that spoken words are represented in written language by specific sequences of letters.

Understand that words are separated by spaces in print.

Recognize and name all upper- and lowercase letters of the alphabet.

Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation).

Recognize the difference between letters, words, and sentences.

Recognize that different parts of a book can convey important info.

Ask and answer questions about key details in a text.

Retell stories, including key details, and demonstrate understanding of their central message or lesson.

Identify basic story elements.

Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.

Use illustrations and details in a story to describe its characters, setting, or events.

With prompting and support, read prose and poetry of appropriate complexity for Papa 1(mele, oli, moʻolelo)Relate mele/oli/hula to our nohona.

Illustrate simple observations.

Create simple questions that compare data sets.

Ask and answer who, what, when, where, why, how questions about text.

Understand conclusions (presented by the kumu) drawn from data sets.

Kākau

Write one simple sentence describing an observation.

Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

Follow along (with understanding) in kumu-led data analysis.

With guidance and support from adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.

Language

Learns and uses new vocabulary appropriately.

ʻŌlelo a Hoʻolohe

(Haʻiʻōlelo wehewehe pāhana.1 minuke a ʻoi ka lōʻihi) -Share/explain information gathered through class-guided and/or individual research (i.e. Pāhana Hoʻopōʻaiapuni)

Makemakika

Operations and Algebraic Thinking

With guidance and support, represent addition in a variety of ways.

With guidance and support, represent subtraction in a variety of ways.

Add within 10.
Subtract within 10.

Decompose numbers less than or equal to 10 into pairs in more than one way and record each pair using a drawing or equation.

Find the number that makes 10 and record the answer with a drawing or equation.

Fluently add and subtract within 1-5.

Recognize duplicates and extend patterns.

Using objects, drawings and equations to solve word problems involving situations of adding to and putting together with unknowns.

Using objects, drawings and equations to solve subtraction word problems involving situations of taking from and taking apart with unknowns.

Using objects, drawings and equations to solve addition word problems of 3 whole numbers within 20.

Know that 8 + 2 is the same as 2 + 8 (Associative Property)

Know that you can solve 2 + 6 + 4=12 by first solving 6 + 4 to make ten so that you can add 2 + 10=12

Understand subtraction, where given 10-8 they know the answer is 2 because they know 2 and 8 make 10.

Relate Counting to addition and subtraction.

Add within 20.

Fluently subtract within 10.

Subtract within 20.

Add by my taking tens.

Subtract by decomposing a number leading to 10.

Knows the relationship between addition and subtraction.

Understand the meaning of the equal sign and determine whether a addition or subtraction equation is true or false.

Determine the unknown number in an addition or subtraction equation relating three whole numbers (ie) 8 + ? = 11

Numbers and Operations in Base Ten

Show and understand that numbers from 11-19 represent a group of ten ones and 1, 2...9 ones

Measurement and Data

Describe measurable attributes of objects (length, weight).

Directly compare two objects to decide which object has more or less of a common attribute (i.e. lengths of 2 pencils) and describe the difference.

Classify objects into different categories; count the numbers of objects in each category and sort the categories by count.

Count to 100 by ones.
Count to 100 by tens.
Count forward from a given number within the known sequence.

Represent a number of objects with a written numeral 0-10.

Represent a number of objects with a written numeral 11-20.

Understand the relationship between numbers and quantities.

Given a number 1-20 count that many objects.

Identify whether the number of objects in one group greater than, less than, or equal to the number of objects in another group.

Compare two numbers between 1 and 10 when presented as a written numeral.

Count to 120 by ones starting at any number less than 120.

Within 120, read and write numerals.

Within 120, represent a number of objects with a written numeral.

Understand that the two digits of a two-digit number represent amounts of tens and ones.

Compare two two-digit numbers (based on place value) and decide if one is more than, less than or equal to the other and record using these symbols <, = and >.

Use place value based math strategies to help solve addition and subtraction problems within 100.

Understand that in adding two digit numbers one adds tens and tens, one and ones and sometimes it is necessary to compose a ten.

Find 10 more or 10 less than a given number using place value based thinking mentally.

Subtract multiples of 10 in the range 10-90 using place value understanding, concrete and pictorial models.

Explain reasoning for math strategies used.

Use concrete models or drawings and place value understanding to solve problems.

Geometry

Describe the positions of objects using terms such as above, below, beside, in front of, behind and next to.

Identify various shapes in the environment.

Correctly name shapes (in Hawaiian) regardless of their orientations or size.

Combine simple shapes to form larger shapes.

Distinguish between defining attributes (three sided, closed) and vs non-defining attributes (color, orientation, size) of a shape.

Build and Draw Shapes.

Build two-dimensional shapes.

Build three-dimensional shapes.

Build new shapes by using other shapes.

Divide shapes into equal parts of 2 and 4 (halves and fourths).

2

PAPA ʻELUA

Papakū Makawalu

Wae ʻAno

Categorize all things into the 3 papa.

Explain (verbally) the rationale behind the categorization of things into the 3 papa.

Kilo

Conduct guided observations for a period of 10 minutes.

Record observations on a data sheet utilizing check boxes, diagrams & short written descriptions.

Utilize basic tools of measure to collect and record quantitative data in the field.

Makawalu

Create 2-3 simple questions from observations and/or data collected. (what, where, why, how)

Complete simple graphs to display data with limited prompts.

Analyze graphs to make simple conclusions (i.e., comparisons, trends, etc.) with prompts.

Analyze longitudinal data to identify trends and patterns with prompts.

Develop simple conclusions that provide rationale for findings with prompts.

Mākau ʻŌlelo

Heluhelu

Recount and retell stories using correct story sequence (including character, setting, conflict, resolution.

With kumu support and scaffolding relate mele/oli/hula to our nohona.

Create 2-3 simple questions from observations and/or data collected (what, where, why, how)

With kumu support and scaffolding relate mele/oli/ʻōlelo noʻeau to our observations infusing Papakū Makawalu skills in the process.

Kākau

Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

Develop simple conclusions that provide rationale for findings with prompts

Categorize all things into the 3 papa

Record observations on a data sheet utilizing check boxes, diagrams & short written descriptions

With kumu guidance, write sentences explicitly describing data gathered. (3 pipipi wale nō i ʻike ʻia ma Puhi akā naʻe, laha nā pupukolea.)

Write sentences reflecting on observations made.

Language

Demonstrate understanding of word relationships and nuances in word meanings.

Identify real-life connections between words and their use (ʻawaʻawa, muʻemuʻe, momona...).

Distinguish shades of meaning among closely related verbs (nou, kiloi, kiolaola) and closely related adjectives. (wīwī, hakahaka, emi, hiwihiwi)

ʻŌlelo a Hoʻolohe

Moʻokūʻauhau- hoʻonui ʻia
haʻiʻōlelo no ka moʻolelo o ko lākou inoa.
haʻiʻōlelo hoʻopaʻanaʻau no 2 minuke a ʻoi ka lōʻihi
hoʻomaka ka haʻiʻōlelo uluwale, he 2-4 minuke ka lōʻihi

Makemakika

Counting
Count to 100 by ones.
Count to 100 by tens.

Count forward from a given number within the known sequence.

Represent a number of objects with a written numeral 0-10.

Represent a number of objects with a written numeral 11-20.

Understand the relationship between numbers and quantities.

Given a number 1-20 count that many objects.

Identify whether the number of objects in one group greater than, less than, or equal to the number of objects in another group.

Compare two numbers between 1 and 10 when presented as a written numeral.

Operations and Algebraic Thinking

With guidance and support, represent addition in a variety of ways.

With guidance and support, represent subtraction in a variety of ways.

Add within 10.

Subtract within 10.

Decompose numbers less than or equal to 10 into pairs in more than one way and record each pair using a drawing or equation.

Find the number that makes 10 and record the answer with a drawing or equation.

Fluently add and subtract within 1-5.

Recognize duplicates and extend patterns.

Use addition within 100 to solve one step word problems involving situations of adding to and putting together with unknowns in all positions.

Use subtraction within 100 to solve one step word problems involving situations of taking from and taking apart with unknowns in all positions.

Use addition within 100 to solve two-step word problems involving situations of adding to and putting together with unknowns in all positions.

Use subtraction within 100 to solve two-step word problems involving situations of taking from and taking apart with unknowns in all positions.

Fluently add within 20 using mental strategies.

Know From memory all sums of two 1-digit numbers.

Determine whether a group of objects (up to 20) has an odd or even number of members.

Use repeated addition to find the sum of rectangular arrays of up to 5 rows and 5 columns.

Numbers and Operations in Base Ten

Show and understand that numbers from 11-19 represent a group of ten ones and 1, 2...9 ones

Measurement and Data

Describe measurable attributes of objects (length, weight)

Directly compare two objects to decide which object has more or less of a common attribute (i.e. lengths of 2 pencils) and describe the difference.

Classify objects into different categories; count the numbers of objects in each category and sort the categories by count.

Understand 3 digit numbers and its value

Understand that 100=10 tens

Count Within 1,000 by 5‘s
Count Within 1,000 by 10‘s
Count Within 1,000 by 100‘s

Read and write numbers to 1,000 using base-ten numerals, number names and expanded form.

Compare two 3-digit numbers and record whether they are >, = and > (more than, equal, less than)

Fluently add within 100 using strategies based on place value, properties of operations and or the relationship between addition and subtraction.

