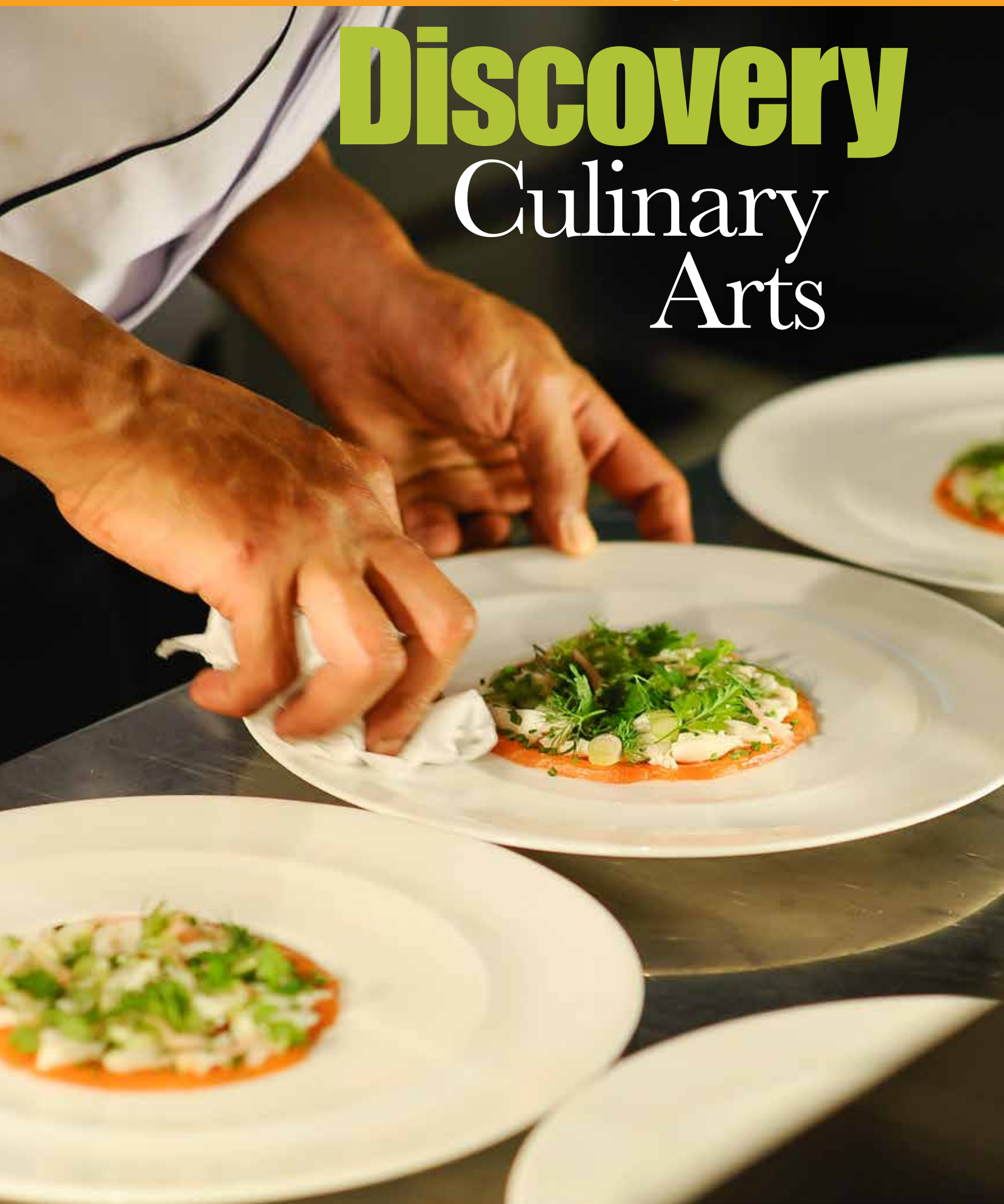


eDynamicLearning

Discovery

Culinary Arts





the Japanese concept of shibui... favors simplicity over luxury

You just landed a reservation at the most expensive restaurant in the country...

Welcome to the most expensive restaurant in the United States. Here, gourmet dining is not only a luxury, it's an art form. Can you guess which city in the country lays claim to such notoriety? San Francisco? Chicago? Los Angeles? Nope. Turns out, MASA in New York City's Time Warner Center soars above the competition as the most refined dining experience of all time. With a price tag of \$595 per head, enjoying a meal at this sushi restaurant will set you back the price of a new iPhone. So what can guests expect when they finally settle in at the nation's top sushi den? You might be surprised...

