1

00:00:00,000 --> 00:00:10,000

So it's that way, is it?

2

00:00:30,000 --> 00:00:50,000

Each shrimp, Savage.

3

00:00:50,000 --> 00:00:55,000

Okay, stop! Stop!

4

00:00:55,000 --> 00:00:57,000

Shall we put some of this chaos to work?

5

00:00:57,000 --> 00:00:59,000

Sounds tasty. Let's get cooking.

6

00:00:59,000 --> 00:01:25,000

Music

7

00:01:25,000 --> 00:01:26,000

So what's cooking?

8

00:01:26,000 --> 00:01:30,000

Well, in this final season episode, we are paying homage to our foodie past

9

00:01:30,000 --> 00:01:33,000

with a couple of myths that we could couch under the rubric,

10

00:01:33,000 --> 00:01:35,000

cooking chaos.

11

00:01:35,000 --> 00:01:36,000

Like what?

12

00:01:36,000 --> 00:01:42,000

Well, later we're going to be creating some fruit juice using nothing but fruit and explosives.

13

00:01:42,000 --> 00:01:46,000

Music

14

00:01:46,000 --> 00:01:48,000

We just blow up a tomato, now we're trying to have a drink.

15

00:01:48,000 --> 00:01:50,000

But first up, we have a viral video.

16

00:01:50,000 --> 00:01:54,000

Two women are seen loading raw shrimp into what looks like an air cannon.

17

00:01:54,000 --> 00:01:56,000

They then fire it.

18

00:01:56,000 --> 00:01:58,000

Music

19

00:01:58,000 --> 00:02:04,000

Through crowds of flour, egg, breadcrumbs, and eventually a fireball where the shrimp

20

00:02:04,000 --> 00:02:08,000

hit a target, land on a plate, and seem to be perfectly cooked.

21

00:02:08,000 --> 00:02:10,000

Instant tempura.

22

00:02:10,000 --> 00:02:12,000

Exactly, and I think we should try doing it.

23

00:02:12,000 --> 00:02:13,000

Yum!

24

00:02:13,000 --> 00:02:14,000

Music

25

00:02:14,000 --> 00:02:17,000

For 14 years, the mythbusters have dined.

26

00:02:17,000 --> 00:02:18,000

You want to try some?

27

00:02:18,000 --> 00:02:20,000

Oh! Ha ha! You can't!

28

00:02:20,000 --> 00:02:22,000

Devoured and feasted.

29

00:02:22,000 --> 00:02:24,000

It can't hold it anymore.

30

00:02:24,000 --> 00:02:27,000

On some fantastically far-fetched

31

00:02:27,000 --> 00:02:28,000

Oh!

32

00:02:28,000 --> 00:02:30,000

Food fables.

33

00:02:30,000 --> 00:02:33,000

Red meat and high explosives.

34

00:02:33,000 --> 00:02:38,000

Music

35

00:02:38,000 --> 00:02:41,000

But in this farewell season spectacular,

36

00:02:41,000 --> 00:02:48,000

They're going to crank up the cooking chaos to the max with a classic mythbuster medley.

37

00:02:48,000 --> 00:02:49,000

Ha ha ha ha!

38

00:02:49,000 --> 00:02:51,000

Like some sort of jet engine.

39

00:02:51,000 --> 00:02:57,000

First up, is it really possible to coordinate four explosive ingredients and a fireball

40

00:02:57,000 --> 00:03:00,000

to fry on the fly?

41

00:03:00,000 --> 00:03:04,000

To test it, they have to copy the video's crazy contraption.

42

00:03:04,000 --> 00:03:06,000

It's going to be a challenge.

43

00:03:06,000 --> 00:03:09,000

Music

44

00:03:09,000 --> 00:03:11,000

Alright, let's start by listing the components. What do we got?

45

00:03:11,000 --> 00:03:13,000

We have some sort of pneumatic cannon.

46

00:03:13,000 --> 00:03:15,000

A flour cannon.

47

00:03:15,000 --> 00:03:18,000

Then we've got the egg wash.

48

00:03:18,000 --> 00:03:21,000

And then a bread crumb cannon.

49

00:03:21,000 --> 00:03:23,000

And then of course there's fire.

50

00:03:23,000 --> 00:03:25,000

And then the target.

51

00:03:25,000 --> 00:03:29,000

The flour cannon and the bread crumb cannon are effectively the same device.

52

00:03:29,000 --> 00:03:31,000

I can jump on that.

53

00:03:31,000 --> 00:03:35,000

Okay, well I'll take care of the egg wash and the cannon.

54

00:03:35,000 --> 00:03:37,000

I think I have just the thing.

55

00:03:37,000 --> 00:03:39,000

Ha ha ha! Ha ha ha!

56

00:03:39,000 --> 00:03:40,000

Music

57

00:03:40,000 --> 00:03:43,000

This launcher's been on the show several times before.

58

00:03:44,000 --> 00:03:48,000

The last one was testing whether rocks coming out of the lawn more could be lethal or not.

59

00:03:48,000 --> 00:03:49,000

Music

60

00:03:49,000 --> 00:03:52,000

Wow! Ha ha ha!

61

00:03:52,000 --> 00:03:55,000

Now the benefit of using a pneumatic launcher like this is that

62

00:03:55,000 --> 00:03:56,000

Music

63

00:03:56,000 --> 00:03:59,000

We can shoot just about anything that we can fit in the barrel.

64

00:03:59,000 --> 00:04:03,000

And because it has a regulator, we can precisely adjust the speed.

65

00:04:03,000 --> 00:04:09,000

Now in the case of shrimp, that's doubly important because we want to fire the whole shrimp intact.

66

00:04:09,000 --> 00:04:14,000

We don't want to shoot a cloud of shrimp bits at our target.

67

00:04:14,000 --> 00:04:18,000

And with a little modification here and there, I think this might just do the trick.

68

00:04:18,000 --> 00:04:19,000

Music

69

00:04:19,000 --> 00:04:21,000

That's the shrimp launcher.

70

00:04:21,000 --> 00:04:24,000

Next comes the cannon for the dry ingredients.

71

00:04:24,000 --> 00:04:25,000

Music

72

00:04:26,000 --> 00:04:28,000

First, the bread crumbs.

73

00:04:29,000 --> 00:04:32,000

All right, it's allowing me to walk you through the components.

74

00:04:32,000 --> 00:04:37,000

First and foremost, we have the cones that will shoot out the bread crumbs.

75

00:04:37,000 --> 00:04:45,000

Those horns are being powered by air, which is blasted up through these tubes to this T coming out of this large pneumatic valve.

76

00:04:45,000 --> 00:04:54,000

It's actually an electromagnetic valve, so when I apply a little power to it under pressure, it will release air and hopefully send the bread crumbs flying.

77

00:04:55,000 --> 00:05:00,000

Jamie's going to be like, why does my shop smell like an Italian restaurant?

78

00:05:00,000 --> 00:05:03,000

If I wanted an Italian restaurant, I'd open one.

79

00:05:03,000 --> 00:05:08,000

To keep the mess to a minimum, Adam fills half of the cones for a quick systems check.

80

00:05:08,000 --> 00:05:11,000

This is bread crumb horn test.

81

00:05:11,000 --> 00:05:14,000

Three, two, one.

82

00:05:16,000 --> 00:05:17,000

Ah!

83

00:05:20,000 --> 00:05:22,000

Ha ha ha ha ha ha!

84

00:05:24,000 --> 00:05:25,000

That's lovely!

