

Domain	Cluster	Code	Common Core Standard	Hawaiian Translation	Notes
Ratios and Proportional Relationships	Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, If a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction $(1/2)/(1/4)$ miles per hour, equivalently 2 miles per hour.	Helu i ka lakio anakahi e pili i nā lakio o nā hākina, me nā lakio o ka lō'ihī, ka 'ili a me ka nui e ana 'ia ma ke anakahi like a me ke anakahi 'oko'a.	La'ana
		7.RP.2	Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant	Ho'omaopopo a hō'ike i ka pilina lakio like o nā nui. a. Ho'oholo inā he pilina lakio like o 'elua nui, he la'ana: ma o ka ho'ā'o 'ana no nā lakio kaulike ma ka pakuhi papa a i 'ole ma ke kākuhi 'ana i ka papa kuhikuhina a me ke kaulona 'ana inā he laina pololei ma ka piko pakuhi ka pakuhi. e. Ho'omaopopo i ka helu pa'a o ka lakio like (ka lakio anakahi) ma ka pakuhi papa, ka pakuhi, ka ha'ihelu, ke ki'ikuhi, a me ka wehewehe waha i ka pilina lakio like. i. Hō'ike i ka pilina lakio like ma ka ha'ihelu. o. Wehewehe i ka mana'o o ia mea he kiko (x,y) ma ka pakuhi o ka pilina lakio like ma ka pō'aiapili, me ka maliu	"nā nui?" ki'ikuhi= diagram papa kuhikuhina-coordinated plane piko pakuhi-origin ka helu ho'ohana o ke anakahi pākēneka= constant of proportionality (unit rate) ka wehewehe ha'i waha= verbal descriptions

			<p>price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.</p> <p>d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.</p>	<p>‘ana i nā kiko $(0,0)$ a me $(1, r)$ ‘oiai ‘o r ka lakio anakahi.</p>	
		7.RP.3	<p>Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</p>	<p>Ho’ohana i ka pilina lakio like e ho’omākalakala i nā polopolema/nane ha’i lakio a pākēneka no lākou nā ka’ina lehulehu. He mau la’ana: ke kuala nōhie/ma’alahi, ka ‘auhau, ke kū’ai’emi a me ke kū’aiho’onui, ka uku lawelawe a me ka uku komikina, ka uku, ka pākēneka ho’onui a hō’emi, ka pākēneka hewa.</p>	
The Number System	<p>Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</p>	7.NS.1	<p>Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <p>a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents</p>	<p>Ho’ohana a ho’oloa i ka ‘ike no ka ho’ohui ‘ana a me ka ho’olawe ‘ana e ho’ohui a e ho’olawe i nā helu rational; e hō’ike i ka ho’onui ‘ana a me ka ho’olawe ‘ana ma ke ki’ikuhi laina helu papakū a i ‘ole papamoe.</p> <p>a. Wehewehe i ka pō’aiapili e hui ai ‘elua nui ‘ēko’a a loa’a ka ‘ole (0).</p> <p>e. Maopopo $p + q$ he helu i</p>	<p>Represent Vertical number line diagram</p>

			<p>are oppositely charged.</p> <p>b. Understand $p + q$ as the number located a distance q from p, in the positive or negative direction depending on whether q is positive or negative.</p> <p>Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.</p> <p>c. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</p> <p>d. Apply properties of operations as strategies to add and subtract rational numbers.</p>	<p>ka'awale he q mai p, i ka 'ao'ao 'i'o a i 'ole i ka a'o'ao 'i'o 'ole, aia i ka 'i'o o q.</p> <p>Hō'ike i ka huina he 'ole, ke ho'ohui i kekahi helu me kona 'ēko'a (ka ho'ohui huli hope).</p> <p>Wehewehe i nā huinanui o nā helu rational ma o ka pō'aiapili maoli o ka nohona.</p> <p>i. Maopopo ka ho'olawe 'ana i ka helu rational ma ka ho'ohui huli hope 'ana, $p - q = p + (-q)$. Hō'ike i ke ka'awale ma waena o 'elua helu rational ma ka laina helu ka waiwai 'i'o o ko lāua koena, a ho'ohana i kēia 'anopili ma ka pō'aiapili maoli o ka nohona.</p> <p>o. Ho'ohana i ke 'anopili o ka hana ho'omākalakala no ke ka'akālai i ka ho'onui 'ana a me ka ho'olawe 'ana i nā helu rational.</p>	
		7.NS.2	<p>Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations</p>	<p>Ho'ohana a ho'oloa i ka 'ike no ka ho'onui 'ana a me ka pu'unaue 'ana i nā hakina e ho'onui a pu'unaue i nā helu rational.</p> <p>a. Maopopo ka ho'opili 'ia 'ana o ka ho'onui 'ana i nā hakina a i nā helu rational ma o ka ho'oko'i 'ana i ka</p>	

