

1

00:00:00,000 --> 00:00:06,000

On this episode of MythBusters...

2

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

Let's do some science!

3

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

Adam and Jamie toss a ton of toast...

4

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

Bombs away!

5

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

...to see which way it really falls.

6

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

Buttered side down again.

7

00:00:16,000 --> 00:00:21,000

Making people yawn isn't the MythBusters way, but is it really contagious?

8

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

I was yawning all day!

9

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

And it's David against Goliath...

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

As a toy car goes head to head with the real thing...

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

The anticipation is killing me!

12

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

Who are the MythBusters?

13

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

Am I missing an eyebrow?

14

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

Adam Savage

15

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

I reject your reality and substitute my own.

16

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

And Jamie Heineman

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

Quack, damn you!

18

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

I wouldn't say Jamie's an evil genius.

19

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

Between them more than 30 years special effects experience...

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

When will the fun ever stop?

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

They don't just tell the Myths...

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

They put them to the test.

23

00:01:05,000 --> 00:01:08,000

Introducing the 1970 Johnny Lightning Challengers.

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00:01:08,000 --> 00:01:13,000

First off the grid, a Myth that's almost as old as toy cars themselves.

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00:01:13,000 --> 00:01:19,000

Brace any other cars against the new Johnny Lightning Challengers and see for yourself.

26

00:01:20,000 --> 00:01:24,000

That's an invitation that the MythBusters just can't refuse.

27

00:01:24,000 --> 00:01:28,000

So strap yourself in for a classic schoolyard myth.

28

00:01:28,000 --> 00:01:33,000

I gotta say, Carrie, I am really really jealous that you guys get to do the legwork on this next myth.

29

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

It sounds like a lot of fun.

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00:01:35,000 --> 00:01:37,000

I'm really excited about this one.

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00:01:37,000 --> 00:01:40,000

The myth is that a toy car can go faster than a real car.

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00:01:40,000 --> 00:01:41,000

That's coasting, right?

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00:01:41,000 --> 00:01:46,000

Yeah, under just the acceleration of gravity, a toy car going down a quarter mile track...

34

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

Against a race car, the toy car's gonna win.

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00:01:48,000 --> 00:01:52,000

I would imagine the toy car is definitely gonna go faster for the first 100-200 feet.

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00:01:52,000 --> 00:01:58,000

It's going to reach its maximum speed in a very short period of time.

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00:01:58,000 --> 00:02:03,000

The larger car is gonna take longer, but is it gonna go faster?

38

00:02:03,000 --> 00:02:07,000

I don't know. I mean, to be honest, I really don't have a guess on this one.

39

00:02:08,000 --> 00:02:11,000

These are the fastest cars around!

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00:02:11,000 --> 00:02:17,000

To find out, they'll need to know how fast a toy car can go before its wheels fail.

41

00:02:17,000 --> 00:02:25,000

They'll also need to know how fast one will go before wind resistance becomes too great and flips the car off the track.

42

00:02:27,000 --> 00:02:32,000

Our resident gas heads are in pole position to get this myth revved up.

43

00:02:32,000 --> 00:02:38,000

I love toy cars. I got my very very first kiss over one of these toy cars, and then he punched me.

44

00:02:38,000 --> 00:02:45,000

First, they need a rig to test toy car wheels to destruction at up to 80 miles per hour.

45

00:02:45,000 --> 00:02:55,000

What we're gonna do is put the wheels, or the actual car, on the belt sander and run it at that speed to see how fast we can go before the wheels break.

46

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

What a mechanic I am.

47

00:03:05,000 --> 00:03:07,000

How's it working? Nice!

48

00:03:07,000 --> 00:03:14,000

It looks like the build team are off to a flying start, but when they calculate the speed of the belt sander using a tachometer...

49

00:03:15,000 --> 00:03:17,000

It's saying 550 RPM.

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00:03:19,000 --> 00:03:21,000

That's going 43 miles an hour.

51

00:03:22,000 --> 00:03:23,000

That's it?

52

00:03:23,000 --> 00:03:24,000

Not fast enough.

53

00:03:24,000 --> 00:03:31,000

Why don't we rig up something else? We could do something with a grinder. That's 30,000 RPM.

54

00:03:31,000 --> 00:03:34,000

Why don't we just jack up a car?

55

00:03:34,000 --> 00:03:41,000

Jack up a car, attach the wheels to the actual car wheel, and then just floor it.

56

00:03:42,000 --> 00:03:44,000

Brilliant and potentially deadly.

57

00:03:44,000 --> 00:03:47,000

So, a perfect mythbusters rig.

58

00:03:47,000 --> 00:03:53,000

The car is jammed up against the wall in case it falls off the jack while the wheels are at high

speed.

59

00:03:53,000 --> 00:03:59,000

Yeah, and with the angle that we've got the fork set, it's not gonna slip forward, it's gonna slip back, if anything.

60

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

They tape up the treads to create a smooth test track.

61

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

Then position Scotty's rig with a C-stand.

62

00:04:06,000 --> 00:04:07,000

Do you see the way it's sitting?

63

00:04:07,000 --> 00:04:08,000

Yeah, it seems fine to me.

64

00:04:08,000 --> 00:04:09,000

It seems fine to me.

65

00:04:09,000 --> 00:04:11,000

It's alright, not too much pressure on the wheel.

66

00:04:14,000 --> 00:04:15,000

There we go.

67

00:04:15,000 --> 00:04:16,000

15.

68

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

25.

69

00:04:19,000 --> 00:04:24,000

If the toy wheels stay on the wagon, there could be mileage in this myth.

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

30.

71

00:04:25,000 --> 00:04:28,000

There went one wheel. What was that mile per hour?

72

00:04:28,000 --> 00:04:29,000

35.

73

00:04:29,000 --> 00:04:31,000

Well, they're not rated for much, are they?

74

00:04:31,000 --> 00:04:37,000

35 miles per hour might be disappointing, but Jamie's not convinced about the rig.

75

00:04:37,000 --> 00:04:42,000

I think it's about the weight, and I don't like this setup because we've got this C-stand on here.

76

00:04:42,000 --> 00:04:43,000

Okay.

77

00:04:43,000 --> 00:04:49,000

I'd like to try one and just hold on to it because I can make it a feather weight, which is all it

should be.

78

00:04:49,000 --> 00:04:50,000

Okay.

79

00:04:50,000 --> 00:04:55,000

Rather than risk Jamie's hands on approach, they decide to modify the rig.

80

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

What we've been having as a problem, our first rig, is putting too much pressure on the wheels.

81

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

So what we did is we changed it up a little bit.

82

00:05:02,000 --> 00:05:07,000

We're just having a car held in place. No pressure on top, but it's just resting on the tire.

83

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

And this way it'll give us a more accurate result of what a car would actually be doing.

84

00:05:12,000 --> 00:05:14,000

Okay, Scotty, start her up.

85

00:05:16,000 --> 00:05:21,000

With a wooden shoe holding the toy car in place, Scotty steps on the gas.

86

00:05:21,000 --> 00:05:23,000

45.

87

00:05:23,000 --> 00:05:25,000

50.

88

00:05:25,000 --> 00:05:26,000

Wow, look at that.

89

00:05:26,000 --> 00:05:28,000

65.

90

00:05:28,000 --> 00:05:30,000

70.

91

00:05:31,000 --> 00:05:32,000

85.

92

00:05:32,000 --> 00:05:34,000

It's out of its shoe.

93

00:05:34,000 --> 00:05:36,000

That's pretty cool.

94

00:05:36,000 --> 00:05:37,000

It held in there.

95

00:05:37,000 --> 00:05:38,000

Yeah.

96

00:05:38,000 --> 00:05:40,000

I can't see anywhere on them.

97

00:05:40,000 --> 00:05:42,000

They look fine.

