WHAT'S COOKING IN ENGINEERING?

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ENGINEERS VS. CHEFS

Our team chose to compare the design processes of both engineers and chefs. Both professions involve creativity, problem-solving, and a systematic process to get the desired result. We thought it would be fun to choose a career not commonly associated with engineering. Plus, who doesn’t like food?

ENGINEERS

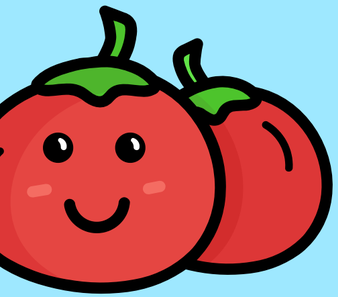
Engineers require creativity to design innovative solutions to problems. They draw inspiration from existing technologies, nature, and various design principles.

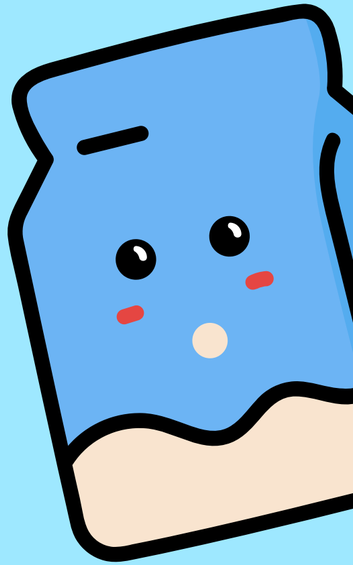
VS

CHEFS

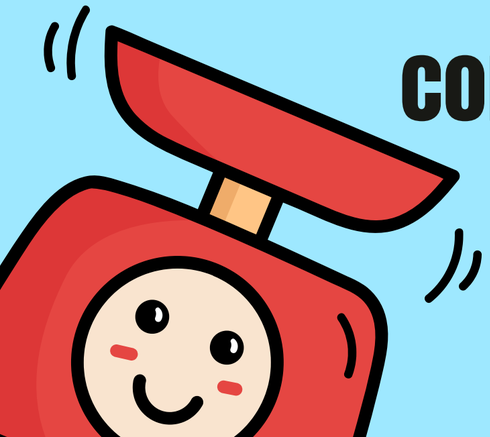
Chefs often experiment with flavors, textures, and presentation to create unique and innovative dishes. They draw inspiration from various cuisines and ingredients.

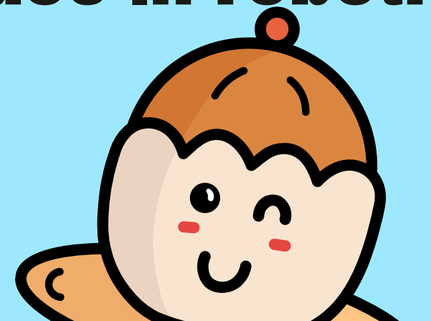
How Does the Professional Approach to Engineering Design Match or Differ from the Approach Used by Your Team?

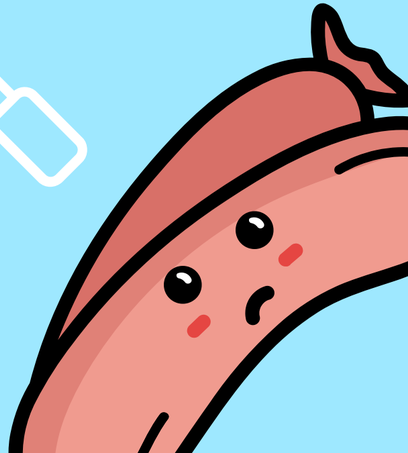




Our team interviewed two chefs to get an idea of what the process or cycle looks like when they create a new dish and compare that to the engineering design process we use in robotics. We used their answers to create a model to compare to the design cycle we use In robotics.







