



My Plate My Way: Building Healthy Meals through Play

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JOHNS HOPKINS

WHITING SCHOOL
of ENGINEERING

Background

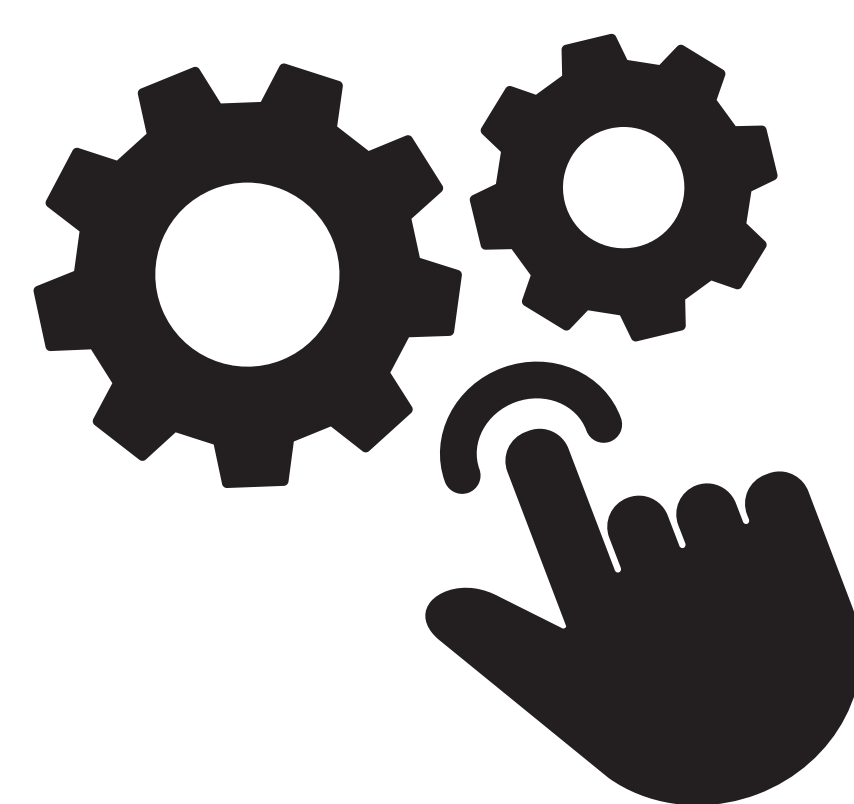
Port Discovery is one of the nations top children's museums, and receives more than 265,000 visitors annually. The museum focuses on **interactive, play-based** learning that supports child development.

The museum continually updates exhibits to meet evolving educational and accessibility needs. The **Royal Farms exhibit**, which is a child-sized version of the popular convenience store and gas station chain. The exhibit features a play car, gas pump, checkout stand and store setup - inviting children to **explore real-world roles through imaginative play**.

