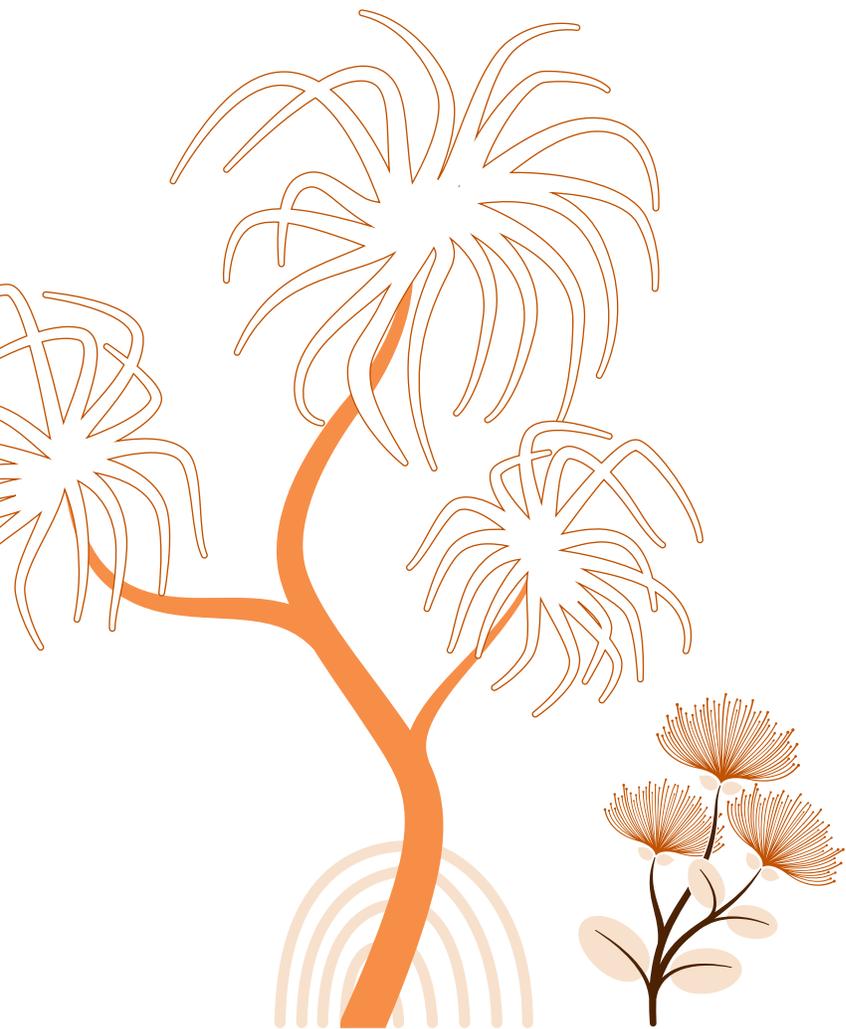


Unit 5: Statistics and Probability



SBAC alignment for *Unit 5: Statistics and Probability Activity 1*

| | |
|-----------------------|--|
| Claim(s) | Claim 1: Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency. |
| Assessment Target(s): | 1 G: Use random sampling to draw inferences about a population. |
| Content Domain: | Statistics and Probability |
| Standard(s): | 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. |
| DOK: | 3 |

Unit 5: Statistics and Probability Activity 1

Kumu Lehua wants to teach a lei-making class after school. Before the start of her class, she asks a random sample of 40 students in her school to identify the type of material they would like to use to make the lei. There are 300 students at her school. Kumu Lehua's data is shown in the table below.

| Student Lei Preferences | |
|-------------------------|--------------------|
| Lei Material | Number of Students |
| Hulu (feathers) | 5 |
| Pūpū (shells) | 4 |
| Kukui nuts | 3 |
| 'Akia berries | 2 |
| Ti leaves | 10 |
| Pūkiawe leaves | 3 |
| Pala'ā ferns | 0 |
| Maile vines | 4 |
| 'Ilima flowers | 4 |
| Pikake flowers | 5 |

Which **one** of these four statements is **best** supported by the data? Explain.