98

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

But over about a quarter mile, you think they'd hold up?

99

00:05:44,000 --> 00:05:46,000

They look like they're going to be fine.

100

00:05:46,000 --> 00:05:48,000

It's all systems go.

101

00:05:48,000 --> 00:05:54,000

We know that the little wheels are actually achieving the speed that the big car is achieving,

102

00:05:54,000 --> 00:05:58,000

and it's good enough for me to want to pursue the project more

103

00:05:58,000 --> 00:06:01,000

and see what they'll actually do in a real condition.

104

00:06:01,000 --> 00:06:03,000

I think the myth is looking pretty good.

105

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

I know these cars can pick up some good speed going downhill,

106

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

and if the tires are willing to hold up,

107

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

pretty much the wind resistance is the only factor that might slow it down.

108

00:06:17,000 --> 00:06:20,000

For experiment number two, the build team needs a wind tunnel,

109

00:06:20,000 --> 00:06:24,000

and they turn to a tried and tested mythbusters method.

110

00:06:24,000 --> 00:06:28,000

This is a nifty little rig based on Adam's penny drop rig.

111

00:06:28,000 --> 00:06:32,000

We're basically trying to find the maximum velocity of our little toy cars

112

00:06:32,000 --> 00:06:39,000

to see under perfect conditions at what point the wind is just going to not allow these cars to accelerate any further.

113

00:06:39,000 --> 00:06:42,000

A leaf blower is hooked up to Janie's homemade variac,

114

00:06:42,000 --> 00:06:46,000

which will allow them to adjust the wind speed inside the tube.

115

00:06:46,000 --> 00:06:47,000

34.

116

00:06:47,000 --> 00:06:53,000

A meter will register the maximum wind speed each toy car can endure before it flips out.

117

00:06:53,000 --> 00:06:55,000

Ready to plug in?

118

00:06:55,000 --> 00:06:56,000

Ready to plug in.

119

00:06:59,000 --> 00:07:00,000

Duster!

120

00:07:03,000 --> 00:07:04,000

Next to my set!

121

00:07:08,000 --> 00:07:09,000

This is really fennec-y.

122

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

It looks easy on paper.

123

00:07:11,000 --> 00:07:12,000

That's it!

124

00:07:13,000 --> 00:07:14,000

Right there!

125

00:07:14,000 --> 00:07:15,000

73!

126

00:07:16,000 --> 00:07:17,000

76.2!

127

00:07:18,000 --> 00:07:19,000

70!

128

00:07:19,000 --> 00:07:22,000

We're balancing at 74.9!

129

00:07:22,000 --> 00:07:26,000

The wind tunnel experiment backs up the wheel test results,

130

00:07:26,000 --> 00:07:31,000

suggesting toy cars can achieve speeds of over 70 miles per hour.

131

00:07:31,000 --> 00:07:36,000

The myth that a toy car can lick a real car is shaping up nicely,

132

00:07:36,000 --> 00:07:38,000

in the lab at least.

133

00:07:40,000 --> 00:07:42,000

The mythbusters lab tests are complete,

134

00:07:42,000 --> 00:07:45,000

so it's time to shift things up a gear.

135

00:07:46,000 --> 00:07:49,000

Carrie, I think those lab results you guys came up with on the car is really impressive.

136

00:07:49,000 --> 00:07:54,000

I mean, it really seems at this point that a toy car might be a contender against a real car.

137

00:07:54,000 --> 00:07:56,000

We don't know how it's going to do on the actual day,

138

00:07:56,000 --> 00:08:00,000

but under perfect lab conditions, we've got up to 70 miles an hour on our wind tunnel.

139

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

Well, they do seem like they go pretty fast, but I think we can do better.

140

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

I think we should each build our own car that we think could be the fastest.

141

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

We can use any material, each of us gets a shot at making the fastest car.

142

00:08:13,000 --> 00:08:17,000

Scotty and Carrie kick things off by customizing production models,

143

00:08:17,000 --> 00:08:21,000

and come up with Hot Pink and Gecko.

144

00:08:21,000 --> 00:08:23,000

Mine's the prettiest.

145

00:08:23,000 --> 00:08:29,000

Jamie's up next, and as his business includes building toy prototypes, he's on Familiar Grand.

146

00:08:29,000 --> 00:08:32,000

It actually hasn't been that long since I've played with toy cars.

147

00:08:32,000 --> 00:08:36,000

In fact, with what I do for a living, I do it all the time.

148

00:08:36,000 --> 00:08:41,000

So this is what Jamie calls work when he's not on Mythbusters.

149

00:08:41,000 --> 00:08:45,000

Aha! The van kicks butt, and I have no idea why.

150

00:08:45,000 --> 00:08:48,000

But in no time, his trained eye spots something.

151

00:08:48,000 --> 00:08:54,000

One thing that I've noticed about these two cars is that they have significantly different wheelbase widths.

152

00:08:54,000 --> 00:08:59,000

The van is wider and can't like bounce around from sidewall to sidewall.

153

00:08:59,000 --> 00:09:03,000

I think that that may be the key difference between all these little cars.

154

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

Jamie decides to build a car from scratch.

155

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

Well, it's a little tiny pizza cutter wheel.

156

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

So Adam rises to the challenge, and if there's ever a quick conclusion to be reached, he's your man.

157

00:09:16,000 --> 00:09:23,000

That's all I need to see. The van seems to go as fast as Scotty's supercar here.

158

00:09:23,000 --> 00:09:26,000

I've got an idea already in my head.

159

00:09:26,000 --> 00:09:30,000

I think I'm just going to go for my idea, see what I get.

160

00:09:30,000 --> 00:09:31,000

Hey, Gowan.

161

00:09:31,000 --> 00:09:32,000

Don't do that. How are you?

162

00:09:32,000 --> 00:09:33,000

All right.

163

00:09:34,000 --> 00:09:35,000

Making a little car?

164

00:09:37,000 --> 00:09:38,000

I am.

165

00:09:38,000 --> 00:09:41,000

End of conversation. Adam's design is top secret.

166

00:09:41,000 --> 00:09:44,000

That's going to be one of the tires.

167

00:09:46,000 --> 00:09:52,000

With just one afternoon to produce a winner, Jamie comes up with a sleek aluminum racer.

168

00:09:52,000 --> 00:09:55,000

While Adam's gone for chunky lead.

169

00:09:55,000 --> 00:09:58,000

I don't think it'll sell very well for some reason.

170

00:09:58,000 --> 00:10:02,000

It's newest kid things. It's brick car.

171

00:10:02,000 --> 00:10:06,000

It's faster than anything and uglier than everything too.

172

00:10:06,000 --> 00:10:10,000

And if you throw it at your brother really hard, it'll kill him.

173

00:10:12,000 --> 00:10:15,000

Yeah, I'm not going to win any design awards with this.

174

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

Shall we race?

175

00:10:16,000 --> 00:10:17,000

Yeah, whatever.

176

00:10:17,000 --> 00:10:20,000

Because whoever wins this race is better.

177

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

Ready?

178

00:10:22,000 --> 00:10:23,000

Go.

179

00:10:26,000 --> 00:10:30,000

Adam's first over the line, even though he's come off the track.

180

00:10:30,000 --> 00:10:33,000

Well, I feel like I'm onto something.

181

00:10:33,000 --> 00:10:38,000

Ignoring his spill, he adds a few finishing touches and calls it a day.

182

00:10:38,000 --> 00:10:40,000

It looks like it was built for one thing.

183

00:10:40,000 --> 00:10:43,000

It was built for super speed.

184

00:10:44,000 --> 00:10:47,000

I think it looks like it's built for killing children.

185

00:10:48,000 --> 00:10:50,000

And what's all this crap on the back of it?

186

00:10:50,000 --> 00:10:52,000

That's the rocket engine, man.