85

00:05:26,000 --> 00:05:33,000

That works, and while Adam knocks up an identical system for the flour, Jamie's getting eggy with it.

86

00:05:33,000 --> 00:05:37,000

I've got to figure out how to shoot egg wash down.

87

00:05:37,000 --> 00:05:42,000

This is a solenoid valve. It's an electronic valve that opens and closes a stream of air.

88

00:05:42,000 --> 00:05:44,000

Oops, strong end.

89

00:05:44,000 --> 00:05:48,000

And that's fine, but I'm using egg, and I don't want to clog it up.

90

00:05:48,000 --> 00:05:59,000

What I'm going to use is this puppy right here, which has a similar solenoid valve here and a piston with a rack and pinion on it that rotates a ball valve.

91

00:05:59,000 --> 00:06:03,000

And I can send anything I want through here and not gum anything up.

92

00:06:03,000 --> 00:06:05,000

It's done.

93

00:06:05,000 --> 00:06:08,000

To test that it matches the spray in the video.

94

00:06:08,000 --> 00:06:12,000

It's going to be hard to make it with this camera in there. Hold on.

95

00:06:12,000 --> 00:06:14,000

Mmm!

96

00:06:14,000 --> 00:06:16,000

Delicious!

97

00:06:16,000 --> 00:06:19,000

Adam whips up some egg-like liquid.

98

00:06:19,000 --> 00:06:22,000

Oh, yummy! Look at that!

99

00:06:24,000 --> 00:06:27,000

Briggs Jamie's host to its compressed air power source.

100

00:06:27,000 --> 00:06:29,000

Three, two, one.

101

00:06:29,000 --> 00:06:31,000

And let's loose.

102

00:06:34,000 --> 00:06:36,000

Ha! Beautiful!

103

00:06:36,000 --> 00:06:40,000

And the flower thrower also gets a systems check.

104

00:06:41,000 --> 00:06:42,000

Oh!

105

00:06:42,000 --> 00:06:45,000

No!

106

00:06:45,000 --> 00:06:48,000

Oh!

107

00:06:48,000 --> 00:06:51,000

Here, you can run that sound effect right over the high speed.

108

00:06:54,000 --> 00:07:03,000

That just leaves the fireball, but that will be assembled on location because the team has a dubious safety record at M5.

109

00:07:03,000 --> 00:07:06,000

Am I missing an eyebrow?

110

00:07:06,000 --> 00:07:13,000

So before things heat up, it's time to tackle another classic Knuthbusters conundrum.

111

00:07:14,000 --> 00:07:18,000

Juicing the inside of fruit with an explosion.

112

00:07:20,000 --> 00:07:25,000

So tell me about creating smoothies inside fruits and vegetables using explosives.

113

00:07:25,000 --> 00:07:28,000

Well, you pretty much outlined the whole thing right there.

114

00:07:28,000 --> 00:07:37,000

It is in a viral video we found where apparently the shockwave of an explosion can be tuned perfectly enough to not destroy the outside of the fruit.

115

00:07:38,000 --> 00:07:45,000

But turn the inside into juice such that you can stick a straw in and have a refreshing drink.

116

00:07:45,000 --> 00:07:49,000

Hmm. Well, I'm dubious, but sounds like fun.

117

00:07:49,000 --> 00:07:51,000

I agree. Let's do it.

118

00:07:51,000 --> 00:07:57,000

It's a deadly fruit cocktail only the Mithlusters could tackle and they've got just the place to do it.

119

00:07:57,000 --> 00:08:01,000

When you want to investigate the power of an explosion, we have a place we like to get.

120

00:08:01,000 --> 00:08:03,000

Actually, we have a lot of places we go.

121

00:08:03,000 --> 00:08:09,000

But our home away from home and the place we go more than any other is right here at the Alameda County Sheriff's Department.

122

00:08:09,000 --> 00:08:15,000

We've been coming here for more than a decade and we have blown up thousands of things on this property.

123

00:08:15,000 --> 00:08:18,000

It's like a clown's head exploded.

124

00:08:18,000 --> 00:08:22,000

Today, however, we're doing things just a little bit differently.

125

00:08:22,000 --> 00:08:27,000

Yep, this time they won't be destroying so much as creating and continuing.

126

00:08:27,000 --> 00:08:28,000

Okay.

127

00:08:28,000 --> 00:08:33,000

To test the premise of the video and its use of surgically precise high explosives.

128

00:08:33,000 --> 00:08:35,000

I love filling waterproof tanks.

129

00:08:35,000 --> 00:08:42,000

They have to accurately recreate all of the elements, starting with the water filled glass proof box.

130

00:08:42,000 --> 00:08:47,000

We've gone above and beyond to make this tank really robust because water doesn't compress.

131

00:08:47,000 --> 00:08:50,000

You're effectively delivering a hammer blow to that structure.

132

00:08:50,000 --> 00:08:51,000

One.

133

00:08:53,000 --> 00:08:54,000

That worked beautifully.

134

00:08:54,000 --> 00:08:58,000

In this case, the ballistic material is probably the weak point.

135

00:08:58,000 --> 00:09:00,000

It's made to stop a bullet.

136

00:09:00,000 --> 00:09:04,000

But what it'll do with an explosive, it's anybody's guess.

137

00:09:04,000 --> 00:09:07,000

I can tell you one thing for sure. I'm going to be standing well back.

138

00:09:07,000 --> 00:09:11,000

Now to position the fruit at explosive as per the video.

139

00:09:11,000 --> 00:09:15,000

Now that our tank is set up and filled with water, let's talk about the parameters for this experiment.

140

00:09:15,000 --> 00:09:17,000

First and foremost is the explosive.

141

00:09:17,000 --> 00:09:22,000

Now in the video, they show that the explosive is 17.5 centimeters from the fruit.

142

00:09:23,000 --> 00:09:25,000

That's the radius of the explosion.

143

00:09:25,000 --> 00:09:29,000

And the explosion goes to about 2.5 centimeters or one inch away from the fruit.

144

00:09:29,000 --> 00:09:31,000

You double that, calculate the diameter.

145

00:09:31,000 --> 00:09:36,000

It comes to about a 12 or 13 inch cavitation that the explosive creates.

146

00:09:36,000 --> 00:09:38,000

So we're going to be using one of these things.

147

00:09:38,000 --> 00:09:39,000

It's a blasting cap.

148

00:09:39,000 --> 00:09:41,000

And it's what we saw them use in the video.

149

00:09:42,000 --> 00:09:43,000

Nice.

150

00:09:43,000 --> 00:09:44,000

Great.

151

00:09:44,000 --> 00:09:48,000

It's easily set off by applying a small amount of electric current to these wires.

152

00:09:48,000 --> 00:09:50,000

That's about as dead center as we can get.

153

00:09:50,000 --> 00:09:58,000

The blasting cap has 3,640 joules of energy and should match the explosive bubble in the video.

154

00:09:58,000 --> 00:10:00,000

Now for the shrink wrap tomato.

155

00:10:03,000 --> 00:10:07,000

This is a polyolefin bag and I can shrink it.

156

00:10:12,000 --> 00:10:13,000

There you go.

157

00:10:13,000 --> 00:10:15,000

Oh, that's beautiful.

158

00:10:15,000 --> 00:10:16,000

Do you think this will float?

159

00:10:16,000 --> 00:10:18,000

I think it will.

160

00:10:20,000 --> 00:10:21,000

What are we going to do about that?

161

00:10:21,000 --> 00:10:23,000

I've got a magnet with a string on it.