Fluently subtract within 100 using strategies based on place value, properties of operations and or the relationship between addition and subtraction.

Add up to four 2-digit numbers using strategies based on place value and properties of operations.

Add and Subtract within 1000 using, place value, properties of operations and or the relationship between addition and subtraction-relate the strategy to a written method.

Understand that in adding & Subtracting three digit numbers you add or subtract in the place value ones + ones ten + tens and so on.

Mentally add 10 to a given number 100-900.
Mentally add 100 to a given number 100-900.
Mentally subtract 10 to a given number 100-900.
Mentally subtract 100 to a given number 100-900.

Explain why addition and subtraction works, using place value and the properties of operations (may support with pictures or by drawing objects)

Geometry

Describe the positions of objects using terms such as above, below, beside, in front of, behind and next to.

Identify various shapes in the environment.

Correctly name shapes (in Hawaiian) regardless of their orientations or size.

Combine simple shapes to form larger shapes.

Recognize and draw shapes with specified attributes.

Identify triangles, quadrilaterals, pentagons, hexagons and cubes.

Partition a rectangle into rows and columns of same size squares and count to find the total number of them.

Partition Circles and Squares into equal parts of 2, 3 or 4.

Describe a whole as two halves, three thirds etc.

Recognize that equal shares of identical holes need not have the same shape.

3

PAPA ʻEKOLU

Papakū Makawalu

Wae ʻAno

Categorize all things into the 3 papa.

Write simple sentences explaining the rationale behind the categorization of things into the 3 papa.

Kilo

Conduct self-directed observations for a period of 10 minutes.

Record observations on a data sheet utilizing check boxes & written descriptions.

Utilize a variety of tools of measure to collect and record quantitative data in the field.

Makawalu

Create 3-5 simple questions from observations and/or data collected (what, where, why, how) w/ prompts.

Create simple graphs to display data.

Analyze graphs to make simple conclusions that answer essential questions (i.e., comparisons, trends, etc.) w/written prompts.

Analyze longitudinal data to identify trends and patterns with limited prompts.

Develop simple conclusions that provide rationale for findings w/ prompts.

Mākau ʻŌlelo

Heluhelu

Recount stories.

Describe characters.

Distinguish point of view.

Ask and understand questions to demonstrate understanding of text;refer to text to answer questions and to draw inferences.

With kumu support relate mele/oli/hula to our nohona.

Create 3-5 simple questions from observations and/or data collected (what, where, why, how) w/ prompts.

With kumu support relate mele/oli/ʻōlelo noʻeau to our observations infusing Papakū Makawalu skills in the process.

Analyze graphs to make simple conclusions that answer essential questions (i.e., comparisons, trends, etc.) w/written prompts.

Kākau

Develop simple conclusions that provide rationale for findings w/ prompts.

Categorize all things into the 3 papa.

Write simple sentences explaining the rationale behind the categorization of things into the 3 papa.

Record observations on a data sheet utilizing check boxes & written descriptions.

With kumu guidance, write an informational paragraph describing data gathered. OR Organize observations made into a narrative paragraph.

Relate ʻōlelo noʻeau where applicable to writing.

Language

E koho i nā huaʻōlelo Hawaiʻi kikoʻī i launa kūpono me ka manaʻo. Carefully choose appropriate Hawaiian vocabulary to convey meaning.
E makaʻala i ka ʻokoʻa ma waena o ka ʻōlelo waha a me ke kākau ʻana; ke mele a me ka moʻolelo…

Be mindful of the differences in communication thru writing and speaking; the difference in format and word choice in poetry and prose.
Demonstrate understanding of word relationships and nuances in word meanings.

E makaʻala i ke kaona ma ka ʻōlelo; he aha ka manaʻo kūʻike? he aha ke kaona o ia manaʻo? (Figurative vs. literal meaning)

Identify real-life connections between words and their use (e hoakāka i kekahi lekapī i hiki ke hana hou ʻia, e hōʻike i ke kaʻinahana ma ka māla kalo…)

E hōʼike i nā huaʻōlelo ʻokoʻa no ka hoakāka ʻana i ke ʻano o ka manaʻo; ke ʻano o ka naʻau: (mao-popo, ʻike leʻa, mahuʻi, piliwi, hilinaʻi, lohe ʻia, pāhaʻohaʻo, āiwaiwa, kāhāha…)

ʻŌlelo a Hoʻolohe

Haʻiʻōlelo hoʻopaʻanaʻau no 3 minuke a ʻoi ka lōʻihi; haʻiʻōlelo uluwale

Makemakika

Numbers and Operations: Fractions

Understand a fraction of one whole broken into parts. Part-whole relationship.

Understand a fraction on a number line and represent a fraction on a number line.

Recognize and Generate simple equivalent fractions.

Explain why fractions are equivalent by using a visual fraction model.

Express whole numbers as fractions eg 3/3 = 1 whole or 3/1 = 3

Compare fractions by reasoning of their size to see whether the two fractions are greater than, less than or equal to each other. Show understanding by using symbols < , > or =.

Use visual fraction model.

Numbers and Operations in Base Ten

Use place value understanding to round whole numbers to the nearest 10.

Use place value understanding to round whole numbers to the nearest 100.

Use different math strategies to add within 1000.

Use different math strategies to subtract within 1000.

Use place value understanding to multiply one-digit whole numbers by 10 between 10-90.

Operations and Algebraic Thinking

Interpret products of whole number e.g. 5X7 is 5 groups of 7 objects each.

Interpret whole number quotients e.g. when 35 objects need to be split into 5 groups there will be 7 objects per group.

Use multiplication within 100 to solve word problems involving equal groups, arrays and measurement quantities with a symbol for the unknown, use drawings and equations.

Use division within 100 to solve word problems involving equal groups, arrays and measurement quantities with a symbol for the unknown, use drawings and equations.

Determine and unknown quantity in multiplication or division tree. E.g. 5X ? = 40

Know that 4X6 is same as 6X4 (commutative property of multiplication)
Know that 3X5X2 can be found by first multiplying 3X5=15 then 15X2= 30 (associative property of multiplication)

Know that 8X5=40 and 8X2=16, one can find 8 X (5+2)= (8X5) + (8X2)= 40 + 16= 56 (distributive property)

Find quotient in division by finding the two factors that are multiplied to make the whole. E.g. 32÷ 8 the answer can be found by finding the factor when multiplied by 8 makes 32.

Fluently Multiply within 100 by using strategies such as the relationship between multiplication and division for properties of operations.

Know from memory all products of one-digit numbers.

Solve two-step word problems using the four operations.

Identify arithmetic patterns in addition and multiplication tables and explain using properties of operations.

Measurement and Data

Tell and write time to the nearest minute.

Measure time intervals

Solve word problems involving addition and subtraction of the time intervals in minutes (on a number line)

Measure and estimate liquid volumes using grams (g), kilograms (kg) and liters (l).

Measure and estimate masses of objects using grams (g) and kilograms (kg).

Solve one-step word problems involving masses using the four operations and by using drawings.
Solve one-step word problems involving volumes using the four operations and by using drawings.

Draw a scaled picture graph.
Draw a scaled bar graph.

Solve one-step how many more or less problems by looking at a scaled bar graph.

Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.

Show data my making a line plot with correlating whole, halves and fourths marked on scale.

Recognize area as attribute of plane figures.

Measure areas by counting unit squares.

Find the area of a rectangle by tiling it and showing that the area can be found by multiplying the side by length.

Understand that an area can be found by finding the sum of two parts of the rectangle that make up the whole.

Solve real-world and mathematical problems involving perimeters of polygons.