INTERVIEWEE #1

Name: Devin Peters

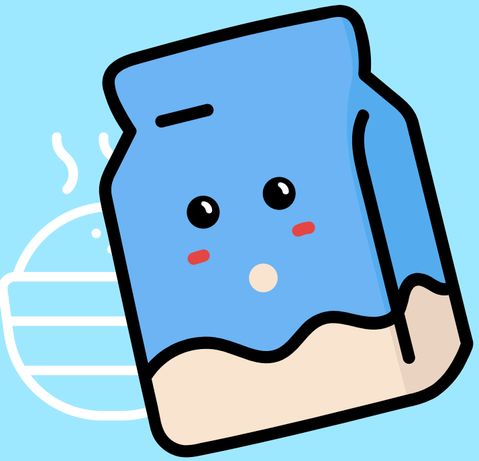
Profession:
Chef at Sysco Foods

INTERVIEWEE #2

Name: Tina Hanna

Profession:
Kitchen Manager

COOKING DESIGN PROCESS



Decide what you want to create

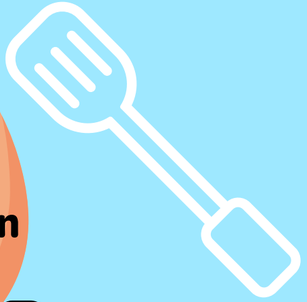
STEP 1

Conceptualization

STEP 2

Inspiration

STEP 3



Ingredient Selection

STEP 4

Pick One

STEP 5

Recipe Development

STEP 6

Testing & Refinement

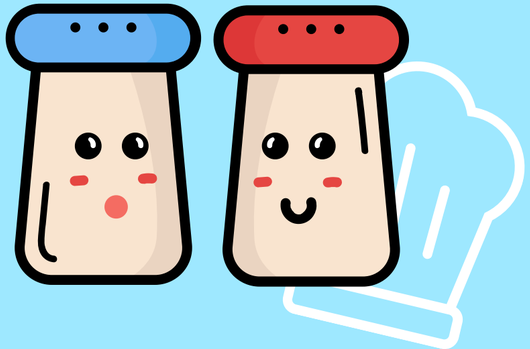
STEP 7

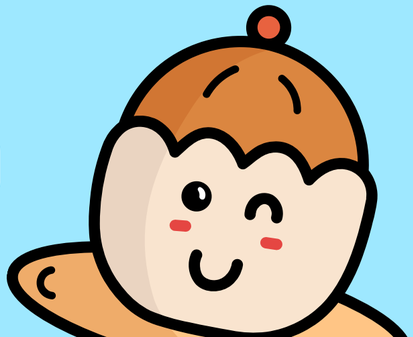
Finalization

STEP 8

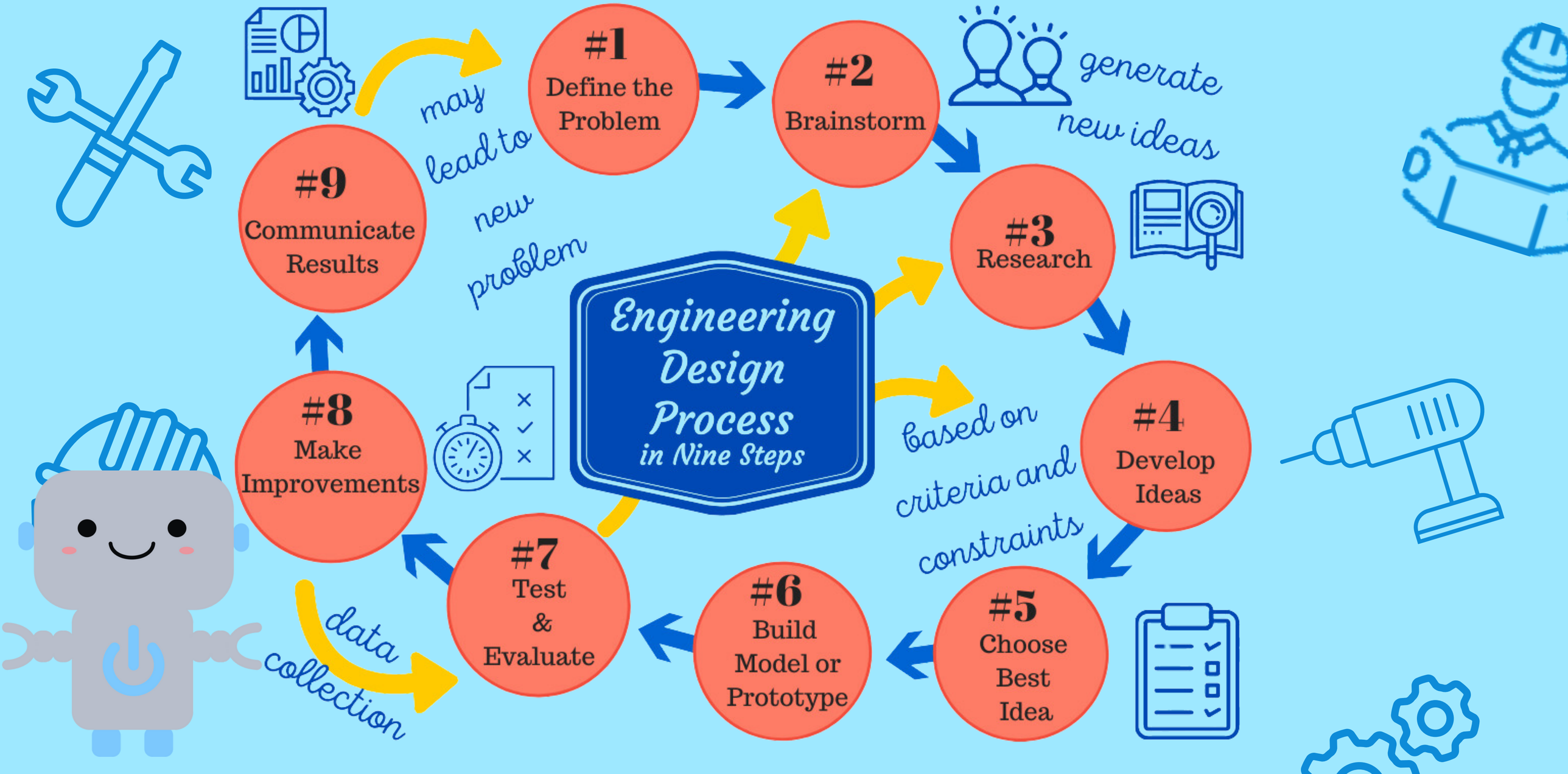
Integration into the Menu

STEP 9





ENGINEERING DESIGN PROCESS



STEP ONE:

CHEFS

Identify a Need: What does the menu need? Is there an item customers are seeking? A dish that needs replacing?

VS

ENGINEERS

Define the Problem: Define the problem or opportunity that requires a solution. Clearly understand the constraints, requirements, and objectives.

STEP TWO:

CHEFS

Conceptualize: Based on inspiration, chefs conceptualize the new dish by envisioning flavors, textures, and presentation. They may consider the balance of tastes, visual appeal, and overall dining experience.

VS

ENGINEERS

Brainstorm:

Engineers think of a robot design that could work for the game and its rules by generating a variety of ideas without focusing too much on one.

STEP THREE:

CHEFS

Inspiration: Chefs often find inspiration from various sources, including other cuisines, cultural influences, personal experiences, or seasonal ingredients.

VS

ENGINEERS

Research: Engineers look at inspirations for their robots that already exist. They look to see what has been tried. What has been successful or needs improvements.

STEP FOUR:

CHEFS

Ingredient Selection: Chefs carefully choose ingredients that complement each other and contribute to the desired flavor profile. They may also consider factors like seasonality, availability, and freshness.

VS

ENGINEERS

Develop Ideas: Using the brainstorm and research ideas, engineers create detailed drawings, specifications, and plans for ideas that work to solve the problem.