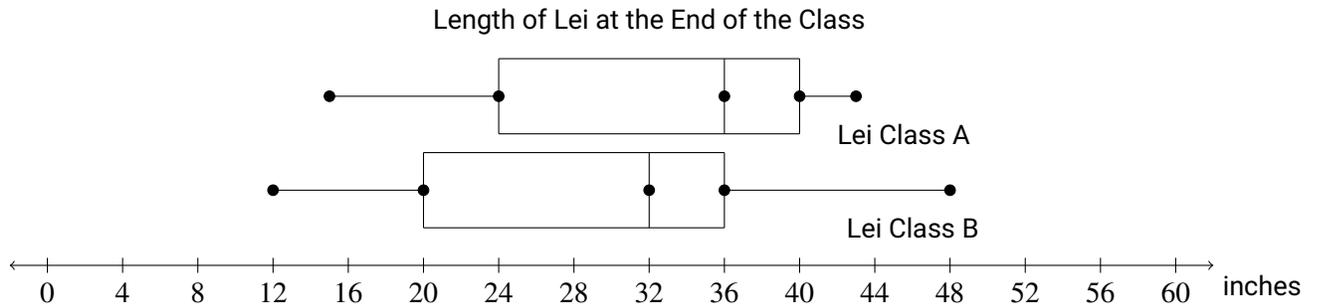
- (a) Exactly 25% of the students at Kumu Lehua's school want to make lei with ti leaves.
- (b) There are no students at Kumu Lehua's school that want to make a lei with pala'ā ferns.
- (c) There are probably more students at Kumu Lehua's school that want to make lei with ti leaves than with hulu (feathers).
- (d) There are probably more students at Kumu Lehua's school that want to make lei with hulu (feathers) than with pūpū (shells).

SBAC alignment for *Unit 5: Statistics and Probability Activity 2*

| | |
|-----------------------|--|
| Claim(s) | Claim 1: Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency. |
| Assessment Target(s): | 1 H: Draw informal comparative inferences about two populations. |
| Content Domain: | Statistics and Probability |
| Standard(s): | 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. |
| DOK: | 2 |

Unit 5: Statistics and Probability Activity 2

There are two lei-making classes at local middle school. In each class, there are students who are experienced lei makers and students who are beginners. The length of each student's lei at the end of the class is summarized by the box plots below.



The kumu of the lei-making classes concluded that there was more variability in the length of the lei made by Class A than Class B. Which statement is true about the kumu's conclusion?

- (a) It is valid because the median for Class A is greater than the median for Class B.
- (b) It is valid because the interquartile range for Class A is greater than the interquartile range for Class B.
- (c) It is invalid because the maximum value for Class A is less than the maximum value for Class B.
- (d) It is invalid because the range for Class A is less than the range for Class B.

SBAC alignment for *Unit 5: Statistics and Probability Activity 3*

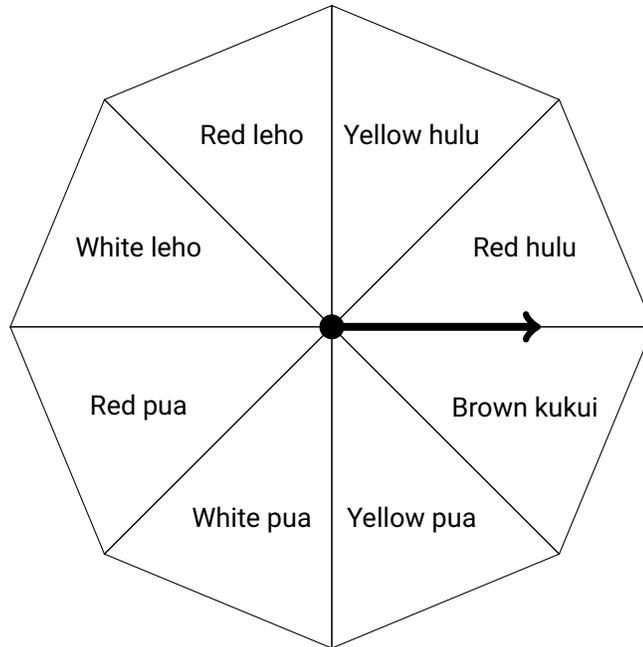
| | |
|-----------------------|--|
| Claim(s) | <p>Claim 3: Communicating Reasoning (primary claim) Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.</p> <p>Claim 1: Concepts and Procedures (secondary claim) Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.</p> |
| Assessment Target(s): | <p>3 E: Distinguish correct logic or reasoning from that which is flawed and—if there is a flaw in the argument—explain what it is.</p> <p>3 F: Base arguments on concrete referents such as objects, drawings, diagrams, and other actions.</p> <p>1 I: Investigate chance processes and develop, use, and evaluate probability models.</p> |
| Content Domain: | Statistics and Probability |
| Standard(s): | <p>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.</p> <p>7.SP.7 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> |
| DOK: | 3 |

Unit 5: Statistics and Probability Activity 3

For a lei class, each student will be given a box of supplies to make a lei from. The boxes will be given out at random and they contain different supplies. Here are the possible contents of lei supply boxes:

- Red hulu (feathers)
- Yellow hulu (feathers)
- Red leho (sea snail shells)
- White leho (sea snail shells)
- Red pua (flowers)
- White pua (flowers)
- Yellow pua (flowers)
- Brown kukui nuts

To receive a box, the students will have to spin the spinner on the board below.



1. One student, Ka'ula, claims that he is likely, but not certain to get something that is red. Explain why Ka'ula's claim is **not** correct.
2. Another student, Kalei, claims to know which box he is likely, but not certain to get. If Kalei's claim is correct, what could his claim be?