			<p>continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.</p> <p>b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.</p> <p>c. Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p>d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats</p>	<p>ho'omau 'ia o ka hana ho'omākalakala e ho'okō i ke 'anopili o ka hana ho'omākalakala, me ke 'anopili ho'oili nō ho'i, i ka loa'a 'ana o ka hua loa'a e la'a me $(-1)(-1) = 1$ a me nā lula no ka ho'onui 'ana i nā helu hō'ailona. Wehewehe i nā hua loa'a o nā helu rational ma ka wehewehe 'ana i nā pō'aiapili maoli o ka nohona.</p> <p>e. Maopopo ka hiki 'ana ke pu'unaue i nā helu piha, inā 'a'ole ka helu komo he 'ole, a he helu rational nā helu puka a pau o nā helu piha (me ka 'ole o ka helu komo, he 'ole). Inā 'o ka p a me ke q he mau helu piha, a laila $-(p/q) = (-p)/q = p/(-q)$. Wehewehe i ka helu puka o nā helu rational ma ka wehewehe 'ana i nā pō'aiapili maoli o ka nohona.</p> <p>i. Ho'ohana i nā 'anopili o ka hana ho'omākalakala i ka'akālai e ho'onui a e pu'unaue 'ana i nā helu rational.</p> <p>o. Ho'ololi i ka helu rational i kekimala ma ka pu'unaue lō'ihī 'ana; 'ike e pau ana ke kino kekimala o ka helu rational ma nā 0 a i 'ole e</p>	
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NĀ UNUHI CCSS O KA PAE PAPA 7 NO KA MAKEMAKIKA/PILI HELU

		7.NS.3	Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)	pīna'i ana. Ho'omākalakala i nā polopelema/nane ha'i o ka nohona a me ka pili helu/makemakika ma nā hana ho'omākalakala 'ehā i nā helu rational. (Ho'omau 'ia nā lula no nā hakina a i nā hakina pa'akikī e ka helu 'ana i nā helu rational.)	
Expressions and Equations	Use properties of operations to generate equivalent expressions.	7.EE.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	Ho'ohana i nā 'anopili o ka hana ho'omākalakala i ka'akālai e ho'ohui, e ho'olawe, e heluhana, a e ho'oloa i nā ha'ihelu lālani me ke ka'ilau rational.	factor? heluhana in Pūku'i
		7.EE.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05."	Maopopo ke kākau hou 'ana i ka ha'ihelu ma kekahi 'ano hou ma ka polopolema/nane ha'i he mea e ho'onui 'ike no ka polopolema/nane ha'i a me ka 'ike no ka pilina o ka nui. E no'ono'o i $a + 0.05a = 1.05a$, 'o ia ho'i, "e ho'onui ma ka 5%" ua like me "ho'onui ma ka 1.05."	
		7.EE.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations as strategies to calculate with numbers in any	Ho'omākalakala i nā polopelema/nane ha'i o ka nohona a me ka makemakika/pili helu a o nā ka'ina hana lehulehu me nā helu 'i'o rational a me nā helu 'i'o 'ole rational ma kekahi 'ano (nā helu piha, nā hakina, a me nā kekimala), ma ka	Did not translate example.

			<p>form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p>	<p>ho'ohana kūpili 'ana i nā mea hana. Ho'ohana i ke 'anopili o ka hana ho'omākalakala i ka'akālai e helu i nā helu ma ma nā kino like 'ole; hakuloli/ho'ololi i ke 'ano o ka helu ke pono; a ana i ka pololei o ka ha'ina ma o ka helu na'au a me nā ka'akālai koho.</p>	
		7.EE.4	<p>Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the</p>	<p>Ho'ohana i nā hualau e hō'ike i ka nui ma nā polopolema/nane ha'i o ka nohona a i 'ole ka pili helu/makemakika, a kūkulu i ka ha'ihelu nōhihi/ma'alahi a me ka ha'ihelu kaulike 'ole e ho'omākalakala polopolema/nane ha'i ma o ka no'ono'o kūpili 'ana i ka nui. a. Ho'omākalakala i nā polopelema hua'ōlelo/mo'olelo nane e loa'a ka ha'ihelu o ke 'ano $px + q = r$ a me $p(x + q) = r$, 'oiai p, q, a me r nā helu rational kiko'ī/pilikahi. 'Eleu ka</p>	<p>In the equations, highlighted words in red to differentiate the alpha from the Hawaiian.</p>

			<p>operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p> <p>b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</p>	<p>ho'omākalakala 'ana i kēia 'ano ha'ihelu. Ho'ohālikelike i ka hā'ina hō'ailona helu me ka ha'ihelu huina helu, me ka ho'omaopopo 'ana i ke ka'ina hana o ka hana</p> <p>ho'omākalakala no nā mea 'elua. He la'ana: He 54 knm. ke anapuni o ka huinahā lō'ihī. He 6 knm. kona lō'ihī. 'Ehia kenimika kona ākea?</p> <p>e. Ho'omākalakala i nā polopolema hua'ōlelo/mo'olelo nane e loa'a ka ha'ihelu kaulike 'ole o ke 'ano $px + q > r$ a i 'ole $px + q < r$, 'oiai p, q, a me r nā helu rational kiko'ī/pilikahi. Kākuhi i ka 'ōpa'a/hui ha'ina o ia kaulike 'ole a wehewehe ma ka pō'aiapili o ka polopolema/mo'olelo nane. He la'ana: Uku 'ia 'oe he \$50 kālā o ka pule a me \$3 kālā o kēlā me kēia kū'ai 'ana aku i kāu 'oihana he kālepa. I kēia pule, makemake 'oe i ka uku he \$100. E haku 'oe i ha'ihelu kaulike 'ole no ke kū'ai 'ana aku e pono ai, a e wehewehe mai i nā ha'ina.</p>	
Geometry	Draw, construct, and describe geometrical	7.G.1	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale	Ho'omākalakala i nā polopolema/nane ha'i me nā ki'i kaha pālākiō o nā kinona, me ka helu 'ana i ka lō'ihī a	

figures and describe the relationships between them.		drawing and reproducing a scale drawing at a different scale.	me ka 'ili mai ke ki'i pālākiō mai a e ho'olaupa'i i ke ki'i kaha ma kekahi pālākiō 'ē a'e.	
	7.G.2	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	Kaha i ki'i (me ka lima, ka lula, ke ana huina, a me ka 'enehana) i nā kīnona me kekahi mau lula. Kālele ma ke kūkulu 'ana i nā huina kolu mai 'ekolu huina a i 'ole 'ekolu 'ao'ao, me ka maka'ala 'ana i ka loa'a o nā huina kolu kūikawā, he 'oi aku o ho'okahi huinakolu, a i 'ole ka huinakolu 'ole.	Conditions: mea 'ae like
	7.G.3	Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	Wehewehe i nā kinona papa i loa'a i ka 'oki 'ia 'ana o ke kīnona pa'a, e la'a me nā māhele papa o ka 'ōpaka huinhāloa kūpono a me ka pelamika huinahā 'ākau.	
Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	7.G.4	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	'Ike i ka ha'ilula no ka 'ili a me ke anapuni o ka pō'ai a ho'ohana e ho'omākalakala polopolema/nane ha'i; hā'awi i ka molekumu o ka pilina o ke anapuni a me ka 'ili o ka pō'ai.	
	7.G.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	Ho'ohana i nā mea 'oia'i'o no nā huina ho'opiha kaha, ho'opiha kūpono, papakū, a pili ma ka polopolema/nane ha'i me nā ka'ina lehulehu no ke kākau 'ana a me ka ho'omākalakala 'ana i ka	