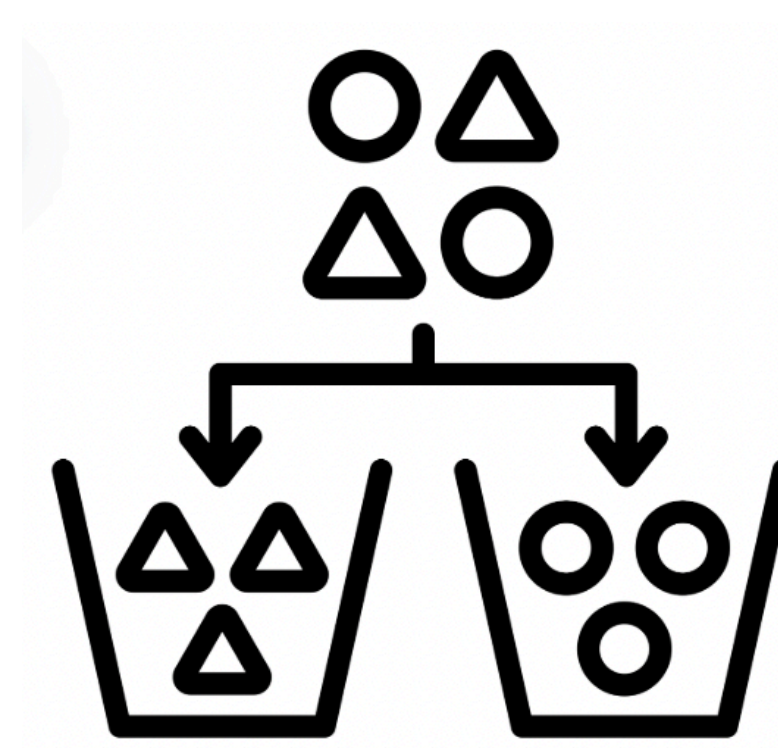


Research Observations

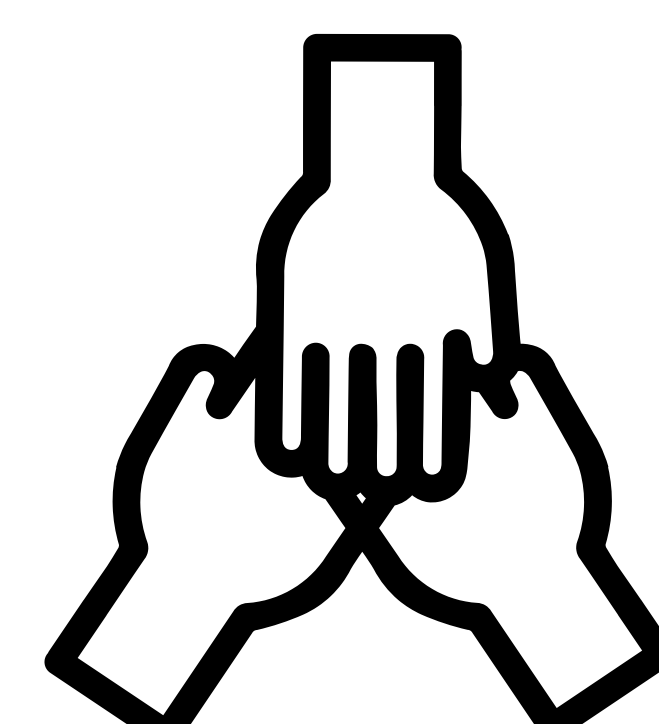
Loved interactive elements



Food sorting area is underutilized



Children liked being able to work together