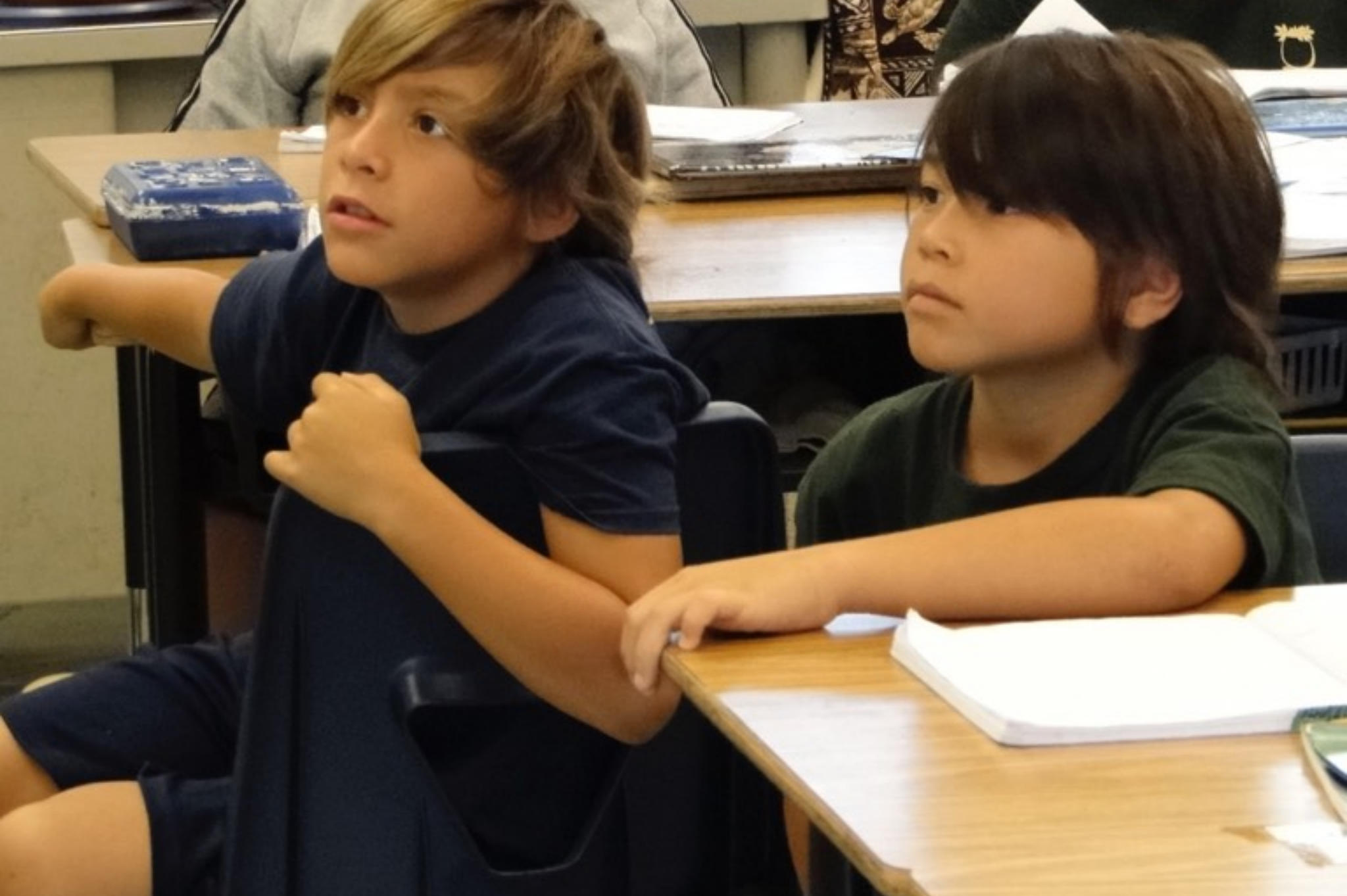
Geometry

Recognize that shapes in different categories share similar attributes e.g. 4 sided

Understand that shapes with shared attributes can define a larger category e.g. quadrilaterals.

Recognize that squares, rectangles and rhombuses are quadrilaterals.

Draw other quadrilaterals that do not belong to the above sub categories.
Partition shapes into parts with equal areas, expressed with a fraction.



4

PAPA ʻEHĀ

PAPAKŪ MAKAWALU

Wae ʻAno

Categorize all things into the 3 papa.

Write a paragraph explaining the rationale behind the categorization of things into the 3 papa.

Differentiate between literary research questions and investigative questions with prompts.

Kilo

Conduct self-directed observations for a period of 15 minutes.

Record observations on a data sheet.

Summarize observations.

Utilize a variety of tools of measure to collect and record quantitative data in the field.

Makawalu

Make predictions tied to kilo activities with guidance from kumu.

Create 3-5 simple questions from observations and/or data collected (what, where, why, how)

Use technology to create simple graphs to display data with limited prompts.

Analyze graphs to make simple conclusions that answer inquiry questions (i.e., comparisons, trends, etc.)

Analyze longitudinal data to identify trends and patterns with limited prompts.

Develop simple conclusions that provide rationale for findings with prompts.

Mākau ʻŌlelo

Heluhelu

Read & interpret a variety of grade level literature in Hawaiian & in English, (ranging from grades K-4), with Kumu support & scaffolding, as it relates to ongoing Papakū Makawalu grade level focus.

With kumu support and scaffolding, refer to details and examples in a text (mele/oli/ʻōlelo noʻeau, and moʻolelo-ʻŌlelo Hawaiʻi and English) to explain what the text says explicitly and when drawing inferences from the text.

Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

Determine the main idea of a text and explain how it is supported by key details; summarize the text.

With kumu support and scaffolding, reference mele/oli/ʻōlelo noʻeau appropriately linked to the text actively infusing Papakū Makawalu skills in the process.

Kākau

Write a 5 paragraph essay following appropriate format and function

Informational
Narrative

Write informative/explanatory texts to examine a topic and convey ideas and information clearly with teacher guidance.

Recall relevant information from experiences or gather relevant information from observations, print and/or digital sources; take notes and categorize information, and provide a list of sources.

Draw evidence from data collection, literary or informational texts to support analysis, reflection, and research.

Language

Utilize the makawalu process with kumu guidance to deconstruct unfamiliar words in Hawaiian within the context of a given text (mele/oli/mo‘olelo/atikala) to gain understanding.

Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

Demonstrate command of the conventions of standard English & Hawaiian grammar and usage when writing or speaking.(exception English grammar & speaking will fall within a range of grades K-4)

‘Ōlelo a Ho‘olohe

Work collaboratively within a group and express thoughts and ideas based on previous knowledge and synthesize with current discussion.

Orally and or visually report on a topic or text, or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes to a variety of audiences.

ha‘i‘ōlelo uluwale 4 a ‘oi minuke ka lō‘ihi

Makemakika

Numbers and Operations: Fractions

(Expectations in this domain are limited to fractions with denominators 2,3,4,5,6,8,10,12,100.)

Understand a fraction on a number line and represent a fraction on a number line.

Explain why fraction a/b is equivalent to a fraction (nxa)/(nxb); using multiples to find equivalent fractions, by using visual fraction models.

Be aware and observe the relationship between how the number of parts and size differ even though the fractions are the same size.

Compare two fractions with different denominators or numerators by creating common denominators or numerators or by comparing to a benchmark fraction such as ½.

Recognize that in order to compare fractions and have it be valid they need to refer the same whole

Be able to record fraction comparisons with these symbols <,> or = (more than, less than or equal)

Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

Decompose a fraction into a sum of fractions of the same whole using an equation. Justify decomposition by using a visual fraction model.

Understand that a mixed number is a combination of multiple wholes and parts.
Add and subtract mixed numbers with like denominators.

Solve word problems involving addition and subtraction of fractions to the same whole and having like denominators.

Multiply a fraction by a whole number. e.g understand that 5/4 is 5 X ¼ as well as 3 X (2/5) is the same as 6 X (1/5)

Solve word problems involving multiplication of fractions by a whole number.

Express a fraction with denominator 10 as equivalent fraction with denominator 100. e.g 3/10 as 30/100 and add 30/100 + 4/100=34/100

Use decimal notation for fractions with denominators 10. e.g .62 is written as 62/100

Understand foundational knowledge of decimals using place value knowledge.

Locate a decimal on a number line diagram.

Compare two decimals to hundredths by reasoning about their size. Use symbols <,> and = to show relationship.

Numbers and Operations in Base Ten

(all multi-digit numbers will be less than 1,000,000).

Recognize in a multi-digit whole number that one place value is 10 times that of the place value before it. e.g. 700÷70=10

Read and write multi-digit whole number using base ten numerals and expanded form.

Compare two multi-digit whole numbers and determine if one number is <,> or = to the other. (more than, less than or equal too)

Use place value understanding to round whole numbers to any place.

Fluently add multi-digit whole numbers using the standard algorithm (a range of algorithms may be used)

Fluently subtract multi-digit whole numbers using the standard algorithm (a range of algorithms may be used)

Multiply a whole number up to 4 digits by a one-digit whole number, using strategies based on place value and properties of operations.

Multiply two 2-digit numbers, using strategies based on place value and properties of operations.

Divide 4 digit whole numbers by a one-digit whole number to find quotients and remainders, using strategies based on place value and properties of operations.

Illustrate and explain calculations by using equations, drawings, rectangular arrays and or area models.

Operations and Algebraic Thinking

(For all word problems use drawings & equations with a symbol for the unknown number to represent the problem)Interpret whole number quotients e.g. when 35 objects need to be split into 5 groups there will be 7 objects per group.

Interpret a multiplication equation e.g. 35 is 5 times as many as 7 or 35 is 7 times as many as 5.

Solve word problems with multiplicative comparison e.g. Liko picked for apples. Nani picked 7 times as many. How many apples did they pick all together?
7X4=28 (4.OA.2)

Distinguish between multiplicative comparison vs additive comparison. e.g. Additive: How many more or less is there.

Multiplicative: How many more times is there.

Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations.

Solve multistep word problems posed with whole numbers and having whole-number answers with remainders using the four operations.

Use a letter in equations to stand for the unknown quantity.

Find all factor pairs for a whole number in the range 1-100.

Recognize that a whole number is a multiple of each of its factors.

Determine whether a given whole number in range 1-100 is a multiple of a given one-digit number.

Determine whether a given whole number in range 1-100 is a prime or composite number.

Generate a number or shape pattern that follows a given rule e.g. “add 3

Identify higher level patterns within a pattern e.g. in a “add 3” pattern the numbers alternate between odd and even numbers.

Measurement and Data

Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb , oz; l, ml; hr, min, sec.

Be able to do measurement conversions via a table for units within a single system e.g. convert from km to m to cm

Know that something that is 4ft is also 48in in length as well as be able to say 1ft is 12 times as long as 1in.

Use the four operations to solve word problems with whole numbers, simple fractions and decimals; in the different areas of measurement. (distance, time, money, liquid volumes, mass)

Apply area and perimeter formulas for rectangles in real world and mathematical problems.