187

00:10:52,000 --> 00:10:57,000

That's the solid rocket fuel boost dirt thing.

188

00:10:57,000 --> 00:11:03,000

While the boy racer dreams, Carrie and Scotty search out a suitable racing grade.

189

00:11:03,000 --> 00:11:05,000

That's a good 10 degrees.

190

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

Might be a little busy on the street though.

191

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

While they're scouring the streets of America's Slopea City, another myth is calling.

192

00:11:16,000 --> 00:11:21,000

This is the Great British Yord.

193

00:11:21,000 --> 00:11:24,000

No one knows why we do it.

194

00:11:24,000 --> 00:11:27,000

Is it to get rid of built up carbon dioxide?

195

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

Is it an evolutionary leftover, something our primitive ancestors did?

196

00:11:32,000 --> 00:11:36,000

And can it really be passed from one human to another?

197

00:11:36,000 --> 00:11:46,000

So how are we going to test whether or not yawning is contagious?

198

00:11:46,000 --> 00:11:48,000

Well first we need a test audience.

199

00:11:48,000 --> 00:11:52,000

We're going to have to isolate them and be able to watch them with hidden cameras.

200

00:11:52,000 --> 00:11:56,000

And we're going to have to be able to control this, let's say it's a room.

201

00:11:56,000 --> 00:11:57,000

We build a room.

202

00:11:59,000 --> 00:12:03,000

We're going to have to plant a yawning seed in the room as well.

203

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

You mean somebody who's in on the gag?

204

00:12:05,000 --> 00:12:06,000

That's good, okay.

205

00:12:06,000 --> 00:12:10,000

I think we can put an ad out on the internet looking for extras.

206

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

And then we just don't tell them what they're here for.

207

00:12:12,000 --> 00:12:16,000

That way we can get them to go sit in a waiting room and we can start messing with their minds.

208

00:12:18,000 --> 00:12:24,000

While the build team gets to work on a chamber of yawns, let's find out more about yawning.

209

00:12:24,000 --> 00:12:26,000

Yawning is involuntary.

210

00:12:26,000 --> 00:12:31,000

The mouth opens and the jaw drops to allow in as much air as possible.

211

00:12:31,000 --> 00:12:37,000

As the lungs fill to capacity, stomach muscles contract and the diaphragm is pushed down.

212

00:12:37,000 --> 00:12:40,000

The heart beats up to 30% faster.

213

00:12:40,000 --> 00:12:44,000

Then when the lungs are full, excess air is expelled.

214

00:12:47,000 --> 00:12:53,000

The yawn chamber is rigged with spying devices like a two-way mirror and a hidden camera.

215

00:12:54,000 --> 00:12:58,000

Now a bit of set dressing and they're ready to bore.

216

00:12:58,000 --> 00:13:05,000

This is the technical explanation of the tax and pension provisions of HR 3108.

217

00:13:05,000 --> 00:13:07,000

Wait, did we want them to yawn or completely pass out?

218

00:13:07,000 --> 00:13:09,000

I think this is good stuff.

219

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

Just a few days ago this was just a bit of garage.

220

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

Now it's a room that looks like it's been lived in for years with a few extra tricks.

221

00:13:18,000 --> 00:13:22,000

Behind our Jamie and Adam picture, there's a secret microphone.

222

00:13:22,000 --> 00:13:26,000

And would you ever believe that this right here is a camera?

223

00:13:26,000 --> 00:13:28,000

Not exactly James Bond.

224

00:13:28,000 --> 00:13:31,000

Could the build team be underestimating Mythbusters fans?

225

00:13:31,000 --> 00:13:35,000

If anybody yawns in this room, I'm gonna catch it.

226

00:13:35,000 --> 00:13:38,000

I'm very, very excited about this.

227

00:13:39,000 --> 00:13:42,000

Our test subjects are here. We're about to bring them in.

228

00:13:44,000 --> 00:13:49,000

Those poor souls, they're about to be bored to within an inch of their lives.

229

00:13:50,000 --> 00:13:56,000

First, the control. The group's left in the empty room for 10 minutes.

230

00:13:56,000 --> 00:14:02,000

Nothing to read, no talking allowed. Here are some highlights.

231

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

10 minutes and absolutely no yawning.

232

00:14:16,000 --> 00:14:19,000

10 minutes, no yawning, 10 minutes, I yawn twice.

233

00:14:19,000 --> 00:14:22,000

Okay, so this time on your clipboard, you'll find a document.

234

00:14:22,000 --> 00:14:24,000

Please just sit quietly and read it.

235

00:14:24,000 --> 00:14:28,000

Next, the lucky volunteers get to read some tax law.

236

00:14:29,000 --> 00:14:32,000

The excitement reaches fever pitch.

237

00:14:37,000 --> 00:14:39,000

People, we have our first yawn.

238

00:14:39,000 --> 00:14:43,000

Now, will it travel around the room like a Mexican wave?

239

00:14:46,000 --> 00:14:48,000

Another one.

240

00:14:49,000 --> 00:14:54,000

Four real yawns and two half yawns, but I think they're all out of the same person, so it's too early to tell.

241

00:14:56,000 --> 00:14:59,000

The first two tests are inconclusive.

242

00:15:00,000 --> 00:15:06,000

So for test number three, Scotty tries to infect the subjects with the yawning bug.

243

00:15:07,000 --> 00:15:10,000

But they appear to be totally immune.

244

00:15:12,000 --> 00:15:14,000

Unlike Carrie.

245

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

Then at yawn central, sudden panic.

246

00:15:18,000 --> 00:15:21,000

The watchers think they are being watched.

247

00:15:21,000 --> 00:15:23,000

Has their cover been blown?

248

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

I swear that guy's looking right at me.

249

00:15:25,000 --> 00:15:30,000

Or is working in a dark confined space starting to get to them?

250

00:15:45,000 --> 00:15:54,000

None the wiser, the bemused volunteers go back to lives which suddenly seem far more exciting.

251

00:15:54,000 --> 00:15:56,000

But what about the results?

252

00:15:56,000 --> 00:15:59,000

First, our control absolutely no yawns.

253

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

Two, the most successful test of all, the tax laws.

254

00:16:03,000 --> 00:16:09,000

We had eight and a half yawns from one woman, two yawns from a man in a jacket,

255

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

one from the man in plaid, two from the kid and half a yawn from the woman in red.

256

00:16:14,000 --> 00:16:17,000

The woman in blue was like a yawning machine.

257

00:16:17,000 --> 00:16:18,000

She would not stop.

258

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

I mean it was like every couple of minutes she was yawning and nobody else was taking the bait.

259

00:16:23,000 --> 00:16:27,000

And there was no yawning at all during Scotty's yawn seeding experiment.

260

00:16:28,000 --> 00:16:32,000

The conclusion so far is no conclusion.

261

00:16:32,000 --> 00:16:36,000

The yawning myth is still wide open.

262

00:16:36,000 --> 00:16:39,000

Time to bring in Adam and Jamie on this one.

263

00:16:39,000 --> 00:16:40,000

Except for that picture.

264

00:16:41,000 --> 00:16:43,000

I love those guys.

265

00:16:44,000 --> 00:16:46,000

They're not boring, they're tiny.

266

00:16:48,000 --> 00:16:51,000

Did anyone walk in and go, hey, hey, how you doing?

267

00:16:51,000 --> 00:16:52,000

Pretty much.

268

00:16:52,000 --> 00:16:53,000

Really?

269

00:16:53,000 --> 00:16:59,000

Adam and Jamie believe the build team have been using too few guinea pigs and too many stimuli.

270

00:16:59,000 --> 00:17:03,000

I think for all of these things you need a bigger sample, you need a longer test.

271

00:17:03,000 --> 00:17:04,000

I think definitely.

272

00:17:04,000 --> 00:17:07,000

And they can't know that we're doing this.