Walking into the fanciest eatery in the nation must be a pretty over-the-top experience, right? You're probably expecting velvet armchairs, gold-trimmed china, and vases overflowing with pricey flowers. But you would be wrong! Instead, the entire restaurant is founded on the Japanese concept of **shibui** which favors simplicity over luxury. This means the folks at MASA don't worry about things like fancy decorations or glitzy lighting. They believe in the old saying "less is more." MASA focuses on highlighting the quiet beauty found in nature and the purity it offers.

shibui: simplicity, purity, and subtlety over luxury and extravagance



This idea of *shibui* has been woven into every part of the MASA dining experience. The dining room is windowless, with neutral-colored paint. The sushi bar is made from a single slab of Hinoki wood. The wood from this sustainable Japanese cypress tree has an herbal and lemony aroma. This scent is such a highlight of the MASA experience that the staff actually sands the sushi bar every day to bring out its lovely texture and smell. Overall, the restaurant's décor is clean and uncluttered. It acts as a blank canvas for what's really important in this place—the food.

All diners at MASA are official guests of Masayoshi Takayama, MASA's Tokyo-based executive chef (fondly known as “Masa”) who has decades of formal training in Japanese cuisine. As such, guests can expect only the freshest, most delicious dishes, each prepared to preserve and enhance the innate character of every single ingredient.

So what does a person choose to eat at MASA? They don't! When it comes to ordering a meal, the house rules are *omakase*, a Japanese phrase meaning “I'll leave it up to you.” There is no menu or daily specials sheet—you just sit back, put your clean white napkin in your lap, and trust that you will be served exactly what your taste buds are longing for.

There is no bad seat in the house. But if you are lucky enough to be seated at the unusual sushi bar, you will have the pleasure of watching well-trained chefs slice, shave, and sprinkle their way through fatty bluefin tuna tartare cloaked in osetra caviar or thinly-sliced wagyu beef tataki with summer truffles. In the spirit of *shibui*, every dish at MASA literally has its own special plate that has been specifically designed by Chef Takayama (who also happens to be an accomplished potter!) These special dishes perfectly spotlight ingredients like seaweed noodles, soft-shelled crab, and bone-warming ginger soup.

“omakase is a Japanese phrase meaning “I'll leave it up to you.”





It's worth remembering, the chefs at MASA may be creating to-die-for sushi in the nation's spendiest restaurant, but the road to success was not always easy. Executive Chef Masayoshi Takayama began his culinary career selling goods at his family fish market in a small Japanese town and delivering fresh **sashimi** (a delicacy of raw, thinly-sliced fish) to neighbors on his bicycle.

In high school, Chef Takayama was not scrolling Instagram or hanging out at Chick-Fil-A on the weekends. He was prepping and grilling hundreds of fish courses to cater local events. Dishes like tuna, fluke, bonito, and snapper commonly made the list. He made it big time because his relationship with food was more than just a pastime or a career choice—it was a way of life. And fortunately for him—and for anyone lucky enough to eat his food—this relationship paid off when he finally moved to the United States in pursuit of his culinary dreams.

After opening several restaurants in California, Chef Takayama moved to the Big Apple in 2004, where he gained a legendary reputation in the industry. How? Well, not only does he keep it fresh by flying fish in straight from a Tokyo market, but Chef Takayama also knows how to make people feel special. No matter who he is serving, Chef Takayama keeps a careful record of what diners in his restaurant eat and drink each night. This helps him stay on top of culinary trends and patterns, so he can always be ready to give his customers something they've never had before.

sashimi: a delicacy of raw, thinly-sliced fish

Revealing Umami: The Mysterious Fifth Flavor

Finding Inspiration

You may be wondering where food lovers around the globe find inspiration for their dishes? What excites them? What gets their creative juices flowing? The answer is simple: flavor. No matter what is happening in a chef's kitchen, one thing is the same—their decisions are ruled by ingredients and the type of flavor each one delivers. As eaters, we detect these four main flavors of salty, sweet, sour, and bitter with our taste buds, which have been designed by nature to “taste” the different characteristics of food. The sweet taste of honey, the bitterness of coffee, the salty kick of soy sauce, the sour zing of lemon—these are the four main flavors we are able to enjoy. And as chefs, how we use these four main flavors to create more complex dishes has everything to do with their deliciousness. But that's not where the story ends.