Make a line plot to display a data set of measurements in fractions of a unit (1/2, ¼, 1/8).

Solve problems involving addition and subtraction of fractions by using information presented in line plots. E.g. telling the difference between the smallest and shortest insects measured and plotted.

Recognize that angles as geometric shapes that are formed whereve two rays (lines) share a common endpoint.

Understand concepts of angle measurement. Measure angles in whole-number degrees using a protractor.

Sketch angles of specified measure

Recognize angle measure as additive. (when a single angle is decomposed, the angle measure of two parts may be added together to know the whole angle)

Solve addition and subtraction problems to find unknown angles. Represent with an equation with a symbol for the unknown angle measure.

Geometry

Draw points, lines, line segments, rays, angles (right, obtuse, acute) and perpendicular and parallel line.

Identify points, lines, line segments, rays, angles (right, obtuse, acute) and perpendicular and parallel lines in two-dimensional figures.

Use points, lines, line segments, rays, angles (right, obtuse, acute) and perpendicular and parallel line to classify two-dimensional figures.

Recognize a line of symmetry for a two dimensional figure and know that it splits the figure into two exact matching parts.

Identify line symmetric figures.

Draw lines of symmetry.

5

PAPA ʻELIMA

PAPAKŪ MAKAWALU

Wae ʻAno

Categorize all things into the 3 papa.

Write a paragraph explaining the rationale behind the categorization of things into the 3 papa.

Teach how to categorize all things into the 3 papa.

Differentiate between literary research questions and investigative questions with limited prompts.

Kilo

Conduct self-directed observations for a period of 15 minutes.

Record observations on a data sheet.

Summarize observations.

Utilize a variety of tools of measure to collect and record quantitative data in the field.

Makawalu

Make predictions tied to kilo activities.

Create 3-5 inquiry questions from observations and/or data collected (what, where, why, how) with prompts.

Use technology to create simple graphs to display data.

Analyze graphs to make conclusions that answer inquiry questions (i.e., comparisons, trends, etc.)

Analyze longitudinal data to identify trends and patterns with limited prompts.

Develop simple conclusions that provide rationale for findings with limited prompts.

Identify interactions between the 3 papa with prompts.

Mākau ʻŌlelo

Heluhelu

Read & interpret a variety of grade level literature in Hawaiian & in English, (ranging from grades1-5), with Kumu support & scaffolding, as it relates to ongoing Papakū Makawalu grade level focus.

With kumu support as needed, reference specific lines or sections in mele/oli/ʻōlelo noʻeau and English texts or stories appropriately linked to the text to demonstrate understanding.

Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.

Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. With kumu support as needed, reference mele/oli/ʻōlelo noʻeau appropriately linked to the text actively infusing Papakū Makawalu skills in the process.

Kākau

Write a 5 paragraph essay following appropriate format and function

Informational
Narrative
Persuasive/Opinion

Write informative/explanatory texts to examine a topic and convey ideas and information clearly with minimal teacher guidance.

Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.

Draw evidence from data collection, literary or informational texts to support analysis, reflection, and research.

Language

Utilize the makawalu process with some kumu guidance to deconstruct unfamiliar words and phrases in Hawaiian within the context of a given text (mele/oli/moʻolelo/atikala) to gain understanding.

Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

Demonstrate command of the conventions of standard English & Hawaiian grammar and usage when writing or speaking.(exception English grammar & speaking will fall within a range of grades 1-5)

ʻŌlelo a Hoʻolohe

Work collaboratively within a group and express thoughts and ideas based on previous knowledge and synthesize with current discussion.

Orally and or visually report on a topic or text, or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes to a variety of audiences.

haʻiʻōlelo uluwale 5 a ʻoi minuke ka lōʻihi.

Makemakika

Numbers and Operations: Fractions

Add fractions with unlike denominators.

Subtract fractions with unlike denominators.

Solve word problems involving addition of fractions with like and unlike denominators.

Solve word problems involving subtraction of fractions with like and unlike denominators.

Haumāna will use number sense of fractions and be able to assess the reasonableness of answer. ie 2/5 + ½ = 3/7 is incorrect because 3/7< ½

Interpret a fraction as division of the numerator by the denominator.

Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.

Multiply a fraction by a whole number.
Multiply a fraction by a fraction.

Find the area of a rectangle by multiplying fractional side lengths and using unit squares (tiling).

The haumāna will understand that when multiplying a fraction less than one by a whole number the product (answer) will be less than the original whole number.

The haumāna will understand that when multiplying a fraction more than one by a whole number the product (answer) will be more than the original whole number.

Solve real world problems involving multiplication of fractions and mixed numbers e.g., by using visual fraction models or equations to represent the problem.

Create story contexts involving division of a unit fraction by a whole number. Using the relationship between multiplication and division to explain.

Create story contexts involving division of a whole number by a unit fraction. Using the relationship between multiplication and division to explain.

Solve real world problems involving division of fractions by non-zero whole numbers and whole numbers by unit fractions e.g., by using visual fraction models or equations to represent the problem.

Numbers and Operations in Base Ten

(all multi-digit numbers will be less than 1,000,000).

Recognize in a multi-digit whole number that one place value is 10 times that of the place value before it. e.g. 700÷70=10

Read and write multi-digit whole number using base ten numerals and expanded form.

Compare two multi-digit whole numbers and determine if one number is <,> or = to the other. (more than, less than or equal too)

Use place value understanding to round whole numbers to any place.

Fluently add multi-digit whole numbers using the standard algorithm (a range of algorithms may be used)

Fluently subtract multi-digit whole numbers using the standard algorithm (a range of algorithms may be used)

Multiply a whole number up to 4 digits by a one-digit whole number, using strategies based on place value and properties of operations.

Multiply two 2-digit numbers, using strategies based on place value and properties of operations.

Divide 4 digit whole numbers by a one-digit whole number to find quotients and remainders, using strategies based on place value and properties of operations.

Illustrate and explain calculations by using equations, drawings, rectangular arrays and or area models.

Operations and Algebraic Thinking

Understand the order of operations.

Compute expressions in parenthesis.

Generate two numerical patterns using two given rules. i.e. add 3, add 6

Identify ordered pairs that fit a given pattern. ie If rule is add 3 then (2,5) is an ordered pair that fits that rule.

Plot the ordered pairs, compare and informally explain the patterns.

Number and Operations in Base Ten (Numbers to a 1,000,000)

Haumāna understand the value of the digit is 10 times more as you move to left.

Haumāna understand the value of the digit is 1/10 when you move to the right.

Haumāna are able to explain the relationship between the amount of zeros a number has when working with 10 to a certain power.

For example, 10 to the 3rd power means their will be 3 zeros or 10X10X10=1,000 or 10 to the 4th power is four zeros and so on.

Use place value understanding to round decimals to any place.

Fluently multiply multi-digit whole numbers using the standard algorithm.

Understand the meaning of division based on place value.

Be able to divide a four-digit number by a digit number using place value understanding.

Divide a 2-digit or 3-digit number by a 2-digit number when the quotient is 2 digits.

Divide a 4-digit number by a 2-digit whole number.

Add 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.

Subtract 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.

Multiply 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.

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 strategy to a written method and explain the reasoning used.

Measurement and Data

Convert measurement units within the same measurement system (i.e. cm to m)

Solve multi-step measurement real world problems.

Make a line plot to display a data set of measurements in fractions of a unit (1/2, ¼, 1/8).

Use operations on fractions for this grade to solve problems information presented in line plots.

Recognize volume as an attribute of solid figures.

Understand that a “unit cube” can be used to measure the volume of a figure.

Understand that a solid figure can be packed without gaps or overlaps with “unit cubes” to know the volume.

Measure volumes by counting unit cubes using cubic cm, cubic in, cubic ft and improvised units.

Discover and understand that the volume of a rectangular prism is V=l x W x H by packing unit cubes into a rectangular prism.

Apply volume formula in solving real world and mathematical problems.

Use the concept that volume is additive to find the volumes of real world figures.