STEP FIVE:

CHEFS	VS	ENGINEERS
Pick One: After carefully considering options, chefs choose the idea they think is the best.		**Choose Best Idea**: Engineers use a decision matrix to specifically analyze each idea against a specific set of criteria to determine their best idea.

STEP SIX:

CHEFS	VS	ENGINEERS
Recipe Development: Chefs experiment with different combinations and proportions of ingredients to develop the recipe. This involves trial and error, adjusting elements until they achieve the desired taste and texture.		**Build Model or Prototype:** Construct a physical prototype to test and validate the design.

STEP SEVEN:

CHEFS	ENGINEERS
Testing and Refinement: The Chef creates a prototype of the dish, testing it in the kitchen. They assess the flavor, texture, and presentation, making adjustments as needed to enhance the dish.	**Test:** Conduct tests to evaluate the performance, functionality, and safety of the prototype. Collect and analyze data to inform design modifications.

STEP EIGHT:

CHEFS	ENGINEERS
Finalization: Once satisfied with the results, the Chef finalizes the recipe, determining the exact measurements and cooking methods.	**Make Improvements:** Based on testing results, refine the design, make necessary adjustments, and repeat the testing and evaluation process.

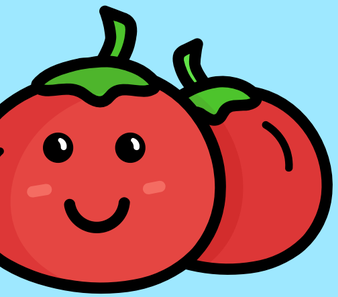
VS

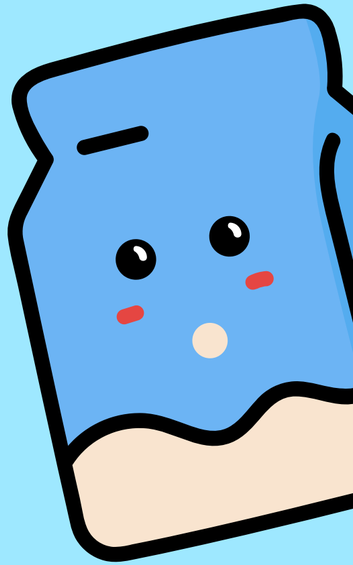
STEP NINE:

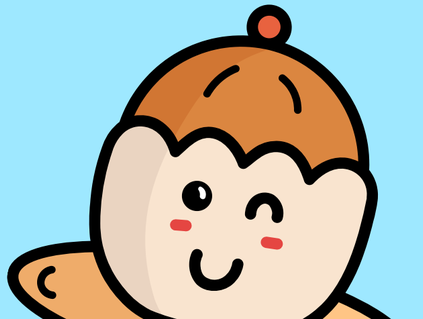
CHEFS	VS	ENGINEERS
Integration into the Menu: The final step involves integrating the new dish into the menu, considering how it complements existing offerings and meets the preferences of the target audience.		**Communicate Results:** Use your design, show others how it stands up to the problem. Be sure to document all your results.

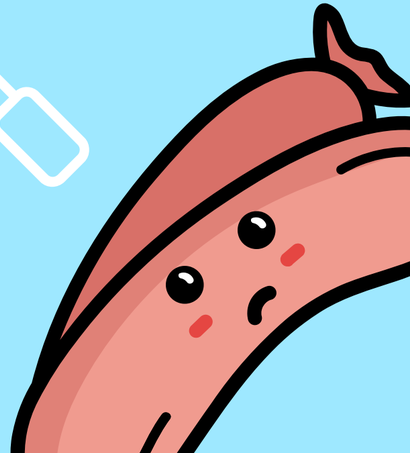
FROM VEX TO THE KITCHEN

Collaboration and teamwork are common in kitchen environments. Chefs often work closely with other kitchen staff. As a VEX robotics team, we practice collaboration and teamwork as well.