162

00:10:23,000 --> 00:10:27,000

I figure I'll attach it to the bottom and we'll hang the blasting cap from the top.

163

00:10:27,000 --> 00:10:32,000

The fruit is suspended according to the reference, 7 inches from the blasting cap.

164

00:10:32,000 --> 00:10:34,000

And the setup is complete.

165

00:10:36,000 --> 00:10:42,000

Will the blast wave leave the exterior surface intact and juice the interior cellular structure?

166

00:10:42,000 --> 00:10:46,000

Or is it just another far-fetched fake film?

167

00:10:47,000 --> 00:10:50,000

They're all set to take the plunge.

168

00:10:52,000 --> 00:10:53,000

You ready?

169

00:10:53,000 --> 00:10:54,000

I'm ready.

170

00:10:54,000 --> 00:10:58,000

Fire the hole! Fire the hole! Fire the hole!

171

00:11:03,000 --> 00:11:06,000

Ha ha ha ha! The whole thing jumped.

172

00:11:07,000 --> 00:11:09,000

That was awesome.

173

00:11:09,000 --> 00:11:10,000

One!

174

00:11:10,000 --> 00:11:14,000

Just how awesome is illustrated on the high-speed camera.

175

00:11:15,000 --> 00:11:18,000

Whoa, look at that beautiful bubble.

176

00:11:20,000 --> 00:11:21,000

Wow!

177

00:11:22,000 --> 00:11:26,000

We have this perfect 12-inch cavitation.

178

00:11:27,000 --> 00:11:32,000

As per the video, the tomato skin is intact, but has it been juiced?

179

00:11:33,000 --> 00:11:35,000

I've got some straws.

180

00:11:35,000 --> 00:11:38,000

Now, if the video is to be believed, I should get tomato juice out of this.

181

00:11:38,000 --> 00:11:41,000

Aaron, do you want to try it?

182

00:11:41,000 --> 00:11:42,000

Try it.

183

00:11:44,000 --> 00:11:47,000

Oh, oh, oh, what, what? Hey!

184

00:11:47,000 --> 00:11:50,000

You're kind of getting some juice there.

185

00:11:50,000 --> 00:11:53,000

Jamie manages to suck up a decent mouthful of juice.

186

00:11:53,000 --> 00:11:54,000

I did.

187

00:11:55,000 --> 00:12:00,000

And Adam, comparing it to an unexploded raw control with zero liquid uptake,

188

00:12:00,000 --> 00:12:03,000

thinks they may be onto something.

189

00:12:03,000 --> 00:12:05,000

This is so ludicrous.

190

00:12:05,000 --> 00:12:07,000

We just blew up a tomato. Now we're trying to have a drink.

191

00:12:07,000 --> 00:12:08,000

What is?

192

00:12:08,000 --> 00:12:09,000

No big.

193

00:12:09,000 --> 00:12:12,000

Question is, where to now?

194

00:12:12,000 --> 00:12:14,000

Okay, did you see what I see there?

195

00:12:14,000 --> 00:12:18,000

Yeah, exactly. Our tomato was just a little too far from the bubble.

196

00:12:18,000 --> 00:12:21,000

I'd say about two inches away, and we needed to be one inch away,

197

00:12:21,000 --> 00:12:24,000

like we see in the video. That is our next test.

198

00:12:25,000 --> 00:12:28,000

Coming up on this final season food spectacular,

199

00:12:28,000 --> 00:12:31,000

the fruit apocalypse continues.

200

00:12:32,000 --> 00:12:36,000

And cooking shrimp gets a mad max makeover.

201

00:12:36,000 --> 00:12:39,000

Eat shrimp and die, m****.

202

00:12:49,000 --> 00:12:51,000

Tenderizing meat.

203

00:12:51,000 --> 00:12:56,000

For more than a decade, the mythbusters have put kitchen catastrophes

204

00:12:56,000 --> 00:12:58,000

to the top of their heads.

205

00:12:58,000 --> 00:13:02,000

The fosters have put kitchen catastrophes to the test.

206

00:13:02,000 --> 00:13:04,000

You should never do this at home.

207

00:13:04,000 --> 00:13:06,000

To sign off their food fun and style,

208

00:13:06,000 --> 00:13:09,000

they're going out with a classic experimental bag.

209

00:13:14,000 --> 00:13:16,000

Here's what just happened.

210

00:13:16,000 --> 00:13:20,000

We detonated a blasting cap seven inches away from a tomato,

211

00:13:20,000 --> 00:13:25,000

and it seems we made a difference in how much juice we were able to get out of that tomato.

212

00:13:25,000 --> 00:13:28,000

Hey, you're kind of getting some juice there.

213

00:13:28,000 --> 00:13:30,000

I did.

214

00:13:32,000 --> 00:13:36,000

So we're going to do it again, except next time we're going to move the tomato a little bit closer.

215

00:13:36,000 --> 00:13:41,000

And there it is, exactly six inches, one inch closer than last time.

216

00:13:41,000 --> 00:13:45,000

Because that might get even more of a definitive result.

217

00:13:45,000 --> 00:13:47,000

Fire the hole!

218

00:13:50,000 --> 00:13:52,000

That doesn't get old.

219

00:13:52,000 --> 00:13:59,000

The skin once again survived a blast wave measuring more than 27,000 feet per second.

220

00:13:59,000 --> 00:14:06,000

And thanks to advances in camera tech, we can see the positioning perfectly matched the clip.

221

00:14:06,000 --> 00:14:09,000

We're not messing around when it comes to the high-speed footage.

222

00:14:09,000 --> 00:14:16,000

This camera is state-of-the-art, and it films at a maximum frame rate of 28,000 frames per second in HD.

223

00:14:18,000 --> 00:14:21,000

But what about the all-important taste test?

224

00:14:21,000 --> 00:14:24,000

That looks like a lot of juice.

225

00:14:27,000 --> 00:14:29,000

That was all most a mouthful.

226

00:14:29,000 --> 00:14:30,000

Really?

227

00:14:30,000 --> 00:14:31,000

Yeah.

228

00:14:31,000 --> 00:14:33,000

We're a lot farther along on this than I thought we would be.

229

00:14:33,000 --> 00:14:36,000

I thought this was that realm of almost total fantasy.

230

00:14:36,000 --> 00:14:40,000

I have to admit on this one you have to call me totally surprised.

231

00:14:40,000 --> 00:14:44,000

I was sure our explosive was going to rip apart the outside of our fruit.

232

00:14:44,000 --> 00:14:47,000

And even if it didn't, there was no way it was going to yield actual juice.

233

00:14:47,000 --> 00:14:51,000

Now we will compare the juice we get from the explosive to an industrial juicer later,

234

00:14:51,000 --> 00:14:55,000

but right now we are going to start looking for the sweet spot.

235

00:14:55,000 --> 00:14:57,000

Four and a half.

236

00:14:57,000 --> 00:14:58,000

There you go.

237

00:14:58,000 --> 00:14:59,000

Fire the hole!

238

00:14:59,000 --> 00:15:05,000

And that is how close we can get the explosive to the fruit before we start to destroy the skin.

239

00:15:05,000 --> 00:15:07,000

That's where we'll get maximum juice.

240

00:15:13,000 --> 00:15:15,000

This is our cooking show.

241

00:15:15,000 --> 00:15:17,000

Three, two, one!

242

00:15:18,000 --> 00:15:23,000

Yep, they want to get as close as they can without rupturing the tomato.

243

00:15:23,000 --> 00:15:25,000

Fruit is still intact.