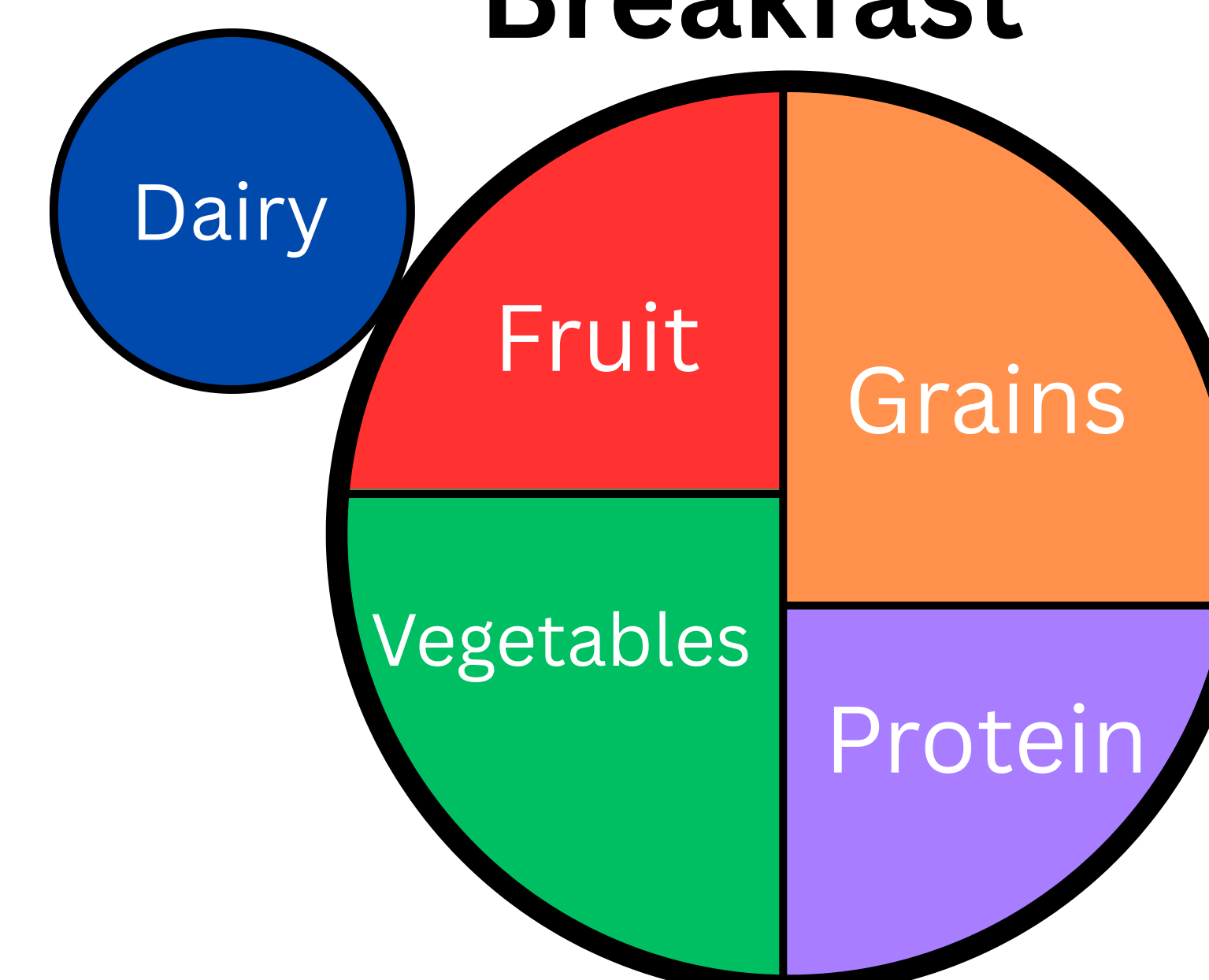
Need Statement

Children and parents need a way to engage through **structured and unstructured hands-on learning** in the Royal Farms exhibit that **encourages exploration of healthy eating**.

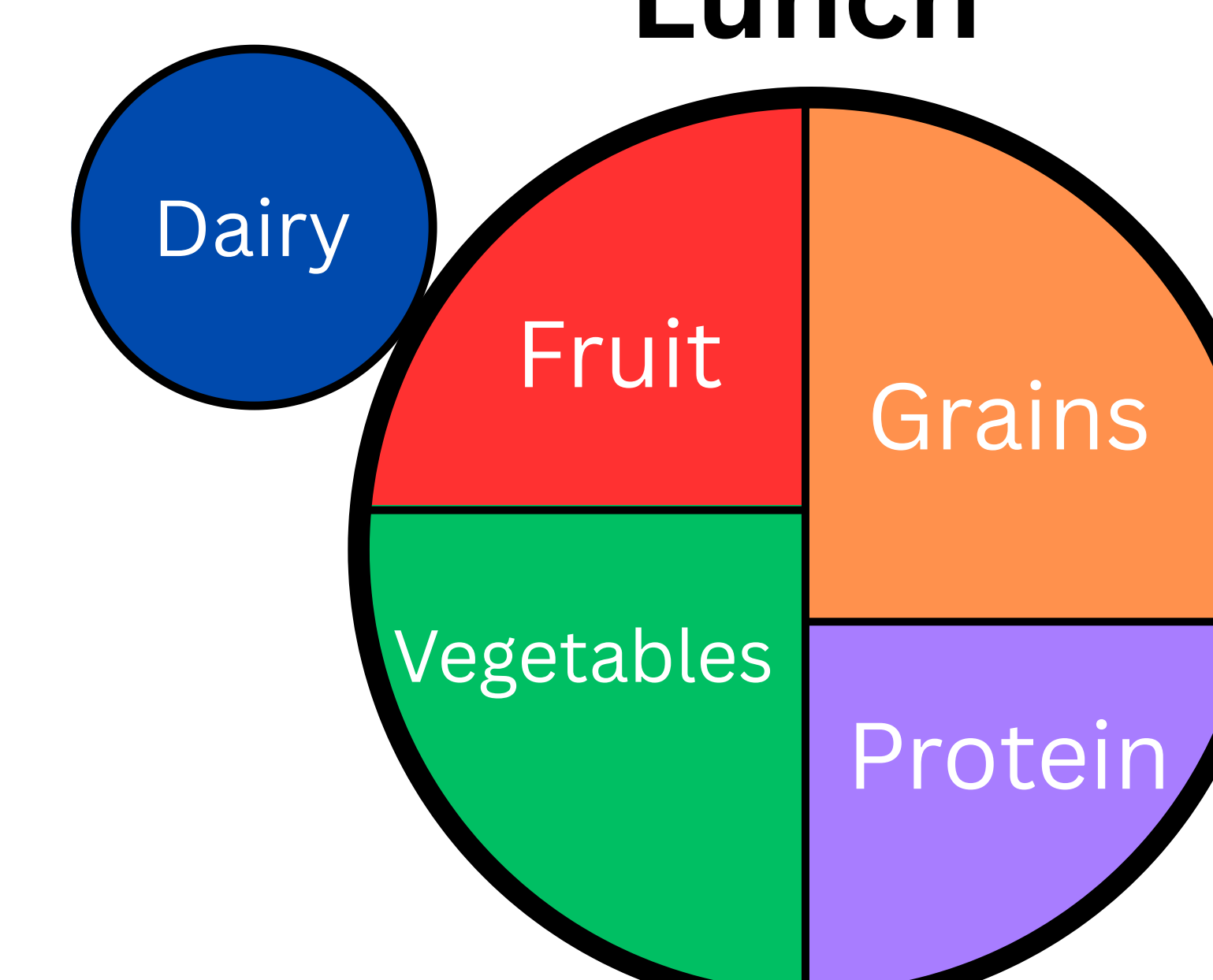
Solution

Children place **magnetic food pucks** with **embedded RFID tags** directly on our large, **2' diameter, mounted plates**. The outer edge color on the puck matches the category.