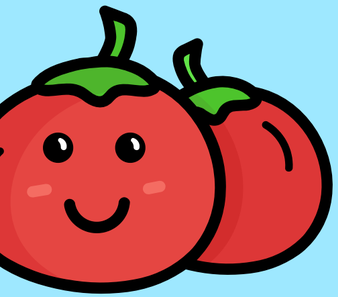


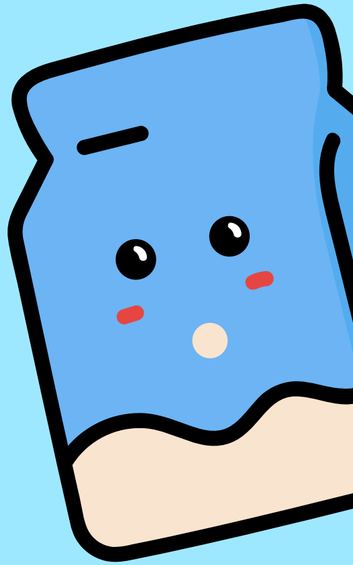


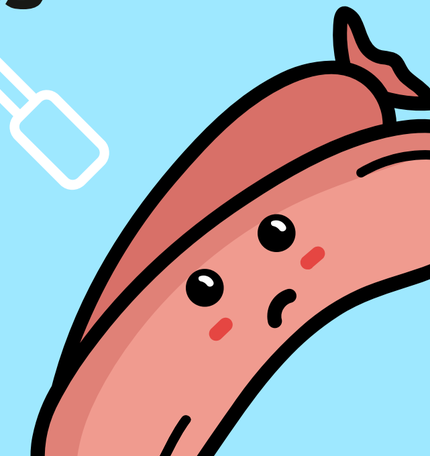


FROM VEX TO THE KITCHEN

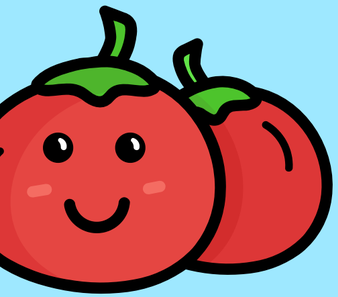
Chefs encounter challenges in the kitchen, from adapting to shortages, dealing with unexpected issues during service, or creating solutions for dietary restrictions. Quick thinking and problem-solving skills are crucial. VEX has taught us to solve complex problems, from designing, troubleshooting issues or game strategy.



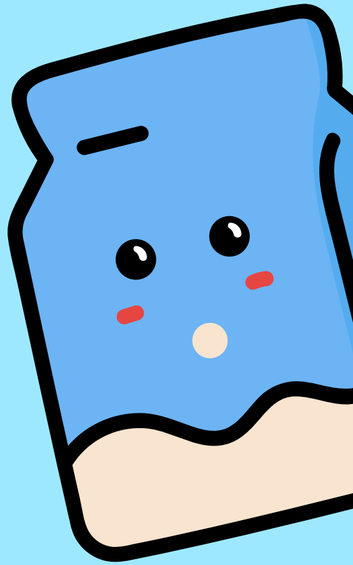


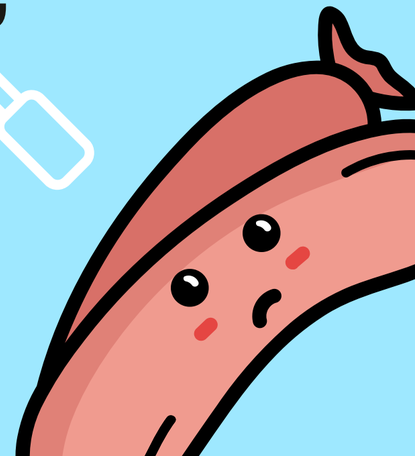


FROM VEX TO THE KITCHEN

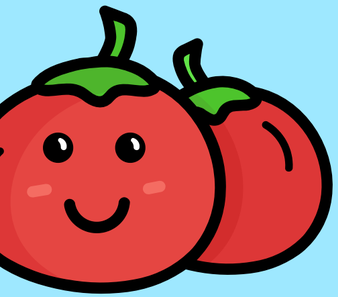


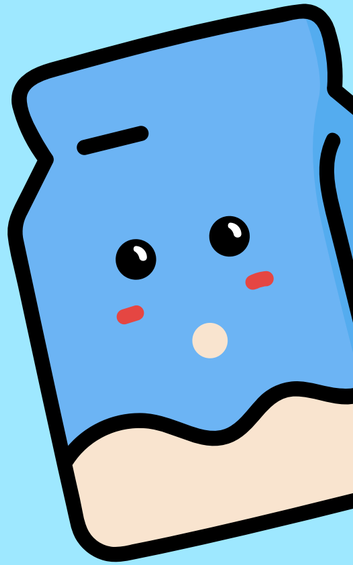
Innovation in the culinary world involves experimenting with new ingredients, cooking techniques, and culinary trends. Chefs often push the boundaries of traditional recipes to create novel and exciting dishes. With VEXIQ and the development of a new game each year we have to be innovative In how we develop our Ideas to play the game.

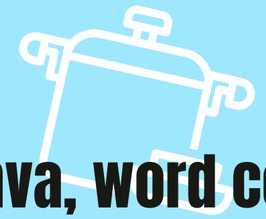


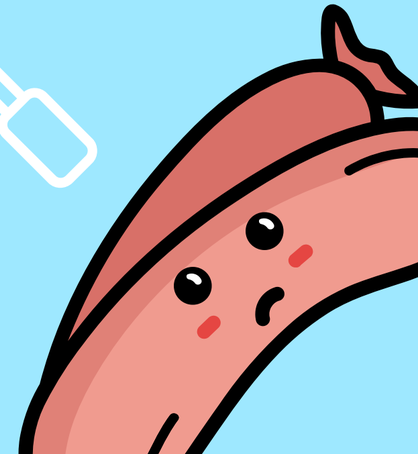


SUMMARY









While chefs and engineers differ in their professions, both require a combination of technical skills, creativity, Innovation, and problem-solving skills.

Thank You

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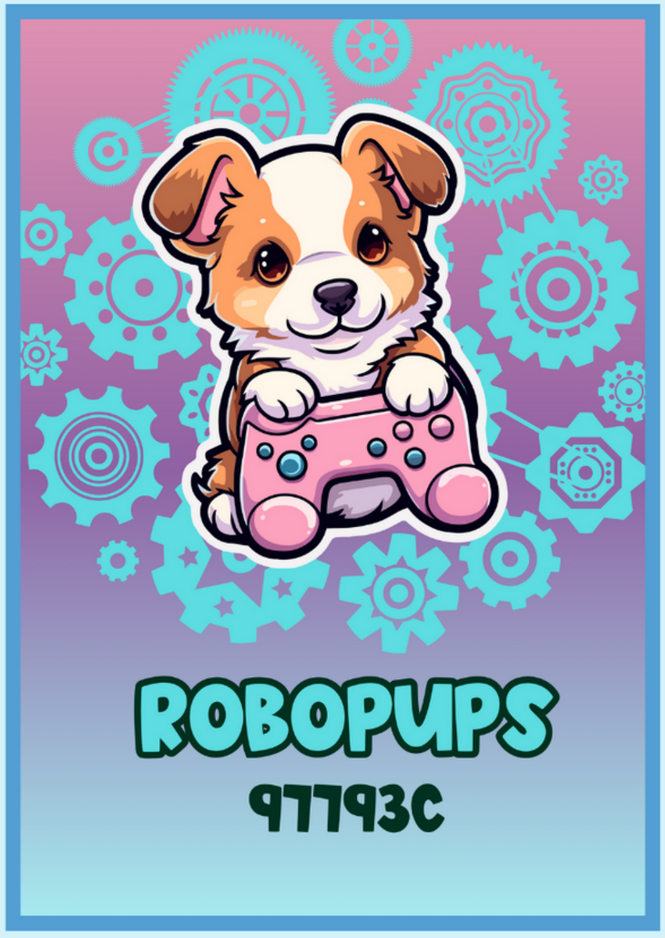
CREDITS



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