



Magical Coding Recipes



by NaomiHarm

In this activity, students will research and identify a favorite cooking recipe with a family member or guardian. Students will bring their favorite recipe to school, and write a program to be solved with printable Scratch 3.0 coding blocks.

Supplies:

Editable and printable 3.0 blocks - Scratch coding blocks - Special thanks to Liane O'Kane @iComputeUK

Recipe index cards or 4x6 or 5x7 card stock paper

Magnetic printable sheets - can be purchased at any office supply store or online.

Laminated 3.0 Scratch coding blocks with velcro dots/strips attached to the back

Dry erase markers or crayons

Metal Cookie Sheets - you can even purchase these at your local dollar store for \$1 :-)

Self stick velcro dots or strips

Children's aprons (optional)

Scratch Jr. Cards(optional) as extension activities



Step 1: Watch a Student Created Video and Write a Program to Represent a Cooking Recipe

As a large group watch the "[What Is Code?](https://www.youtube.com/watch?v=pEA5yv3GhX4)" from [Girl Scouts Troop 8863](#) as cooking video to provide background knowledge and learning context of how a cooking recipe is a series of sequential steps to create an algorithm. Students will write a program to

represent their cooking recipe in sequential steps to represent their unique algorithm onto a recipe card or 4x6 or 5x7 card stock paper

<https://www.youtube.com/watch?v=pEA5yv3GhX4>

Step 2: Students Will Create and Debug Cooking Recipes Using Scratch 3.0 Blocks

Next, students will use Scratch 3.0 magnetic coding blocks with metal cookie sheets on a horizontal surface, or laminated Scratch 3.0 coding blocks with velcro tabs on a vertical wall velcro surface, and create their unique cooking recipes from their written programming recipe cards.

Then students will take a picture of their completed coded recipe to document their evidence of the correct code, and recheck and debug their coding steps verbally of their original recipe with friend.

KEY CODING TERMS

Command: an instruction for a computer

Algorithm: a list of commands that you can follow to complete a task

Program: an algorithm that is written for a computer

Bug: an error that stops the program from working

Debug: finding and fixing bugs in the program



Step 3: Dynamic Duo Programming Pairs to Solve a Cooking Recipe

Next, students will exchange original recipe cards, and then work in dynamic duo programming pairs to solve each other's cooking recipe.

Convert ingredients or steps into symbolic instructions (commands) and you may use dry erase markers on Scratch 3.0 coding blocks. Write ingredients or steps as a series of commands (program). Order commands as sequential steps in a program. Identify any commands that are unsuccessful and modify program (debug). Predict the ingredient or step to get student teammates from beginning of recipe to the last ingredient of the recipe. The Executive Chef or Controller will communicate algorithms as programs to teammate who will execute

the recipe program (Sous Chef or Walking Machine).

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Step 4: Extension: Have Students Design Their Own Cookie Cutters

As a fun extension, have students design, code or create their own cookie cutters using [Cookie Caster](#), or [TinkerCad](#) and 3D Printing with an [Instructables](#)

[guide](#), or use [3Doodler Pens](#).



Step 5: Extension: Community Influencer Interview and Coding Project

In today's world our learning is impacted by community influencers. It may be through our family heritage of stories, or the types of food and meals we enjoy together, through engaging everyday conversations with others, or the places where we travel too.

1. Take the time to have students generate interview questions, and allow students to interview a local Community Influencer that has contributed to a greater good in their immediate world. Make sure students include a question to ask about what types of food, places or people that the Community Influencer remembers most about enjoyed as a child, to bring about an interesting storytelling element of their past history of their why.

2. Have student teams video interview this Community Influencer with the posed questions. Encourage students to video edit the final video segments down to 2 minutes or less. Next have students embed the final video clip into a QR Code that can be placed on or embedded into a digital recipe card they design.

3. On the recipe card also include the directions of a simple food recipe, travel map, or representation of an individual that best represents the community influencers memory. Bonus - use their actual recipe if they have one, and are willing to share this secret recipe with the students.

4. Now have students work in teams to design and create a unique cookie or food object cutter project in Cookie Caster <http://www.cookiecaster.com> or TinkerCad, that best represents the Community Influencer's story. Review the students Cookie Caster or TinkerCad cookie cutter design before sending the file to a 3D printer.

5. The finalized recipe card should include who is the Community Influencer, a summary statement of their story of their why, and how they have contributed to a greater world of good in the local community. Attach the 3D cookie cutter to the printed recipe card on card stock, and present it him/her as a thank you gift to the Community Influencer.

