Math 1 **Frog Frolics Activity**  Unit 4 Day 2

1. Follow the directions on the folding handout to fold an origami frog. I will demonstrate at the front of the room.
2. Each member of your group will test his/her frog’s jumping skills in each jumping event. Each frog will jump three times in each event (except the hurdles and the water hole). Record the data in the table below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Person 1** | **Person 2** | **Person 3** | **Person 4** | **Data Analysis** |
| **High Jump**Hold the meter stick up vertically and measure how high each frog jumps. | Trial 1: | Trial 1: | Trial 1: | Trial 1: | Mean:Median:Mode:Range:Standard Deviation: |
| Trial 2: | Trial 2: | Trial 2: | Trial 2: |
| Trial 3: | Trial 3: | Trial 3: | Trial 3: |
| **Long Jump**Lay the meter stick on the ground and record how far each frog jumps. | Trial 1: | Trial 1: | Trial 1: | Trial 1: | Mean:Median:Mode:Range:Standard Deviation: |
| Trial 2: | Trial 2: | Trial 2: | Trial 2: |
| Trial 3: | Trial 3: | Trial 3: | Trial 3:  |
| **Triple Jump**With the meter stick on the ground, jump your frog 3 times. Record its final landing spot. Do not pick up frog between jumps. | Trial 1: | Trial 1: | Trial 1: | Trial 1: | Mean:Median:Mode:Range:Standard Deviation: |
| Trial 2: | Trial 2: | Trial 2: | Trial 2: |
| Trial 3: | Trial 3: | Trial 3: | Trial 3: |

1. How many high jumps fall within one standard deviation of the mean? How many fall within two standard deviations of the mean?
2. How many long jumps fall within one standard deviation of the mean? How many fall within two standard deviations of the mean?
3. How many triple jumps fall within one standard deviation of the mean? How many fall within two standard deviations of the mean?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Person 1** | **Person 2** | **Person 3** | **Person 4** | **Data Analysis** |
| **Hurdles**Place a “hurdle” on the ground. Each person attempts to jump their frog over the hurdle. Record the # of tries it takes to clear the hurtle.*MAX* 🡪 10 tries | Trial 1: | Trial 1: | Trial 1: | Trial 1: | Mean:Median:Mode:Range:Standard Deviation: |
| Trial 2: | Trial 2: | Trial 2: | Trial 2: |
| Trial 3: | Trial 3: | Trial 3: | Trial 3: |
| **Water Hole**Place a container on the ground. All students attempt to jump your frog into the container. Record the # of tries it takes.*MAX* 🡪 10 tries | Trial 1: | Trial 1: | Trial 1: | Trial 1: | Mean:Median:Mode:Range:Standard Deviation: |
| Trial 2: | Trial 2: | Trial 2: | Trial 2: |
| Trial 3: | Trial 3: | Trial 3: | Trial 3:  |

1. Complete the table below. Follow the instructions for each type of jump and record the data.
2. How many hurdle attempts fall within one standard deviation of the mean? Two standard deviations of the mean?
3. How many waterhole attempts fall within one standard deviation of the mean? Two standard deviations of the mean?

**Extension**

1. Explain how doing three trials instead of one for each frog was helpful when finding mean, median, mode, range, and standard deviation. How would one trial per frog have changed the data? Which values would have changed and how?
2. Is there a pattern between the percentage of values between one and two standard deviations of the mean?
3. What is an outlier? Were there any outliers for any of the sets of data?
4. Which is the most accurate measure of central tendency for each group of data? Why?
5. Create an event in which your frogs can compete. If it’s good enough, the whole class can do it!