

Unplugged Activity: Make a Pizza with a Procedure

1. Ask 4 students to come up to the front of the room to represent 4 different pizza restaurants. One at a time, give each of them a card with a recipe for a pizza. *You can also insert the recipes in the pages of a cookbook, and ask each student to read a given recipe.*

<p>1. MUSHROOM PIZZA RECIPE</p> <p>Roll out dough. Spread tomato sauce on dough. Sprinkle cheese on tomato sauce. Sprinkle sliced mushrooms on top of cheese. Put pizza in oven at 350° for 5 minutes. Take out of oven.</p>	<p>2. PEPPERONI PIZZA RECIPE</p> <p>Roll out dough. Spread tomato sauce on dough. Sprinkle cheese on tomato sauce. Sprinkle sliced pepperoni on top of cheese. Put pizza in oven at 350° for 5 minutes. Take out of oven.</p>
<p>3. PEPPER PIZZA RECIPE</p> <p>Roll out dough. Spread tomato sauce on dough. Sprinkle cheese on tomato sauce. Sprinkle sliced peppers on top of cheese. Put pizza in oven at 350° for 5 minutes. Take out of oven.</p>	<p>4. ANCHOVY PIZZA RECIPE</p> <p>Roll out dough. Spread tomato sauce on dough. Sprinkle cheese on tomato sauce. Sprinkle sliced anchovies on top of cheese. Put pizza in oven at 350° for 5 minutes. Take out of oven.</p>

2. Have each student read aloud the recipe.
3. Ask the class:
 - 1) Do you see anything similar between the different recipes?
 - 2) What is different?
 - 3) Could it be more efficient?
5. Present the solution of giving a different student a generic recipe for pizza. You just need to tell that student what kind of pizza you want and they can make it.
6. Have another student come to the front of the class and read the generic recipe.

5. PIZZA RECIPE WITH INGREDIENT

Roll out dough.

Spread tomato sauce on dough.

Sprinkle cheese on tomato sauce.

Sprinkle sliced ingredient on top of cheese.

Put pizza in oven at 350° for 5 minutes.

Take out of oven.

7. Ask students to compare with these 5 pizza recipes. Explain that the first 4 restaurants are not very versatile because they can only make one type of pizza. The last restaurant is a better solution because it is capable of making any kind of pizza, as long as we tell the restaurant what ingredient we want on it. If we want to update the pizza recipe (such as adjusting the amount salt or adding new spices) for the restaurant, we just update the one copy, and need not locate all those different single type recipes to add salt or spices to the recipe.
8. Explain that it's better to have the capability of making multiple types of pizzas. It is also better to have one recipe that can be generalized to any type of pizza. This is the same as having one procedure (set of commands) rather than multiple ones in a program. So, when students are programming and they see that they are copying/pasting code over and over, it's a good time to consider making a procedure.

<p>MUSHROOM PIZZA RECIPE</p> <ol style="list-style-type: none"> 1. Roll out dough. 2. Spread tomato sauce on dough. 3. Sprinkle cheese on tomato sauce. 4. Sprinkle sliced mushrooms on top of cheese. 5. Put pizza in oven at 350° for 5 minutes. 6. Take out of oven. 	<p>PEPPERONI PIZZA RECIPE</p> <ol style="list-style-type: none"> 1. Roll out dough. 2. Spread tomato sauce on dough. 3. Sprinkle cheese on tomato sauce. 4. Sprinkle sliced pepperoni on top of cheese. 5. Put pizza in oven at 350° for 5 minutes. 6. Take out of oven.
<p>PEPPER PIZZA RECIPE</p> <ol style="list-style-type: none"> 1. Roll out dough. 2. Spread tomato sauce on dough. 3. Sprinkle cheese on tomato sauce. 4. Sprinkle sliced peppers on top of cheese. 5. Put pizza in oven at 350° for 5 minutes. 6. Take out of oven. 	<p>ANCHOVY PIZZA RECIPE</p> <ol style="list-style-type: none"> 1. Roll out dough. 2. Spread tomato sauce on dough. 3. Sprinkle cheese on tomato sauce. 4. Sprinkle sliced anchovies on top of cheese. 5. Put pizza in oven at 350° for 5 minutes. 6. Take out of oven.

PIZZA RECIPE WITH
INGREDIENT

1. Roll out dough.
2. Spread tomato sauce on dough.
3. Sprinkle cheese on tomato sauce.
4. Sprinkle sliced ingredient on top of cheese.
5. Put pizza in oven at 350° for 5 minutes.
6. Take out of oven.