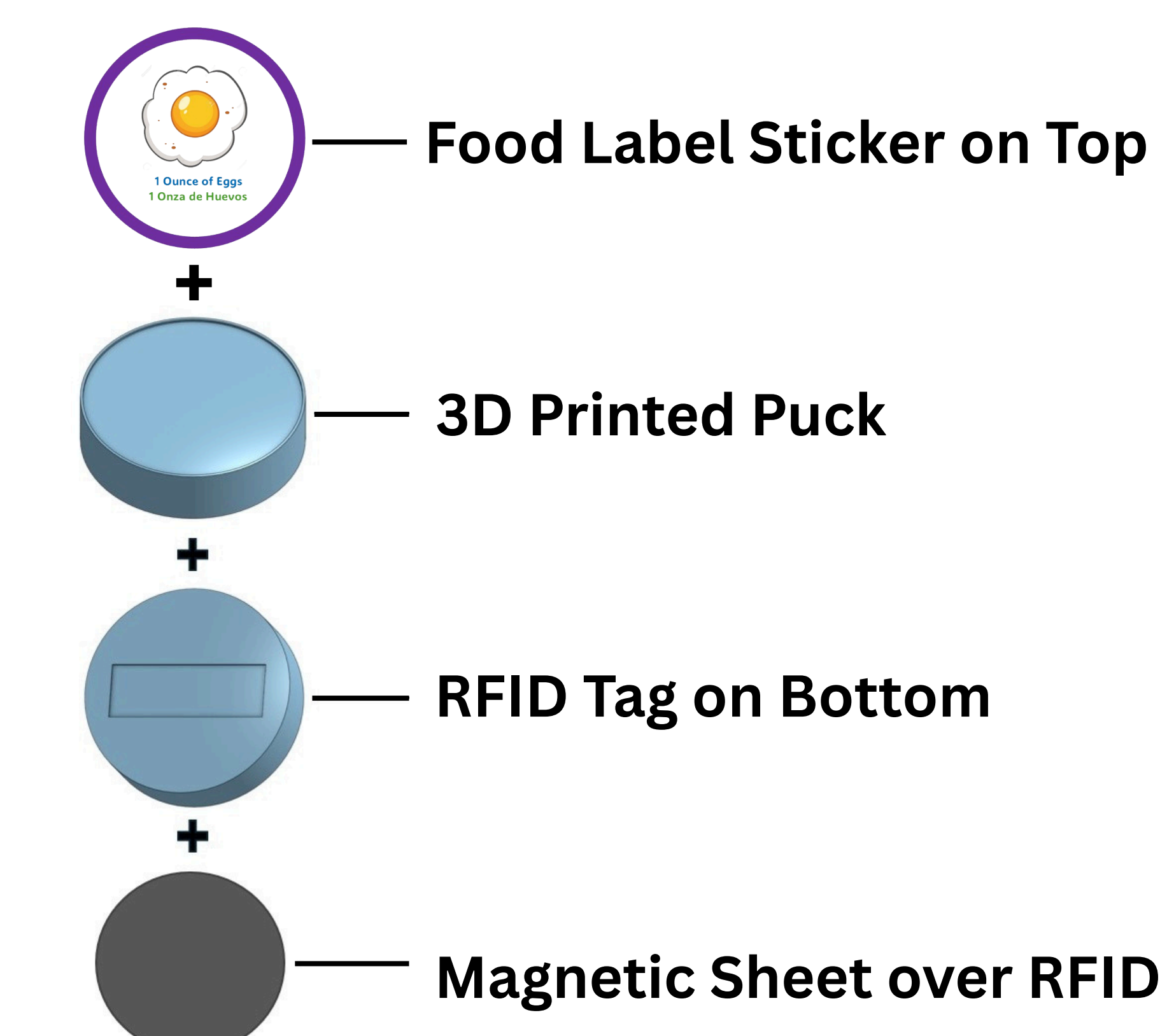
