Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_

**SWBAT: Use a video to help explain hypothesis testing and p-values**

*Complete the table below with notes indicating the differences between Descriptive & Inferential Statistics:*

|  |  |
| --- | --- |
| **Descriptive Statistics** | **Inferential Statistics** |
|  |  |

*Watch and listen to the video entitled “Hypothesis Tests, p-value” (7:37) by Statistics Learning Centre. When the teacher pauses the video, write your responses in the space provided.*

Video link: <https://www.youtube.com/watch?v=0zZYBALbZgg>

Hypothesis testing (pause after 1:05)

1. Explain the difference between a null hypothesis (H0) and an alternative hypothesis (H1)

A null hypothesis states that the difference between two groups is equal to 0, the alternative hypothesis states that the difference is not equal to zero.

Significance (pause after 1:47)

1. What does a significance level, or alpha value, indicate?

It indicates how significant the difference between the groups is.

1. What does a significance value of 0.01 indicate about your hypothesis?

It indicates that there is evidence supporting the alternative hypothesis.

Writing Hypotheses (3:26)

1. Write the null Hypothesis (H0) for this experiment

µ\_free-sticker – µ\_no-free-sticker = 0

1. Write the alternative Hypothesis (H1) for this experiment

µ\_free-sticker – µ\_no-free-sticker ≠ 0

Mathematically expressing Hypotheses (4:18)

1. Write the null Hypothesis(H0) mathematically (both ways)
   1. µ\_free-sticker – µ\_no-free-sticker = 0
   2. µ\_free-sticker = µ\_no-free-sticker
2. Write the alternative Hypothesis (H1) mathematically (both ways)
   1. µ\_free-sticker – µ\_no-free-sticker ≠ 0
   2. µ\_free-sticker ≠ µ\_no-free-sticker

One tailed vs. two tailed tests (5:22)

1. Write the mathematical (not written) Hypotheses for this experiment if it was changed to a one-tailed test:

H0: µ\_free-sticker – µ\_no-free-sticker = 0

H1: µ\_free-sticker – µ\_no-free-sticker < 0

1. What mathematical symbol(s) will a two-tailed test have its equation?

=≠

1. What mathematical symbol(s) will a one-tailed test have in its equation? (5:44)

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