**Math 8/Science 8**

**Pumpkin Exploration**

**Part 1🡪 Day 1 - 3**

**Name(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**Learning Goals:**

1. To learn how to measure the weight, height, circumference, and volume of a pumpkin
2. To use the pumpkin seeds to explore fractions
3. To graph connections between weight of pumpkins and number of seeds, volume of pumpkin and number of seeds, and circumference of pumpkin and number of seeds

**Behaviour Goals:**

1. To work collaboratively as a team to investigate your pumpkin
2. To be safe and attentive during your investigation and use your tools safely

**Day 1: You will investigate and make observations on the OUTSIDE of your pumpkin.**

Draw (as detailed as possible) and label the outside structures of the pumpkin. Use your observation skills to shade and add any detail that you can:

|  |  |  |
| --- | --- | --- |
| **Side View (front)** | **Side view (Back)** | **Top view** |
|  |  |  |

What information do you think is important to collect about a pumpkin? Put in your data below (and make sure you use units). Use any tools on the side of the classroom to do your measuring.

|  |  |
| --- | --- |
| Measurable characteristic | Value (with units) |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Calculations of characteristics of pumpkin:

|  |  |  |
| --- | --- | --- |
| Dimension | Measured | Calculated |
| Circumference | $$C= πd$$ |  |
| Volume | $$V= \frac{4}{3}πr^{3}$$ |  |

**What is Pi?**

Take your pumpkin dimensions circumference and diameter.

Do the following…$\frac{Circumference}{Diamater}$ = ?

What does this number mean? Where have you seen it before?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Day 2: You will investigate and make observations on the INSIDE of your pumpkin.**

What information do you think is important to collect about the INSIDE of your pumpkin? Put in your data below (and make sure you use units). Use any tools on the side of the classroom to do your measuring.

|  |  |
| --- | --- |
| Measurable characteristic | Value (with units) |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Draw (as detailed as possible) and label the inside structures of the pumpkin. Use your observation skills to shade and add any detail that you can:

|  |  |
| --- | --- |
| **Inside View (with guts)** | **Inside view (guts removed)** |
|  |  |

***SEPARATE AND WASH YOUR PUMPKIN SEEDS IN PREPARATION FOR NEXT DAY!!***

**Day 3: You will prepare and roast your pumpkin seed today. Be sure to follow the recipe below. As you wait for your seeds to roast, you are to prepare the plan for your MATH PUMPKIN CARVING (on Wednesday).**

1. Pre-heat your oven to 350 degrees
2. Measure out your pumpkin seeds using the ¼ measuring cup
	1. How many ¼ cups did you fill? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Was there any additional seeds that did not completely fill an additional ¼ cup? \_\_\_\_\_\_\_\_\_\_\_\_\_
	3. What is your total amount of pumpkin seeds? \_\_\_\_\_\_\_\_\_\_\_\_\_
3. Measure out $\left(\frac{4}{4}\right)\left(\frac{3}{2}\right)$ = \_\_\_\_\_\_ tablespoon of olive oil, add to your pumpkin seeds
4. Measure out $\left(\frac{1}{4}\right)\left(\frac{3}{3}\right)$ = \_\_\_\_\_\_ cups of parmesan cheese, add to your pumpkin seeds
5. Measure out $\left(\frac{3}{4}\right)\left(\frac{3}{3}\right)$ = \_\_\_\_\_\_ teaspoons of black pepper, add to your pumpkin seeds
6. Mix all the spices around to coat pumpkin seeds
7. Place pumpkin seeds on cookies sheet and place in over for 25 minutes
8. CLEAN UP ALL YOUR DISHES and return to the proper cupboard in your station
9. Put your names on the large ziplock bags and place cooled seeds in the bag

While you wait for your seeds to be ready, you and your team are to prepare for your carving day (Day 5). Your pumpkin face is supposed to be built using only MATH SYMBOLS. Be creative!