Geometry

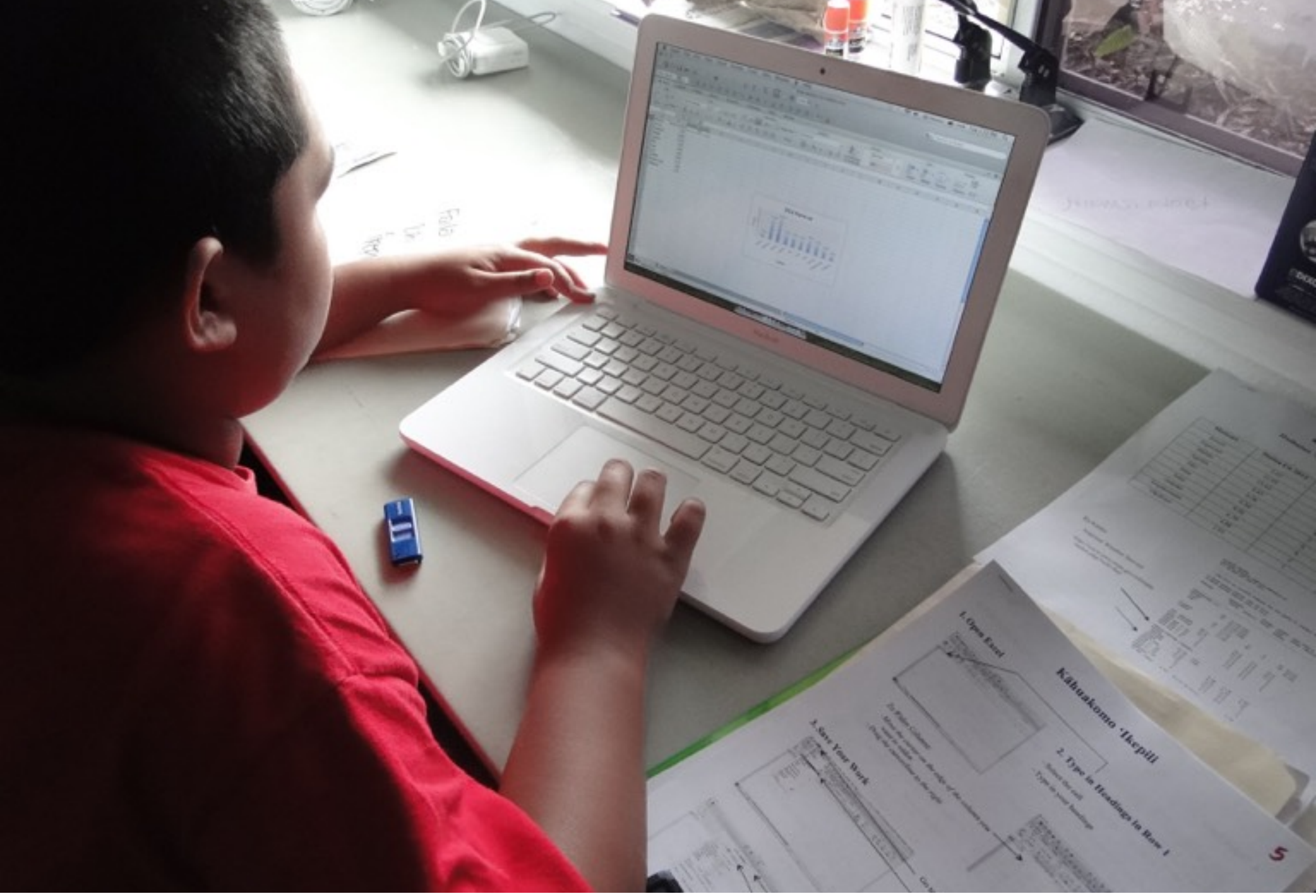
Create a x and y coordinate system using intersecting perpendicular lines.

Be able to locate a point on this coordinate system by giving a ordered pair of (x,y) numbers.

Represent real world and mathematical problems by graphing points in the first quadrant of this co-ordinate plane.

Understand that attributes belonging to a category of two dimensional figures also belong to all subcategories of that category. I.e. all rectangles have four right angles and squares are rectangles, so all squares have four right angles.

Classify two-dimensional figures in hierarchy based on properties.



6

PAPA ʻEONO

PAPAKŪ MAKAWALU

Wae ʻAno

Categorize things into the 3 papa from simple written texts (i.e., ʻōlelo noʻeau) with kumu assistance

Write a paragraph explaining the rationale behind the categorization of things into the 3 papa

Teach how to categorize all things into the 3 papa

Differentiate between literary research questions and investigative questions with prompts

Kilo

Conduct self-directed observations for a period of 15 minutes

Record observations on a data sheet

Summarize observations

Utilize a variety of tools of measure to accurately collect and record quantitative data in the field (w/supervision)

Makawalu

Create inquiry questions from observations and/or data collected. (what, where, why, how)

Use technology to create simple graphs to display data.

Analyze graphs to make conclusions that answer inquiry questions (i.e., comparisons, trends, etc.)

Analyze longitudinal data to identify trends and patterns with limited prompts.

Develop simple conclusions that provide rationale for findings with limited prompts.

Apply makawalu skills to an inquiry class project.

Identify interactions between the 3 papa with teacher assistance.

Field questions regarding the information presented.

Mākau ʻŌlelo

Heluhelu

Read & interpret a variety of grade level literature in Hawaiian & in English, (ranging from grades1-6), with Kumu support & scaffolding, as it relates to ongoing PKM8 grade level focus.

Read, (at current reading level), from a variety of sources to obtain & analyze information in regards to the historical context needed to write the components included in the Scientific Inquiry project.

Kākau

Conduct a Scientific Inquiry group Project, with teacher guidance. Individual written components include, Introduction, Methodology, Data Analysis, & Conclusion.

Write a 5-7 paragraph essay, with kumu guidance, in response to experiences & literature.

Utilize the writing process, planning, writing, revising, rewriting & editing.

Language

Demonstrate command of the conventions of standard English & Hawaiian grammar and usage when writing or speaking.(exception English grammar & speaking will fall within a range of grades 1-6)

ʻŌlelo a Hoʻolohe

Present Scientific Inquiry Project to classmates, parents & outside judges.

Makemakika

Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, be-

cause for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."

Understand the concept of a unit rate a/b associated with a ratio. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."

Use ratio and rate reasoning to solve real-world and mathematical problems.

Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Compute division of fractions accurately.
Solve division of fractions by fractions word problems using standard algorithm accurately.

Solve division of fractions by fractions word problems using visual models accurately.

Fluently divide multi-digit numbers using the standard algorithm.

Fluently add multi digit decimals using the standard algorithm.

Fluently subtract multi digit decimals using the standard algorithm.

Fluently multiply multi digit decimals using the standard algorithm.

Fluently divide multi digit decimals using the standard algorithm.

Find the greatest common factor of two whole numbers less than or equal to 100.

Find the least common multiple of two whole numbers less than or equal to twelve.

Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to twelve.

Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a sum of two whole numbers with no common factor. For example 36 + 8 as 4(9+2)

Understand that positive and negative numbers are used together to describe quantities having opposite directions or values.

Use positive and negative numbers to represent quantities in real-world context, explaining the meaning of zero in each situation.

Understand a rational number as a point on the number line.

Plot negative numbers on a number line.

Plot negative coordinate axes on a plane.

Recognize opposite signs of numbers as indicating locations on opposites sides of 0 on the number line.

Recognize that the opposite of the opposite of a number is the number it self.

Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane.

Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.

Find and position integers and other rational numbers on a horizontal or vertical number line diagram.

Find and position pairs of integers and other rational numbers on a coordinate plane.

Understand ordering of rational numbers.

Understand absolute value of rational numbers.

Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.

Write, interpret and explain statements of order for rational numbers in real world contexts.

Understand the absolute value of a rational number as its distance from 0 on the number line. Interpret absolute values in real world situations.

Distinguish comparisons of absolute value from statements about order.

Solve real world and mathematical problems by graphing points in all four quadrats of the coordinate plane.

Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Write and evaluate numerical expressions involving whole-number exponents.

Write, read, and evaluate expressions in which letters stand for numbers.

Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation: Subtract y from 5" as 5 – y.

Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient).

Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems.

Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas V = s3 and A = 6 s2 to find the volume and surface area of a cube with sides of length s = 1/2.

Apply the properties of operations as strategies to generate equivalent expressions. For example, apply the distributive property to the expression 3(2 + x) to produce the equivalent expression 6 + 3x; apply properties of operations to y + y + y to produce the equivalent expression 3y.

Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.

Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Use variables to represent numbers and write expressions when solving a real-world or mathematical problem.

Understand that a variable can represent an unknown number.

Understand that a variable can, depending on the purpose at hand, be any number in a specified set.

Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.

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.
Represent solutions of such inequalities on number line diagrams.

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, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable.

Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.

Find area of right triangles.
Find the area of other types of triangles.
Find the area of special quadrilaterals.
Find the area of polygons.

Find the area of the above shapes by composing into rectangles or decomposing into triangles and other shapes.

Apply the above techniques in the context of solving real-world and mathematical problems.

Find the volume of a right rectangular prism with fractional edge lengths.

Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths.

Apply the above formula to the context of solving real-world and mathematical problems.

Draw polygons in the coordinate plane given coordinates for the vertices.

Use the coordinates of a polygon to find the length of a side joining points with the same first coordinate or the same second coordinate.

Apply the above techniques in the context of solving real-world and mathematical problems.

Represent three-dimensional figures using nets made up of rectangles.

Represent three-dimensional figures using nets made up of triangles.

Use the net of a rectangle to find the surface area.

Use the net of a triangle to find the surface area.

Apply these techniques in the context of solving real-world and mathematical problems.

Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, "How old am I?" is not a statistical question, but "How old are the haumāna in my school?" is a

statistical question because one anticipates variability in haumāna' ages.

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.

Recognize that a measure of center for a numerical data set summarizes all of its values using a single number.

Measure of variation describes how its values vary using a single number.

Display numerical data in plots on a number line, including dot plots, histograms, and box plots. Summarize numerical data sets in relation to their context, such as by:

- Reporting the number of observations.
- Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
- Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation).
- Describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

7

PAPA ʻEHIKU

PAPAKŪ MAKAWALU

Wae ʻAno

Categorize things into the 3 papa from written texts (i.e., moʻolelo)

Write a paragraph explaining the rationale behind the categorization of things into the 3 papa

Teach how to categorize all things into the 3 papa

Differentiate between literary research questions and investigative questions with limited prompts

Kilo

Conduct self-directed observations for a period of 15 minutes

Utilize the practice of kilo outside of the school environment

Record detailed observations on a data sheet

Summarize observations

Utilize a variety of tools of measure to accurately collect and record quantitative & qualitative data in the field (w/supervision)

Makawalu

Create inquiry questions from observations and/or data collected (what, where, why, how)

Use technology to create simple graphs to display data

Analyze graphs to make conclusions that answer inquiry questions (i.e., comparisons, trends, etc.)

