VARIABLES

Part of an experiment that *changes* (the cause and effect)

INDEPENDENT

What we _____

(the _____)

DEPENDENT

What we _____

(the _____)

VARIABLES

Part of an experiment that *changes* (the cause and effect)

INDEPENDENT

What we **change**

(the **cause**)

DEPENDENT

What we **measure**

(the **effect**)

VARIABLES

Part of an experiment that *changes* (the cause and effect)

INDEPENDENT

What we **change**

(the **cause**)

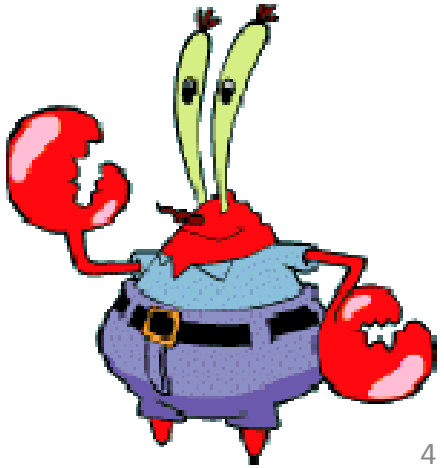
DEPENDENT

What we **measure** (the **effect**)

Constant Variables

Parts of an experiment that is **the same** for all conditions

Mr. Krabs created a secret ingredient for a breath mint that he thinks will “cure” the bad breath that people get from eating crabby patties at the Krusty Krab. He asked 100 customers with a history of bad breath to be in his experiment. He had fifty customers (Group A) eat his new breath mint after they finished eating a crabby patty. The other fifty (Group B) received a breath mint without the Secret Ingredient. Two hours after eating the crabby patties, Mr. Krab measured how fresh each person’s breath was.



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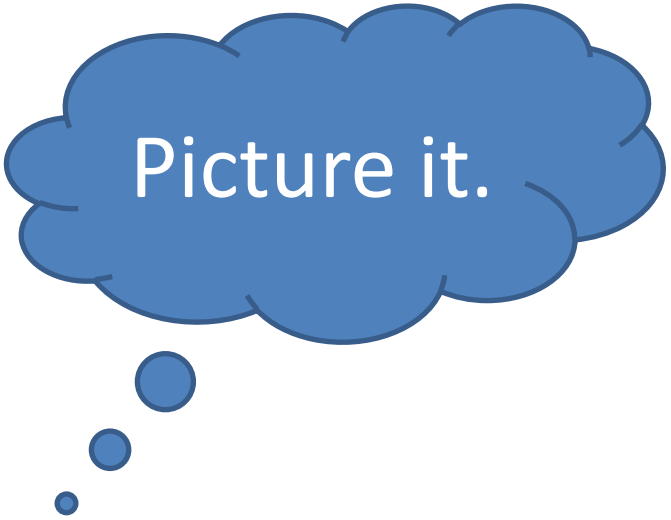

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Independent Variable:	**Dependent Variable:**	**Constant Variables:**
Breath mint (secret ingredient or not)		

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Independent Variable:	**Dependent Variable:**	**Constant Variables:**
Breath mint (secret ingredient or not)	How fresh breath is	

He had fifty customers (Group A) eat his new breath mint after they finished eating a crabby patty. The other fifty (Group B) received a breath mint without the Secret Ingredient. Two hours after eating the crabby patties, Mr. Krab measured how fresh each person's breath was.

Independent Variable:	Dependent Variable:	Constant Variables:
Secret Breath mint (secret ingredient or not)	How fresh breath is	Number of people, what they eat before, time period, ingredients in sandwich, how long they had the mint in their mouth, size of mint, chew or not chew mint, etc.

Complete the three partner practice problems.

SpongeBob noticed that his favorite pants were not as clean as they used to be. His friend Sandy told him that he should try using Clean-O detergent, a new laundry soap she found at Sail-Mart. SpongeBob made sure to wash one pair of pants in plain water and another pair in water with the Clean-O detergent. After washing both pairs of pants a total of three times, the pants washed in the Clean-O detergent did not appear to be any cleaner than the pants washed in plain water.

Independent Variable:	Dependent Variable:	Constant Variables:

SpongeBob noticed that his favorite pants were not **as clean** as they used to be. His friend Sandy told him that he should try using Clean-O detergent, a new laundry soap she found at Sail-Mart. SpongeBob made sure to wash one pair of pants in plain water and another pair in water with the Clean-O detergent. After washing both pairs of pants a total of three times, the pants washed in the Clean-O detergent **did not appear to be any cleaner than the pants washed in plain water.**

Independent Variable:

Detergent or no detergent

Dependent Variable:

How **clean** (use this word because that is the word in the prompt that they want to measure.)

Constant Variables:

Same amount of stain, same pants, same kind of stains, same temperature of water, same kind of water, same washer, same amount of water, etc.

Squidward loves playing his clarinet and believes it attracts more jellyfish than any other instrument he as played. In order to test his hypothesis, Squidward played a song on his clarinet for a total of 5 minutes and counted the number of jellyfish he saw in his front yard. He played the song a total of 3 times on his clarinet and repeated the experiment using a flute and a guitar. He also recorded the number of jellyfish he observed when he was not playing an instrument.

Independent Variable:	**Dependent Variable:**	**Constant Variables:**

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Independent Variable:

Type of Instrument (clarinet, flute, guitar)

Control Variable:

Not playing an instrument

Dependent Variable:

Number of jellyfish

Constant Variables:

Time played (5 minutes), song, how many times he plays song, weather conditions, time of year (in case it is mating season or not)

Patrick and SpongeBob love to blow bubbles! Patrick found some Super Bubble Soap at Sail-Mart. The ads claim that Super Bubble Soap will produce bubbles that are twice as big as bubbles made with regular bubble soap. Patrick and SpongeBob made up two samples of bubble solution. One sample was made with 5 oz. of Super Bubble Soap and 5 oz. of water, while the other was made with the same amount of water and 5 oz. of regular bubble soap. Patrick and SpongeBob used their favorite bubble wands to blow 10 different bubbles and did their best to measure the diameter of each one.

Independent Variable:	**Dependent Variable:**	**Constant Variables:**

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Independent Variable:	**Dependent Variable:**	**Constant Variables:**
Bubble soap / solution	Diameter / size of bubble	How many bubbles, how much solution, how much water in the solution, the wand, amount of wind, temperature of air, force to blow bubble, etc.