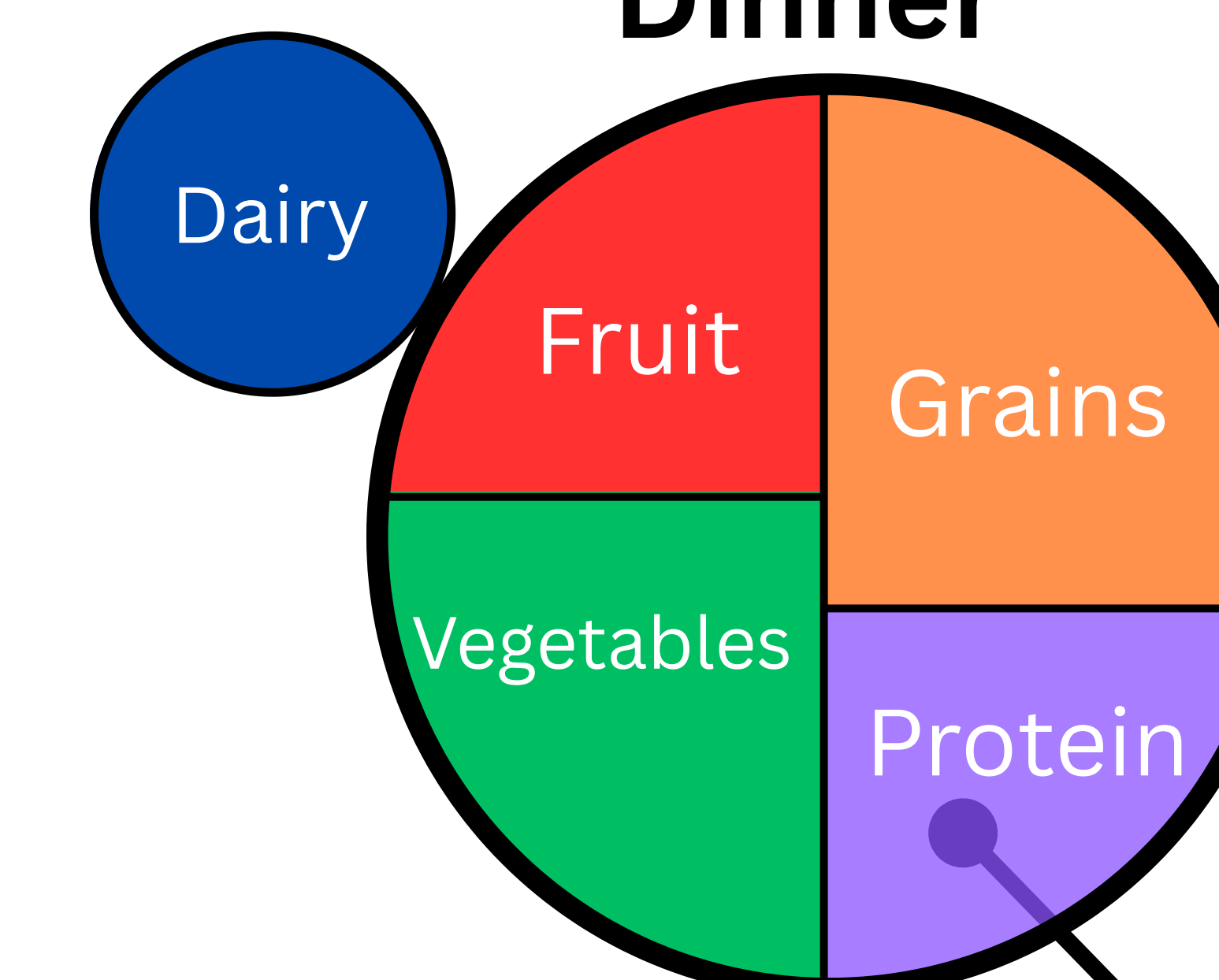
Breakfast