Analyze longitudinal data to identify trends and patterns with limited prompts

Develop simple conclusions that provide rationale for findings with limited prompts

Apply makawalu skills to a small group inquiry project

Identify interactions between the 3 papa with limited teacher assistance

Field questions regarding the information presented

Mākau ʻŌlelo

Heluhelu

Read & interpret a variety of grade level literature in Hawaiian & in English, (ranging from grades 3-7), with Kumu support, as it relates to ongoing Papakū Makawalu grade level focus.

Read from a variety of sources (at current grade level), to obtain, analyse & synthesize information as it relates to the historical context needed to write the components included in the Scientific Inquiry project.

Kākau

Conduct as an individual, or in pairs a Scientific

Inquiry Project with a mentor & or Kumu supervision. Individual written components to include, introduction, Methodology, Data Analysis, & Conclusion.

Write a 5-7 paragraph narrative fiction, or Poetry utilizing graphic organizer, & relating to some aspect of the Scientific Inquiry Project

Utilizing the writing process, planning, writing, revising, rewriting, & editing.

Language

Demonstrate command of the conventions of standard English & Hawaiian grammar and usage when writing or speaking.(exception English grammar & speaking will fall within a range of grades 3-7)
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Ōlelo a Hoʻolohe

Present Scientific Inquiry Project & Narrative Fiction or Poetry to classmates, parents, & outside judges.

Makemakika

Combine opposite numbers on a number line

Combine opposite rational numbers on a number line

Combine opposite quantities to make zero using a number line

Combine opposite quantities to make zero on a number line

Add integers using a number line
Add integers with the same signs
Add integers with different signs

Find the additive inverse using an equation

Identify rational numbers

Convert unit fractions to a decimal

Convert fraction and mixed numbers to decimals

Multiply positive and negative integers on a number line

Multiply two positive or two negative integers on a number line

Multiply sets of integers using the associative property on a number line

Multiply proper fractions

Multiply to divide proper and improper fractions

Use addition and subtraction to solve word problems involving decimals

Use addition and subtraction to solve word problems involving fractions

Use addition and multiplication to solve word problems with rational numbers

Use addition and division to solve word problems with rational numbers

Simplify expressions with order of operations
Simplify an expression by distributing a negative

Factor an expression

Simplify expressions using distribution and combining like terms

Simplify an expression with a fraction using the distributive property

Simplify an expression with a fraction by adding or subtracting terms with fractions

Add linear expressions by combining like terms

Subtract linear expressions by combining like terms

Expand linear expressions using distributive property

Expand linear expressions with fractions using the distributive property

Factor linear expressions

Rewrite an expression by expanding it

Identify equivalent expressions using substitution

Write an expression to find the cost of an item with tax

Write an expression to find the cost of a discounted item

Write a percent markup expression

Approach a multi-step problem using steps

Solve problems using a chart
Solve problems by writing and solving equations

Estimate to check reasonableness

Solve multi-step problems using order of operations

Solve multi-step problems by creating diagrams

Solve multi-step problems with positive and negative fractions

Solve word problems with positive and negative fractions

Solve multi-step problems with positive and negative decimals using order of operations

Solve multi-step problems with positive and negative decimals using mathematical reasoning

Use order of operations to solve multi-step problems

Use a bar model to write and solve equations

Solve an equation using inverse operations

Convert a real-world situation into an equation

Write an inequality from a word problem

Solve inequalities with inverse operations

Represent an inequality solution set on a number line

Calculate a unit rate with two fractions using division

Analyze a situation using a rate table

Graph a proportional relationship using a table

Identifying proportional relationships by examining a graph

Identifying proportional relationships by examining the origin

Evaluate specific points on a graph of a proportional relationship

Describe the relationship between measures by examining a graph

Quantify the relationship of two proportional measures

Determine the unit rate of a proportional relationship using a graph

Answer questions about a proportional relationship using a graph

Estimate a percent value using a bar model

Calculate percent of a number using a proportion model

Solve percent of a number problems using a proportion model

Apply taxes, tips, and discounts using a proportion and scale factor

Calculate percent increase and decrease in context

Solve ratio and percent problems using a proportion

Compute successive percentages using proportions and equations

Find amount of change and final amount, given percent of change and original amount

Find percent of change and what percent the final amount is of the original amount

Find original amount and amount of change, given percent of change and final amount

Solve problems with taxes using proportions

Solve problems with tips using proportions

Find the percent of decrease using a proportion

Find the percent of increase using a proportion

Identify a random sample.

Identify a representative sample.

Make inferences about a population by analyzing random samples.

Use proportional reasoning to make estimates about a population.

Assess whether an inference is valid by analyzing data.

Make estimates about a population using the mean of multiple samples.

Compare the means and mean absolute deviations of two data sets.

Compare medians and inter-quartiles of two data sets.

Use variability and measures of center to persuade.

Analyze deceptive advertising using measures of center and variability.

Compare populations using mean.

Compare populations using median.

Make inferences about range.

Compare inter-quartile range using box plots.

Compare two populations using mean absolute deviation.

Calculate the probability of an event by creating a ratio.

Describe the probability of an event using a number line.

Calculate probability of an event by making a sum of 1.

Find the experimental probability by creating a ratio.

Compare experimental and theoretical probability to interpret data.

Predict the frequency of an even using results from experiments.

Predict the frequency of an even using the theoretical probability.

Analyze the probability of an event by assigning equal probability to all outcomes.

Find the probability of events with multiple possibilities.

Understand the law of large numbers by comparing experimental results to the theoretical probability.

Explain discrepancies in results from probability model by comparing the experimental and theoretical probabilities.

Analyze independent and dependent events.
Find the probability of a compound even by creating an organized list.

Find the probability of a compound event by creating a tree diagram.

Find the probability of a compound event by creating a table.

8

PAPA ʻEWALU

PAPAKŪ MAKAWALU

Wae ʻAno

Identify elements of the 3 papa from a variety of basic written texts (i.e., oli, moʻolelo, etc.) with prompts

Differentiate between literary research questions & investigative questions

Kilo

Conduct self-directed observations focusing on an inquiry investigation

Utilize the practice of kilo outside of the school environment

Record detailed observations on a data sheet

Determine the appropriate tools of measure to collect and record quantititative & qualitative data in the field

Makawalu

Deconstruct ʻōlelo noʻeau & provide verbal & written explanation

Orally present pāhana nīele findings to peers, kumu & experts using a display board

Identify interactions between the 3 papa

Participate in guided makawalu discussions

Field questions regarding the information presented

Mākau ʻŌlelo

Heluhelu

Read & interpret a variety of grade level literature, in Hawaiian & English, (ranging from grades 4-8), with graphic organizer support as it relates to ongoing PKM8 grade level focus.

Read, (at current reading level), from a variety of sources to obtain, analyze, synthesize, & compare information in regards to the historical context needed to write the components included in the Scientific Inquiry project. Inquiry Projects may be chosen either a Science or Health focus.

Kākau

Conduct as an individual, or in pairs a Scientific Inquiry Project with a mentor & or Kumu supervision. Individual written components to include, introduction, Methodology, Data Analysis, & Conclusion.

Write a 6-9 paragraph narrative fiction, or Poetry utilizing graphic organizers & relating to some aspect of the Scientific or Health Inquiry Project

Utilizing the writing process, planning, writing, revising, rewriting, & editing.

Language

Demonstrate command of the conventions of standard English & Hawaiian grammar and usage when writing or speaking.(exception English grammar & speaking will fall within a range of grades 4-8)

ʻŌlelo a Hoʻolohe

Present Scientific Inquiry Project & Narrative Fiction or Poetry to classmates, parents, & outside judges.

Makemakika

Understand that every number can be represented in scientific notation.

Being able to compare the value of irrational numbers.

Being able to plot irrational numbers on a number line.

Being able to estimate the value of irrational number expressions.

Know the properties of integer exponents.

Apply the properties of integer exponents to create equivalent numerical expressions.

Be able to use the square root symbol to represent the solution to equations of the form where p is a positive rational number.

Be able to use the cube root symbol to represent the solution to equations of the form , where p is a positive rational number.

Be able to evaluate square roots of small perfect squares.

Be able to evaluate cube roots of small perfect cubes.

Use single digit numbers times an integer power of 10 to estimate very large or very small quantities.

Be able to express how many times as much one single digit times an integer power of 10 is than another.

Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.

Use scientific notation and choose units of appropriate size for measurements of very large of very small quantities.

Be able to graph and compare proportional relationships represented in different ways.

Analyze and solve linear equations and pairs of simultaneous linear equations.

Understand that solutions to a system of two linear equations in two variables match the points where they meet on a graph.

Be able to solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations.

Be able to solve real-world and mathematical problems leading to two linear equations in two variables.