People around the world have always marveled at the magical power of food. A yummy dish can be so life changing... so how can our food only be composed of four main flavors? What about that scrumptious taste you get when different flavors are blended and cooked together in just the right way to create that hard-to-define taste that fills your taste buds with pleasure? Like when a slice of crispy bacon is laid on top of a fried egg or a seared steak is smothered in sautéed mushrooms? Turns out, there *is* more to the story. This deep, rich, almost meaty flavor is known as umami. This mysterious fifth flavor has become the gold standard for gourmet cooking.

The Science of Savory

Translated as “pleasant taste” in Japanese, **umami** refers to the savoriness of a dish, where ingredients have been expertly handled to bring out their inner deliciousness—but it's also so much more. This mysterious fifth taste has always been an unofficial part of the eating experience. Romans loved fermented fish sauce and Americans have a fascination with ketchup. But for a long time, there was no official word for this sensation. All that changed in 1909 when Japanese chemist Kikunae Ikeda sat pondering the deliciousness of a traditional kelp broth known as **dashi**. This dish, he thought, seemed to capture an indescribable flavor in a most wonderful way. As a researcher, Dr. Ikeda was determined to pin down the secrets of this tasty soup and find out for himself what ingredients gave it such unique flavors.



This mysterious fifth taste has always been an unofficial part of the eating experience. Romans loved fermented fish sauce and Americans have a fascination with ketchup.

umami: the savoriness of a dish / “pleasant taste” in Japanese

dashi: a savory Japanese broth with kelp

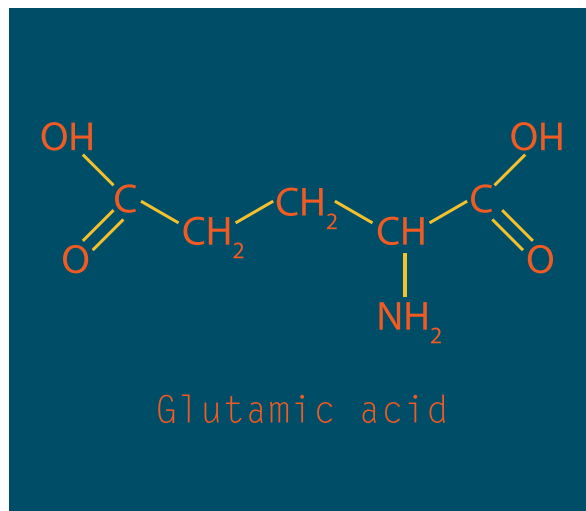
To discover what exactly made dashi taste so amazing, Dr. Ikeda turned to the world of science. After conducting months of chemical trials on various ingredients like kelp and bean curd, Dr. Ikeda finally found an amino acid known as **glutamate** in the form of tiny crystals. Thinking this might be the source of that delicious flavor, he sprinkled some of the crystals on various types of food. Turns out they did in fact bring out their savory characteristics. This breakthrough not only challenged traditional culinary thinking, it also pushed the boundaries of cooking and solved the mystery of the famous fifth flavor. Or at least that's what he thought...

The Umami Headache

Dr. Ikeda wasted no time making the most of his flavor discovery. He soon began mass-producing a food additive called Ajinomoto, or “essence of taste” in Japanese. This concoction used the fermentation of vegetable proteins to create tiny white crystals of glutamic acid. The Ajinomoto product was quickly packaged and sold to an admiring public who loved the way it magically turned their bland dishes into delicious ones with just a little shake of the wrist. It was inexpensive, easy, and sure tasty—what could possibly go wrong?

Turns out, a lot. Dr. Ikeda's sodium salt, now commonly known as **monosodium glutamate (MSG)**, was making the food taste good but the eaters feel bad. People eating MSG began to complain of effects like headache, nausea, dizziness, chronic thirst, swelling, blurred vision, and overall sickness. As a result, MSG soon fell from grace, becoming more of a dirty little secret lazy chefs would use to make up for weak flavor profiles than a real quality seasoning.

By the time MSG made its way to America in the mid-1930s, it was already a household staple in both Japan and China, where it was often placed on the table for a quick and easy umami fix. But when MSG hit the states, it arrived in giant crates of white powder and immediately found its way into the



glutamate: flavorful amino acid

monosodium glutamate (MSG): sodium salt with glutamate



world of industrialized food. Soon it became a key ingredient in many canned goods, frozen foods, and pre-prepared meals. Any **standardized recipe** that produced lots and lots of food for the public became the perfect place for MSG. In fact, Americans developed such a fondness for the savory kick of umami, they bought more Ajinomoto products than any other country outside of Japan.

standardized recipe:
designed for large
food consumption

But, by the 1960s, people were starting to be more focused on health and wanted to know what all of the invisible ingredients in their foods were. This ushered in a new age of safety-first cooking. Things got more serious when the **Federal Drug Administration (FDA)**, a US agency responsible for protecting public health, banned the use of the popular artificial sweetener known as saccharin in 1969, due to its connection with some cancers. At this point, people began to question the goodness of all chemical-sounding ingredients in their food. Even though MSG was also questioned at that time, it was categorized as GRAS (Generally Recognized as Safe) by the FDA, who allowed it stay on the shelves.

**Federal Drug
Administration
(FDA):** US agency
responsible for protect-
ing public health

But at that point, the damage had already been done. Most Americans now viewed MSG as part of the “Chinese Restaurant Syndrome” that was destroying the natural flavor movement in food. Soon, “No MSG” signs appeared in the windows of many Asian-inspired eateries. But while restaurants were busy cleaning up their acts, well-known packaged food makers in the United States, such as Campbell Soup Company, continued to use MSG in their food products until just a few years ago.

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Umami's Comeback

On the flip side, however, the discovery of umami as a secret flavor breathed new life into the culinary world. In 2010, umami was celebrated as the most delicious food trend to watch, giving way to a host of new umami-styled restaurants and recipes. When Umami Burger opened for the first time in New York City, long lines of hungry customers waited for over three hours to try some natural “umami dust” made from dried mushrooms, seaweed, soy sauce, and **marmite**, a brewing ingredient made from yeast. Famous chefs like David Chang of New York City’s Momofuku began to use layers of umami-rich ingredients to create legendary dishes like pork belly buns with scallions, fermented chickpeas in miso, and spicy sausage with rice cakes. By combining ingredients like red chilis, ground pork, fermented bean paste, and whipped tofu, Chef Chang and his kitchen crew were able to replace traditional (and some would say less flavorful) ingredients with umami-boosting ones—and all without a single dash of MSG. Once again, umami was back on top as the flavor-to-find, and chefs across the country were learning how to create balance in their dishes with totally naturally and deeply flavorful ingredients.

marmite: a brewing ingredient made from yeast



What I always keep in mind when using umami in cooking is maintaining a balance with the other four tastes. Combining umami in a balanced way with other basic tastes such as sour and sweet gives the flavors a well-rounded quality.

Nobuyuki Matsuhisa
owner/chef, Nobu Restaurant

Following Your Taste Buds

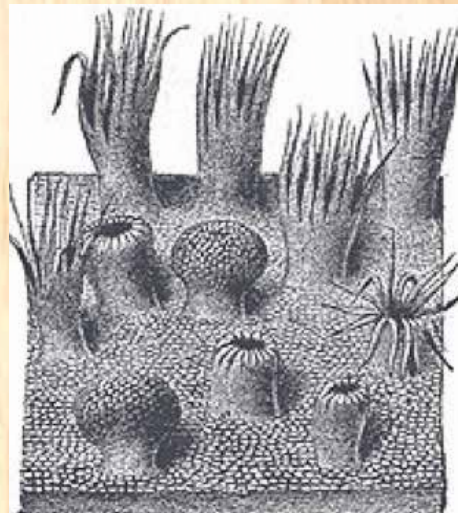
Back in 400 BCE, long before the Food Network or Iron Chef, an ancient Greek philosopher named Democritus wondered about the theory of taste and how exactly certain flavors affect the human tongue. To explain this mysterious process, he and others proposed the idea of atomism, a theory suggesting hard, uncuttable particles of matter were always moving through empty space. (He was a philosopher, after all.) According to this theory, the atoms had specific shapes, masses, and paths of motion that made them unique—and when you chewed food, those bits in your mouth naturally broke into four basic shapes. Democritus took this theory and applied it to the secrets of taste, suggesting all four of the basic flavors—sweet, sour, bitter, and salty—also had four unique shapes which gave them their main characteristics. He suggested that sweet things are round and large in their atoms, while sour ones are also large but rougher and more jagged in shape. Salty items, on the other hand, have atoms shaped like triangles, he theorized, and bitter ingredients offer small, smooth, and round shapes. If only Democritus had lived another 2,000 years to see his theory blossom in the modern world...

Jump ahead to the nineteenth century when a scientist struggling to understand more about taste placed some human tongue cells under a microscope and—boom—he realized they looked a lot like tiny keyholes into which bits of food could fit. And even more crazy, it seemed there were four different keyhole shapes in the human tongue, a perfect match for the four then-recognized food flavors. Taste buds had been discovered! And it seemed the secret of flavor had been solved—that is, until the mysterious fifth flavor arrived on the scene...

Just a short time later, the famous French chef Escoffier began cooking up flavors no one had tasted before and creating meals that magically combined all four tastes in totally new ways. People didn't know it yet, but what they were tasting was umami, and Escoffier had found it by inventing something simple but amazing—veal stock.

This new meat broth transformed everything it touched into something deeper and richer, and food lovers could not get enough. But because Escoffier's flavor profiles were not really sour or sweet or bitter or salty, it was impossible to put a finger on what exactly made his food so tasty. So people just chalked it up to one seriously talented chef.

Meanwhile, halfway across the world in Japan, Dr. Ikeda was lingering over that legendary bowl of dashi that would soon give birth to the official name of umami. Little did Escoffier and Ikeda know, but they were both relying on the same base ingredient, a deeply enriched stock, to bring out this exciting new taste in their dishes. Escoffier was using beef stock, while Ikeda was using seaweed broth, but the end result was the same—umami-rich flavors that left food lovers screaming for more. From Democritus to Escoffier to Ikeda, the secret fifth flavor had been found, and the culinary world would never be the same.



An illustration of taste buds from Gray's Anatomy of the Human Body



Let's Cook Umami Style!

Sure, the term umami stems from Japanese cuisine, but it can also be replicated in tons of different “Americanized” dishes such as pizza, pasta, soups, and sandwiches. All you need to know is how to identify sources of umami and use them in your own cooking. This may seem intimidating, but it's actually a lot easier than it sounds. The umami taste can be found in a large number of everyday foods, so you don't even need to visit a specialty shop. Here are some umami ingredients you can buy in any basic supermarket:

- mushrooms
- asparagus
- cheese (the more aged, the better)
- pork, beef, and chicken
- soy products (tofu, soy sauce, edamame, etc)
- carrots
- green peas
- corn
- eggplant
- potatoes
- tomatoes
- anchovies
- miso

Are you ready to amaze your friends by cooking up an original umami meal of your own? Don't worry, it will be simple and yummy, something even the least adventurous guest can enjoy. And once you see how easy it is, you won't want to stop making dishes with the magical fifth flavor. Here are three great umami recipes, each a guaranteed crowd pleaser. Can you identify the umami ingredients in each one?



Beginner: Tomato Salad with Blue Cheese

- heirloom or multicolored tomatoes, cut into thick wedges
- blue cheese dressing
- coarsely chopped chives
- fresh black pepper
- spiced nuts (optional)

Directions:

Arrange the tomato wedges on a plate and top with blue cheese drizzle, chives, and pepper. If you're feeling adventurous, sprinkle on some tamarind pumpkin seeds or other spiced nuts for an extra pop of umami crunch!

Intermediate: Penne Pasta with Bacon and Miso

- 3 tablespoons butter
- 2 ounces bacon, thickly sliced
- ½ cup white onion, chopped
- ½ pound penne pasta
- 2 tablespoons white miso
- 2 tablespoons flat-leaf parsley, chopped
- ½ teaspoon black pepper
- ½ cup fresh parmesan, grated

Directions:

Bring a large pot of lightly-salted water to a full boil and add pasta. Set a timer and begin working on sauce. Melt butter in large skillet, add bacon, and cook until meat is rendered and starting to brown, about four minutes. Add chopped onion and cook until it's soft and bacon is crisp, another four minutes. When pasta is done, drain it and reserve one cup of the cooking water. Add this reserved water and miso to skillet and bring to a simmer. Add pasta and cook, tossing constantly until the sauce is glossy and the pasta is well-coated, about two minutes. Add parsley and pepper, tossing to combine fully. Plate the pasta and garnish with parmesan and parsley.



Advanced: Savory Chicken Coconut Soup

- 1" piece of fresh ginger, peeled and smashed
- 2 stalks fresh lemongrass, outer layers removed and cut into pieces
- 2 fresh limes, 1 tablespoon zested rind & ¼ cup juice
- 6 cups chicken broth
- 1.5 pounds boneless, skinless chicken thighs, cut into 1" pieces
- 8 oz. Asian mushrooms (shiitake, oyster, maitake), stemmed and cut
- 13.5 oz. can coconut milk
- 2 tablespoon fish sauce
- 1 teaspoon white sugar
- Chili oil, cilantro leaves, and lime wedges for serving

Directions:

Bring ginger, lemongrass, lime ingredients, and chicken broth to boil in a large saucepan. Reduce heat and simmer until flavors are blended, about nine minutes. Strain broth into clean saucepan and discard solids.

Add chicken and return to a boil. Reduce heat and add mushrooms, simmering and skimming occasionally until meat is cooked through and mushrooms are soft, about 20 minutes. Mix in coconut milk, fish sauce, and sugar. Divide soup into bowls and garnish with dash of chili oil and a sprinkle of cilantro.

Want to come up with your own original recipe? It's simple! Just choose the umami-related foods you love, like mushrooms, soy sauce, or cheese, and combine them with old favorites like steak, potatoes, or pasta. Any dish you make can be made more exciting and flavorful using this simple trick. Now, what are you waiting for? Get in the kitchen and start discovering your own relationship with the culinary world's intriguing fifth flavor!



Making Umami Your Job

Like most people considering their next move in the culinary world, you might be wondering how you can enjoy the magic of umami while still earning a living. Great news—it's totally do-able! But there's no fooling around when it comes to cooking in a professional kitchen. You will have to “work your way up” just like everyone else. And one of the first steps you must take, especially if you hope to be searing steaks with the best of the best, is to get yourself some real culinary training. More good news is, there are hundreds of great cooking schools in the world, many of which are located in the United States. With a little research and some motivation, you can surely find the one that fits your needs. And even more good news—in just 6 to 12 months, you can



change your life and start an exciting career in the culinary arts as a chef... or perhaps some other type of hospitality and food-related work in these areas:

- Restaurant management
- Marketing
- Production
- Accounting
- Menu design
- Food safety
- Service management
- Facilities and design
- Beverage and wine
- Hotel operations

But for the sake of umami, let's say you're sticking with the role of chef as your career choice. So, let's skip the part where you research schools, apply for admission, and are accepted as a new student. Instead, let's jump right to your first day at the Institute of Culinary Education (ICE) in New York City, a world-class learning environment for those who want to be chefs. ICE is home to one of the biggest hands-on career programs in the world. With over 26,000 students enrolled each year, it boasts an incredibly wide-ranging curriculum. Pretty exciting, right? Last night, you ironed your white chef uniform, polished your shoes, and organized your knives. But now the morning has come and you're feeling a little nervous—what can you expect on your first day?

First, you will notice that culinary school is not just for one type of person. Students of all backgrounds, cultures, ages, and experiences have shown up to learn more about the culinary arts—and you are one of them. Your chef instructor explains that you are all starting at zero together. No matter what you have done in the past, this will be a process of learning, growing, and advancing that will lead you each in unique directions. As long as you bring your heart, your soul, and your brain to the kitchen every single day, you are sure to succeed!

The next thing you may realize is that cooking school is a lot of work. Sure, it's fun, but—wow, there's a lot to learn. Starting with proper identification of kitchen equipment and moving on to herb selection, you will slowly but surely make your way through a broad curriculum of stocks, soups, seasonings, and *mise en place*. First and foremost, you will learn that everything in the kitchen must be organized, clean, and ready to grab when you need it—because umami waits for no one! But don't worry, you got this. And once you've spent several hundred hours learning the basics of cooking, you will see how the food world opens up in some seriously exciting ways. Here are just a few of the courses you will be allowed to take after mastering the fundamentals:

- Cuban Surf and Turf
- Essentials of Korean Cooking
- California Wine Country Fare
- Baking 101
- Asian BBQ
- Middle Eastern Favorites
- Joy of Tuscan Cooking
- Food and Healing
- Developing Plant-Based Flavor
- The Art of Plating
- Classic Italian Desserts
- Vegan Baking
- Gluten-Free Tricks and Techniques
- Beyond Pizza

How exciting! Which course would you choose? Your decision might tell you something about your interests and giving you a clue about where your special culinary path might lead someday...



Key terms:

dashi: a savory Japanese broth with kelp

Federal Drug Administration (FDA): US agency responsible for protecting public health

glutamate: flavorful amino acid

marmite: a brewing ingredient made from yeast

monosodium glutamate (MSG): sodium salt with glutamate

sashimi: a delicacy of raw, thinly-sliced fish

shibui: simplicity, purity, and subtlety over luxury and extravagance

standardized recipe: designed for large food consumption

umami: the savoriness of a dish, “pleasant taste” in Japanese

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