273

00:17:07,000 --> 00:17:11,000

You can't know that you're doing a test and really you have to leave them alone in the room.

274

00:17:11,000 --> 00:17:12,000

Yes, just waiting.

275

00:17:12,000 --> 00:17:14,000

You have to just leave them alone in the room waiting.

276

00:17:14,000 --> 00:17:15,000

Sit here and wait.

277

00:17:15,000 --> 00:17:18,000

What you guys are telling us is that we need to go back and try this again.

278

00:17:18,000 --> 00:17:19,000

Yep.

279

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

Alright, well, look forward to see what you come up with next time.

280

00:17:23,000 --> 00:17:24,000

Thanks guys.

281

00:17:24,000 --> 00:17:25,000

Alright.

282

00:17:28,000 --> 00:17:32,000

Back on the city streets, the girls are searching for steep slopes.

283

00:17:32,000 --> 00:17:33,000

Oh, no.

284

00:17:33,000 --> 00:17:34,000

Oh, no.

285

00:17:35,000 --> 00:17:40,000

But Carrie and Scotty can't find a straight quarter mile, the length of a drag racing

286

00:17:40,000 --> 00:17:42,000

strip for their toy car racetrack.

287

00:17:43,000 --> 00:17:44,000

I think we might have to go out of town.

288

00:17:44,000 --> 00:17:47,000

I don't think San Francisco is going to have any doable hills for us.

289

00:17:47,000 --> 00:17:48,000

We're going to Tahoe.

290

00:17:48,000 --> 00:17:49,000

We're going to Tahoe.

291

00:17:49,000 --> 00:17:50,000

Road trip.

292

00:17:51,000 --> 00:17:56,000

Even though we live in a very hilly city, we could not find a quarter mile of straight track.

293

00:17:56,000 --> 00:18:01,000

So we're going all the way up to Lake Tahoe, laying out a quarter mile of this toy car track,

294

00:18:01,000 --> 00:18:05,000

getting a viper, and we're racing the cars.

295

00:18:05,000 --> 00:18:06,000

Wow.

296

00:18:08,000 --> 00:18:13,000

The Mythbusters head for the hills in one of the Southwest's most beautiful locations.

297

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

Lake Tahoe's Ski Boulevard is the venue for the big event.

298

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

It's both long enough and steep enough for a gravity-powered race-off.

299

00:18:24,000 --> 00:18:26,000

I think they'll get going pretty fast.

300

00:18:26,000 --> 00:18:29,000

We'll be most of the way by the time we get to the bottom of this hill.

301

00:18:29,000 --> 00:18:32,000

Yeah, I think the quarter mile is right about where the stop sign is.

302

00:18:32,000 --> 00:18:33,000

Go for it.

303

00:18:35,000 --> 00:18:36,000

200 feet.

304

00:18:37,000 --> 00:18:39,000

Okay, that's 300 feet.

305

00:18:39,000 --> 00:18:46,000

It's a suitable grade, and the quarter mile track fits neatly into one block, just as Jamie estimated.

306

00:18:47,000 --> 00:18:48,000

That was freakish.

307

00:18:48,000 --> 00:18:50,000

Jamie stood at the top of the hill and said,

308

00:18:50,000 --> 00:18:54,000

Oh, quarter mile is just about to the stop sign.

309

00:18:54,000 --> 00:18:56,000

And how far off was he?

310

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

He was off by 16 feet.

311

00:18:58,000 --> 00:19:01,000

Yeah, sometimes he pulls something out that's just a little bit freakish.

312

00:19:01,000 --> 00:19:02,000

I know.

313

00:19:02,000 --> 00:19:04,000

Maybe we shouldn't tell him.

314

00:19:04,000 --> 00:19:05,000

He is a robot.

315

00:19:05,000 --> 00:19:06,000

I think so.

316

00:19:06,000 --> 00:19:07,000

Jamie is a robot.

317

00:19:09,000 --> 00:19:11,000

Not bad for a man of 75.

318

00:19:15,000 --> 00:19:19,000

Right on cue, the real speed machine arrives.

319

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

Hersh like a kid.

320

00:19:20,000 --> 00:19:22,000

I think that just about says it.

321

00:19:22,000 --> 00:19:24,000

Get in, sit down, shut up, hang on.

322

00:19:25,000 --> 00:19:29,000

Have you heard the myth that a small toy car, like a 64th scale toy car,

323

00:19:29,000 --> 00:19:34,000

can actually beat a car like this just in a gravity slope race?

324

00:19:34,000 --> 00:19:35,000

It should.

325

00:19:35,000 --> 00:19:36,000

Really?

326

00:19:36,000 --> 00:19:37,000

It should.

327

00:19:37,000 --> 00:19:39,000

I would be flabbergasted if it didn't.

328

00:19:39,000 --> 00:19:43,000

When you shove the clutch in here, you got 3,000 pounds that has to get rolling.

329

00:19:43,000 --> 00:19:47,000

And that little thing is going to be down the hill and gone.

330

00:19:48,000 --> 00:19:53,000

So the sun sets on race day Eve with the toy car a surprise favorite.

331

00:19:53,000 --> 00:19:56,000

Tomorrow, the real excitement begins.

332

00:19:59,000 --> 00:20:03,000

At Yon Central, nothing went right the first time round.

333

00:20:03,000 --> 00:20:05,000

So it's back to the drawing board.

334

00:20:05,000 --> 00:20:06,000

I'm totally bummed.

335

00:20:06,000 --> 00:20:08,000

This experiment is just not working.

336

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

We haven't achieved anything that we put up on our blueprint.

337

00:20:10,000 --> 00:20:13,000

Well, I think our biggest problem with the last time is we were not consistent.

338

00:20:13,000 --> 00:20:15,000

Like nothing we did was consistent.

339

00:20:15,000 --> 00:20:17,000

We had, you know, a different number of people coming in.

340

00:20:17,000 --> 00:20:19,000

We were giving them all kinds of stimuli.

341

00:20:19,000 --> 00:20:21,000

We just need a do-over.

342

00:20:21,000 --> 00:20:22,000

We need to start this over.

343

00:20:22,000 --> 00:20:26,000

We put way too much work into this not to get really definitive results.

344

00:20:26,000 --> 00:20:28,000

We have to come up with a new plan.

345

00:20:28,000 --> 00:20:32,000

I think what we need to do is we'll do it again, keep it consistent,

346

00:20:32,000 --> 00:20:35,000

and instead of bringing the people to us, we'll take it to the people.

347

00:20:36,000 --> 00:20:42,000

6.30 a.m. at a local flea market where the Mythbusters hope to get a bigger sample of test cases.

348

00:20:42,000 --> 00:20:44,000

They've modified a truck.

349

00:20:44,000 --> 00:20:49,000

Inside, it's a multi-chambered yawning observation lab.

350

00:20:49,000 --> 00:20:53,000

Well, the Mythbusters are here to perform a psychological experiment.

351

00:20:53,000 --> 00:20:59,000

We needed a crowded, sort of outdoor atmosphere to be able to get our subjects from.

352

00:20:59,000 --> 00:21:08,000

And we plan to run through about 30 or 40 today in our custom-built Mythbusters psychological chamber.

353

00:21:08,000 --> 00:21:15,000

And we're going to see if we can get anyone to yawning by influencing them.

354

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

Adam and Jamie set off to chum the waters of the market and net some unsuspecting fans.

355

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

There we go.

356

00:21:23,000 --> 00:21:25,000

What do you think?

357

00:21:25,000 --> 00:21:29,000

Before long, there's a feeding frenzy around the Mythbusters stall.

358

00:21:29,000 --> 00:21:30,000

Sure, I'll do it.

359

00:21:30,000 --> 00:21:31,000

Okay.

360

00:21:31,000 --> 00:21:32,000

Sure, why not?