244

00:15:25,000 --> 00:15:28,000

To get the highest juice yield possible.

245

00:15:29,000 --> 00:15:31,000

That looks amazing.

246

00:15:31,000 --> 00:15:34,000

He's getting juice out of it.

247

00:15:35,000 --> 00:15:37,000

It's the same story at three inches.

248

00:15:37,000 --> 00:15:38,000

One!

249

00:15:39,000 --> 00:15:40,000

Still there.

250

00:15:40,000 --> 00:15:43,000

I don't know that we've reached the outer skin.

251

00:15:43,000 --> 00:15:44,000

This is amazing.

252

00:15:44,000 --> 00:15:48,000

And even at 1.5 inches.

253

00:15:48,000 --> 00:15:53,000

And most importantly, Jamie seems to be getting more juice each time.

254

00:15:53,000 --> 00:15:55,000

Look at that, dude.

255

00:15:56,000 --> 00:15:58,000

That looks like the best one yet.

256

00:15:59,000 --> 00:16:03,000

When Jamie's people come and invade the earth, this is what they're going to do to our planet.

257

00:16:05,000 --> 00:16:07,000

I feel like a mosquito.

258

00:16:07,000 --> 00:16:10,000

Until half an inch proves too close for comfort.

259

00:16:10,000 --> 00:16:11,000

One!

260

00:16:15,000 --> 00:16:18,000

Yep, finally!

261

00:16:18,000 --> 00:16:23,000

We figured out how close you can get and actually herd a tomato.

262

00:16:23,000 --> 00:16:29,000

Before they quantify just how much juice they're detonating and deliberate on the result,

263

00:16:30,000 --> 00:16:33,000

it's back to the shrimp course.

264

00:16:33,000 --> 00:16:39,000

One of the great things about shooting the show in the Bay Area is that we have such a wonderful array of places to run our experiments at.

265

00:16:39,000 --> 00:16:48,000

This one in particular is going to be perfect for us to run an experiment that involves shrimp, guns, air cannons and fireballs.

266

00:16:51,000 --> 00:16:56,000

The engineering challenge they're facing to even test this viral video is as tough as it gets.

267

00:16:56,000 --> 00:17:01,000

A ballistic ballet of perfectly choreographed explosive ingredients.

268

00:17:01,000 --> 00:17:08,000

We have watched this video dozens of times and looked at every single shot of the rig.

269

00:17:08,000 --> 00:17:10,000

Oh, beauty.

270

00:17:10,000 --> 00:17:19,000

And we have measured as best we can the distances between each of the stations and replicated exactly the journey of the shrimp from gun to plate.

271

00:17:19,000 --> 00:17:21,000

I love color.

272

00:17:22,000 --> 00:17:27,000

With the system laid out according to the video reference, Jamie hooks up the power source.

273

00:17:27,000 --> 00:17:34,000

Given that this whole thing is driven by air, we don't want any leaks.

274

00:17:34,000 --> 00:17:37,000

While Jamie springs into action, unspringing any leaks,

275

00:17:37,000 --> 00:17:39,000

Lake number three,

276

00:17:39,000 --> 00:17:42,000

Adam attempts to avoid product placement.

277

00:17:42,000 --> 00:17:48,000

In the video, the target seems to be a pillow, a bubble.

278

00:17:48,000 --> 00:17:53,000

So, we're going to try to get a little bit of air in the tank.

279

00:17:53,000 --> 00:17:56,000

It seems to be a pillow, a bubble.

280

00:17:56,000 --> 00:17:59,000

So, am I allowed to say bubble?

281

00:17:59,000 --> 00:18:01,000

The world.

282

00:18:02,000 --> 00:18:08,000

In the video, the target seems to be a pillow of this bubble packaging stuff.

283

00:18:08,000 --> 00:18:10,000

You know what it's called.

284

00:18:10,000 --> 00:18:13,000

I'm going to make a pillow of the same stuff.

285

00:18:13,000 --> 00:18:16,000

With their trademark target taped into place.

286

00:18:16,000 --> 00:18:18,000

Time for shooting.

287

00:18:18,000 --> 00:18:21,000

And the firing squad peeled and prepped.

288

00:18:21,000 --> 00:18:27,000

They're all set to test the first cog in their multi-part machine, the shrimp cannon.

289

00:18:27,000 --> 00:18:35,000

After all of our prep work, what remains to be done is to fire shrimp from this gun and see, well, just how accurately it fires.

290

00:18:35,000 --> 00:18:37,000

Oh, look at those.

291

00:18:38,000 --> 00:18:42,000

This whole machine depends upon this shrimp firing accurately.

292

00:18:43,000 --> 00:18:45,000

The shrimp gun is locked and loaded.

293

00:18:45,000 --> 00:18:49,000

I for one think that there may be a little adjustment after the first time we fire it.

294

00:18:49,000 --> 00:18:50,000

Here we go.

295

00:18:50,000 --> 00:18:53,000

In, three, two, one.

296

00:18:56,000 --> 00:18:58,000

I got shrimp on my nose.

297

00:18:58,000 --> 00:19:00,000

What happened?

298

00:19:02,000 --> 00:19:08,000

The first test, well, my face got covered with shrimp guts.

299

00:19:10,000 --> 00:19:12,000

And that's the best I can say about that test.

300

00:19:12,000 --> 00:19:14,000

It was pretty much a total failure.

301

00:19:14,000 --> 00:19:20,000

But we're going to hold down the shrimp cartridge so it doesn't jump like it did last time.

302

00:19:20,000 --> 00:19:24,000

Okay, so I'm going to hold on to that and see if we can't get the shrimps to hit the target.

303

00:19:24,000 --> 00:19:26,000

Shrimp cannon test fire number two.

304

00:19:26,000 --> 00:19:28,000

That's the first test.

305

00:19:28,000 --> 00:19:30,000

Then the second one is to make sure they hit it consistently.

306

00:19:30,000 --> 00:19:33,000

In, three, two, one.

307

00:19:36,000 --> 00:19:39,000

We might have a problem on our hands.

308

00:19:39,000 --> 00:19:40,000

Shrimp, no.

309

00:19:44,000 --> 00:19:46,000

Nice.

310

00:19:46,000 --> 00:19:47,000

What?

311

00:19:47,000 --> 00:19:50,000

Shrimp, no. Let's go collect the shrimp.

312

00:19:51,000 --> 00:20:00,000

Right out of the gate, it's not looking too good for this story because we didn't even get to the target and our shrimp basically disintegrated.

313

00:20:00,000 --> 00:20:02,000

Oh, I graduated by its eyeball.

314

00:20:02,000 --> 00:20:05,000

There's a little bits everywhere.

315

00:20:05,000 --> 00:20:08,000

And we can't just add more pressure.

316

00:20:08,000 --> 00:20:10,000

It's just going to disintegrate them more.

317

00:20:10,000 --> 00:20:14,000

And that means that we've got to do something to doctor this a little bit.

318

00:20:14,000 --> 00:20:26,000

And what it would take is what is known as a sabote, which is behind the shrimp and takes the brunt of the force of the air blast, pushing the shrimp out of the cannon without destroying them.

319

00:20:26,000 --> 00:20:30,000

Things we turn out to get good at that will never be useful again.

320

00:20:32,000 --> 00:20:36,000

And then that sabote or wadding falls away before it reaches the target.

321

00:20:36,000 --> 00:20:40,000

Test number three, three, two, one.

322

00:20:41,000 --> 00:20:43,000

That was a little better.

