

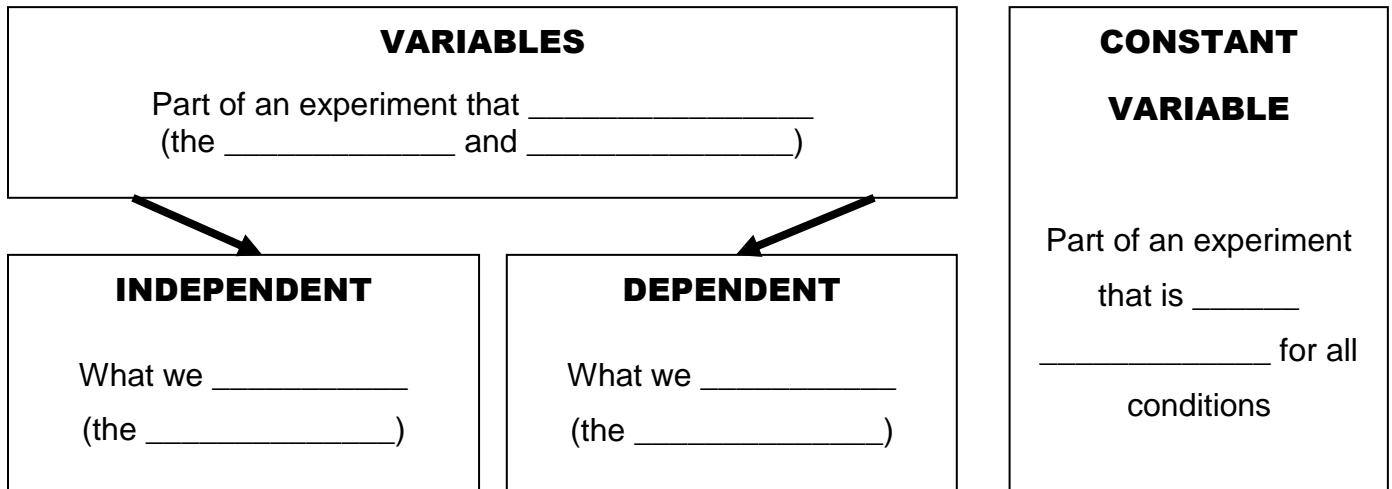
Name \_\_\_\_\_ Hour \_\_\_\_\_, 20 \_\_\_\_\_

I will try really hard at \_\_\_\_\_ (College/University) in 7 years!

## Independent & Dependent Variables and Constant Variables!

**AIM:** Determine independent and dependent variables as well as constant variables for experiments!

### Mini-Lesson:



### Guided Practice:

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.



The independent variable is: \_\_\_\_\_

The dependent variable is: \_\_\_\_\_

At least 3 things to keep constant are:

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

### Partner Practice:



#### SpongeBob Clean Pants

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.

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The independent variable is: \_\_\_\_\_

The dependent variable is: \_\_\_\_\_

At least 3 things to keep constant are:

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### Squidward's Symphony

Squidward loves playing his clarinet and believes it attracts more jellyfish than any other instrument he has 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.

The independent variable is: \_\_\_\_\_

The dependent variable is: \_\_\_\_\_

At least 3 things to keep constant are:

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### Super Bubbles

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.



The independent variable is: \_\_\_\_\_

The dependent variable is: \_\_\_\_\_

At least 3 things to keep constant are:

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### 6<sup>th</sup> Grade Science Homework

**Directions:** Read each experiment below. Then, determine at least three constants variables and the other two variables (1 IV and 1 DV )for each experiment. Use the first example to help you.

*Example experiment:* You want to know if the color of light will affect how tall a plant grows. You get 50 sunflower plants, each that is 1 cm tall. You place 10 under green light, 10 under blue light, 10 under purple light, 10 under red light, and the remaining 10 in normal sunlight. You measure their height every week for a year.

<p><b>Constant Variables</b> (at least 3):</p> <p><i>Same plant type</i> <i>Same starting height</i> <i>Same measurement tool (ruler)</i> <i>Same amount of light</i></p>	<p><b>Variables</b> (exactly 2 – one independent and one dependent):</p> <p><b>Independent:</b> <i>Color of light</i></p> <p><b>Dependent:</b> <i>Height every week / growth</i></p>
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1. Mrs. Wecker wants to know if covering your mouth when you cough really helps prevent the spread of germs. She collects 20 scholars who all have the same cold. She has half of them cover their mouths when they cough into a test tray. She has the other ten of them cough directly into the test tray without covering their mouths. She has each scholar cough three times into their test tray. Then, she compared the amount of bacteria in each of the twenty trays.

<p><b>Constant Variables</b> (at least 3):</p>	<p><b>Variables</b> (exactly 2 – one independent and one dependent):</p> <p><b>Independent:</b></p> <p><b>Dependent:</b></p>
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Name \_\_\_\_\_ Hour \_\_\_\_\_, 20 \_\_\_\_\_

I will try really hard at \_\_\_\_\_ (College/University) in 7 years!

2. Mr. Grana's mom told her that water will boil faster if salt is added to it. To test this, Mrs. Grana collects four pots and fills each with the same amount of water. She added 1 T of salt to the first pot, 2 T to the second, and 3 T to the third. She leaves the fourth pot with just water. She turns on every burner at the same time and to the same temperature. She sets a timer and watches each pot until she sees it start to boil. She records the time it takes for each pot of water to boil.

<b>Constant Variables</b> (at least 3):	<b>Variables</b> (exactly 2 – one independent and one dependent):  <b>Independent:</b>  <b>Dependent:</b>
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3. Mr. Sanford hates it when his cereal gets soggy! He wants to figure out which cereal stays crunchy the longest in milk. He buys ten different kinds of cereal. He measures 3 cups of each cereal and pours it into a bowl. He then adds 1 cup of milk to each bowl. Every two minutes, He takes a bite of each cereal and rates it from 0 (soggy) to 1 (crunchy). He continues this for 20 minutes.

<b>Constant Variables</b> (at least 3):	<b>Variables</b> (exactly 2 – one independent and one dependent):  <b>Independent:</b>  <b>Dependent:</b>
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*Bonus (Optional): Write your own experiment below. Identify your independent and dependent variables and at least three controls.*