361

00:21:32,000 --> 00:21:34,000

All right, now, so you'll just go back.

362

00:21:34,000 --> 00:21:36,000

Tutorial over there.

363

00:21:36,000 --> 00:21:40,000

This time, they are testing one variable only, the seated yarn.

364

00:21:40,000 --> 00:21:42,000

Sorry, we've been up since 4.

365

00:21:42,000 --> 00:21:43,000

Back to your room.

366

00:21:43,000 --> 00:21:45,000

Come on in, follow me.

367

00:21:45,000 --> 00:21:49,000

Sit in the little room quietly and I'll come get you briefly.

368

00:21:49,000 --> 00:21:53,000

There's three yarn cubicles, each fitted with a hidden camera.

369

00:21:53,000 --> 00:21:58,000

And one observation chamber, where Tari is on watch.

370

00:21:58,000 --> 00:22:04,000

Kari will yawn at two of every three subjects as she ushers them into their cubicle.

371

00:22:04,000 --> 00:22:08,000

So we're going to see if they yawn faster with some influence,

372

00:22:08,000 --> 00:22:11,000

and without any, every third person will be in control,

373

00:22:11,000 --> 00:22:16,000

which Kari will get no influence to, and we'll see if there's actually a difference.

374

00:22:16,000 --> 00:22:22,000

So the experiment begins, and Tari gets down to some careful observation of the subjects doing,

375

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

well, doing nothing.

376

00:22:24,000 --> 00:22:26,000

Absolutely nothing.

377

00:22:30,000 --> 00:22:37,000

It's starting to seem like the Mythbusters are just way too much fun to evoke even the slightest yawn.

378

00:22:39,000 --> 00:22:44,000

This is a big case.

379

00:22:45,000 --> 00:22:47,000

Then a breakthrough.

380

00:22:51,000 --> 00:22:54,000

You may have had a yawn in the first place.

381

00:22:54,000 --> 00:22:58,000

And after the drought, a flood of yawning is unleashed.

382

00:23:04,000 --> 00:23:07,000

The Mythbusters suddenly have the Midas touch.

383

00:23:09,000 --> 00:23:15,000

Even the local dogs get caught up in the current of yawns that's sweeping the market.

384

00:23:19,000 --> 00:23:25,000

The experiment also suggests that some guinea pigs are more observant than others.

385

00:23:28,000 --> 00:23:32,000

And finally proving that all good things must come to an end,

386

00:23:32,000 --> 00:23:38,000

five hours, and 50 test cases later, the yawnathon draws to a close.

387

00:23:40,000 --> 00:23:43,000

That was it. That's the last one. We're done.

388

00:23:43,000 --> 00:23:46,000

For Kari, it's not a moment too soon.

389

00:23:46,000 --> 00:23:51,000

I was yawning all day, the point where my cheeks were hurting and my eyes were watering.

390

00:23:53,000 --> 00:23:59,000

All right, well, after testing 50 people in the field, our largest sample we've ever used on Mythbusters,

391

00:23:59,000 --> 00:24:04,000

the results are in, and when the people we tested got no seed yawn, no stimulus,

392

00:24:04,000 --> 00:24:10,000

they yawned 25% of the time. When they got stimulus, they yawned 29% of the time.

393

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

Well, it's not dramatic, but it seems like it's pretty good to me.

394

00:24:14,000 --> 00:24:16,000

What do you guys think? Busted, plausible, or confirmed?

395

00:24:16,000 --> 00:24:19,000

Given how large our sample was, I'd say it's confirmed.

396

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

There's little doubt. It does seem to be contagious.

397

00:24:23,000 --> 00:24:27,000

And I bet the audience at home right now is probably yawning.

398

00:24:29,000 --> 00:24:31,000

And that's what we're gonna do.

399

00:24:43,000 --> 00:24:48,000

You know, Jamie, this coming up is a question that has plagued the breakfast table for generations.

400

00:24:48,000 --> 00:24:54,000

And that would be whether buttered toast falls, buttered side up, or down more often.

401

00:24:54,000 --> 00:24:56,000

Exactly.

402

00:25:00,000 --> 00:25:02,000

You know, Jamie, it is a truth.

403

00:25:02,000 --> 00:25:08,000

Universally acknowledged that a man in possession of a good fortune must be in want of a myth to bust.

404

00:25:08,000 --> 00:25:12,000

Well, it has been an absolutely capital year for busting myths.

405

00:25:12,000 --> 00:25:14,000

Indeed. Most agreeable.

406

00:25:14,000 --> 00:25:15,000

More tea, sir.

407

00:25:15,000 --> 00:25:16,000

Thank you. I'll get it.

408

00:25:22,000 --> 00:25:24,000

Buttered side down again?

409

00:25:24,000 --> 00:25:27,000

Well, that sounds like something we need to test, and I have an idea.

410

00:25:27,000 --> 00:25:29,000

Well, I have an idea too, actually.

411

00:25:29,000 --> 00:25:35,000

Let's say we actually go off, build two separate rigs, get them together, and see which one comes up with a better result.

412

00:25:35,000 --> 00:25:37,000

That sounds like a capital idea.

413

00:25:38,000 --> 00:25:39,000

Excellent.

414

00:25:39,000 --> 00:25:45,000

At long last, this centuries-old breakfast brain teaser is going to be put to the test.

415

00:25:45,000 --> 00:25:51,000

But why simply drop buttered toast when you can build an over-elaborate machine to do it?

416

00:25:51,000 --> 00:25:53,000

I love the Rue Goldberg approach.

417

00:25:53,000 --> 00:26:00,000

It's always funny to me to bring in pneumatics and other sciences to bear on something like toast falling off of the table.

418

00:26:01,000 --> 00:26:06,000

Adam goes over the top with a pneumatic device which mimics breakfast table mishaps.

419

00:26:07,000 --> 00:26:14,000

There are many ways toast can fall, but the most common it would seem to me is toast accidentally getting brushed off a table like that.

420

00:26:14,000 --> 00:26:19,000

Now, the question is, how to come up with a mechanical model that can repeat that type of action?

421

00:26:19,000 --> 00:26:22,000

And what I've got here is a top-loading toast tosser.

422

00:26:23,000 --> 00:26:27,000

Toast tosser is right. His solenoid valve is way too powerful.

423

00:26:30,000 --> 00:26:37,000

Now, there's a problem with my rig right off the bat, which is it's just throwing the toast like a Frisbee, like that.

424

00:26:37,000 --> 00:26:42,000

I was trying to think of something slightly more random that would brush it off the table like that.

425

00:26:43,000 --> 00:26:51,000

Adam recalibrates his rig, so instead of launching toast across the kitchen, it recreates the classic brush-off-the-table scenario.

426

00:26:52,000 --> 00:26:54,000

The toast tosser 2.0.

427

00:26:54,000 --> 00:26:58,000

First, he runs a control experiment with unbuttered toast.

428

00:27:05,000 --> 00:27:09,000

They're all starting topside up. Topside's labeled.

429

00:27:12,000 --> 00:27:15,000

Down. Down.

430

00:27:16,000 --> 00:27:22,000

He's hoping for a random sample where the toast lands topside up and down in equal numbers.

431

00:27:22,000 --> 00:27:29,000

We're showing totally consistently that a piece of toast just brush off, does one flip and lands topside down.

432

00:27:29,000 --> 00:27:30,000

With a certain pressure.

433

00:27:30,000 --> 00:27:36,000

With a certain pressure. So, I'll bet if we went to, you know, a thousand restaurants and shot a thousand people tipping toast off,

434

00:27:36,000 --> 00:27:39,000

it would probably be pretty close to this. That's what my intuition says.

435

00:27:39,000 --> 00:27:44,000

But it doesn't help. That is answering the question about people's proclivities to tipping toast.

