

THE ADVENTURES OF Spriggy & Twiggy

Spriggy and Twiggy are Sprowteez. They live with their Sprowtee friends on Sprowt Island. They are clever, funny and kind little scientists and always very curious...

Spriggy is in the kitchen watering his basil and oregano plants.



Important Tips:

- Problems? Questions? Want extra experiments for friends or family? Email help@iSprowt.com.
- Be sure to check out all the amazingly cool video links.
- Show What You Know! We love your ideas and experiments. Upload to social media. Be sure to tag @iSprowt and use #chemistry to see your work featured on iSprowt.com/community.
- Level Up! Part of being a scientist is experimenting with new ideas. It's okay if sometimes they work and sometimes they don't. Scientists try something new, observe the results, make changes to their design, and then try it again in a new way. Try Level Up Experiments your own way and don't worry if they're not perfect. It's part of the fun adventure!



Contents

- 1 Story
- 4 **EXPERIMENT #1: COOKING CHEMISTRY – MARINARA SAUCE**
- 6 PIZZA SAUCE
- 7 FRENCH BREAD PIZZA
- 8 **EXPERIMENT #2: CREATE A BIODEGRADABLE TOY**
- 12 Level Up with Biodegradable Toy
- 14 **EXPERIMENT #3: CRYSTAL GROWING EXPERIMENT**
- 17 Level Up with Crystals
- 18 **EXPERIMENT #4: WATER CYCLE EXPERIMENT**
- 26 **EXPERIMENT #5: BATH BOMBS EXPERIMENT**
- 35 Level Up Cooking Art Challenge
- 37 Engineering Challenge: Chemistry Challenge



iSprowt.com

Copyright © 2020

All rights reserved.



Well then you don't need to have any, Crabby. Wouldn't it be cool if we did other crazy chemistry experiments?

Oh yeah! I bet that there are all sorts of cool chemistry experiments we can try. I heard about a way to make biodegradable plastic. Do you want to try and make a toy together?



That sounds amazingly cool! What about bath bombs? I love those. I wonder if we could make those too.

I think baths stink and that you are both boring scientists. The only thing I like are rocks.



Great idea Crabby! Let's see if we can make our own crystal rocks too!

That's not what I meant. I meant chemistry is so boring. See you stink-pots later.

Don't be such a grump Crabby. You'll miss all the fun.

Join Spriggy and Twiggy on their adventure as they try making wonderful new creations.



Yipity - Doo!

Spriggy and Twiggy want to begin an adventure with you!

Well, I'm ready to experiment. I can't wait! Let's go for it Twiggy.

I'm totally in! Let's do it!

KITCHEN CHEMISTRY: Spriggy's Favorite Marinara Sauce

GET READY
✓

WHAT YOU NEED:

- 1 **28-ounce can** whole San Marzano **tomatoes**
(other types of tomatoes don't crush as well)
- 2 **Tablespoons** extra-virgin **olive oil**
- 3 **Tablespoons** of fresh **minced garlic**
- **Pinch** of crushed **red pepper flakes**
- 1 **Teaspoon** kosher **salt**
- 🔑 **¼ teaspoon** ground **pepper**
- 1 Large fresh **basil sprig**, more to taste*
- 1 **Tablespoon** fresh **oregano***
- 🧀 Optional: **Parmesan cheese**



TIME: 25 MINUTES

*** **5 MINUTE OPTION:** PUT YOUR FAVORITE CAN OF PASTA SAUCE IN A POT AND BRING TO A LOW BOIL. FOLLOW THE DIRECTIONS STARTING HERE ***

RECIPE PREPARATION: LET'S GET COOKING!



- * **Pour entire can of tomatoes** into a large bowl and crush them like a superhero using your hands.
- * **Add 1 cup water** into bowl and stir gently.
- * In a **large skillet** (do not use a deep pot) over medium heat, heat the oil. When it is hot, **add garlic**.
- * As soon as garlic is sizzling (do not let it brown), add the tomatoes. Add whole chili or red pepper flakes, and salt. Stir.



*** Add oregano.

- * Place your fresh basil sprig, including stem, on the surface (like a flower). Let it wilt, then sink it like a submarine in the sauce.
- * Simmer sauce until thickened and oil on surface is a deep orange, about 15 minutes.
- * Scoop out your basil sprig and throw it away.
- * Pour your delicious sauce over your favorite pasta, chicken and/or meatballs.
- * Optional: Sprinkle parmesan cheese over the top

MY SCIENCE OBSERVATIONS ABOUT BASIL AND OREGANO:



Smells like: _____



Feels like: _____

What happened to the basil leaves when you cooked them?

What meals can you make using this same sauce?

💡 **Tip:** Save extra sauce in the fridge for up to 7 days.



DRAW IT! Draw your favorite people enjoying the meal you created:

Twiggy's 5 Minute Pizza Sauce



GET READY ✓

WHAT YOU NEED:

- 1 Can tomato **sauce** (15 OUNCE)
- 1 Can tomato **paste** (6 OUNCE)
- 2 **Teaspoons** minced garlic
- 1 **Teaspoon** granulated sugar
- 1 **Teaspoon** ground paprika
- 1 **Teaspoon** onion powder
- 2 **Tablespoons** of fresh **oregano**
- 1 **Tablespoon** of fresh **basil**

* **EASY TIP: JUST POP ALL OF YOUR INGREDIENTS TOGETHER IN A BLENDER AND MIX UNTIL SMOOTH. VOILA! PERFECTION!**



⌚ **TIME: 5 MINUTES**

TO MIX BY HAND:

- * Start by pouring one 15-ounce can of tomato sauce into a bowl or large blender.
- * Add one 6-ounce can of tomato paste.
- * Chop oregano.
- * Chop basil.
- * Mix together until they are very smooth.
- * Add in all other ingredients (garlic, sugar, paprika, onion powder, fresh oregano, fresh basil).
- * Mix together until well-blended.



French Bread Pizza!

GET READY ✓

WHAT YOU NEED:

- 1 Loaf of fresh French bread
- 8 Ounces of fresh grated low-fat mozzarella and provolone cheese blend (option: you can just use mozzarella)
- 1 Your favorite pizza toppings
- 1 5 Minute Pizza Sauce from page 6
- 1 Baking sheet covered in aluminum foil or parchment paper

⌚ **TIME: 25 MINUTES | 5 MINUTES PREP | 15-20 MINUTES COOKING**

RECIPE PREPARATION: LET'S GET COOKING!

- * Slice French bread loaf down the middle (length-wise).
- * Place French Bread on covered baking sheet.
- * Spoon on pizza sauce so that the entire loaf is covered. (Do not leave any bread without sauce or it will burn).
- * Sprinkle mozzarella and provolone cheese over sauce (make sure to cover all of the sauce - even on the very ends!).
- * Cover with your favorite toppings.
- * Bake at 365 degrees for about 20 minutes, or until cheese is completely melted.
- * Broil on high for 1 - 2 minutes, or until top cheese is a light golden brown.
- 💡 **Tip:** be very careful! The broiler can burn your food very quickly, so keep an eye on it the whole time!
- * Slice, serve and enjoy!



WRITE IT! My favorite type of pizza is...