

Introducing Sarah from Tempe, Arizona! She will be assisting Simon with this yummy experiment!

How do scientists figure out how many different species live in an area? It would be very difficult to actually try and count each and every one! One method is to do a simple survey and come up with a "**diversity in-**

Simon's Magic Lunchbox Experiment



dex". A diversity index is a formula that scientists created to help them compare healthy and unhealthy, or disturbed, ecosystems. For example, someplace like the rainforest would have an index of a **1.0** – which is

the highest diversity of life. The lowest is a **.01** – that would indicate an ecosystem that is <u>not</u> doing well.

For this experiment, you are going to figure out your very own diversity index – using M&M's! Careful, don't eat any until you have finished!

Steps:

1. Open a small bag of plain M&M's.

2. Take out 26, one by one, without looking. Put them in a straight line on a piece of paper.



- 3. After you have finished laying them out you will need to figure out how many of the same color are next to each other (runs). <u>Here is an</u> <u>example:</u>
 - Red = R Blue = B Yellow = YGreen = G

You get the idea! Ok, suppose you lined your M&M's up like this:

RRRBYYYYGGGGBBBBBYBGRRR

4. Now, you have to identify the runs. Take your pencil and put a line above or below, alternating, each "run" of color.

RRRBYYYYGGGGBBBBYBGRRRRYG





Diversity Index, continued...

Add up your runs and take out your calculator.

5. Now, just divide the number of runs by the number of M&M's...

11 / 26 = .42 your diversity index!

What kind of diversity do you have? Remember, 1.0 is the best and .01 is the worst. Where did your diversity index land? Do you have a healthy ecosystem with many different types of life or one that has been damaged?

Now you can eat your M&M's!