436

00:27:44,000 --> 00:27:48,000

And the aim is to eliminate people from the toast dropping process.

437

00:27:48,000 --> 00:27:57,000

So Adam now wants a less naturalistic model, where the toast is suspended in mid-air and then

dropped without any human intervention.

438

00:27:57,000 --> 00:28:04,000

In terms of the question, does toast, when it's buttered, prefer to fall to one side or the other?

439

00:28:04,000 --> 00:28:08,000

I think that's a question that's much better answered by Jamie's rig.

440

00:28:08,000 --> 00:28:12,000

Which, as you'll see, is a kind of a spring thing.

441

00:28:15,000 --> 00:28:16,000

There you go.

442

00:28:16,000 --> 00:28:19,000

But first, it's race day at Tahoe.

443

00:28:31,000 --> 00:28:35,000

I'm most definitely a morning person. I'm up this early anyway.

444

00:28:35,000 --> 00:28:38,000

Adam and Jamie, night and day.

445

00:28:38,000 --> 00:28:44,000

Well, it's pre-dawn. It's freezing.

446

00:28:44,000 --> 00:28:49,000

And we're getting together a quarter mile of a toy car track.

447

00:28:49,000 --> 00:28:54,000

You know, if you want to play with the big toys, apparently you have to get up really early in the morning.

448

00:28:54,000 --> 00:29:02,000

Armed with 1,320 feet of track, our toy car gladiators set out to do battle.

449

00:29:03,000 --> 00:29:09,000

But before they can go head to head with the Viper, there's a world record length of toy track to lay,

450

00:29:09,000 --> 00:29:14,000

specially manufactured for Mythbusters by Mark Kazimov of RaceGrooves,

451

00:29:14,000 --> 00:29:18,000

assisted by his offspring Amanda and Jeremy.

452

00:29:18,000 --> 00:29:24,000

Well, Mark, have you in your experience ever heard of anybody laying out 1,300 feet of track?

453

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

A quarter mile of track, as far as I know, nobody's ever come close.

454

00:29:28,000 --> 00:29:34,000

1,200 feet, maybe. Never on a total slope like this. This will be the first time to my knowledge.

455

00:29:34,000 --> 00:29:36,000

Pressure's on!

456

00:29:40,000 --> 00:29:42,000

Can't feel fingers.

457

00:29:42,000 --> 00:29:44,000

We're going to get rid of it by car.

458

00:29:44,000 --> 00:29:48,000

Did that guy just drive over the crack?

459

00:29:48,000 --> 00:29:51,000

There's a lot of work laying out a quarter mile of track.

460

00:29:51,000 --> 00:29:54,000

I'm just going to be out there straightening.

461

00:29:54,000 --> 00:29:57,000

Please note the Heinemann doing his careful straightening work.

462

00:29:57,000 --> 00:30:02,000

Jamie's people have been track straighteners since the Middle Ages.

463

00:30:02,000 --> 00:30:06,000

Even with that pedigree, Jamie's got his hands full.

464

00:30:06,000 --> 00:30:10,000

Every half hour, so this track is gaining two or three inches.

465

00:30:10,000 --> 00:30:14,000

As the day heats up, things start to go curly.

466

00:30:14,000 --> 00:30:19,000

The problem is, is that as the sun is hitting our track, it's making the plastic expand.

467

00:30:20,000 --> 00:30:23,000

And it's actually causing it to buckle.

468

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

This track in the hot sun could actually be five or six feet longer, over 1,300 feet, than in the cold.

469

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

Jamie's going to be running up and down that track all day. We're fighting shadows.

470

00:30:35,000 --> 00:30:38,000

I'll tell you what, I've had enough of this already today.

471

00:30:38,000 --> 00:30:40,000

It's on to go!

472

00:30:40,000 --> 00:30:42,000

Scotty, are you ready to do a test run?

473

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

Just go!

474

00:30:43,000 --> 00:30:45,000

Okay, here it comes.

475

00:30:45,000 --> 00:30:48,000

Three, two, one.

476

00:30:49,000 --> 00:30:53,000

It's the longest toy track in history, but is it flat enough?

477

00:30:53,000 --> 00:30:55,000

The anticipation is killing me.

478

00:30:55,000 --> 00:30:57,000

Is it coming still?

479

00:30:57,000 --> 00:30:59,000

It's stopped.

480

00:30:59,000 --> 00:31:01,000

It's gone, 200 feet, over.

481

00:31:01,000 --> 00:31:04,000

Let's go straight into another round, over.

482

00:31:05,000 --> 00:31:07,000

Fingers are crossed.

483

00:31:11,000 --> 00:31:14,000

But the track's still buckled.

484

00:31:15,000 --> 00:31:21,000

We're going to take a break right now, because we can keep on doing this until the cows come home.

485

00:31:21,000 --> 00:31:24,000

A quick team talk and a tough decision is made.

486

00:31:24,000 --> 00:31:28,000

To keep this myth alive, it must be radically scaled down.

487

00:31:28,000 --> 00:31:34,000

It's just ridiculous to keep trying, you know, spend half an hour to undo these buckles when they just keep appearing.

488

00:31:34,000 --> 00:31:41,000

So, right now, we're going to go up to the 400 foot mark, and I'm going to time it with a stopwatch at 400 feet.

489

00:31:41,000 --> 00:31:44,000

At least we'll be able to get a bunch of repeated runs in.

490

00:31:44,000 --> 00:31:47,000

This has been so spotty up until now.

491

00:31:48,000 --> 00:31:54,000

Back at the Mythbusters Workshop, Jamie's rig is ready to test if toast lands butterside down.

492

00:31:54,000 --> 00:31:59,000

Okay, so I'm always going to put the top facing to this side.

493

00:31:59,000 --> 00:32:01,000

Facing which way?

494

00:32:01,000 --> 00:32:03,000

That way, yeah.

495

00:32:06,000 --> 00:32:08,000

Thank you, Adam.

496

00:32:11,000 --> 00:32:14,000

Ow, it hurts to laugh.

497

00:32:14,000 --> 00:32:17,000

I didn't know the rig wasn't assembled.

498

00:32:17,000 --> 00:32:19,000

So, you want to mark it now?

499

00:32:19,000 --> 00:32:21,000

Sure.

500

00:32:22,000 --> 00:32:28,000

Once again, they first test out dry toast to get a random sample without butter.

501

00:32:30,000 --> 00:32:31,000

Down.

502

00:32:33,000 --> 00:32:36,000

Not exactly a rip-roaring reset, is it?

503

00:32:36,000 --> 00:32:40,000

You know that I'm not inclined to overbuild a rig and when it's untested.

504

00:32:40,000 --> 00:32:44,000

I know, I know. I know that at the end of the day you'll get the job done.

505

00:32:44,000 --> 00:32:45,000

Down.

506

00:32:45,000 --> 00:32:47,000

There's something about this rig.

507

00:32:47,000 --> 00:32:48,000

Down.

508

00:32:48,000 --> 00:32:49,000

Down.

509

00:32:49,000 --> 00:32:51,000

That's building in a bias.

510

00:32:51,000 --> 00:32:52,000

Down.

511

00:32:52,000 --> 00:32:55,000

And they suspect the spring action is to blame.

512

00:32:55,000 --> 00:32:57,000

I think we need to stop testing on this thing.

513

00:32:57,000 --> 00:32:58,000

Why?

514

00:32:58,000 --> 00:33:01,000

Because right now we've got three up and seven down.

515

00:33:01,000 --> 00:33:02,000

Okay.

516

00:33:02,000 --> 00:33:05,000

We're way outside of a random sample.

517

00:33:05,000 --> 00:33:15,000

We want to come up with a test that with unbuttered toast gives us a fully random statistical distribution of toast falling up or down.