Understand that a function assigns exactly one output to each input. (T-graph with a given equation)

Being able to compare the properties of two functions each represented in a different way.(algebraically, graphically, numerically in tables, or by verbal descriptions.

Be able to evaluate the equation y=mx+b as defining a linear function, whose graph is a straight line and give examples of functions that are not linear.

Construct a function to model a linear relationship between two quantities.

Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph.

Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear).

Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

Verify experimentally the properties of rotations

- Lines are taken to lines, and line segments to line segments of the same length.
- Angles are taken to angles of the same measure.
- Parallel lines are taken to parallel lines.

Explain a proof of the Pythagorean Theorem and its converse.

Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

Know the formula for the volume of cylinder and use it to solve real-world and mathematical problems.

Know the formulas for the volume of a sphere and use it to solve real-world and mathematical problems.

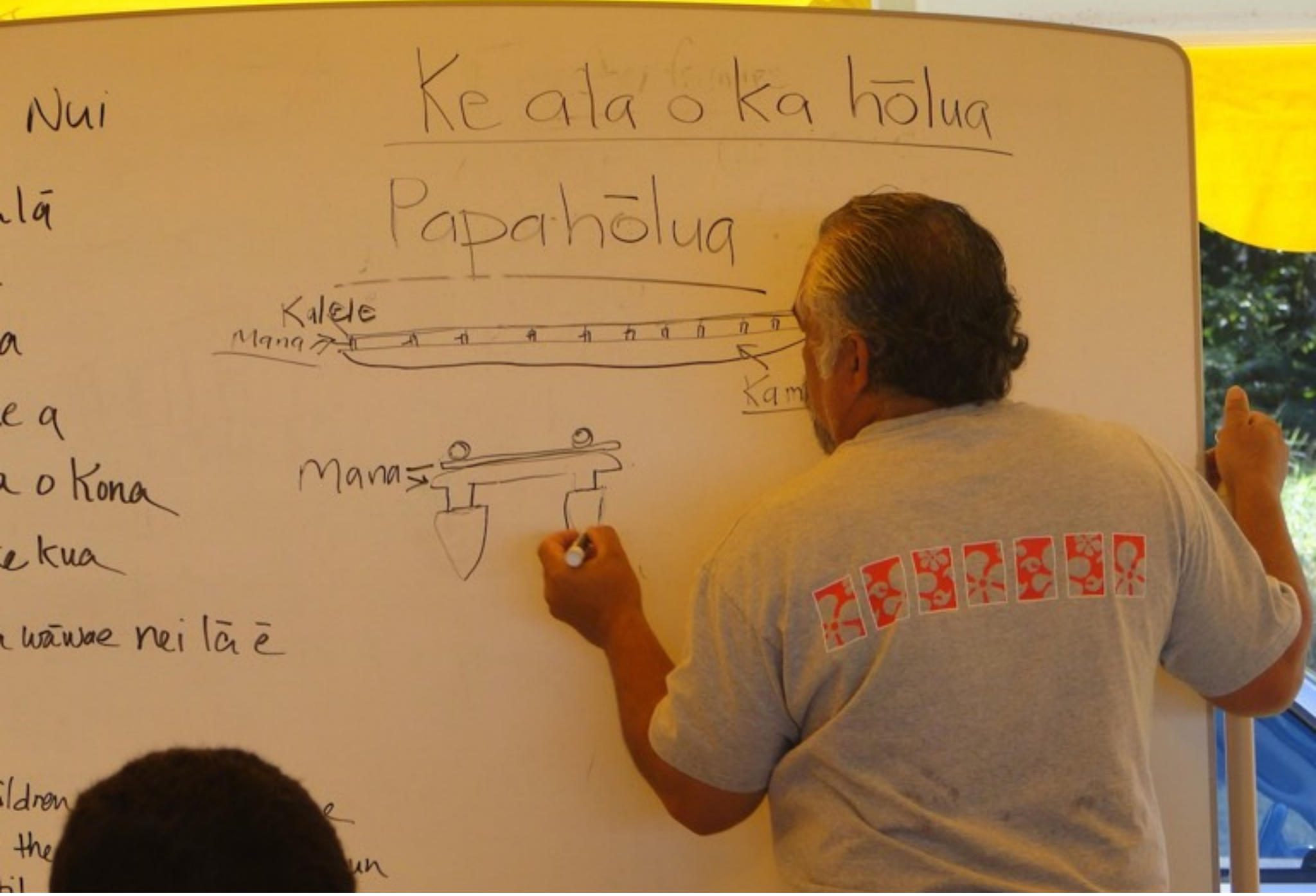
Know that a straight line in scatter plots suggest a linear association.

On a scatter plot informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.

Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table.

Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.

Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from haumāna in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?



9

PAPA ʻEIWA

PAPAKŪ MAKAWALU

Wae ʻAno

Identify elements of the 3 papa from a variety of grade level written Hawaiian & English texts (i.e., oli, moʻolelo, etc.) with prompts

Differentiate between literary research questions and investigative questions

Kilo

Conduct self-directed observations focusing on an inquiry investigation.

Utilize the practice of kilo outside of the school environment.

Record detailed observations on a data sheet.

Determine the appropriate tools of measure to collect and record quantitative & qualitative data in the field.

Makawalu

Make predictions based on kilo and data collections in the natural environment

Guided deconstruction of an oli/mele with verbal and written explanation

Participate in guided makawalu discussions

Formally present pāhana nīele findings to peers, kumu & experts

Field questions regarding the information presented

All Kula Waena and Kula Kiʻekiʻe haumāna will be required to participate in a year-end Papakū Makawalu Hōʻike and will be graded based on their presentation, hypothesis, methodology, research and research paper.

Mākau ʻŌlelo

Heluhelu

Read and comprehend literature, including Hawaiian literature stories and dramas.

With kumu guidance analyze literary research that supports the makawalu of a chosen chant.

Determine the meaning of words and phrases within a chosen chant, including figurative, connotative, and literal meanings.

Kākau

Write a response paper that articulates the makawalu of a chosen class chant with literary supporting evidence.

With assistance of kumu and peers, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Compose a fictional drama, myth using the information analyzed in the chant/papakū.

Language

With kumu and peer discussion, determine or clarify the meaning of unknown and multiple-meaning words and phrases in literary research to support makawalu findings.

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing response papers.

ʻŌlelo a Hoʻolohe

Participate with kumu prompting in a range of collaborative makawalu discussions that add new ideas to possible chant understandings.

With kumu assistance present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning using digital media.

Makemakika

SY 2015 - 2016

Geometry

Experiment with transformations in the plane

Understand congruence in terms of rigid motions

Able to prove geometric theorems

Able to make geometric constructions

Understand and apply theorems about circles

Find arc lengths and areas of sectors of circles

Able to explain volume formulas and use them to solve problems

Able to visualize relationships between two-dimensional objects and three-dimensional objects

Able to apply geometric concepts in modeling situations

Understand similarity

Prove theorems involving similarity
Define trigonometric ratios and solve problems involving right triangles

Apply trigonometry to general triangles

SY 2016-2017

Algebra I

Interpret the structure of expressions and write expressions in equivalent forms

Create equations that describe numbers or relationship

Solve equations as a process of reasoning

Solve systems of equations

Represent and solve equations and inequalities graphically

Identify key information from a graph

Evaluate f(x) for various values of x, given symbolically.

Graph non-factorable quadratic functions

Demonstrate the relationship between symbolic linear factors and graphing

Identify quadratic inverses and solve equations involving square roots.

Identify properties unique to linear functions.

Demonstrate the relationship between linear functions, models, equations and inequalities.

SY 2017 - 2018

Algebra II

Understand imaginary and complex numbers.

Perform operations on matrices
Perform operations on vectors
Perform arithmetic operations on polynomials

Know and apply the Binomial Theorem

Rewrite rational expressions
Understand the properties of exponents, rational and irrational numbers

Evaluate f(x) for various values of x, given symbolically.

Graph non-factorable quadratic functions

Demonstrate the relationship between symbolic linear factors and graphing

Demonstrate the relationship between linear functions, models, equations and inequalities

Preparing for College

At Ka ʻUmeke we begin to prepare your haumāna for a successful transition to college in Papa ʻEiwa. They will be required build a portfolio that will include identifying their interests, potential careers and universities.

As a part of their Papakū Makawalu research each haumāna will be required to plan, implement and evaluate a service project that records at least 30 hours each year, for a total of 120 hours by the time a haumāna graduates. These projects should be geared towards taking what the haumāna has been researching and making the link to actively contributing to their community.

Some examples may include:

- Writing a Papa Mālaaʻo leveled book on limu a haumāna has been researching and then reading that book to Papa Mālaaʻo haumāna.
- Developing a cloud identification app and training for other haumāna and the community.
- Presenting their research at a community conference.

10

PAPA ‘UMI

PAPAKŪ MAKAWALU

Wae ‘Ano

Categorize things into the 3 papa from a variety of Hawaiian & English texts (i.e., oli, mo‘olelo, etc.) with prompts

Differentiate between literary research questions and investigative questions

Kilo

Kilo is practiced often in and out of the school setting

Make thorough observations in any natural environment regardless of familiarity

Articulate the ʻano of an area based on a single or a few short observational periods

Makawalu

Guided deconstruction of a formal piece of Hawaiian language writing (i.e., KaMākau, Fornander, etc.) & provide verbal & written explanation

Generate literary research questions & investigative questions

Participate in makawalu discussions with limited teacher guidance

Formally present pāhana nīele findings to peers, kumu & experts

Field questions regarding the information presented

All Kula Waena and Kula Kiʻekiʻe haumāna will to participate in a year-end Papakū Makawalu Hōʻike and will be graded based on their presentation, hypothesis, methodology, research and research paper.