323

00:20:43,000 --> 00:20:48,000

That was a lot better. All three of them hit the back target. And if I'm not incorrect, at the same time.

324

00:20:48,000 --> 00:20:55,000

The sabote was successful. The shrimp stayed intact. And with a small adjustment to the aim.

325

00:20:57,000 --> 00:21:00,000

Ah, that was perfect.

326

00:21:00,000 --> 00:21:03,000

That was perfect. I was going to say almost perfect, but that was perfect.

327

00:21:04,000 --> 00:21:06,000

The guys seem happy.

328

00:21:07,000 --> 00:21:09,000

Spank right into the pillow.

329

00:21:09,000 --> 00:21:11,000

Couldn't be better.

330

00:21:11,000 --> 00:21:15,000

That success means they can go again, this time to measure the flight time.

331

00:21:15,000 --> 00:21:21,000

For the record, the last one took 392 milliseconds to reach from the end of the barrel to the target.

332

00:21:21,000 --> 00:21:29,000

And with that, they're ready to coordinate the launch of the shrimp with each ingredient and the final fiery piece of the puzzle.

333

00:21:29,000 --> 00:21:33,000

Nice.

334

00:21:41,000 --> 00:21:43,000

That's the coolest toy ever.

335

00:21:52,000 --> 00:21:56,000

Welcome back. We have been attempting to cook a shrimp in midair.

336

00:21:57,000 --> 00:22:03,000

So far, we've got the shrimp flying consistently into a target. Spank right into the pillow.

337

00:22:03,000 --> 00:22:09,000

And now we need to set off each of those elements at precisely the right time.

338

00:22:11,000 --> 00:22:17,000

For that, we're going to be using these timers, which will allow us to tune everything the way we need it within milliseconds.

339

00:22:18,000 --> 00:22:22,000

That's the key to this complicated cooking method, the launch sequence.

340

00:22:22,000 --> 00:22:30,000

Each element has its own trigger, delayed depending on how fast that ingredient reaches its optimum spread.

341

00:22:30,000 --> 00:22:34,000

And they have to be wired together to fire and sink.

342

00:22:34,000 --> 00:22:40,000

I love these situations when we've set this stuff up like a house of cards.

343

00:22:40,000 --> 00:22:47,000

All we have to do is take off one of these and run it to our AC line.

344

00:22:47,000 --> 00:22:52,000

There's all these switches and solenoids and a bunch of other stuff.

345

00:22:52,000 --> 00:22:58,000

Activating all at once and it's almost too much to comprehend.

346

00:22:58,000 --> 00:23:04,000

I don't think you're right. You only have one. The switch only activates one of two legs.

347

00:23:04,000 --> 00:23:05,000

It's cool.

348

00:23:05,000 --> 00:23:08,000

The question is, will it work?

349

00:23:08,000 --> 00:23:10,000

Things are about to get messy.

350

00:23:10,000 --> 00:23:13,000

Cue a 500 degree fireball.

351

00:23:14,000 --> 00:23:16,000

Yes, this is what you've been waiting for!

352

00:23:17,000 --> 00:23:20,000

Like this, cooked shrimp might be next.

353

00:23:20,000 --> 00:23:24,000

I'm going to go out on a limb here and say this might be the weirdest machine we've built on the shelf.

354

00:23:24,000 --> 00:23:26,000

It's right up there.

355

00:23:29,000 --> 00:23:31,000

This one's for the money.

356

00:23:31,000 --> 00:23:33,000

I'm going to try cooking shrimp in midair.

357

00:23:34,000 --> 00:23:38,000

In, three, two, one!

358

00:23:43,000 --> 00:23:44,000

Dude!

359

00:23:44,000 --> 00:23:46,000

That was beautiful!

360

00:23:48,000 --> 00:23:51,000

Shrimp are leaving. It's going through the flower.

361

00:23:51,000 --> 00:23:52,000

Awesome!

362

00:23:54,000 --> 00:23:55,000

Go to the egg!

363

00:23:56,000 --> 00:23:58,000

And the red covers!

364

00:23:58,000 --> 00:24:00,000

Oh my God.

365

00:24:00,000 --> 00:24:01,000

And the fire!

366

00:24:06,000 --> 00:24:09,000

It worked! That is awesome!

367

00:24:10,000 --> 00:24:14,000

It's an astonishing ballet of edible ballistics.

368

00:24:14,000 --> 00:24:18,000

Each ingredient timed with millisecond accuracy.

369

00:24:18,000 --> 00:24:23,000

And if the video is to be believed, that means we have a plate full of cooked shrimp, right?

370

00:24:24,000 --> 00:24:26,000

Here's one here.

371

00:24:26,000 --> 00:24:28,000

He's not coated or cooked.

372

00:24:28,000 --> 00:24:29,000

Wrong.

373

00:24:29,000 --> 00:24:30,000

What?

374

00:24:31,000 --> 00:24:33,000

Our machine works beautifully.

375

00:24:33,000 --> 00:24:36,000

The shrimp is flying through clouds of flour, breadcrumbs, egg, and fire.

376

00:24:37,000 --> 00:24:39,000

But it's not getting coated. It's not getting covered.

377

00:24:39,000 --> 00:24:41,000

And it's definitely not getting cooked.

378

00:24:41,000 --> 00:24:45,000

This guy does have what appear to be some breadcrumbs on it, but...

379

00:24:45,000 --> 00:24:46,000

Like three?

380

00:24:46,000 --> 00:24:47,000

Yeah.

381

00:24:47,000 --> 00:24:49,000

Okay, so we need like hundreds more.

382

00:24:49,000 --> 00:24:53,000

After timing the flight of the shrimp with millisecond accuracy,

383

00:24:53,000 --> 00:24:56,000

it turns out time was never on their side.

384

00:24:56,000 --> 00:25:01,000

The problem is that if we slow the shrimp down long enough to allow these processes time to work,

385

00:25:01,000 --> 00:25:04,000

the shrimp are going to fall short of the target.

386

00:25:04,000 --> 00:25:08,000

We could make the clouds larger and shoot over a longer distance,

387

00:25:08,000 --> 00:25:13,000

but that would require more air pressure, which most likely is going to blow the shrimp apart.

388

00:25:13,000 --> 00:25:15,000

It's a classic catch-22.

389

00:25:15,000 --> 00:25:20,000

To coat the shrimp requires a much longer flak time, but that would destroy them.

390

00:25:20,000 --> 00:25:24,000

So that part of the video was clearly faked.

391

00:25:25,000 --> 00:25:27,000

And then there's the fire.

392

00:25:27,000 --> 00:25:30,000

For the same reason that flicking your hand through a candle flame doesn't burn you,

393

00:25:30,000 --> 00:25:34,000

the shrimp just doesn't spend enough time in the fire to get cooked.

394

00:25:34,000 --> 00:25:38,000

And we can't, for all the reasons Jamie just stated, let it spend more time in the fire,

395

00:25:38,000 --> 00:25:41,000

but we can make the fire hotter.

396

00:25:43,000 --> 00:25:47,000

This is a five-burner sword forge running propane.

397

00:25:47,000 --> 00:25:50,000

It runs about four times as hot as our flame bar.

398

00:25:50,000 --> 00:25:52,000

2,000 degrees.

399

00:25:52,000 --> 00:25:55,000

And because it's a sword forge, it's open on either end.

400

00:25:55,000 --> 00:25:59,000

That means we're going to shoot our shrimp right through the middle of this baby.

