Dilutions

* Each group will create 4 different dilutions of their chosen spice.
* 100%, 75%, 50%, 25%

Each group will need to determine the ratio of spice extract to water.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 100% spice | 75% spice | 50% spice | 25% spice |
| Original volume |  |  |  |  |
| New total volume |  |  |  |  |
| Amount water to add |  |  |  |  |

The first step is to soak your spice in distilled water for a week, and then strain through a cheese cloth to get your extract.

* Measure the extract in mL.
* You want to divide this amount up by four, to make four dilutions. (100%, 75%, 50%,25%)
* Each dilution should have the same amount of extract to start (this will be the original volume)
* In your groups you need to determine how much water to add to create the dilutions.

**Dilution Equation:**

Original Volume X (100%/Desired %) = New Total Volume



New Total Volume – Original Volume = Amt. Water to add for Desired Dilution



**Example 1:** One group has decided to use mustard as their spice. After measuring their extract they have a total of 200 mL.

* How many mL will be in each dilution?
* Calculate the total volume of each dilution by using the following equation: OV X 100/desired = new total volume. OV stands for original volume.
* Ex: each dilution will have 50mL of extract, how many mL of water should be added to create a 75% dilution?
1. 50X100/75 = new total volume
2. 5000/75= 66.66
3. 66.6 is the new total volume, including both the extract and water.
4. To calculate the mL of just water, subtract the original volume from the new total volume
5. 66.6-50= 16.66~ 16.7 mL of water.
* **Now figure out the rest of the dilutions for this example. Show all your math and record in a chart.**

**Example 2:** Another group, after soaking and straining their spice; finished with 62 mL of extract.

* How many mL will be in each dilution? (original volume)
* Try to figure out how many mL of water to add to each dilution to get your desired concentration.
* **Record in a chart!**