Mākau ʻŌlelo

Heluhelu

Read and comprehend literature, including Hawaiian literature stories and dramas.

With kumu guidance, conduct literary research that supports the makawalu of a chosen chant.

Determine the meaning of words and phrases within a chosen chant, including figurative, connotative, and literal meanings.

Kākau

Write a response paper that articulates the makawalu of a chosen class chant with literary supporting evidence.

With assistance of kumu and peers, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Compose a fictional drama, myth using the information analyzed in the chant/papakū

Language

With kumu and peer discussion,determine or clarify the meaning of unknown and multiple-meaning words and phrases in literary research to support makawalu findings.

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing response papers.

ʻŌlelo a Hoʻolohe

Participate with kumu prompting in a range of collaborative makawalu discussions that add new ideas to possible chant understandings.

With kumu assistance present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning using digital media

Makemakika

SY 2015 - 2016

Geometry

Experiment with transformations in the plane

Understand congruence in terms of rigid motions

Able to prove geometric theorems

Able to make geometric constructions

Understand and apply theorems about circles

Find arc lengths and areas of sectors of circles

Able to explain volume formulas and use them to solve problems

Able to visualize relationships between two-dimensional objects and three-dimensional objects

Able to apply geometric concepts in modeling situations

Understand similarity

Prove theorems involving similarity
Define trigonometric ratios and solve problems involving right triangles

Apply trigonometry to general triangles

Demonstrate the relationship between linear functions, models, equations and inequalities

As a part of their Papakū Makawalu research each haumāna will be required to plan, implement and evaluate a service project that records at least 30 hours each year, for a total of 120 hours by the time a haumāna graduates.

These projects should be geared towards taking what the haumāna has been researching and making the link to actively contributing to their community. Some examples may include:

- Create an public art piece related to their research.
- Create and maintain a website that collects and shares data on their research topic.
- Advocate for a conservation issue relevant to their research.
- Present their research at a community conference.

Preparing for College

At Ka ʻUmeke we continue to prepare your haumāna for a successful transition to college in Papa ʻUmi. They will be required to build a portfolio that will include identifying scholarships, writing an autobiography, completing first draft of personal statement and resume.

11

PAPA ʻUMIKŪMĀKAHI

Papakū Makawalu

Wae ʻAno

Categorize things into the 3 papa from a variety of Hawaiian & English texts (i.e., oli, moʻolelo, etc.) with prompts

Differentiate between literary research questions and investigative questions

Kilo

Kilo is practiced often in and out of the school setting

Make thorough observations in any natural environment regardless of familiarity

Articulate the ʻano of an area based on a single or a few short observational periods

Makawalu

Guided deconstruction of a formal piece of Hawaiian language writing (i.e., KaMākau, Fornander, etc.) & provide verbal & written explanation

Generate literary research questions & investigative questions

Participate in makawalu discussions with limited teacher guidance

Formally present pāhana nīele findings to peers, kumu & experts

Field questions regarding the information presented

All Kula Waena and Kula Kiʻekiʻe haumāna will participate in a year-end Papakū Makawalu Hōʻike and will be graded based on their presentation, hypothesis, methodology, research and research paper.

Mākau ʻŌlelo

Heluhelu

Read and comprehend literature, including Hawaiian literature stories and dramas.

Conduct literary research that supports the makawalu of a chosen chant.

Determine the meaning of words and phrases within a chosen chant, including figurative, connotative, and literal meanings.

Kākau

Write a response paper that articulates the makawalu of a chosen chant with literary supporting evidence.

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Language

Determine or clarify the meaning of unknown and multiple-meaning words and phrases in literary research to support makawalu findings.

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing response papers.
ʻ

Ōlelo a Hoʻolohe

Initiate and participate effectively in a range of collaborative makawalu discussions that add new ideas to possible chant understandings.

Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning using digital media

Makemakika

SY 2015 - 2016

Modeling Our World I - Applied Math

Distinguish between situations that can be modeled with linear functions and with exponential functions.

Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.

Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.

Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.

For exponential models, express as a logarithm the solution to abct = d where a, c, and dare numbers and the base b is 2, 10, or e; evaluate the logarithm using technology.

Interpret expressions for functions in terms of the situation they model.

Interpret the parameters in a linear or exponential function in terms of a context.

Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).

Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).

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).

Preparing for College

At Ka ʻUmeke we continue to prepare your haumāna for a successful transition to college in Papa ʻUmikūmākahi. They will be required build a portfolio that will include identifying scholarships, prepare for ACT/SAT, take the Compass Placement Test for English and Math placement at Hawaiʻi Community College and complete personal statement

As a part of their Papakū Makawalu research each haumāna will be required to plan, implement and evaluate a service project that records at least 30 hours each year, for a total of 120 hours by the time a haumāna graduates.

These projects should be geared towards taking what the haumāna has been researching and making the link to actively contributing to their community. Some examples may include:
Writing a Papa ʻEhā leveled book on limu a haumāna has been researching and then reading that book to haumāna.

- Developing a blog connecting other youth to a particular environmental or social issue.
- Advocating for a conservation issue relevant to their research.
- Presenting their research at a community conference.

12

PAPA ʻUMIKŪMĀLUA

Papakū Makawalu

Wae ʻAno

Categorize things into the 3 papa from a variety of advanced Hawaiian & English texts (i.e., oli, moʻolelo, etc.)

Differentiate between literary research questions and investigative questions.

Kilo

Categorize things into the 3 papa from a variety of advanced Hawaiian & English texts (i.e., oli, moʻolelo, etc.)

Differentiate between literary research questions and investigative questions.

Makawalu

Deconstruct a complex topic/concept using multiple literary sources

Generate literary research questions & investigative questions

Lead makawalu discussions with peers demonstrating advanced makawalu skills

Create a 25-45 minute formal Papakū Makawalu presentation of the topic/concept

Formal makawalu presentation to peers, kumu and the Edith Kanakaʻole Foundationʻs Papakū Makawalu team

Field complex questions regarding makawalu.

All Kula Waena and Kula Kiʻekiʻe haumāna will participate in a year-end Papakū Makawalu Hōʻike and will be graded based on their presentation, hypothesis, methodology, research and research paper.

Mākau ʻŌlelo

Heluhelu

Research chants relatable to chosen papakū.

Read and comprehend literature, including Hawaiian literature stories and dramas.

Conduct literary research that supports the makawalu of a chosen chant.

Research multiple literary resources to support the makawalu of a chosen papakū.

Determine the meaning of words and phrases within a chosen chant, including figurative, connotative, and literal meanings.

Kākau

Write a response paper that articulates the makawalu of a chosen chant with literary supporting evidence.

Write a response paper that articulates the makawalu of a chosen papakū with literary supporting evidence.

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Language

Determine or clarify the meaning of unknown and multiple-meaning words and phrases in literary research to support makawalu findings.

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing response papers.

ʻŌlelo a Hoʻolohe

Initiate and participate effectively in a range of collaborative makawalu discussions that add new ideas to possible chant understandings.

Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning using digital media.

Makemakika

Papa ʻUmikūmālua haumāna are expected to take the Compass Placement Exam at Hawaiʻi Community College and place into Math 100.

Modeling Our World I

Distinguish between situations that can be modeled with linear functions and with exponential functions.

Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.

Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.

Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.

For exponential models, express as a logarithm the solution to abct = d where a, c, and dare numbers and the base b is 2, 10, or e; evaluate the logarithm using technology.

Interpret expressions for functions in terms of the situation they model.
Interpret the parameters in a linear or exponential function in terms of a context.

Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).

Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).

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).

Preparing for College

At Ka ʻUmeke we begin to prepare your haumāna for a successful transition to college in Papa ʻEiwa. They will be required build a portfolio that will include identifying their interests, potential careers and universities.

As a part of their Papakū Makawalu research each haumāna will be required to plan, implement and evaluate a service project that records at least 30 hours each year, for a total of 120 hours by the time a haumāna graduates. These projects should be geared towards taking what the haumāna has been researching and making the link to actively contributing to their community.

Some examples may include:

- Writing a Papa Mālaaʻo leveled book on limu a haumāna has been researching and then reading that book to Papa Mālaaʻo haumāna.
- Developing a cloud identification app and training for other haumāna and the community.
- Presenting their research at a community conference.

A CALL TO EXCELLENCE

Kahea aku nā kumu…

ʻO ka lou ana o nā moku

Hook and bring it to your consciousness. Acquire knowledge and be aware, awake, alert. Know it and use it. From the Kumulipo this line references Māuiʻs use of Mānaiakalani to pull the islands out of the ocean revealing them. Kumu throw out the hook in order to catch and reveal the interest and excellence of their haumāna.

Pane mai na haumāna…

E pae pono aku kahi nao ia

Referencing leaving your mark taking ownership of work done and elevating that work.

Nao is the watermark on the kapa, a signature of that piece, of the artist. The watermark on kapa only exists in Hawaiʻi. The haumāna response indicates that they are ready to leave a mark by the elevation of their work.