**Science 24 – Pizza Lab**

Pizza has been around for centuries; the simple ingredients and customizability makes for pizza being a family favorite for many across Canada.

Sam’s Pizza – a local restaurant has had the same recipe for its 25-year history, but has noticed it is losing its popularity. They have hired you to come up with a new recipe for their dough by changing just one ingredient. They want you to know the following information:

* Yeast is used to allow the dough to rise by creating CO2 bubbles
* Sugar is used to give the yeast food so it can grow;
* Salt is used to stop the yeast from growing too large;

Fill out the form below to indicate the ingredient (and by how much) you intend to change.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Original Recipe** | | **Ingredient to change**  **(mark “X”)** | **New Recipe** | |
| **Ingredient** | **Amount** | **Ingredient** | **New Amount** |
| Flour | 2 ½ cups |  | Flour |  |
| Sugar | ½ tbsp |  | Sugar |  |
| Salt | ½ tsp |  | Salt |  |
| Yeast | ½ tbsp |  | Yeast |  |

Which ingredient did you choose to change?

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What is your reasoning? (will make dough fluffier, firmer, etc.)

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If this was a lab, what would be the manipulated, controlled, and responding variables be?

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| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Manipulated |  | Controlled |  | Responding |

**Post Pizza Assignment**

What sanitary precautions did you take in the foods lab?

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Why is it important to make sure our foods lab is clean?

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Explain how your pizza dough turned out

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What do you think your ingredient change did to the pizza dough? Provide a scientific reason.

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What would you change next time?

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**Sam’s Pizza – Famous Pizza Dough 2.0 Recipe**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cooking Method**  Knead Bake  **Cooking Time**  15 min  **Ingredients**  (fill in the ingredients from the form you filled out)   |  |  | | --- | --- | |  | cups, flour | |  | tbsp, sugar | |  | tsp, salt | |  | tbsp, yeast |   Approx. 6oz hot water (shower temp)  ½ tbsp, olive oil | **Equipment**  Measuring cups and spoons, wooden spoon, medium metal bowl  **Procedure – Day 1**  Measure each ingredient separately and put them into plastic containers. Label each container with tape (write the name of the ingredient and the amount along with your kitchen color)  **Procedure – Day 2**  Start by adding 6oz of hot water to a large glass measuring cup. Then add the yeast, sugar and oil into the same glass cup. Stir with a wooden spoon.  Next, in a large metal bowl, transfer all the ingredients from the glass measuring cup into the metal bowl.  Add HALF the amount of flour and the salt into the metal bowl and stir ingredients with a wooden spoon. Mix ingredients together until they combine but do not turn the ingredients into a batter.  Gradually add the reminder of the flour and begin kneading dough by hand. Dough should not be too wet or sticky. Knead dough on floured counter for 10 minutes, until soft like your skin.  Let dough rest for approx. 10 minutes in a bowl, covered with saranwrap, if time allows.  Grab a baking tray & spray it with nonstick spray. Place it the dough onto the pan. Press out the dough large enough to cover the surface of the pizza pan. Spread sauce over the surface of the dough and add toppings.  Bake at 450F for approx. 15 minutes.Pizza is done when the crust is golden brown and the cheese bubbles. |