401

00:25:59,000 --> 00:26:03,000

If that doesn't cook our shrimp in midair, I don't know what would.

402

00:26:04,000 --> 00:26:08,000

Before the shrimp fly through the forge, go!

403

00:26:09,000 --> 00:26:16,000

Jamie and Adam are facing the far-fetched fact that fruit could be juiced using an explosion.

404

00:26:18,000 --> 00:26:21,000

Alright, once we figured out that we had the right explosive,

405

00:26:21,000 --> 00:26:25,000

that putting it seven inches away from our tomato did not destroy it and gave us juice,

406

00:26:25,000 --> 00:26:28,000

then we figured out that putting it ever closer still didn't destroy the tomato,

407

00:26:28,000 --> 00:26:30,000

but got us more juice each time.

408

00:26:30,000 --> 00:26:35,000

The question was, how close can you get to get the maximum amount of juice without destroying the tomato?

409

00:26:35,000 --> 00:26:38,000

And that distance turns out to be one and a half inches.

410

00:26:40,000 --> 00:26:44,000

But now it's time to figure out exactly how much juice we can get out of that to actually quantify it.

411

00:26:45,000 --> 00:26:52,000

How? Well, earlier back at the shop, we quantified the amount of juice that we got from a tomato using an industrial juicer.

412

00:26:52,000 --> 00:26:59,000

And it was 62%. That means I got 62% of the weight of the tomato out in delicious tomato juice.

413

00:26:59,000 --> 00:27:06,000

Now we're going to compare that to what we get from a tomato detonated at our sweet spot of one and a half inches.

414

00:27:09,000 --> 00:27:10,000

Alright, so here's how this is going to work.

415

00:27:10,000 --> 00:27:14,000

I've got a vacuum pump, a containment vessel, and a straw at the end of a tube.

416

00:27:14,000 --> 00:27:19,000

The vacuum pump will pull air out of this, which will then come through this straw.

417

00:27:19,000 --> 00:27:23,000

We stick the straw into the tomato and it acts just like Jamie's mouth, sucking the tomato juice out.

418

00:27:26,000 --> 00:27:28,000

Oh. That's vigorous.

419

00:27:29,000 --> 00:27:32,000

That's actually pretty impressive, isn't it? Yeah.

420

00:27:34,000 --> 00:27:35,000

It's coming.

421

00:27:38,000 --> 00:27:41,000

Alright, alright, alright, alright. I think that's more than a human could get out.

422

00:27:41,000 --> 00:27:47,000

Which we then weigh in this cup and determine exactly what percentage of juice we got out by detonating a blasto cap near the tomato.

423

00:27:47,000 --> 00:27:53,000

60. This works out beautifully. 180 gram tomato, we got 60 grams of juice, that's exactly one third.

424

00:27:53,000 --> 00:28:00,000

That is 30% of the tomato in juice. That's half of what you get out of an industrial juicer, but that's a lot more than I thought we'd get.

425

00:28:00,000 --> 00:28:05,000

I actually believe that we are drifting dangerously into plausible territory here.

426

00:28:05,000 --> 00:28:09,000

In fact, after all this blasting, I'm not sure where we could go from here.

427

00:28:10,000 --> 00:28:17,000

Yes, using a precisely calibrated explosive charge, it's possible to juice the inside of a tomato.

428

00:28:17,000 --> 00:28:20,000

And there really is only one place to go from here.

429

00:28:21,000 --> 00:28:26,000

Impatented Mythbusters style is bigger, better.

430

00:28:26,000 --> 00:28:27,000

I think we need more explosives.

431

00:28:27,000 --> 00:28:46,000

Welcome back. All episode long, we've been attempting to replicate a viral video we found, which seems to show that a small amount of explosives can turn a tomato into a tomato juice dispenser.

432

00:28:46,000 --> 00:28:51,000

That is, that it can turn the inside of a tomato to liquid you can drink while not damaging the outside.

433

00:28:51,000 --> 00:28:56,000

And astonishingly, we seem to have determined that this is actually true.

434

00:28:58,000 --> 00:29:06,000

Now, of course, it's Mythbusters, so where a small amount of explosives seems to work pretty well, a large amount of explosives ought to work a lot better.

435

00:29:07,000 --> 00:29:12,000

This time around, we're going to be using 20 pounds of TNT. Nice.

436

00:29:14,000 --> 00:29:19,000

It's nice and peaceful out here. At least right now it is.

437

00:29:20,000 --> 00:29:23,000

And that's going to create a much larger and more powerful pressure weight.

438

00:29:23,000 --> 00:29:28,000

So in theory, that should do a better job of creating more juice.

439

00:29:29,000 --> 00:29:38,000

The blasting cap yield was 30%. To attempt to maximize the juice, they're scaling up the explosion energy by a factor of 10,000.

440

00:29:38,000 --> 00:29:50,000

All right, let's double check our supplies. We've got mesh bags, check oranges, check cucumbers, check tomatoes, wrapped, check pineapples, check 20 pounds of TNT.

441

00:29:52,000 --> 00:29:53,000

Let's make some fruit juice.

442

00:29:54,000 --> 00:30:02,000

While Adam and Jamie know a tomato works, the video also shows a variety of fruit and veg being satisfactorily slurred.

443

00:30:03,000 --> 00:30:09,000

So to find out if this juicing technique really is that flexible, they're covering their bases.

444

00:30:10,000 --> 00:30:12,000

Let's start attaching them to the buoys.

445

00:30:13,000 --> 00:30:23,000

Finally, without knowing the ideal distance for this sized explosion, each bag is placed under the surface at staggered intervals.

446

00:30:24,000 --> 00:30:25,000

There's the 10.

447

00:30:25,000 --> 00:30:35,000

The blasting cap is an explosive energy of 3,640 joules, 20 pounds of TNT as 37 megajoules.

448

00:30:36,000 --> 00:30:41,000

Will the larger amplitude blast wave be more effective? We're about to find out.

449

00:30:42,000 --> 00:30:43,000

Does it look beautiful?

450

00:30:43,000 --> 00:30:44,000

Yeah, it's perfect.

451

00:30:45,000 --> 00:30:50,000

All right, Captain, back to shore. Let me explain our methodology, although I think it's pretty straightforward.

452

00:30:50,000 --> 00:30:55,000

Three orange buoys at the end of that line. We're going to hang 20 pounds of explosives 10 feet down.

453

00:30:56,000 --> 00:30:59,000

At each of the numbered markers is hanging a bag of fruit about 5 feet down.

454

00:31:02,000 --> 00:31:05,000

Okay, large scale fruit smoothie.

455

00:31:06,000 --> 00:31:07,000

We're going to set off those explosives.

456

00:31:08,000 --> 00:31:10,000

In three.

457

00:31:11,000 --> 00:31:12,000

Retrieve what fruit we can.

458

00:31:13,000 --> 00:31:14,000

Two.

459

00:31:14,000 --> 00:31:17,000

And find out how juicy the explosives made it.

460

00:31:20,000 --> 00:31:21,000

One.

461

00:31:26,000 --> 00:31:27,000

Uh-oh.

462

00:31:29,000 --> 00:31:30,000

Yeah.

463

00:31:30,000 --> 00:31:33,000

That was a little more energetic than I thought.

464

00:31:35,000 --> 00:31:40,000

More energetic at 8,000 frames per second. It's also beautiful.

465

00:31:41,000 --> 00:31:45,000

You can see the original impulse of the explosive starting to expand.

466

00:31:45,000 --> 00:31:51,000

And then you can see a set of different speed shock waves emanating out from that center.

467

00:31:52,000 --> 00:31:56,000

Then you can also see some of the reflected waves, which are bouncing off the bottom of the lake.

468

00:31:57,000 --> 00:32:02,000

Also interrupting and creating secondary artifacts around the primary shock wave.

469

00:32:03,000 --> 00:32:06,000

This is one of the loveliest shots of an explosion I think that we have ever got.

470

00:32:16,000 --> 00:32:19,000

Extraordinary footage.

471

00:32:20,000 --> 00:32:21,000

That's 40.

472

00:32:22,000 --> 00:32:23,000

But did they get any juice?

473

00:32:24,000 --> 00:32:25,000

That's 30.

474

00:32:26,000 --> 00:32:28,000

This is actually pretty darn cool.

475

00:32:29,000 --> 00:32:33,000

We were afraid when we first saw the explosion go off that we'd lost like most of our fruit.

476

00:32:34,000 --> 00:32:38,000

But it turns out it seems that we have lost our 2, 5 and 10 foot bags,

477

00:32:39,000 --> 00:32:41,000

which we kind of expected because they're so close to the explosion.

478

00:32:42,000 --> 00:32:43,000

We got them from 15.

479

00:32:43,000 --> 00:32:44,000

Awesome.

480

00:32:45,000 --> 00:32:48,000

But we have 15, 20, 25, 30 and 40.

481

00:32:49,000 --> 00:32:53,000

Now it's time to inspect and see just how juicy our bouquets of fruit and vegetables are.

482

00:32:54,000 --> 00:32:56,000

The initial signs, oh man, are not great.

483

00:32:57,000 --> 00:33:01,000

Okay, I'm just going to go on a limb and say cucumbers do not like explosives.

484

00:33:02,000 --> 00:33:06,000

Searching through the debris, many of the victims are ruptured, but luckily not all.

485

00:33:07,000 --> 00:33:08,000

This one's been compromised.

486

00:33:09,000 --> 00:33:10,000

There is evidence of tenderization.

487

00:33:10,000 --> 00:33:11,000

It's definitely softer.

488

00:33:12,000 --> 00:33:13,000

At 40 feet?

489

00:33:15,000 --> 00:33:18,000

No, so I'd say that orange is not a fruit juice dispenser.

490

00:33:19,000 --> 00:33:20,000

30.

491

00:33:21,000 --> 00:33:22,000

Nope.

492

00:33:23,000 --> 00:33:24,000

Nope.

493

00:33:25,000 --> 00:33:26,000

25 and 20.

494

00:33:27,000 --> 00:33:28,000

Tomatoes, that one's dead.

495

00:33:29,000 --> 00:33:33,000

The kind of carnage that can only be yielded by the episode of McBusters.

496

00:33:34,000 --> 00:33:39,000

But by the time all survivors have been examined, the results are definitive.

497

00:33:40,000 --> 00:33:41,000

Well, the same thing as before.

498

00:33:42,000 --> 00:33:43,000

Not juice.

499

00:33:44,000 --> 00:33:45,000

Tender.

500

00:33:46,000 --> 00:33:49,000

So, seems like bigger is not better in this case, huh?

501

00:33:50,000 --> 00:33:54,000

No, no, we found at least one thing for which more explosives do not get the better results.

502

00:33:58,000 --> 00:33:59,000

But why didn't it scale up?

503

00:34:00,000 --> 00:34:01,000

Whoa!

504

00:34:02,000 --> 00:34:05,000

We know that blast pressures can bounce off of surfaces.

505

00:34:06,000 --> 00:34:07,000

They can reflect.

506

00:34:07,000 --> 00:34:15,000

And so that small container caused the blast pressure to go back and forth and back and forth through the fruit a bunch of times,

507

00:34:16,000 --> 00:34:18,000

each time breaking the cell walls a little bit more.

508

00:34:19,000 --> 00:34:24,000

So that may actually have been the ideal situation, even though the amount of explosive was very small.

509

00:34:25,000 --> 00:34:30,000

If you remember, we started out with a viral video that seemed to imply that with a little boom in a box,

510

00:34:31,000 --> 00:34:34,000

you could generate sweet juice out of something like a tomato.

511

00:34:35,000 --> 00:34:40,000

In that scale, we actually succeeded in getting some lovely gulps of juice out of a tomato.

512

00:34:41,000 --> 00:34:46,000

Now, it didn't work when we scaled it up, but I have to say, given how well it worked in the scale that the video shows,

513

00:34:47,000 --> 00:34:49,000

I think that we're going to have to call this one plausible.

514

00:35:00,000 --> 00:35:01,000

Coming up.

515

00:35:02,000 --> 00:35:03,000

Welcome to Jamie's Temporar Kitchen.

516

00:35:04,000 --> 00:35:08,000

This season's spectacular signs off with a sword forge fried shrimp.

517

00:35:09,000 --> 00:35:10,000

Like some sort of jet engine.

518

00:35:15,000 --> 00:35:20,000

To celebrate the final season, this is the Mythbusters number crunching countdown.

519

00:35:23,000 --> 00:35:29,000

Over the last 14 years, the team has tested tasty beverages and crazy explosive cuisine

520

00:35:30,000 --> 00:35:34,000

in a gut-busting, calorie-counting 71 story.

521

00:35:37,000 --> 00:35:44,000

Their Epicurean curiosity has guzzled 240 gallons of cola and 14 kegs of beer.

522

00:35:46,000 --> 00:35:47,000

It's a delicious memory.

523

00:35:48,000 --> 00:35:52,000

Behind and for the camera, they've devoured 1,500 donuts.

524

00:35:53,000 --> 00:35:56,000

On seven occasions, they've raised the stakes with exploding steak.

525

00:35:57,000 --> 00:35:58,000

Maddie, tasty meat.

526

00:35:59,000 --> 00:36:04,000

Lath 5 Salamis and imbibed alcohol for science 23 times.

527

00:36:07,000 --> 00:36:08,000

Cheers.

528

00:36:16,000 --> 00:36:17,000

What?

529

00:36:18,000 --> 00:36:22,000

We've been trying to cook shrimp in mid-air and so far we've got buckets.

530

00:36:22,000 --> 00:36:28,000

We were able to exactly replicate the process as we saw in that video.

531

00:36:29,000 --> 00:36:33,000

But the problem is we weren't able to replicate any of the results.

532

00:36:34,000 --> 00:36:40,000

And when you think about it, it's not really surprising because all of these activities are occurring in the course of milliseconds.

533

00:36:41,000 --> 00:36:45,000

So there's not really any time for coding or cooking anything.

534

00:36:46,000 --> 00:36:50,000

We have no choice therefore, but to conclude that those results were faked.

535

00:36:50,000 --> 00:36:52,000

Of course, we're not done yet.

536

00:36:54,000 --> 00:36:57,000

Yep, in this final season food challenge.

537

00:36:58,000 --> 00:36:59,000

Yeah, I like it further away.

538

00:37:00,000 --> 00:37:01,000

Me too.

539

00:37:02,000 --> 00:37:03,000

They have to exhaust all reasonable possibilities.

540

00:37:04,000 --> 00:37:09,000

With the ingredient clouds busted as a possibility, it boils down to heat.

541

00:37:11,000 --> 00:37:12,000

It's going to get hot in here.

542

00:37:13,000 --> 00:37:14,000

A sword forage.

543

00:37:15,000 --> 00:37:16,000

Welcome to Jamie's Temporar Kitchen.

544

00:37:17,000 --> 00:37:19,000

Versus a single pre-prepared shrimp.

545

00:37:21,000 --> 00:37:24,000

I'm a student of shrimp.

546

00:37:25,000 --> 00:37:30,000

Science is often about refining questions and removing variables and we have done both of those here.

547

00:37:31,000 --> 00:37:32,000

I'll turn on the gas.

548

00:37:41,000 --> 00:37:43,000

Shrimp, gun, furnace.

549

00:37:44,000 --> 00:37:45,000

It's going to take a few minutes to get hot.

550

00:37:46,000 --> 00:37:49,000

Hopefully cook shrimp on the other side. We are soon to find out.

551

00:37:51,000 --> 00:37:53,000

I'm getting about 2100 degrees.

552

00:37:54,000 --> 00:37:57,000

That's five times hotter than we were getting in our fireball.

553

00:37:58,000 --> 00:38:05,000

750,000 British thermal units of heat energy are generated by this propane powered forge.

554

00:38:06,000 --> 00:38:07,000

It's like some sort of jet engine.

555

00:38:08,000 --> 00:38:13,000

Each of those BTUs can raise the temperature of one pound of water by one degree Fahrenheit.

556

00:38:14,000 --> 00:38:15,000

Woo hoo hoo hoo.

557

00:38:16,000 --> 00:38:17,000

Dude, that is one hot oven. Here we go.

558

00:38:17,000 --> 00:38:22,000

But is there enough time for that energy to cook the pre-prep shrimp?

559

00:38:23,000 --> 00:38:24,000

I'm feeling good about this.

560

00:38:25,000 --> 00:38:27,000

Here we go, fire and shrimp through a forge.

561

00:38:28,000 --> 00:38:31,000

And three, two, one, go.

562

00:38:35,000 --> 00:38:37,000

The shrimp fired through the forge accurately.

563

00:38:40,000 --> 00:38:42,000

But did it fry?

564

00:38:43,000 --> 00:38:45,000

Does it seem at all cooked to you?

565

00:38:46,000 --> 00:38:48,000

Are the breadcrumbs crispy at all?

566

00:38:49,000 --> 00:38:50,000

No.

567

00:38:55,000 --> 00:38:58,000

We upped our fire game significantly in this last experiment.

568

00:38:59,000 --> 00:39:01,000

Where formerly we had a fireball that was about as hot as a consumer oven.

569

00:39:02,000 --> 00:39:03,000

500 degrees.

570

00:39:04,000 --> 00:39:06,000

This forge was 2000 degrees.

571

00:39:07,000 --> 00:39:11,000

We fired the shrimp through it and we ended up with a room temperature shrimp.

572

00:39:12,000 --> 00:39:14,000

And I can feel this is cold.

573

00:39:15,000 --> 00:39:17,000

It's cold. Oh, right. 67 degrees.

574

00:39:18,000 --> 00:39:19,000

Yeah, room temperature.

575

00:39:20,000 --> 00:39:21,000

Room temperature. That's not a cooked shrimp.

576

00:39:22,000 --> 00:39:24,000

Despite frying several times.

577

00:39:25,000 --> 00:39:26,000

It hit the plate.

578

00:39:27,000 --> 00:39:29,000

The flying shrimp shows no sign of warming to the occasion.

579

00:39:30,000 --> 00:39:31,000

Dun dun dun. Stop right there.

580

00:39:32,000 --> 00:39:34,000

66 degrees.

581

00:39:35,000 --> 00:39:38,000

Most people would give up at this point, but come on, we're not most people.

582

00:39:39,000 --> 00:39:40,000

We're going to continue.

583

00:39:40,000 --> 00:39:43,000

How about instead of three feet of sword forge, 12 feet of sword forge?

584

00:39:44,000 --> 00:39:46,000

Yeah, evil laugh.

585

00:39:47,000 --> 00:39:49,000

We're going to set this up and try it again.

586

00:39:50,000 --> 00:39:56,000

Using all of their 14 years of experience, this is the very cutting edge of ramping it up.

587

00:39:57,000 --> 00:40:01,000

For reference, a typical kitchen burner is putting out 10 to 15,000 BTUs.

588

00:40:03,000 --> 00:40:07,000

This setup right here, 3 million BTUs.

589

00:40:07,000 --> 00:40:11,000

All in case in one long square tube, that's pretty extreme heat.

590

00:40:12,000 --> 00:40:14,000

You ready to fire it up? Let's do it.

591

00:40:15,000 --> 00:40:16,000

This is it.

592

00:40:17,000 --> 00:40:19,000

It's looking pretty good.

593

00:40:20,000 --> 00:40:22,000

One final fry on the fly try.

594

00:40:24,000 --> 00:40:25,000

Whoa!

595

00:40:26,000 --> 00:40:27,000

One last chance.

596

00:40:28,000 --> 00:40:29,000

I'm going to love this shrimp. Okay.

597

00:40:30,000 --> 00:40:31,000

To cook a cannon fired shrimp.

598

00:40:32,000 --> 00:40:34,000

Man, I've never seen anything like that before.

599

00:40:34,000 --> 00:40:37,000

No, no, no. This is an insane thing.

600

00:40:44,000 --> 00:40:49,000

We have 12 feet of sword forge putting out 3 million BTUs of heat.

601

00:40:50,000 --> 00:40:53,000

If this doesn't cook it, nothing will. Nothing.

602

00:40:54,000 --> 00:40:56,000

Okay, maybe something, but not something we can build here.

603

00:40:57,000 --> 00:40:58,000

Are you ready?

604

00:40:59,000 --> 00:41:00,000

Ready to fire.

605

00:41:01,000 --> 00:41:02,000

Fire your shrimp in midair.

606

00:41:02,000 --> 00:41:09,000

3, 2, 1, fire.

607

00:41:12,000 --> 00:41:13,000

It made it through.

608

00:41:14,000 --> 00:41:17,000

Ha ha! You hit the plate. Fire.

609

00:41:19,000 --> 00:41:23,000

The shrimp flew successfully through all four sword fortresses.

610

00:41:25,000 --> 00:41:26,000

Okay, here we go.

611

00:41:27,000 --> 00:41:29,000

And hit the target, ready to be served up and eaten. Right?

612

00:41:29,000 --> 00:41:33,000

Still raw. That is still a raw shrimp.

613

00:41:34,000 --> 00:41:37,000

That is not cooked. The breading has not been set.

614

00:41:38,000 --> 00:41:39,000

It's room temperature.

615

00:41:40,000 --> 00:41:41,000

Well, there you go.

616

00:41:42,000 --> 00:41:44,000

There you go. No shrimp for you tonight.

617

00:41:46,000 --> 00:41:47,000

Well, you can't fault us for not trying.

618

00:41:48,000 --> 00:41:53,000

You can have all the heat you want, but if there's not enough time, you're not cooking.

619

00:41:53,000 --> 00:42:03,000

Looking at it from a physics perspective, the limiting factor is not the amount of heat or even necessarily how long the meat is exposed to the heat.

620

00:42:04,000 --> 00:42:11,000

It's how fast the heat can move through the meat. You can't cook a shrimp until you've got the outside hot and the inside not raw.

621

00:42:12,000 --> 00:42:17,000

This was just not enough time. This was on the order of milliseconds and you need at least a couple of minutes.

622

00:42:18,000 --> 00:42:22,000

No, I'm not eating this at the end of this take. It's disgusting.

623

00:42:23,000 --> 00:42:25,000

I'm not eating this at the end of this take.