518

00:33:15,000 --> 00:33:25,000

So, unable to provide a random sample with unbuttered toast, both the trapdoor dropper and the top-loading tosser bite the mythbusters dust.

519

00:33:25,000 --> 00:33:30,000

You know, Adam, I don't think either of our rigs really got to the bottom of this.

520

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

Yeah, you know, I think your rig had a little better than mine.

521

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

Yours was an empirical model.

522

00:33:35,000 --> 00:33:37,000

Mine was a naturalistic model.

523

00:33:37,000 --> 00:33:42,000

I think we need to build a rig that has absolutely no bias at all in terms of how it drops it.

524

00:33:42,000 --> 00:33:46,000

Well, let's just build my rig, but a better one.

525

00:33:46,000 --> 00:33:47,000

I think that's a great idea.

526

00:33:47,000 --> 00:33:50,000

And I think we should also actually automate the whole process.

527

00:33:50,000 --> 00:33:52,000

Let's get an automatic toaster like they have at the deli.

528

00:33:52,000 --> 00:33:54,000

Maybe you could put together a conveyor belt for it.

529

00:33:54,000 --> 00:33:58,000

We'll put a thermometer to make sure they're all the same temperature when they go.

530

00:33:58,000 --> 00:34:03,000

Buttering station, I mean, let's automate as much of this as we can to eliminate all the variables.

531

00:34:03,000 --> 00:34:06,000

All right, we're going to get to the bottom of this.

532

00:34:06,000 --> 00:34:08,000

Once and for all.

533

00:34:08,000 --> 00:34:15,000

Adam and Jamie joined forces to build the most elaborate toast dropping test rig of all time.

534

00:34:15,000 --> 00:34:18,000

Probably going to cut these down actually way down.

535

00:34:18,000 --> 00:34:28,000

A toast dropper.

536

00:34:28,000 --> 00:34:30,000

Who would have thought?

537

00:34:30,000 --> 00:34:31,000

Oh, it looks good.

538

00:34:31,000 --> 00:34:32,000

Should work.

539

00:34:32,000 --> 00:34:36,000

I'm going to make a little wedge for this so that it activates them both at the same time.

540

00:34:36,000 --> 00:34:39,000

It's another Rube Goldbergian device.

541

00:34:39,000 --> 00:34:41,000

Pneumatic powered and hands free.

542

00:34:41,000 --> 00:34:47,000

It should drop toast perfectly level and consistently each time.

543

00:34:47,000 --> 00:34:52,000

Thus eliminating any human factor in cheating the toast.

544

00:34:52,000 --> 00:34:55,000

Butterside up or butterside down when it drops.

545

00:34:55,000 --> 00:35:01,000

There's our piece of toast held innocently.

546

00:35:01,000 --> 00:35:06,000

And when I want to drop it, I push this button.

547

00:35:06,000 --> 00:35:09,000

And it drops.

548

00:35:09,000 --> 00:35:16,000

It's kind of surreal to have spent so much time and effort on a machine that just drops pieces of toast.

549

00:35:16,000 --> 00:35:18,000

Perfectly straight.

550

00:35:18,000 --> 00:35:24,000

I think we've blown the whole toast dropping mechanism field wide open.

551

00:35:24,000 --> 00:35:26,000

The toast dropper is done to a tee.

552

00:35:26,000 --> 00:35:29,000

All that's needed now is a toast transporter.

553

00:35:29,000 --> 00:35:31,000

This is a toast conveyor belt.

554

00:35:31,000 --> 00:35:39,000

And while it's not entirely necessary, it'll add a certain level of complexity to our device that we like.

555

00:35:39,000 --> 00:35:44,000

Unnecessary, over-elaborate, sounds like fun.

556

00:35:47,000 --> 00:35:51,000

Back at Lake Tahoe, the track has been shortened to 400 feet.

557

00:35:51,000 --> 00:35:57,000

And inaugural time trials are underway to find which toy car will face the viper.

558

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

Roozing!

559

00:35:58,000 --> 00:36:01,000

We have a white car ready when you are.

560

00:36:01,000 --> 00:36:03,000

We're ready down here. Give us a countdown.

561

00:36:03,000 --> 00:36:07,000

Three, two, one.

562

00:36:09,000 --> 00:36:13,000

The white Camaro is low, sleek and fast.

563

00:36:13,000 --> 00:36:17,000

Oh, look at that!

564

00:36:21,000 --> 00:36:27,000

Well, it was riding on top of the middle Meridian, and it still made it in 23 seconds.

565

00:36:27,000 --> 00:36:32,000

That's 22 miles per hour, the fastest of the Johnny Lightning entrance.

566

00:36:32,000 --> 00:36:35,000

But what about the Mythbusters homemade prototypes?

567

00:36:35,000 --> 00:36:38,000

Okay, Adam's lead thing is up next.

568

00:36:38,000 --> 00:36:43,000

The boy racer is first on the grid, and his reputation is on the line.

569

00:36:43,000 --> 00:36:47,000

Okay, watch your fingers and limbs, because it's gonna fly!

570

00:36:47,000 --> 00:36:53,000

Now, some people say toy car racing is a matter of life and death.

571

00:36:53,000 --> 00:36:54,000

Oh!

572

00:36:54,000 --> 00:36:55,000

But not Adam.

573

00:36:55,000 --> 00:36:57,000

A part came off of it.

574

00:36:57,000 --> 00:36:58,000

Yeah, big shocker there.

575

00:36:58,000 --> 00:37:01,000

To him, it's way more important than that.

576

00:37:01,000 --> 00:37:05,000

Well, it looks like, as I thought, it was top-heavy.

577

00:37:05,000 --> 00:37:09,000

Well, you can understand my disappointment. I just want to see it happen.

578

00:37:09,000 --> 00:37:13,000

Adam's still dreaming of the checkered flag.

579

00:37:13,000 --> 00:37:15,000

Direct in the same place.

580

00:37:15,000 --> 00:37:18,000

But before long, he's waving a white one.

581

00:37:18,000 --> 00:37:24,000

He got, you know, kind of ambitious with his lead approach, and I figured he was gonna wipe everybody out.

582

00:37:24,000 --> 00:37:25,000

I thought so, too.

583

00:37:25,000 --> 00:37:27,000

I'm very sad about my car.

584

00:37:27,000 --> 00:37:29,000

It's too top-heavy.

585

00:37:29,000 --> 00:37:33,000

Mental note, never work with animals or children.

586

00:37:33,000 --> 00:37:36,000

Okay, we're getting ready to go with mine, over.

587

00:37:36,000 --> 00:37:37,000

I'm ready.

588

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

Okay, three, two, one.

589

00:37:44,000 --> 00:37:49,000

So, from Adam's lead balloon to Jamie's silver bullet.

590

00:37:51,000 --> 00:37:54,000

That was a very handy 18 seconds, over.

591

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

Damn, he took four seconds off the top record.

592

00:37:58,000 --> 00:38:00,000

Jamie, you won!

593

00:38:00,000 --> 00:38:01,000

Isn't that beautiful?

594

00:38:01,000 --> 00:38:05,000

Mental note, animals, children, and Carrie.

595

00:38:06,000 --> 00:38:08,000

So the lineup is decided.

596

00:38:08,000 --> 00:38:13,000

Jamie's prototype and the white Camaro go into the snake pit against the Viper.

597

00:38:16,000 --> 00:38:20,000

Under power, it's capable of speeds of up to 200 miles per hour.

598

00:38:20,000 --> 00:38:23,000

But how about coasting downhill under gravity?

599

00:38:23,000 --> 00:38:25,000

Can it beat a toy car?

600

00:38:25,000 --> 00:38:29,000

Or will the mini-meese get a jump on the muscle monster?

601

00:38:30,000 --> 00:38:32,000

I really think the toy car is going to beat the Viper.

602

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

I would put my money on the toy car.