				ha'ihelu nōhihi/ma'alahi no ka huina i 'ike 'ole 'ia ma kekahi kinona.	
		7.G.6	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	Ho'omākalakala i nā polopolema/nane ha'i o ka nohona a me ka pili helu/makemakika no ka 'ili, ka pihanahaka a me ka 'ili alo o nā kinona papa a me nā kinona pa'a e loa'a ai ka huina kolu, ka huinahā, ka huinalehulehu, ka pa'a'iliono, a me ka 'ōpaka kūpono.	Area and surface= 'ili-ho'okahi hua 'ōlelo.
Statistics and Probability	Use random sampling to draw inferences about a population.	7.SP.1	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	Maopopo ka ho'ohana 'ia 'ana o ka 'ikepili helu e ho'onui 'ike no ka heluna kānaka ma o ka noi'i 'ana i kekahi hāpana kānaka; aia ka pololei o nā mana'o laulā no ka heluna kānaka i ka pololei o ka hāpana o ia heluna kānaka inā kū like me ka heluna kānaka holo'oko'a. Maopopo ka ho'opuka 'ana a ka hāpana 'ohi kaulele/pono koho i ka hāpana e pani ana a me ka ho'opuka 'ana ho'i i ke kuhi kūpono e kākō'o ana.	Ua pa'akikī kēia māhele.
		7.SP.2	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to	Ho'ohana i ka 'ikepili/'ike o ka hāpana pono koho/'ohi kaulele e kuhi e pili ana i kekahi heluna kānaka nona ka hi'ohi'ona hoihoi i maopopo 'ole. Ho'opuka i nā hāpana lehulehu (a i 'ole nā	Population: heluna kanaka, heluna. I dropped "kanaka" from all entries. Peters.

			<p>gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.</p>	<p>hāpana hakupuni) o ka nui like e ana i ka ‘oko‘a o nā kuhi a i ‘ole nā koho. He la‘ana: e koho i ka ‘awelika o ka lō‘ihi hua‘ōlelo o kekahi puke ma nānā ‘ana i ka hāpana pono koho/‘ohi kaulele o nā hua‘ōlelo o ka puke; kuhi/wānana i ka lanakila o ke koho pāloka kula ma ka nānā ‘ana i ka ‘ikepili/‘ike o ke anamana‘o hāpana pono koho/‘ohi kaulele. Ana i ke kau hewa o ia koho a i ‘ole wānana.</p>	
	<p>Draw informal comparative inferences about two populations.</p>	<p>7.SP.3</p>	<p>Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.</p>	<p>Ana mōhalu i ka nui o ka ‘unu‘unu ‘ana ma ka nānā ‘ana i ‘elua ho‘oili helu ‘ikepili/‘ike me nā kumuloli i like, a me ke ana ‘ana i ke ka‘awale o nā kikowaena ma o ka hō‘ike ‘ana ma ke ‘ano he helu māhua o ka ana kumuloli. He la‘ana: He 10 knm ‘oi a‘e ka ‘awelika o ke ki‘eki‘ena o nā ‘ālapa ma ke kime pōhina‘i ma mua o nā ‘ālapa ma ke kime pōwāwae, ma kahi o ka pālua ke kumuloli (ka haiahū ‘awelika holo‘oko‘a) ma kekahi kime; ma ka pakuhi kiko, ahuwale ke ka‘awale o ‘elua ho‘oili o ke ki‘eki‘ena.</p>	

		7.SP.4	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.	Ho'ohana i ke ana kikowaena a me ke ana kumuloli no ka 'ikepili helu o ka hāpana pono koho/'ohi kaulele e kuhi ho'ohālike no 'elua heluna kānaka. He la'ana: e ho'oholo inā 'oi aku ka lō'ihī o nā hua'ōlelo ma ka mokuna o ka puke 'epekema no pae papa 7 ma mua o nā hua'ōlelo ma ka mokuna o ka puke 'epekema no ka pae papa 4.	
Investigate chance processes and develop, use, and evaluate probability models.		7.SP.5	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	Maopopo ka pāhiki o ka hanana papaha he helu ma waena o ka 0 a me ka 1 e hō'ike ana i ka nui papaha o ke kupu 'ana o ia hanana. 'O nā helu nui a'e ka hō'ailona o ka papaha nui a'e. Inā kokoke ka pahiki i ka 0, 'a'ole paha e kupu ana, a inā kokoke ka papaha i ka 1/2, 'a'ohe kupu a i 'ole he kupu paha, a inā nō kokoke ka papaha i ka 1, e kupu ana paha.	"neither unlikely nor likely" review. Repetitive phrase
		7.SP.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. For example, when	Koho i ke kokekau i ka pāhiki o ka hanana papaha ma o ka 'ohi 'ana i ka 'ikepili/'ike o ke ka'ina hana papaha nāna e ho'opuka i ia hanana a ma o ke kaulona i kona alapine i ka wā lō'ihī, a wānana/kuhi i ke alapine pili i ia pāhiki. He	

			rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.	la'ana: I ka lūlū 'ia 'ana o ka una he 600 manawa, wānana/kuhi i ka loa'a 'ana o ka 3 a me ka 6 ma kahi o 200 manawa, akā 'a'ole na'e he 200 manawa kiko'i/pilikahi.	
		7.SP.7	<p>Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.</p> <p>a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.</p> <p>b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning</p>	<p>Kūkulu i ke kumu alaka'i pāhiki a ho'ohana i ia mea no ka huli 'ana a me ka loa'a 'ana o ka pāhiki o ka hanana. Ho'ohālikelike i nā pahiki o ke kumu alaka'i a me nā alapine i 'ike maka 'ia; inā 'a'ole launa nā pāhiki, wehewehe i ke kumu o ka launa 'ole.</p> <p>a. Kūkulu i ke kumu alaka'i pāhiki makalike ma ka ho'olilo 'ana i ka pahiki kaulike i nā hopena a pau, a ho'ohana i ia kumu alaka'i e ho'oholo i ka pāhiki o nā hanana. He la'ana: Inā pono koho/'ohi kaulele wale 'ia ka haumana o kekahi papa, e huli a loa'a ka pāhiki e koho 'ia ana 'o Lani a e koho 'ia ana kekahi kaikamahine.</p> <p>e. Kūkulu i ke kumu alaka'i pāhiki ('a'ole paha he makalike) ma ka nānā 'ana i nā alapine ma ka 'ikepili/'ike i ho'okumu 'ia e ke ka'ina hana papaha. He la'ana: e huli i ka pāhiki kokekau o ke ku'u 'ana o ke kenikeni i ho'ohuli 'ia me</p>	kumu alaka'i-model

			<p>penny appear to be equally likely based on the observed frequencies?</p>	<p>ke po'o i luna a i 'ole ke ku'u 'ana o ke kī'aha pepa me kona puka i lalo. Ua kaulike anei nā hopena o ka ho'ohuli kenikeni i ka papaha ke kālele 'ia nā alapine i nānā 'ia?</p>	
		7.SP.8	<p>Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</p> <p>a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.</p> <p>b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.</p> <p>c. Design and use a simulation to generate frequencies for compound events. For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood,</p>	<p>Huli i ka pāhiki o nā hanana 'ano hui me ka ho'ohana 'ana i nā papa helu ho'onohonoho pono 'ia, nā pakuhi papa, nā kī'ikuhi kumu lā'au, a me ka ho'omeamea 'ana.</p> <p>a. Maopopo ka pāhiki o ka hanana 'ano hui, e like me ka nā hanana nōhie/ma'alahi, he hakina ia o nā hopena i kahi hāpana o ke kupu 'ana o nā hanana 'ano hui a pau.</p> <p>e. Hō'ike i kahi hāpana o nā hanana 'ano hui ma ka papa helu ho'onohonoho pono 'ia, nā pakuhi papa, a me nā kī'ikuhi kumu lā'au. No ka hanana e wehewehe 'ia ma ka 'ōlelo ma'a mau (e la'a, "ka lūlū 'ana i nā 'eono pālua"), ho'omaopopo i nā hopena i kahi hāpana e ho'okupu ai i ka hanana.</p> <p>i. Haku/Hakulau a ho'ohana i ka ho'omeamea e ho'oulu i ke alapine o nā hanana 'ano hui. He la'ana, ho'ohana i nā kikoho'e pono koho'ohi kaulele ma ke 'ano he mea</p>	

			<p>what is the probability that it will take at least 4 donors to find one with type A blood?</p>	<p>hana ho'omeamea e pane kokekau i ka nīnau: Inā he 40% heluna kānaka o ke 'ano koko A, he aha ka pāhiki e pono ana he 'ehā kānaka ma ka li'ili'i e loa'a ho'okahi kānaka o ke 'ano koko A?</p>	
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