Lunch



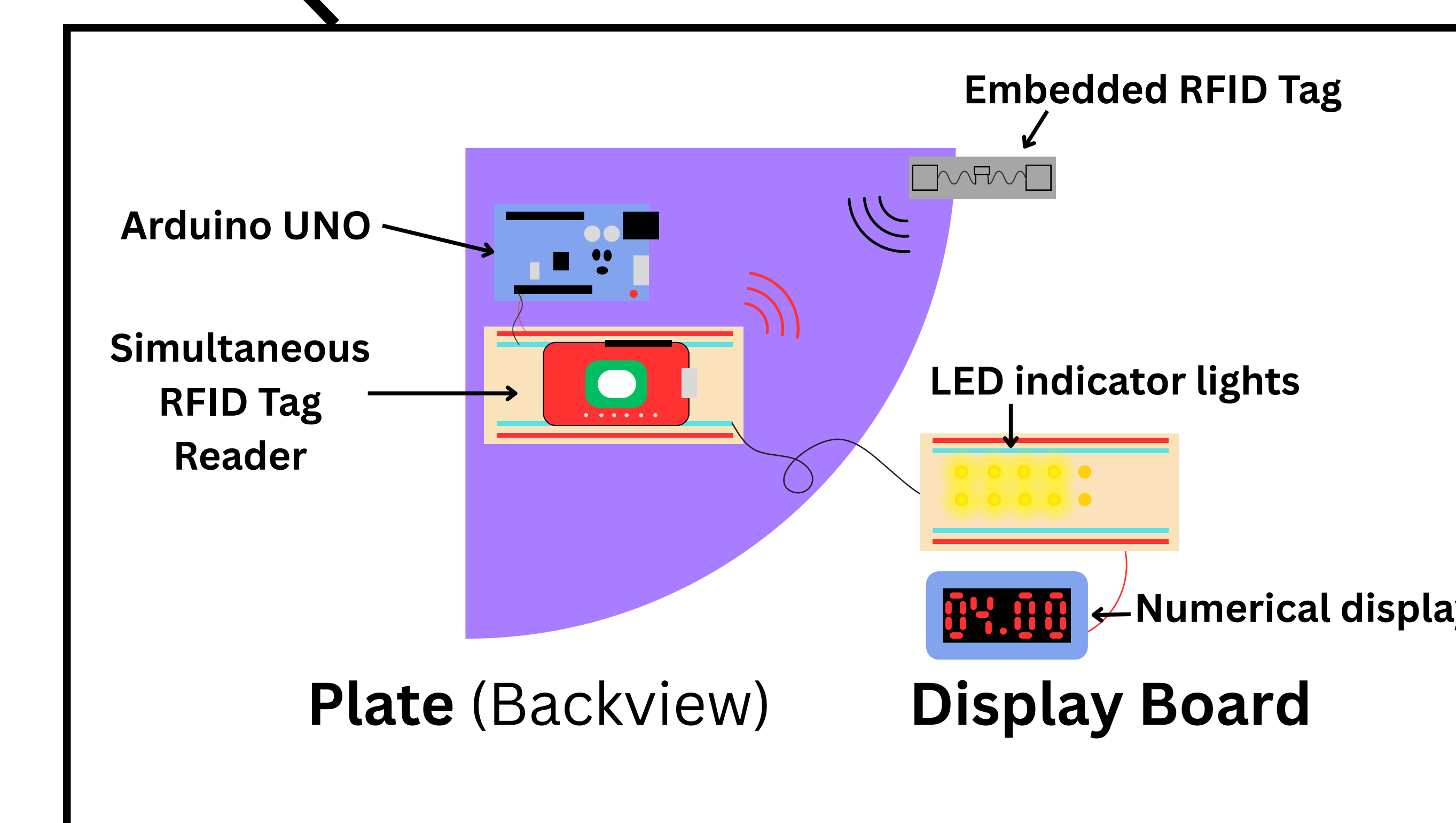
Dinner



Have you met your daily nutritional needs?

Fruit 🍌 🍌
Vegetables 🥦 🥦
Grains 🍷 🍷 🍷 🍷
Protein 🍗 🍗 🍗 🍗
Dairy 🥛 🥛 🥛

The indicator board **lights up the daily servings** as kids put the correct food in a category, providing real-time feedback to how each food item contributes to reaching their daily nutritional needs.



Testing Results

Educational Goals

- Nutritional literacy
- Critical thinking
- Fostering healthy habits

90% of children reattempted sorting after failure

85% of children said they learned something new

95% of children expressed they had fun during the activity

Conclusion

The My Plate My Way solution empowers children to build nutritionally balanced meals by exploring food variety and nutrition in an engaging, hands-on way. Focusing on what goes on the plate rather than how much, encourages lasting healthy habits and supports informed food choices through playful learning.