**Activity #1: Prediction Race.**

How long will it take you to complete one lap of the track? Guess: \_\_\_\_\_\_\_\_\_

Then see how close your estimate is to your true time. You may walk, jog, trot, or run. It does not matter *how* you choose to complete the lap. BUT, you MUST walk alone to ensure independence. Have someone ELSE time you and NO peeking at your watch while walking.

**Name of inference procedure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Activity #2: Helicopters**

Build cardstock helicopters: long vs. short rotor. Lean over the bleacher railing and drop 5 times with each rotor. Record how many land in the hula hoop below.

**Name of inference procedure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Activity #3: Stick Horse Race**

**Activity #4: Sack Race**

How long does it take you to ride your horse from the end line to the top of the soccer box?

How long does it take you to hop from the end line to the top of the soccer box?

**Name of inference procedure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Activity #5: Blindfold Walk**

Have a partner / spotter. Blindfold one person. Turn the person three times and then point downfield. Accompany the person to make sure they do not get hurt.

Record the time it takes to walk from one end line to the other.

**Name of inference procedure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Activity #6: Car Color**

Go to the student parking lot. Randomly select at least 50 cars. Complete the chart of colors.

**Name of inference procedure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Activity #7: Oreos**

Choose four cookies of each type. Scrape out and weigh the crème filling for each cookie.

Record your weights.

**Name of inference procedure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Activity #8: Hula Hoops**

Take a hula hoop and time how long you can spin before it hits the ground. Are you an expert?

**Name of inference procedure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Activity #9: Bean Bag Toss**

Out of 10 attempts, record the number of bean bags that land in the bucket.

**Name of inference procedure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Activity #10: Chubby Monkey**

How many marshmallows can you put in your mouth?

**Name of inference procedure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Analysis

EVERY analysis requires a COMPLETE inference procedure. Minitab will give you the mechanics, but you must supply the rest. Include Minitab output with EVERY activity.

**Activity #1: Prediction Race.**

1. (3 pts) Create a scatterplot of actual time vs. prediction time, including line of best fit.
2. (3 pts) Interpret the slope.
3. (6 pts) Interpret the correlation and coefficient of determination.
4. (3 pts) Graph the line y = x. What does it mean if a point on the scatterplot lies on it?
5. (10 pts) Is there statistical evidence of a linear relationship between predicted time and actual time?

**Activity #2: Helicopters**

1. (3 pts) Create segmented bar graph for your data.

2. (10 pts) Is the proportion of short rotor helicopters that land in the hula hoop the same as for long rotor helicopters?

**Activity #3: Stick Horse Race**

**Activity #4: Sack Race**

1. (3 pts) Create a boxplot of the differences in the paired times.

2. (10 pts) Estimate the average difference in time between the time it takes to ride a stick horse vs. a sack race.

**Activity #5: Blindfold Walk**

1. (3 pts) Create a dotplot of the data.

2. (10 pts) Estimate the average time for a student to walk the length of a football field blindfolded.

**Activity #6: Car Color**

1. (3 pts) Create a pie chart / circle graph of the colors.

2. (10 pts) Do school drivers prefer one car color over another?

**Activity #7: Oreos**

1. (3 pts) Create stacked dotplots for the filling weights.

2. (10 pts) Does Double Stuff give you twice as much filling as regular?

**Activity #8: Hula Hoops**

1. (3 pts) Create histograms for your data.

2. (10 pts) Can you conclude that tall people have the same skill level as short people for each time interval?

**Activity #9: Bean Bag Toss**

1. (3 pts) Create a dotplot for the number of bean bags (out of ten tries) that landed in the bucket.

2. (10 pts) Determine the 95% confidence interval for the **proportion** of bean bags that land in the bucket.

**Activity #10: Chubby Monkey**

1. (3 pts) Create a stem and leaf plot for the data.

2. (10 pts) Determine the 95% confidence interval for the number of marshmallows.

Data Records

**Activity #1: Prediction Race - class data**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Predicted  Time |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Actual  Time |  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Predicted  Time |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Actual  Time |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Activity #2: Helicopters – summarized class data**

|  |  |  |
| --- | --- | --- |
|  | In the hoop | Outside the hoop |
| Short Rotor |  |  |
| Long Rotor |  |  |

**Activity #3/4: Stick Horse Race/Sack Race - class data.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Horse time |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sack  time |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Horse time |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sack  time |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Activity #5: Blindfold Walk - class data.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Time |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Activity #6: Car Color – individual data**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| White | Black | Silver | Gray | Red | Blue | Brown/Beige | Yellow/Gold | Green | Other |
|  |  |  |  |  |  |  |  |  |  |

**Activity #7: Oreos: Regular vs. Double Stuff – class data**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Regular |  |  |  |  |  |  |  |  |  |  |  |  |
| Double Stuff |  |  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Regular |  |  |  |  |  |  |  |  |  |  |  |  |
| Double Stuff |  |  |  |  |  |  |  |  |  |  |  |  |

**Activity #8: Hula Hoops – summarized class data**

Complete the chart:

|  |  |  |  |
| --- | --- | --- | --- |
|  | < 10 seconds (oh, no) | 10-30 seconds (novice) | > 30 seconds (expert) |
| Over 5’6” |  |  |  |
| Under 5’6” |  |  |  |

**Activity #9: Bean Bag Toss – class data**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # success |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Total successes: \_\_\_\_\_\_ Total tossed: \_\_\_\_\_\_\_\_\_

**Activity #10: Chubby Monkey – class data**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # mallows |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |