

Test summary

Test Case	Health Score	Cooking Tool & Cooking Time Constraint	Ingredients Relevance	Consistency
Spring Rolls	5	pass	0%	failed
Egg, Spinach	6	pass	100%	pass
Meatball, Rib	4	pass	50%	pass
Salmon, Asparagus	3	pass	100%	pass
Bacon, Egg, Bread	5	pass	100%	pass
Rib, Pistachios, Green Beans	4	pass	100%	failed
Bagels, grapefruit, Cereal, Honey	4	pass	100%	pass
Pasta, rice, Peanut Butter, Tomato Sauce	4	pass	100%	pass
Egg, Lettuce, Tomato, Cucumber, Cheese	3	pass	100%	pass
Broccoli, Parsley, Swiss Chard, artichoke	5	pass	100%	pass
Butter, Cantaloupe, Salsa, Clams, Dill, Cookies	4	pass	100%	pass
Spring Rolls, Macaroni and Cheese, Fettuccine, Tofu, Raisins	2	pass	100%	pass
Beer, Grapes, duck, Pasta, Bell Peppers, Onion Powder, Crackers	4	pass	60%	pass
Mozzarella, Cider, Kale, bay leaf, Quinoa	5	pass	100%	pass
Waffles, Dairy, Cranberry Sauce, Cocktail Sauce, bay leaf, Vegetable	4	pass	75%	pass
Bread, Shrimp, Radishes, Garlic Powder, Turkey, Duck	4	pass	75%	pass

Eggplant, Coconut Milk, Tofu, Pepper, Thai Basil	4	pass	75%	pass
Beef, tomato, cabbage, celery, carrot, onion, garlic	4	pass	100%	pass
Cheese, Almond Beverage, Bacon, Pollock, Honey, Sunflower Seeds, Quinoa	2	pass	100%	pass
Pepper, Lemon, Squid, Shrimp, Mussel, Crab, Potato, Corn, Broccoli, Garlic	6	pass	100%	pass

Test 1: spring roll

```
{
  "title": "Baked Veggie Spring Rolls",
  "processed_ingredients": [
    "4 spring roll wrappers",
    "1 cup shredded cabbage",
    "1/2 cup grated carrot",
    "1/2 cup bean sprouts",
    "2 tablespoons soy sauce",
    "1 tablespoon sesame oil",
    "1 tablespoon olive oil",
    "1 teaspoon minced garlic",
    "1 teaspoon minced ginger",
    "1/4 teaspoon salt",
    "1/4 teaspoon black pepper"
  ],
  "pure_ingredients": [
    "cabbage",
    "carrot",
    "bean sprouts",
    "spring roll wrappers"
  ],
  "instructions": [
    "1. Preheat the oven to 400°F (200°C).",
    "2. In a large bowl, mix together the shredded cabbage, grated carrot, and bean sprouts.",
    "3. In a small bowl, whisk together the soy sauce, sesame oil, olive oil, minced garlic, and minced ginger.",
    "4. Pour the sauce over the vegetable mixture and toss well to combine.",
    "5. Season with salt and black pepper."
  ]
}
```

"6. Place a spring roll wrapper on a clean surface and add about 2 tablespoons of the vegetable mixture near one corner.",

"7. Roll the wrapper tightly over the filling, folding the sides in as you go, and seal the edge with water.",

"8. Repeat with the remaining wrappers and filling.",

"9. Place the spring rolls on a baking sheet lined with parchment paper.",

"10. Brush each roll lightly with olive oil.",

"11. Bake in the oven for 20-25 minutes, turning halfway through, until golden brown and crispy.",

"12. Serve warm with your choice of dipping sauce."

],

"required_tools": [

"oven",

"large bowl",

"small bowl",

"baking sheet",

"parchment paper",

"brush"

],

"cooking_time": 35,

"suggestions": [

"Add some chopped mushrooms or tofu for extra protein.",

"Include more vegetables such as bell peppers or zucchini for increased fiber."

]

}

```
{'value': 100, 'unit': 'gram', 'name': 'roll wrappers'}
{'value': 150.0, 'unit': 'gram', 'name': 'shredded cabbage'}
{'value': 75.0, 'unit': 'gram', 'name': 'grated carrot'}
{'value': 75.0, 'unit': 'gram', 'name': 'bean sprouts'}
{'value': 34.14, 'unit': 'gram', 'name': 'soy sauce'}
{'value': 17.07, 'unit': 'gram', 'name': 'sesame oil'}
{'value': 17.07, 'unit': 'gram', 'name': 'olive oil'}
{'value': 5.69, 'unit': 'gram', 'name': 'minced garlic'}
{'value': 5.69, 'unit': 'gram', 'name': 'minced ginger'}
{'value': 1.4225, 'unit': 'gram', 'name': 'salt'}
{'value': 1.4225, 'unit': 'gram', 'name': 'black pepper'}
{'Protein': 23.23875775, 'Carbohydrate': 80.68507875000002, 'Sugars, total':
9.594275000000001, 'Sodium, Na': 3035.2724500000004, 'Total Fat': 38.2727195, 'Fatty
acids, saturated, total': 5.7097194, 'Fibre, total dietary': 11.484792500000003, 'Energy (kJ)':
3075.8025500000003}
Failed: Carbohydrate
Reason: Carbohydrates not enough (Value: 1371.6463387500003)

Failed: Fats
Reason: Too many fats (Value: 1416.0906215)
```

Health Score: 5

Score Summary: {'Protein': 1, 'Sugars': 1, 'Sodium': 1, 'Saturated Fats': 1, 'Fibers': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 0.0}

Test 2: egg, spinach

```
{
  "title": "Egg and Spinach Scramble",
  "processed_ingredients": [
    "1 egg",
    "1 cup fresh spinach",
    "1/2 tablespoon olive oil",
    "1/8 teaspoon salt",
    "1/8 teaspoon black pepper"
  ],
  "pure_ingredients": [
    "egg",
    "spinach"
  ],
  "instructions": [
    "1. Heat 1/2 tablespoon of olive oil in a skillet over medium heat.",
    "2. Add 1 cup of fresh spinach to the skillet and sauté until wilted, about 2-3 minutes.",
    "3. In a small bowl, beat 1 egg with 1/8 teaspoon of salt and 1/8 teaspoon of black pepper.",
    "4. Pour the beaten egg into the skillet with the spinach and cook, stirring gently, until the egg is fully cooked, about 3-4 minutes.",
    "5. Serve immediately."
  ],
  "required_tools": [
    "skillet"
  ],
  "cooking_time": 10,
  "suggestions": [
    "Consider adding 1/4 cup of diced tomatoes or 1/4 cup of cooked quinoa to increase fiber and carbohydrates.",
    "To add more protein, consider adding 1 tablespoon of feta cheese."
  ]
}
```

{'value': 100, 'unit': 'gram', 'name': ''}

{'value': 150.0, 'unit': 'gram', 'name': 'fresh spinach'}

{'value': 8.535, 'unit': 'gram', 'name': 'olive oil'}

{'value': 0.71125, 'unit': 'gram', 'name': 'salt'}

{'value': 0.71125, 'unit': 'gram', 'name': 'black pepper'}

{'Protein': 13.373898875, 'Carbohydrate': 32.119844375, 'Sugars, total': 0.974552, 'Sodium, Na': 395.47922500000004, 'Total Fat':

```
9.79318675, 'Fatty acids, saturated, total': 1.4189133999999999,
'Fibre, total dietary': 12.479946250000001, 'Energy (kJ)': 1068.677775}
Failed: Fats
Reason: Too many fats (Value: 362.34790975)
```

```
Health Score: 6
Score Summary: {'Protein': 1, 'Carbohydrate': 1, 'Sugars': 1, 'Sodium':
1, 'Saturated Fats': 1, 'Fibers': 1}
Meet cooking time requirements
{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate':
50.0}
```

Test 3: meatball, rib

```
{
  "title": "Baked Meatball and Rib Medley",
  "processed_ingredients": [
    "3 meatballs",
    "1 rib",
    "1 tablespoon olive oil",
    "0.5 teaspoon salt",
    "0.25 teaspoon black pepper",
    "1 cup mixed vegetables (e.g., bell peppers, zucchini, carrots)",
    "2 tablespoons cooked brown rice"
  ],
  "pure_ingredients": [
    "meatball",
    "rib",
    "mixed vegetables",
    "brown rice"
  ],
  "instructions": [
    "1. Preheat the oven to 375°F (190°C).",
    "2. Lightly oil a baking dish with 1 tablespoon of olive oil.",
    "3. Place 3 meatballs and 1 rib into the baking dish.",
    "4. Season with 0.5 teaspoon salt and 0.25 teaspoon black pepper.",
    "5. Add 1 cup of mixed vegetables to the dish, spreading them evenly around the meat.",
    "6. Cover the baking dish with foil and bake in the preheated oven for 35 minutes.",
    "7. Remove the foil and bake for an additional 10 minutes to let the meat brown.",
    "8. While the meat and vegetables are baking, cook 2 tablespoons of brown rice according to package instructions.",
    "9. Serve the baked meat and vegetables over the cooked brown rice."
  ],
  "required_tools": [
    "oven",
    "baking dish",
    "foil"
  ]
}
```

```

],
"cooking_time": 45,
"suggestions": [
  "Consider adding a source of plant-based protein, such as lentils or chickpeas, to
increase fiber content.",
  "Include a small amount of nuts or seeds (like almonds or sunflower seeds) for healthier
fats."
]
}

```

```

{'value': 100, 'unit': 'gram', 'name': ''}
{'value': 100, 'unit': 'gram', 'name': ''}
{'value': 17.07, 'unit': 'gram', 'name': 'olive oil'}
{'value': 2.845, 'unit': 'gram', 'name': 'salt'}
{'value': 1.4225, 'unit': 'gram', 'name': 'black pepper'}
{'value': 150.0, 'unit': 'gram', 'name': 'mixed vegetables (e.g., bell peppers, zucchini, carrots)'}
{'value': 34.14, 'unit': 'gram', 'name': 'cooked brown rice'}
{'Protein': 22.83734575, 'Carbohydrate': 75.30200275, 'Sugars, total': 3.8925940000000003,
'Sodium, Na': 1300.39690000000002, 'Total Fat': 39.3217355, 'Fatty acids, saturated, total':
4.5906578, 'Fibre, total dietary': 20.7789665, 'Energy (kJ)': 3053.47215}
Failed: Carbohydrate
Reason: Carbohydrates not enough (Value: 1280.13404675)

```

```

Failed: Fats
Reason: Too many fats (Value: 1454.9042135000002)

```

```

Health Score: 5
Score Summary: {'Protein': 1, 'Sugars': 1, 'Sodium': 1, 'Saturated Fats': 1, 'Fibers': 1}
Meet cooking time requirements
{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 50.0}

```

Test 4: Mozzarella, Greek Yogurt

```

{
  "title": "Baked Mozzarella and Greek Yogurt Dip",
  "processed_ingredients": [
    "0.5 cup Greek yogurt",
    "2 oz Mozzarella cheese",
    "0.1 tsp salt",
    "0.1 tsp pepper",
    "0.5 tbsp olive oil"
  ],
  "pure_ingredients": [
    "Greek yogurt",
    "Mozzarella cheese"
  ],
}

```

```

"instructions": [
  "1. Preheat the oven to 375 degrees Fahrenheit.",
  "2. Grate 2 oz of Mozzarella cheese and set aside.",
  "3. In a mixing bowl, combine 0.5 cup of Greek yogurt, grated Mozzarella, 0.1 tsp of salt,
and 0.1 tsp of pepper.",
  "4. Lightly grease a small baking dish with 0.5 tbsp of olive oil.",
  "5. Transfer the mixture into the prepared baking dish and spread it evenly.",
  "6. Bake in the oven for 25 minutes or until the top is bubbly and lightly browned.",
  "7. Allow it to cool slightly before serving."
],
"required_tools": [
  "oven",
  "mixing bowl",
  "grating tool",
  "baking dish"
],
"cooking_time": 25,
"suggestions": [
  "Consider adding vegetables like spinach or artichokes to increase fiber content.",
  "Add whole grain crackers or bread for dipping to enhance carbohydrate intake."
]
}

```

```

{'value': 75.0, 'unit': 'gram', 'name': 'Greek yogurt'}
{'value': 56.7, 'unit': 'gram', 'name': 'Mozzarella cheese'}
{'value': 0.5690000000000001, 'unit': 'gram', 'name': 'salt'}
{'value': 0.5690000000000001, 'unit': 'gram', 'name': 'pepper'}
{'value': 8.535, 'unit': 'gram', 'name': 'olive oil'}
{'Protein': 20.6048176, 'Carbohydrate': 13.991883300000001, 'Sugars, total': 1.7935132,
'Sodium, Na': 668.3542100000001, 'Total Fat': 9.9575475, 'Fatty acids, saturated, total':
1.38162213, 'Fibre, total dietary': 1.180842, 'Energy (kJ)': 948.3306}

```

Failed: Protein

Reason: Too much protein (Value: 350.2818992)

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 237.86201610000003)

Failed: Fats

Reason: Too many fats (Value: 368.4292575)

Failed: Fibers

Reason: Fibers not enough (Value: 1.180842)

Health Score: 3

Score Summary: {'Sugars': 1, 'Sodium': 1, 'Saturated Fats': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 50.0}

Test 5: Beans, Apple Sauce, Pizza

```
{
  "title": "Baked Bean and Apple Savory Pizza",
  "processed_ingredients": [
    "0.5 cup canned beans",
    "1 small pizza base",
    "2 tablespoons apple sauce",
    "0.5 cup shredded cheese",
    "0.5 teaspoon olive oil",
    "Salt",
    "Pepper"
  ],
  "pure_ingredients": [
    "beans",
    "pizza base",
    "apple sauce",
    "cheese"
  ],
  "instructions": [
    "1. Preheat your oven to 400°F (200°C).",
    "2. Spread 2 tablespoons of apple sauce evenly over the pizza base, leaving a small border for the crust.",
    "3. Rinse and drain 0.5 cups of canned beans. Spread them evenly over the apple sauce layer on the pizza base.",
    "4. Sprinkle 0.5 cup of shredded cheese over the beans.",
    "5. Drizzle 0.5 teaspoon of olive oil over the top and season with salt and pepper to taste.",
    "6. Place the pizza in the preheated oven and bake for 15-20 minutes, or until the cheese is melted and bubbly, and the edges of the pizza are golden brown.",
    "7. Remove the pizza from the oven, let it cool for a few minutes, then slice and serve."
  ],
  "required_tools": [
    "oven",
    "baking sheet"
  ],
  "cooking_time": 20,
  "suggestions": [
    "Consider adding spinach or bell peppers to increase fiber and nutrients.",
    "For more protein, add a few slices of grilled chicken or tofu."
  ]
}

{'value': 75.0, 'unit': 'gram', 'name': 'canned beans'}
{'value': 100, 'unit': 'gram', 'name': 'pizza base'}
{'value': 34.14, 'unit': 'gram', 'name': 'apple sauce'}
{'value': 75.0, 'unit': 'gram', 'name': 'shredded cheese'}
{'value': 2.845, 'unit': 'gram', 'name': 'olive oil'}
```


{'Protein': 23.918280000000003, 'Carbohydrate': 36.772222, 'Sugars, total': 10.06, 'Sodium, Na': 649.5435, 'Total Fat': 29.081397999999997, 'Fatty acids, saturated, total': 14.931593, 'Fibre, total dietary': 2.04866, 'Energy (kJ)': 2073.70235}

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 625.127774)

Failed: Fats

Reason: Too many fats (Value: 1076.011726)

Failed: Saturated Fats

Reason: Too much saturated fat (Value: 552.468941)

Failed: Fibers

Reason: Fibers not enough (Value: 2.04866)

Health Score: 3

Score Summary: {'Protein': 1, 'Sugars': 1, 'Sodium': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 25.0}

Test 6: Rib, Pistachios, Green Beans

```
{
  "title": "Pistachio-Crusted Rib with Roasted Green Beans",
  "processed_ingredients": [
    "150 g rib (beef or pork)",
    "30 g pistachios",
    "150 g green beans",
    "1 tablespoon olive oil",
    "1 pinch salt",
    "1 pinch black pepper"
  ],
  "pure_ingredients": [
    "rib",
    "pistachios",
    "green beans"
  ],
  "instructions": [
    "1. Preheat the oven to 200°C (400°F).",
    "2. Season the rib with salt and black pepper on both sides.",
    "3. Place pistachios in a food processor and pulse until they are coarsely ground.",
    "4. Press the ground pistachios onto the surface of the rib to create an even crust.",
    "5. Place the rib on a baking sheet lined with parchment paper.",
    "6. In a bowl, toss green beans with olive oil, a pinch of salt, and black pepper.",
    "7. Arrange green beans around the rib on the baking sheet."
```

"8. Bake in the preheated oven for about 30-35 minutes or until the rib is cooked to your preferred doneness and the pistachio crust is golden brown.",

"9. Once cooked, remove the baking sheet from the oven and let the rib rest for 5 minutes before serving."

```
],
"required_tools": [
  "oven",
  "food processor",
  "baking sheet",
  "parchment paper",
  "bowl"
],
"cooking_time": 50,
"suggestions": [
  "Consider adding a side of whole grain like quinoa or barley to increase fiber and carbohydrate intake.",
  "Incorporate a small amount of fruit, like apple slices, into the dish for additional fiber and vitamins."
]
}
```

```
{'value': 150.0, 'unit': 'gram', 'name': 'rib (beef or pork)'}
{'value': 30.0, 'unit': 'gram', 'name': 'pistachios'}
{'value': 150.0, 'unit': 'gram', 'name': 'green beans'}
{'value': 17.07, 'unit': 'gram', 'name': 'olive oil'}
{'value': 100, 'unit': 'gram', 'name': 'salt'}
{'value': 100, 'unit': 'gram', 'name': 'black pepper'}
{'Protein': 58.372, 'Carbohydrate': 74.339, 'Sugars, total': 1.717, 'Sodium, Na': 38868.3564,
'Total Fat': 53.711, 'Fatty acids, saturated, total': 10.360725599999999, 'Fibre, total dietary':
26.41, 'Energy (kJ)': 3856.7193}
Failed: Carbohydrate
Reason: Carbohydrates not enough (Value: 1263.763)
```

Failed: Fats
Reason: Too many fats (Value: 1987.307)

Health Score: 5
Score Summary: {'Protein': 1, 'Sugars': 1, 'Sodium': 1, 'Saturated Fats': 1, 'Fibers': 1}
Meet cooking time requirements
{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 100.0}

Test 7: bagel, honey, grapefruit, cereal

```
{
  "title": "Honey Grapefruit Baked Bagel",
  "processed_ingredients": [
```

```

    "0.5 bagel",
    "0.5 grapefruit",
    "1 tablespoon honey",
    "1 tablespoon cereal (preferably a high-fiber type)"
  ],
  "pure_ingredients": [
    "bagel",
    "grapefruit",
    "honey",
    "cereal"
  ],
  "instructions": [
    "1. Preheat the oven to 375°F (190°C).",
    "2. Cut 0.5 of a bagel in half and place it on a baking sheet.",
    "3. Drizzle 1 tablespoon of honey evenly over the bagel halves.",
    "4. Place the bagel halves in the oven and bake for 10 minutes or until they start to become golden brown.",
    "5. While the bagel is baking, cut the 0.5 grapefruit in half and segment the flesh with a sharp knife.",
    "6. Once the bagels are done, remove them from the oven.",
    "7. Top each bagel half with the grapefruit segments.",
    "8. Sprinkle 1 tablespoon of cereal over each bagel half for added crunch.",
    "9. Serve warm and enjoy."
  ],
  "required_tools": [
    "oven",
    "baking sheet",
    "knife"
  ],
  "cooking_time": 15,
  "suggestions": [
    "Consider adding a source of protein, such as Greek yogurt or nuts, to enhance the nutritional profile."
  ]
}

```

```
{'value': 100, 'unit': 'gram', 'name': 'bagel'}
```

```
{'value': 100, 'unit': 'gram', 'name': 'grapefruit'}
```

```
{'value': 17.07, 'unit': 'gram', 'name': 'honey'}
```

```
{'value': 17.07, 'unit': 'gram', 'name': 'cereal'}
```

```
{'Protein': 11.004886999999998, 'Carbohydrate': 86.807795000000001, 'Sugars, total': 25.982711000000002, 'Sodium, Na': 522.8777, 'Total Fat': 2.488725, 'Fatty acids, saturated, total': 0.560554, 'Fibre, total dietary': 5.03987, 'Energy (kJ)': 1719.2033000000001}
```

Failed: Carbohydrate

Reason: Too many carbohydrates (Value: 1475.7325150000001)

Failed: Sugars

Reason: Too much sugar (Value: 441.706087)

Failed: Fats

Reason: Fats not enough (Value: 92.082825)

Failed: Fibers

Reason: Fibers not enough (Value: 5.03987)

Health Score: 3

Score Summary: {'Protein': 1, 'Sodium': 1, 'Saturated Fats': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 50.0}

Test 8: Pasta, rice, Peanut Butter, Tomato Sauce

```
{
  "title": "Baked Peanut Butter Tomato Pasta",
  "processed_ingredients": [
    "3 oz pasta",
    "0.25 cup tomato sauce",
    "2 tablespoons peanut butter",
    "0.5 cup cooked rice",
    "0.25 teaspoon salt",
    "0.25 teaspoon pepper"
  ],
  "pure_ingredients": [
    "pasta",
    "tomato",
    "rice"
  ],
  "instructions": [
    "1. Preheat the oven to 350 degrees Fahrenheit.",
    "2. Cook 3 ounces of pasta in a pot of boiling salted water until al dente, about 7-8 minutes. Drain the pasta and set aside.",
    "3. In a mixing bowl, combine the cooked pasta, 0.25 cup tomato sauce, 2 tablespoons of peanut butter, and 0.5 cup cooked rice. Mix until well combined.",
    "4. Add 0.25 teaspoon salt and 0.25 teaspoon pepper to taste.",
    "5. Transfer the mixture to a baking dish and spread evenly.",
    "6. Bake in the preheated oven for 20 minutes or until heated through and slightly golden on top.",
    "7. Let cool for a few minutes before serving."
  ],
  "required_tools": [
    "oven",
    "pot",
    "mixing bowl",
    "baking dish"
  ]
}
```

```

],
"cooking_time": 50,
"suggestions": [
  "Add spinach or kale to increase fiber content.",
  "Sprinkle some nuts or seeds for healthy fats."
]
}

```

```

{'value': 85.05000000000001, 'unit': 'gram', 'name': 'pasta'}
{'value': 37.5, 'unit': 'gram', 'name': 'tomato sauce'}
{'value': 34.14, 'unit': 'gram', 'name': 'peanut butter'}
{'value': 75.0, 'unit': 'gram', 'name': 'cooked rice'}
{'value': 1.4225, 'unit': 'gram', 'name': 'salt'}
{'value': 1.4225, 'unit': 'gram', 'name': 'pepper'}
{'Protein': 19.171036, 'Carbohydrate': 73.09524225000001, 'Sugars, total':
18.212934999999998, 'Sodium, Na': 675.2711750000001, 'Total Fat': 19.40266275, 'Fatty
acids, saturated, total': 2.8694225249999996, 'Fibre, total dietary': 12.239400000000002,
'Energy (kJ)': 2131.0062749999997}
Failed: Sugars
Reason: Too much sugar (Value: 309.619895)

```

```

Failed: Fats
Reason: Too many fats (Value: 717.89852175)

```

```

Health Score: 5
Score Summary: {'Protein': 1, 'Carbohydrate': 1, 'Sodium': 1, 'Saturated Fats': 1, 'Fibers': 1}
Meet cooking time requirements
{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 50.0}

```

Test 9: lots of spice

```

{
  "title": "Maple-Spiced Chia Seed Bars",
  "processed_ingredients": [
    "2 tablespoons maple syrup",
    "1 tablespoon chia seeds",
    "1/2 teaspoon hot spice",
    "1/4 teaspoon paprika"
  ],
  "pure_ingredients": [
    "maple syrup",
    "chia seeds"
  ],
  "instructions": [
    "1. Preheat the oven to 325 degrees F (165 degrees C).",

```

```
"2. In a mixing bowl, combine 2 tablespoons of maple syrup, 1 tablespoon of chia seeds, 1/2
teaspoon of hot spice, and 1/4 teaspoon of paprika.",
"3. Stir the mixture well until the chia seeds are fully coated and begin to absorb the liquid.",
"4. Line a baking sheet with parchment paper.",
"5. Spread the chia seed mixture evenly onto the parchment-lined baking sheet, forming a
thin layer.",
"6. Bake in the preheated oven for 20-25 minutes, or until the edges are golden and crispy.",
"7. Remove from the oven and let cool for 10 minutes before cutting into small bars."
],
"required_tools": [
"oven",
"mixing bowl",
"baking sheet",
"parchment paper"
],
"cooking_time": 50,
"suggestions": [
"Consider adding oats or nuts for extra carbohydrates and fiber.",
"Add a source of protein like a scoop of protein powder or nuts to increase protein content."
]
}
```

```
{'value': 34.14, 'unit': 'gram', 'name': 'maple syrup'}
{'value': 17.07, 'unit': 'gram', 'name': 'chia seeds'}
{'value': 2.845, 'unit': 'gram', 'name': 'hot spice'}
{'value': 1.4225, 'unit': 'gram', 'name': 'paprika'}
{'Protein': 3.1531135000000003, 'Carbohydrate': 28.37816375, 'Sugars, total':
20.2948075000000005, 'Sodium, Na': 6.9292820000000001, 'Total Fat': 8.432153249999999,
'Fatty acids, saturated, total': 1.19077475, 'Fibre, total dietary': 2.9289275000000004,
'Energy (kJ)': 810.526275}
```

Failed: Protein

Reason: Protein not enough (Value: 53.602929500000001)

Failed: Sugars

Reason: Too much sugar (Value: 345.011727500000006)

Failed: Fats

Reason: Too many fats (Value: 311.98967024999996)

Failed: Fibers

Reason: Fibers not enough (Value: 2.9289275000000004)

Health Score: 3

Score Summary: {'Carbohydrate': 1, 'Sodium': 1, 'Saturated Fats': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 100.0}

Test 10: lots of vegetables

```
{
  "title": "Roasted Artichoke and Broccoli with Swiss Chard",
  "processed_ingredients": [
    "3.75 oz artichoke hearts",
    "2.67 oz broccoli florets",
    "1.25 oz Swiss chard",
    "0.5 tbsp olive oil",
    "0.25 tsp salt",
    "0.25 tsp black pepper",
    "0.5 tbsp fresh parsley"
  ],
  "pure_ingredients": [
    "artichoke hearts",
    "broccoli",
    "Swiss chard"
  ],
  "instructions": [
    "1. Preheat your oven to 400°F (200°C).",
    "2. In a mixing bowl, combine 3.75 oz of artichoke hearts and 2.67 oz of broccoli florets with 0.5 tbsp of olive oil, 0.25 tsp of salt, and 0.25 tsp of black pepper.",
    "3. Spread the mixture evenly onto a baking sheet.",
    "4. Roast in the preheated oven for 25-30 minutes, or until the broccoli is tender and the artichokes are slightly caramelized.",
    "5. While the vegetables are roasting, rinse and roughly chop 1.25 oz of Swiss chard.",
    "6. In the last 5 minutes of roasting, add the Swiss chard to the baking sheet and continue roasting until wilted.",
    "7. Remove from oven and sprinkle with 0.5 tbsp of freshly chopped parsley before serving."
  ],
  "required_tools": [
    "oven",
    "mixing bowl",
    "baking sheet",
    "knife",
    "cutting board"
  ],
  "cooking_time": 35,
  "suggestions": [
    "Consider adding 0.75 oz of quinoa to boost fiber and protein content.",
    "Incorporate 1.5 oz of chickpeas for additional protein."
  ]
}
```

{'value': 106.3125, 'unit': 'gram', 'name': 'artichoke hearts'}

{'value': 75.6945, 'unit': 'gram', 'name': 'broccoli florets'}

```
{'value': 35.4375, 'unit': 'gram', 'name': 'Swiss chard'}
{'value': 8.535, 'unit': 'gram', 'name': 'olive oil'}
{'value': 1.4225, 'unit': 'gram', 'name': 'salt'}
{'value': 1.4225, 'unit': 'gram', 'name': 'black pepper'}
{'value': 8.535, 'unit': 'gram', 'name': 'fresh parsley'}
{'Protein': 6.567242149999999, 'Carbohydrate': 18.7027153, 'Sugars, total': 1.7582705,
'Sodium, Na': 749.6606175000001, 'Total Fat': 17.960825275, 'Fatty acids, saturated, total':
1.910996055, 'Fibre, total dietary': 6.808877375, 'Energy (kJ)': 1007.6948699999999}
Failed: Carbohydrate
Reason: Carbohydrates not enough (Value: 317.94616010000004)
```

Failed: Fats

Reason: Too many fats (Value: 664.550535175)

Health Score: 5

Score Summary: {'Protein': 1, 'Sugars': 1, 'Sodium': 1, 'Saturated Fats': 1, 'Fibers': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 66.66666666666666}

5 More tests

```
{'title': "Seafood and Vegetable Boil", 'processed_ingredients': ["0.25 teaspoon black pepper", "1
lemon", "100 grams squid", "100 grams shrimp", "100 grams mussel", "100 grams crab", "150 grams
potato", "100 grams corn", "100 grams broccoli", "2 cloves garlic", "0.5 teaspoon
salt"], 'pure_ingredients': ["squid", "shrimp", "mussel", "crab", "potato", "corn", "broccoli", "garlic", "lemon"], 'i
nstructions': ["1. Fill a large pot with water and bring it to a boil over medium-high heat.", "2. Add 0.5
teaspoon of salt and 0.25 teaspoon of black pepper to the boiling water.", "3. Add 150 grams of potato
(cut into cubes) to the pot and boil for 15 minutes until tender.", "4. Add 100 grams of corn (cut into
chunks) and boil for an additional 5 minutes.", "5. Add 2 cloves of garlic (minced) to the pot.", "6. Add
100 grams each of squid, shrimp, mussel, and crab to the pot and boil for 5-7 minutes until the
seafood is cooked through.", "7. In the last 5 minutes, add 100 grams of broccoli florets to the pot and
boil until they are tender yet still bright green.", "8. Cut the lemon into wedges and squeeze fresh
lemon juice over the seafood and vegetables before
serving."], 'required_tools': ["pot"], 'cooking_time': 35, 'suggestions': ["Consider adding whole grain
pasta or quinoa to increase carbohydrates and fiber."]}
```

```
{'value': 1.4225, 'unit': 'gram', 'name': 'black pepper'}
{'value': 100, 'unit': 'gram', 'name': ''}
{'value': 100.0, 'unit': 'gram', 'name': 'squid'}
{'value': 100.0, 'unit': 'gram', 'name': 'shrimp'}
{'value': 100.0, 'unit': 'gram', 'name': 'mussel'}
{'value': 100.0, 'unit': 'gram', 'name': 'crab'}
{'value': 150.0, 'unit': 'gram', 'name': 'potato'}
{'value': 100.0, 'unit': 'gram', 'name': 'corn'}
{'value': 100.0, 'unit': 'gram', 'name': 'broccoli'}
{'value': 8, 'unit': 'gram', 'name': 'garlic'}
{'value': 2.845, 'unit': 'gram', 'name': 'salt'}
```


{'Protein': 98.65659774999999, 'Carbohydrate': 151.94948875, 'Sugars, total': 22.849104, 'Sodium, Na': 3124.8096, 'Total Fat': 32.2313735, 'Fatty acids, saturated, total': 4.6999211999999995, 'Fibre, total dietary': 25.0978925, 'Energy (kJ)': 4166.77625}

Failed: Protein

Reason: Too much protein (Value: 1677.1621617499998)

Health Score: 6

Score Summary: {'Carbohydrate': 1, 'Sugars': 1, 'Sodium': 1, 'Fats': 1, 'Saturated Fats': 1, 'Fibers': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 100.0}

{'title': "Thai Basil Eggplant and Tofu Stir Fry", 'processed_ingredients': ["0.5 medium eggplant, cubed", "0.25 cup coconut milk", "0.25 lb firm tofu, cubed", "0.5 cup fresh Thai basil leaves", "1 teaspoon black pepper", "1 tablespoon soy sauce", "1 tablespoon olive oil", "1 clove garlic, minced", "0.5 tablespoon ginger, grated"], 'pure_ingredients': ["eggplant", "coconut milk", "tofu", "Thai basil leaves"], 'instructions': ["1. Heat 1 tablespoon of olive oil in a pot over medium heat.", "2. Add 1 clove of minced garlic and 0.5 tablespoon of grated ginger, and sauté for 1-2 minutes until fragrant.", "3. Add 0.5 medium eggplant, cubed, to the pot and stir-fry for about 5-6 minutes until the eggplant begins to soften.", "4. Add 0.25 pound of firm tofu, cubed, and 0.25 cup of coconut milk to the pot, stirring to combine.", "5. Season with 1 teaspoon of black pepper and 1 tablespoon of soy sauce.", "6. Reduce the heat to low and simmer for about 10 minutes, allowing the flavors to meld.", "7. Remove from heat and stir in 0.5 cup of fresh Thai basil leaves until wilted.", "8. Serve hot."], 'required_tools': ["pot"], 'cooking_time': 25, 'suggestions': ["Consider adding 0.5 cup of cooked brown rice or quinoa to increase carbohydrates and fiber.", "Include 1 tablespoon of peanuts or cashews for added healthy fats and protein."]}

{'value': 100, 'unit': 'gram', 'name': 'eggplant, cubed'}

{'value': 37.5, 'unit': 'gram', 'name': 'coconut milk'}

{'value': 113.3975, 'unit': 'gram', 'name': 'firm tofu, cubed'}

{'value': 75.0, 'unit': 'gram', 'name': 'fresh Thai basil leaves'}

{'value': 5.69, 'unit': 'gram', 'name': 'black pepper'}

{'value': 17.07, 'unit': 'gram', 'name': 'soy sauce'}

{'value': 17.07, 'unit': 'gram', 'name': 'olive oil'}

{'value': 4, 'unit': 'gram', 'name': 'garlic, minced'}

{'value': 8.535, 'unit': 'gram', 'name': 'ginger, grated'}

{'Protein': 17.64320575, 'Carbohydrate': 54.5687955, 'Sugars, total': 6.066494, 'Sodium, Na': 2641.0030249999995, 'Total Fat': 27.57028175, 'Fatty acids, saturated, total': 10.08158835, 'Fibre, total dietary': 16.769339999999996, 'Energy (kJ)': 2143.6464}

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 927.6695235)

Failed: Fats

Reason: Too many fats (Value: 1020.10042475)

Failed: Saturated Fats

Reason: Too much saturated fat (Value: 373.01876895000004)

Health Score: 4

Score Summary: {'Protein': 1, 'Sugars': 1, 'Sodium': 1, 'Fibers': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 75.0}

```
{
  "title": "Cheese and Veggie Skillet",
  "processed_ingredients": [
    "1 large egg",
    "1 cup lettuce, chopped",
    "0.5 cup tomato, diced",
    "0.5 cup cucumber, sliced",
    "0.25 cup cheese, shredded",
    "1 tablespoon olive oil",
    "Salt to taste",
    "Black pepper to taste"
  ],
  "pure_ingredients": [
    "egg",
    "lettuce",
    "tomato",
    "cucumber",
    "cheese"
  ],
  "instructions": [
    "1. Heat a skillet over medium heat and add 1 tablespoon of olive oil.",
    "2. Crack the egg into the skillet and cook until the white is set and the yolk is cooked to your preference, about 3-5 minutes.",
    "3. Remove the egg from the skillet and set aside.",
    "4. In the same skillet, add the chopped lettuce, diced tomato, and sliced cucumber. Sauté for about 2-3 minutes until the vegetables are slightly softened.",
    "5. Sprinkle the shredded cheese over the vegetables and cover the skillet for another 2 minutes until the cheese melts.",
    "6. Season the veggies with salt and black pepper to taste.",
    "7. Serve the sautéed vegetables on a plate and top with the cooked egg."
  ],
  "required_tools": [
    "skillet"
  ],
  "cooking_time": 12,
  "suggestions": [
    "Add whole-grain bread or quinoa to increase fiber.",
    "Include nuts or seeds for healthy fats."
  ]
}
```

```
{'value': 100, 'unit': 'gram', 'name': 'egg'}
{'value': 150.0, 'unit': 'gram', 'name': 'lettuce, chopped'}
{'value': 75.0, 'unit': 'gram', 'name': 'tomato, diced'}
{'value': 75.0, 'unit': 'gram', 'name': 'cucumber, sliced'}
{'value': 37.5, 'unit': 'gram', 'name': 'cheese, shredded'}
{'value': 17.07, 'unit': 'gram', 'name': 'olive oil'}
{'Protein': 32.513000000000005, 'Carbohydrate': 52.393249999999995, 'Sugars, total': 32.11, 'Sodium, Na': 839.7464, 'Total Fat': 43.6815, 'Fatty acids, saturated, total': 13.3092756, 'Fibre, total dietary': 11.722499999999998, 'Energy (kJ)': 2859.1693}
```

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 890.6852499999999)

Failed: Sugars

Reason: Too much sugar (Value: 545.87)

Failed: Fats

Reason: Too many fats (Value: 1616.2155)

Failed: Saturated Fats

Reason: Too much saturated fat (Value: 492.4431972)

Health Score: 3

Score Summary: {'Protein': 1, 'Sodium': 1, 'Fibers': 1}

Meet cooking time requirements

```
{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 100.0}
```

```
{
  "title": "Egg and Bacon Breakfast Sandwich",
  "processed_ingredients": [
    "2 strips bacon",
    "1 egg",
    "1 slice whole grain bread",
    "1 tablespoon olive oil",
    "Salt and pepper to taste"
  ],
  "pure_ingredients": [
    "bacon",
    "egg",
    "bread"
  ],
  "instructions": [
    "1. Heat a skillet over medium heat and add 1 tablespoon of olive oil.",
    "2. Add the bacon strips to the skillet and cook until crispy, about 8 minutes, turning occasionally. Remove bacon and set aside.",
  ]
}
```

"3. In the same skillet, crack the egg and cook to your desired doneness, seasoning with salt and pepper, about 3-4 minutes.",

"4. Toast the slice of whole grain bread in the skillet until golden brown, about 2-3 minutes per side.",

"5. Assemble the sandwich by placing the cooked bacon and egg on top of the toasted bread."

```
],
"required_tools": [
  "skillet"
],
"cooking_time": 15,
"suggestions": [
  "Add spinach or avocado for extra fiber and healthy fats.",
  "Include a slice of tomato for additional vitamins and flavor."
]
}
```

```
{'value': 100, 'unit': 'gram', 'name': 'bacon'}
```

```
{'value': 100, 'unit': 'gram', 'name': ''}
```

```
{'value': 100, 'unit': 'gram', 'name': 'whole grain bread'}
```

```
{'value': 17.07, 'unit': 'gram', 'name': 'olive oil'}
```

```
{'Protein': 30.439999999999998, 'Carbohydrate': 84.42, 'Sugars, total': 4.96, 'Sodium, Na': 2068.3414, 'Total Fat': 49.66, 'Fatty acids, saturated, total': 7.6440256, 'Fibre, total dietary': 13.8, 'Energy (kJ)': 3666.4193}
```

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 1435.14)

Failed: Fats

Reason: Too many fats (Value: 1837.4199999999998)

Health Score: 5

Score Summary: {'Protein': 1, 'Sugars': 1, 'Sodium': 1, 'Saturated Fats': 1, 'Fibers': 1}

Meet cooking time requirements

```
{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 100.0}
```

```

{
  "title": "Salmon and Asparagus Skillet",
  "processed_ingredients": [
    "150 grams salmon",
    "200 grams asparagus",
    "1 tablespoon olive oil",
    "1 tablespoon lemon juice",
    "1 pinch salt",
    "1 pinch black pepper",
    "1 teaspoon sesame seeds"
  ],
  "pure_ingredients": [
    "salmon",
    "asparagus"
  ],
  "instructions": [
    "1. Heat a skillet over medium-high heat and add 1 tablespoon of olive oil.",
    "2. Season 150 grams of salmon with a pinch of salt and black pepper.",
    "3. Add the salmon to the skillet and cook for 4-5 minutes on each side, or until golden brown and cooked through.",
    "4. Remove the salmon from the skillet and set aside.",
    "5. In the same skillet, add another drizzle of olive oil if needed and add 200 grams of asparagus.",
    "6. Sauté the asparagus for 5-6 minutes, or until tender-crisp.",
    "7. Add 1 tablespoon of lemon juice to the asparagus and toss to coat.",
    "8. Return the salmon to the skillet to warm through, about 1-2 minutes.",
    "9. Sprinkle 1 teaspoon of sesame seeds over the salmon and asparagus before serving."
  ],
  "required_tools": [
    "skillet"
  ],
  "cooking_time": 20,
  "suggestions": [
    "Consider adding a whole grain like quinoa or brown rice to increase carbohydrates and fiber."
  ]
}

```

```

{'value': 150.0, 'unit': 'gram', 'name': 'salmon'}
{'value': 200.0, 'unit': 'gram', 'name': 'asparagus'}
{'value': 17.07, 'unit': 'gram', 'name': 'olive oil'}
{'value': 17.07, 'unit': 'gram', 'name': 'lemon juice'}
{'value': 100, 'unit': 'gram', 'name': 'salt'}
{'value': 100, 'unit': 'gram', 'name': 'black pepper'}
{'value': 5.69, 'unit': 'gram', 'name': 'sesame seeds'}
{'Protein': 15.814769000000002, 'Carbohydrate': 74.352436000000001, 'Sugars, total': 4.830164, 'Sodium, Na': 38783.138, 'Total Fat': 173.342168, 'Fatty acids, saturated, total':

```

34.02633540000001, 'Fibre, total dietary': 30.347810000000003, 'Energy (kJ)': 7662.464599999999}

Failed: Protein

Reason: Protein not enough (Value: 268.85107300000004)

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 1263.9914120000003)

Failed: Fats

Reason: Too many fats (Value: 6413.660215999999)

Failed: Saturated Fats

Reason: Too much saturated fat (Value: 1258.9744098000003)

Health Score: 3

Score Summary: {'Sugars': 1, 'Sodium': 1, 'Fibers': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 100.0}

10 More tests

**Butter, Cantaloupe, Salsa, Clams, Dill, Cookies
Oven; 50**

```
{
  "title": "Baked Clams with Butter-Dill Salsa",
  "processed_ingredients": [
    "1 tablespoon butter",
    "0.5 cup fresh salsa",
    "8 fresh clams, cleaned",
    "1 tablespoon fresh dill, chopped",
    "0.5 cup diced cantaloupe",
    "1 pinch salt"
  ],
  "pure_ingredients": [
    "butter",
    "salsa",
    "clams",
    "dill",
    "cantaloupe"
  ],
  "instructions": [
    "1. Preheat the oven to 375°F (190°C).",
    "2. In a medium bowl, combine 0.5 cup of fresh salsa, 0.5 cup of diced cantaloupe, and 1 tablespoon of chopped fresh dill. Mix well.",
    "3. Arrange the 8 fresh cleaned clams on a baking dish.",
    "4. Spoon the cantaloupe-salsa mix over each clam.",
    "5. Melt 1 tablespoon of butter in a small pan and drizzle over the clams.",
    "6. Season with a pinch of salt.",
    "7. Bake in the preheated oven for 15-20 minutes, or until clams open and are cooked through.",
    "8. Remove from oven and let cool slightly before serving."
  ],
  "required_tools": [
    "oven",
    "baking dish",
    "small pan",
    "medium bowl"
  ],
  "cooking_time": 25,
  "suggestions": [
    "Add a whole grain side like quinoa or brown rice to boost fiber.",
    "Include a leafy green salad to further meet the fiber requirement."
  ]
}
```

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 817.534437)

Failed: Fats

Reason: Too many fats (Value: 1163.1858349999998)

Failed: Saturated Fats

Reason: Too much saturated fat (Value: 478.53500820000005)

Health Score: 4

Score Summary: {'Protein': 1, 'Sugars': 1, 'Sodium': 1, 'Fibers': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 100.0}

Spring Rolls, Macaroni and Cheese, Fettuccine, Tofu, Raisins Oven, skillet; 60

```
{
  "title": "Baked Tofu with Fettuccine and Raisins",
  "processed_ingredients": [
    "3 oz fettuccine",
    "3 oz tofu",
    "1 tbsp olive oil",
    "1/4 cup raisins",
    "0.5 tsp salt",
    "0.25 tsp black pepper"
  ],
  "pure_ingredients": [
    "fettuccine",
    "tofu",
    "raisins"
  ],
  "instructions": [
    "1. Preheat the oven to 400°F (200°C).",
    "2. Cut 3 oz of tofu into small cubes and season with 0.25 tsp of salt and 0.25 tsp of black pepper.",
    "3. Place the tofu cubes on a baking sheet lined with parchment paper and bake in the preheated oven for 20 minutes, turning halfway through.",
    "4. While the tofu is baking, cook 3 oz of fettuccine according to the package instructions. Drain and set aside.",
    "5. In a skillet, heat 1 tbsp of olive oil over medium heat.",
    "6. Add the cooked fettuccine and 1/4 cup of raisins to the skillet, sautéing for 3-4 minutes until the raisins are slightly plump.",
    "7. Add the baked tofu to the skillet and toss everything together, cooking for an additional 2-3 minutes.",
    "8. Season with the remaining salt and pepper as needed and serve warm."
  ],
  "required_tools": [
    "oven",
    "skillet",
    "baking sheet",
    "parchment paper",
    "pot",
    "strainer"
  ],
  "cooking_time": 50,
  "suggestions": [
    "Add a serving of spinach to increase fiber.",
    "Include a sprinkle of chopped nuts for healthy fats."
  ]
}
```

Failed: Protein
Reason: Protein not enough (Value: 93.70392774999999)

Failed: Carbohydrate
Reason: Carbohydrates not enough (Value: 862.98967025)

Failed: Fats
Reason: Too many fats (Value: 3911.5398040000005)

Failed: Saturated Fats
Reason: Too much saturated fat (Value: 608.1950406000001)

Failed: Fibers
Reason: Fibers not enough (Value: 4.0104395)

Health Score: 2
Score Summary: {'Sugars': 1, 'Sodium': 1}
Meet cooking time requirements
{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 100.0}

Beer, Grapes, duck, Pasta, Bell Peppers, Onion Powder, Crackers Oven, skillet 60

```
{
  "title": "Duck and Bell Pepper Stir-Fry with Pasta",
  "processed_ingredients": [
    "0.25 lb duck breast",
    "1 cup cooked pasta",
    "0.5 bell pepper",
    "0.25 cup grapes",
    "0.5 tablespoon olive oil",
    "0.13 teaspoon onion powder",
    "0.06 teaspoon salt",
    "0.06 teaspoon black pepper",
    "0.25 cup crushed crackers"
  ],
  "pure_ingredients": [
    "duck breast",
    "pasta",
    "bell pepper",
    "grapes",
    "crackers"
  ],
  "instructions": [
    "1. Preheat the oven to 350 degrees F.",
    "2. Season 0.25 lb duck breast with 0.06 teaspoon each of salt and black pepper.",
    "3. Heat 0.5 tablespoon olive oil in a skillet over medium-high heat. Add the duck breast and cook for 5-6 minutes on each side until browned and cooked through. Remove from the skillet and let rest.",
    "4. In the same skillet, add 0.5 sliced bell pepper and 0.25 cup halved grapes. Cook for 3-4 minutes until the bell pepper is tender.",
    "5. Slice the duck breast and return to the skillet. Add 1 cup of cooked pasta and 0.13 teaspoon of onion powder. Toss everything together and cook for another 2-3 minutes.",
    "6. Transfer the mixture to an oven-safe dish. Top with 0.25 cup crushed crackers.",
    "7. Bake in the preheated oven for 5-7 minutes until the crackers are golden and crispy. Serve immediately."
  ],
  "required_tools": [
    "oven",
    "skillet"
  ],
  "cooking_time": 30,
  "suggestions": [
    "Consider adding a side salad with leafy greens to increase fiber content."
  ]
}
```


Failed: Carbohydrate
Reason: Carbohydrates not enough (Value: 1580.50829098)

Failed: Sugars
Reason: Too much sugar (Value: 382.37211019)

Failed: Fats
Reason: Too many fats (Value: 1356.2206909899999)

Health Score: 4
Score Summary: {'Protein': 1, 'Sodium': 1, 'Saturated Fats': 1, 'Fibers': 1}
Meet cooking time requirements
{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 60.0}

Mozzarella, Cider, Kale, bay leaf, Quinoa

```
{
  "title": "Mozzarella and Kale Quinoa Bake",
  "processed_ingredients": [
    "0.5 cup quinoa",
    "1 cup water",
    "1 bay leaf",
    "0.5 tablespoon olive oil",
    "1 cup kale, chopped",
    "0.5 cup mozzarella, shredded",
    "0.5 cup apple cider",
    "0.125 teaspoon salt",
    "1 pinch black pepper"
  ],
  "pure_ingredients": [
    "quinoa",
    "kale",
    "mozzarella"
  ],
  "instructions": [
    "1. Preheat the oven to 375°F (190°C).",
    "2. In a medium skillet, combine 0.5 cup quinoa, 1 cup water, and 1 bay leaf. Bring to a boil over medium-high heat.",
    "3. Reduce heat to low, cover, and simmer for 15 minutes or until quinoa is cooked and water is absorbed. Remove bay leaf.",
    "4. In the same skillet, add 0.5 tablespoon olive oil and heat over medium heat. Add 1 cup chopped kale and sauté for 3-4 minutes until wilted.",
    "5. Stir in 0.5 cup apple cider, a pinch of salt, and black pepper. Cook for an additional 2 minutes.",
    "6. Remove from heat and mix in cooked quinoa.",
    "7. Transfer the mixture to a baking dish, sprinkle 0.5 cup shredded mozzarella on top.",
    "8. Bake in the preheated oven for 15 minutes or until the mozzarella is melted and bubbly.",
    "9. Allow to cool for a few minutes before serving."
  ],
  "required_tools": [
    "oven",
    "skillet",
    "baking dish"
  ],
  "cooking_time": 45,
  "suggestions": [
    "Consider adding chickpeas or black beans for additional protein.",
    "Incorporate nuts or seeds like almonds or sunflower seeds for healthy fats."
  ]
}
```

Failed: Carbohydrate
Reason: Too many carbohydrates (Value: 3518.5835)

Failed: Fats
Reason: Too many fats (Value: 2326.6895)

Health Score: 5
Score Summary: {'Protein': 1, 'Sugars': 1, 'Sodium': 1, 'Saturated Fats': 1, 'Fibers': 1}
Meet cooking time requirements
{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 100.0}

Waffles, Dairy, Cranberry Sauce, Cocktail Sauce, bay leaf, Vegetable
Skillet, pan, avoid using oven
20

```

{
  "title": "Cranberry Waffle Veggie Stir-fry",
  "processed_ingredients": [
    "1 frozen waffle",
    "0.5 cup mixed vegetables, chopped (e.g., bell peppers, broccoli, carrots)",
    "0.25 cup cranberry sauce",
    "1 bay leaf",
    "0.5 tablespoon cocktail sauce",
    "1 tablespoon olive oil",
    "Salt to taste",
    "Pepper to taste"
  ],
  "pure_ingredients": [
    "waffle",
    "mixed vegetables",
    "cranberry sauce",
    "bay leaf"
  ],
  "instructions": [
    "1. In a skillet, heat 1 tablespoon of olive oil over medium-high heat.",
    "2. Add 0.5 cup of mixed vegetables and sauté for 5-6 minutes until they are tender.",
    "3. Add 1 bay leaf, 0.25 cup cranberry sauce, and 0.5 tablespoon cocktail sauce to the skillet. Stir well.",
    "4. Cook the mixture for an additional 2-3 minutes to allow the flavors to meld.",
    "5. Meanwhile, toast 1 frozen waffle in a pan over medium heat for 2-3 minutes on each side until golden brown.",
    "6. Remove the bay leaf from the skillet and discard.",
    "7. Serve the sautéed vegetable and cranberry mixture over the toasted waffle.",
    "8. Season with salt and pepper to taste before serving."
  ],
  "required_tools": [
    "skillet",
    "pan"
  ],
  "cooking_time": 15,
  "suggestions": [
    "Consider adding a source of protein such as nuts or seeds to meet macronutrient requirements.",
    "Incorporate whole grains or additional vegetables to increase fiber content."
  ]
}

```

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 811.9984549999999)

Failed: Fats

Reason: Too many fats (Value: 911.2437699999999)

Failed: Fibers

Reason: Fibers not enough (Value: 3.641745)

Health Score: 4

Score Summary: {'Protein': 1, 'Sugars': 1, 'Sodium': 1, 'Saturated Fats': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 75.0}

Bread, Shrimp, Radishes, Garlic Powder, Turkey, Duck
Skillet, pan, avoid using oven

```

{
  "title": "Shrimp and Turkey Stir-Fry with Radishes",
  "processed_ingredients": [
    "0.25 lb shrimp, peeled and deveined",
    "0.25 lb turkey breast, thinly sliced",
    "0.5 cup radishes, sliced",
    "1 slice whole-grain bread, cut into cubes",
    "0.5 teaspoon garlic powder",
    "1 tablespoon olive oil",
    "0.25 teaspoon salt",
    "0.25 teaspoon black pepper"
  ],
  "pure_ingredients": [
    "shrimp",
    "turkey breast",
    "radishes",
    "bread"
  ],
  "instructions": [
    "1. Heat a skillet over medium-high heat and add 1 tablespoon of olive oil.",
    "2. Add the shrimp and turkey breast to the skillet, seasoning with 0.25 teaspoon of salt, 0.25 teaspoon of black pepper, and 0.5 teaspoon of garlic powder.",
    "3. Cook the shrimp and turkey for 5-6 minutes, stirring occasionally, until the shrimp is pink and the turkey is cooked through.",
    "4. Remove the shrimp and turkey from the skillet and set aside.",
    "5. In the same skillet, add the sliced radishes and sauté for 3 minutes until slightly tender.",
    "6. Add the bread cubes to the skillet and sauté for an additional 2-3 minutes until they become crispy.",
    "7. Return the shrimp and turkey to the skillet, stirring everything together for another 2 minutes to heat through.",
    "8. Serve hot and enjoy your meal."
  ],
  "required_tools": [
    "skillet",
    "pan"
  ],
  "cooking_time": 20,
  "suggestions": [
    "Consider adding a handful of spinach or kale for additional fiber.",
    "Incorporate a squeeze of lemon juice for enhanced flavor."
  ]
}

```

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 1272.7993585000002)

Failed: Fats

Reason: Too many fats (Value: 1391.4088927499997)

Failed: Fibers

Reason: Fibers not enough (Value: 4.5445325)

Health Score: 4

Score Summary: {'Protein': 1, 'Sugars': 1, 'Sodium': 1, 'Saturated Fats': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 75.0}

Enter your ingredients

bread, shrimp, radishes, garlic powder, turkey, duck

Enter your cooking tools

skillet, pan, avoid using oven

Enter your preferred cooking time (in min)

70

Tofu, bok choy, mushroom, pork, noodles, green onion
Skillet, pan, avoid using oven

45

```
{
  "title": "Stir-Fried Tofu and Mushroom Noodles",
  "processed_ingredients": [
    "100 g tofu",
    "50 g pork",
    "50 g bok choy",
    "50 g mushroom",
    "80 g noodles",
    "10 g green onion",
    "1 tablespoon soy sauce",
    "1 teaspoon olive oil",
    "1 clove garlic",
    "1/4 teaspoon ground black pepper",
    "1/4 teaspoon salt"
  ],
  "pure_ingredients": [
    "tofu",
    "pork",
    "bok choy",
    "mushroom",
    "noodles",
    "green onion",
    "garlic"
  ],
  "instructions": [
    "1. Cook 80 g noodles in a pan of boiling water according to package instructions, then drain and set aside.",
    "2. Heat 1 teaspoon of olive oil in a skillet over medium-high heat.",
    "3. Add 100 g tofu (cut into cubes) to the skillet and cook for about 5 minutes until golden brown on all sides. Remove and set aside.",
    "4. In the same skillet, add 50 g pork (thinly sliced) and cook for about 5-6 minutes until browned and cooked through.",
    "5. Add 50 g sliced mushrooms and 50 g chopped bok choy to the skillet and stir-fry for another 5 minutes until tender.",
    "6. Add 1 clove garlic (minced), 1 tablespoon soy sauce, 1/4 teaspoon salt, and 1/4 teaspoon black pepper to the skillet and mix well.",
    "7. Return the cooked tofu to the skillet and toss everything together.",
    "8. Add the cooked noodles and toss to combine well with the other ingredients.",
    "9. Garnish with 10 g chopped green onion and serve hot."
  ],
  "required_tools": [
    "skillet",
    "pan"
  ],
  "cooking_time": 30,
  "suggestions": "Consider adding a handful of spinach for extra fiber and nutrients."
}
```

Failed: Protein

Reason: Protein not enough (Value: 273.56833075000003)

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 468.26989175)

Failed: Fats

Reason: Too many fats (Value: 4527.9432094999999)

Failed: Saturated Fats

Reason: Too much saturated fat (Value: 826.7166817)

Failed: Fibers

Reason: Fibers not enough (Value: 3.8284524999999996)

Health Score: 2

Score Summary: {'Sugars': 1, 'Sodium': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 85.71428571428571}

Beef, tomato, cabbage, celery, carrot, onion, garlic Skillet, pan, avoid using oven

45

```
{
  "title": "Hearty Beef Vegetable Skillet",
  "processed_ingredients": [
    "150g beef, diced",
    "1 medium tomato, chopped",
    "100g cabbage, shredded",
    "1 stalk celery, sliced",
    "1 small carrot, sliced",
    "1 small onion, chopped",
    "2 cloves garlic, minced",
    "1 tablespoon olive oil",
    "0.5 teaspoon salt",
    "0.5 teaspoon black pepper"
  ],
  "pure_ingredients": [
    "beef",
    "tomato",
    "cabbage",
    "celery",
    "carrot",
    "onion",
    "garlic"
  ],
  "instructions": [
    "1. Heat a skillet over medium-high heat and add 1 tablespoon of olive oil.",
    "2. Add the diced beef to the skillet. Cook for 5-6 minutes, stirring occasionally, until browned.",
    "3. Add the chopped onion and minced garlic to the skillet. Sauté for 2-3 minutes until the onion is translucent.",
    "4. Add the chopped tomato, sliced carrot, and sliced celery. Stir well and cook for another 5 minutes.",
    "5. Add the shredded cabbage to the skillet, season with 0.5 teaspoon salt and 0.5 teaspoon black pepper.",
    "6. Stir everything together and cover the skillet. Reduce the heat to medium and let it cook for 15-20 minutes, stirring occasionally, until all vegetables are tender.",
    "7. Uncover and cook for an additional 3-4 minutes to allow any excess liquid to evaporate. Adjust seasoning if necessary.",
    "8. Serve hot directly from the skillet."
  ],
  "required_tools": [
    "skillet",
    "pan"
  ],
  "cooking_time": 40,
  "suggestions": [
    "Add 50g of cooked lentils or beans to boost fiber and protein content.",
    "Consider adding a handful of spinach or kale for additional fiber and nutrients."
  ]
}
```

Failed: Carbohydrate

Reason: Too many carbohydrates (Value: 2067.0466174999997)

Failed: Sugars

Reason: Too much sugar (Value: 1096.880936)

Failed: Fats

Reason: Too many fats (Value: 961.243239)

Health Score: 4

Score Summary: {'Protein': 1, 'Sodium': 1, 'Saturated Fats': 1, 'Fibers': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 100.0}

Tomato not matching correctly in ingredient map

Cheese, Almond Beverage, Bacon, Pollock, Honey, Sunflower Seeds, Quinoa
Sillket, pan, oven

45

```

{
  "title": "Quinoa Crusted Pollock with Honey Almond Glaze",
  "processed_ingredients": [
    "3 oz pollock fillet",
    "1/4 cup quinoa",
    "1 tablespoon sunflower seeds",
    "1 tablespoon honey",
    "1/4 cup almond beverage",
    "1 tablespoon shredded cheese",
    "1 slice bacon"
  ],
  "pure_ingredients": [
    "pollock",
    "quinoa",
    "sunflower seeds",
    "honey",
    "almond",
    "cheese",
    "bacon"
  ],
  "instructions": [
    "1. Preheat the oven to 375°F.",
    "2. Rinse 1/4 cup of quinoa and cook it in a small pan with 1/2 cup of water over medium-high heat. Bring to a boil, then reduce heat to low, cover, and simmer for about 15 minutes or until quinoa is fluffy.",
    "3. While the quinoa is cooking, cook 1 slice of bacon in a skillet over medium heat until crispy, about 5-7 minutes. Remove bacon and set aside, leaving the bacon fat in the skillet.",
    "4. In a bowl, mix 1 tablespoon honey and 1/4 cup almond beverage to create a glaze.",
    "5. Once quinoa is cooked, spread it evenly on a plate. Press the pollock fillet into the quinoa on both sides to form a crust.",
    "6. Place the crusted pollock in the skillet with bacon fat and cook over medium heat for 3 minutes on each side until golden brown.",
    "7. Transfer the fish to a baking pan, brush with honey almond glaze, then bake in the preheated oven for 10-12 minutes.",
    "8. Sprinkle 1 tablespoon sunflower seeds and 1 tablespoon shredded cheese over the fish.",
    "9. Crumble the cooked bacon and sprinkle on top before serving."
  ],
  "required_tools": [
    "skillet",
    "pan",
    "oven"
  ],
  "cooking_time": 45,
  "suggestions": [
    "Add vegetables such as spinach or broccoli for additional fiber.",
    "Consider adding a small portion of whole grain bread to increase carbohydrates."
  ]
}

```

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 1306.1363499999998)

Failed: Sugars

Reason: Too much sugar (Value: 686.885901)

Failed: Fats

Reason: Too many fats (Value: 2098.419258)

Failed: Saturated Fats

Reason: Too much saturated fat (Value: 368.2680929)

Failed: Fibers

Reason: Fibers not enough (Value: 5.32658)

Health Score: 2

Score Summary: {'Protein': 1, 'Sodium': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 100.0}

Brioche, Rum, Plantains, Cider Vinegar, Brussels Sprouts, Cashews, Fettuccine

Sillket, pan, oven

20

Single Prompt

```
{
  "title": "Pan-Seared Salmon with Asparagus",
  "processed_ingredients": [
    "150g salmon fillet",
    "200g asparagus, trimmed",
    "1 tablespoon olive oil",
    "1/2 lemon, juice only",
    "Salt and pepper to taste"
  ],
  "pure_ingredients": [
    "salmon fillet",
    "asparagus",
    "lemon"
  ],
  "instructions": [
    "1. Heat 1 tablespoon of olive oil in a skillet over medium-high heat.",
    "2. Season the salmon fillet with salt and pepper.",
    "3. Once the oil is hot, place the salmon fillet in the skillet, skin-side down. Cook for 4-5 minutes until the skin is crispy.",
    "4. Flip the salmon and cook for another 3-4 minutes until the salmon is cooked through.",
    "5. Remove the salmon from the skillet and set aside.",
    "6. In the same skillet, add the asparagus and a splash of water. Cover and steam for 4-5 minutes until the asparagus is tender-crisp.",
    "7. Squeeze the juice of 1/2 a lemon over the asparagus and season with salt and pepper.",
    "8. Serve the salmon alongside the asparagus on a plate."
  ],
  "required_tools": [
    "skillet"
  ],
  "cooking_time": 20,
  "suggestions": [
    "Consider adding a whole grain, like quinoa or brown rice, to increase carbohydrate and fiber content.",
    "Include a small portion of nuts or seeds for additional healthy fats and fiber."
  ]
}
```

```
{'value': 150.0, 'unit': 'gram', 'name': 'salmon fillet'}
{'value': 200.0, 'unit': 'gram', 'name': 'asparagus, trimmed'}
{'value': 17.07, 'unit': 'gram', 'name': 'olive oil'}
{'value': 100, 'unit': 'gram', 'name': ', juice only'}
{'Protein': 5.1000000000000005, 'Carbohydrate': 18.16, 'Sugars, total': 12.16, 'Sodium, Na': 5.3414, 'Total Fat': 167.51, 'Fatty acids, saturated, total': 32.269025600000006, 'Fibre, total dietary': 4.4, 'Energy (kJ)': 6650.4193}
```

Failed: Protein

Reason: Protein not enough (Value: 86.7)

Failed: Carbohydrate

Reason: Carbohydrates not enough (Value: 308.72)

Failed: Fats

Reason: Too many fats (Value: 6197.87)

Failed: Saturated Fats

Reason: Too much saturated fat (Value: 1193.9539472000001)

Failed: Fibers

Reason: Fibers not enough (Value: 4.4)

Health Score: 2

Score Summary: {'Sugars': 1, 'Sodium': 1}

Meet cooking time requirements

{'cooking_tools': True, 'cooking_time': 0, 'ingredient_overlap_rate': 66.66666666666666}