603

00:38:34,000 --> 00:38:37,000

I think the toy car is just going to smoke the Viper.

604

00:38:37,000 --> 00:38:40,000

Big car? You guys are betting big car?

605

00:38:40,000 --> 00:38:42,000

Alright, we'll see who wins.

606

00:38:42,000 --> 00:38:44,000

Kids, what do they know?

607

00:38:44,000 --> 00:38:45,000

So this is it, Scotty.

608

00:38:45,000 --> 00:38:50,000

The Viper against the toy car, the Johnny Lightning, under gravity only.

609

00:38:50,000 --> 00:38:51,000

You ready?

610

00:38:51,000 --> 00:38:54,000

We're ready to go on our end, on your count.

611

00:38:54,000 --> 00:38:58,000

Three, two, one.

612

00:38:59,000 --> 00:39:01,000

Johnny Lightning's off to a flyer.

613

00:39:01,000 --> 00:39:04,000

At 25 feet, he's smoking it.

614

00:39:05,000 --> 00:39:07,000

At 50, he's hanging on.

615

00:39:07,000 --> 00:39:09,000

It's neck and neck.

616

00:39:09,000 --> 00:39:11,000

But the Viper bites back.

617

00:39:11,000 --> 00:39:13,000

We're hitting 30.

618

00:39:13,000 --> 00:39:15,000

And takes the checkered flag.

619

00:39:15,000 --> 00:39:17,000

But where's Johnny?

620

00:39:20,000 --> 00:39:22,000

There's Johnny.

621

00:39:23,000 --> 00:39:25,000

Hardly a photo finish.

622

00:39:25,000 --> 00:39:27,000

Viper wins.

623

00:39:27,000 --> 00:39:30,000

The Dodds Viper won handily.

624

00:39:30,000 --> 00:39:34,000

It was neck and neck right in the beginning there for the first hundred feet almost.

625

00:39:34,000 --> 00:39:36,000

Wishful thinking, Toy Maker.

626

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

So it's Geppetto's turn to race his silver bullet.

627

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

It was four seconds faster than the white Camaro.

628

00:39:42,000 --> 00:39:45,000

Maybe. Just maybe.

629

00:39:45,000 --> 00:39:48,000

We're ready to go on our end, on your count.

630

00:39:48,000 --> 00:39:52,000

Three, two, one.

631

00:39:56,000 --> 00:39:58,000

We're hitting 20.

632

00:39:58,000 --> 00:40:01,000

Jamie's ahead at 25 feet.

633

00:40:01,000 --> 00:40:03,000

And at 50.

634

00:40:03,000 --> 00:40:05,000

I see Jamie's car coming.

635

00:40:05,000 --> 00:40:08,000

At 100, he's still edging out the Viper.

636

00:40:08,000 --> 00:40:10,000

Ooh, it's close.

637

00:40:11,000 --> 00:40:14,000

13 seconds.

638

00:40:14,000 --> 00:40:17,000

Damn, that was good.

639

00:40:17,000 --> 00:40:19,000

The Viper crossed the market 13 seconds.

640

00:40:19,000 --> 00:40:23,000

Jamie's car had its fastest time crossing the market 17 seconds.

641

00:40:23,000 --> 00:40:25,000

Still not enough to beat the Viper.

642

00:40:25,000 --> 00:40:27,000

I think this one's busted.

643

00:40:27,000 --> 00:40:30,000

Actually, it beat the Viper over 100 feet.

644

00:40:30,000 --> 00:40:31,000

Over.

645

00:40:31,000 --> 00:40:34,000

It's been a red letter day of myth busting.

646

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

I beat the Viper over 100 feet.

647

00:40:36,000 --> 00:40:38,000

Time for a racing roundup.

648

00:40:38,000 --> 00:40:42,000

So over 100 feet, a new confirmed myth.

649

00:40:42,000 --> 00:40:45,000

And who's gonna have more than 100 feet of track anyway?

650

00:40:45,000 --> 00:40:47,000

How about a quarter of a mile?

651

00:40:47,000 --> 00:40:52,000

I think we definitely set a world record for the most amount of toy car track

652

00:40:52,000 --> 00:40:55,000

ever laid out in one contiguous distance.

653

00:40:55,000 --> 00:40:57,000

And a land speed record?

654

00:40:57,000 --> 00:41:01,000

I can't say that we actually set a land speed record for a toy car,

655

00:41:01,000 --> 00:41:04,000

but I'll wager that we came close.

656

00:41:04,000 --> 00:41:08,000

Jamie's Silver Bullet hit 28 miles per hour.

657

00:41:08,000 --> 00:41:13,000

Well, the toy cars were able to beat the sports car up to about 20 to 30 feet,

658

00:41:13,000 --> 00:41:16,000

and Jamie's car beat it up to about 100 feet.

659

00:41:16,000 --> 00:41:19,000

Over 400 feet, the sports car won hands down,

660

00:41:19,000 --> 00:41:22,000

and over a quarter mile it wouldn't be any contest at all.

661

00:41:22,000 --> 00:41:24,000

I mean, it's totally bust.

662

00:41:24,000 --> 00:41:27,000

And that's all she wrote.

663

00:41:44,000 --> 00:41:46,000

One, two, three, boop, go!

664

00:41:46,000 --> 00:41:48,000

And it drops it.

665

00:41:48,000 --> 00:41:49,000

The new rig is ready.

666

00:41:49,000 --> 00:41:52,000

First, the control test without butter.

667

00:41:52,000 --> 00:41:55,000

When the toast gets to me for test number one,

668

00:41:55,000 --> 00:41:57,000

I'll just be putting an X across the top of it,

669

00:41:57,000 --> 00:41:59,000

putting it in our toast dropper,

670

00:41:59,000 --> 00:42:02,000

and activating the drop,

671

00:42:02,000 --> 00:42:04,000

and logging on this piece of paper,

672

00:42:04,000 --> 00:42:06,000

whether or not it's landed up or down.

673

00:42:06,000 --> 00:42:08,000

Okay, so 20 slices unbuttered.

674

00:42:08,000 --> 00:42:10,000

Correct. You ready?

675

00:42:10,000 --> 00:42:11,000

I'm ready.

676

00:42:12,000 --> 00:42:15,000

Adam limbers up, and it's game on.

677

00:42:15,000 --> 00:42:17,000

Oh, yeah.

678

00:42:17,000 --> 00:42:19,000

Here comes piece number one.

679

00:42:22,000 --> 00:42:23,000

Down.

680

00:42:23,000 --> 00:42:24,000

Next.

681

00:42:25,000 --> 00:42:28,000

Three, two, one, go!

682

00:42:28,000 --> 00:42:29,000

Next.

683

00:42:31,000 --> 00:42:33,000

The rig runs like clockwork,

684

00:42:33,000 --> 00:42:37,000

bringing on one of Jamie's schoolgirl giggling fits.

685

00:42:37,000 --> 00:42:39,000

This is going to be an intense day.

686

00:42:39,000 --> 00:42:40,000

I'll tell you that.

687

00:42:40,000 --> 00:42:42,000

It's going to be like that episode of Lucy,

688

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

you know, with the chocolates.

689

00:42:43,000 --> 00:42:44,000

Next.

690

00:42:45,000 --> 00:42:47,000

I know this. You're not doing anything.

691

00:42:47,000 --> 00:42:48,000

I'm loading the toast.

692

00:42:48,000 --> 00:42:49,000

That's my job.

693

00:42:51,000 --> 00:42:52,000

Down.

694

00:42:52,000 --> 00:42:53,000

Next.

695

00:42:53,000 --> 00:42:55,000

This is the last slice of our test.

696

00:42:55,000 --> 00:43:00,000

We're showing a perfect statistical distribution up,

697

00:43:00,000 --> 00:43:01,000

and down,

698

00:43:03,000 --> 00:43:04,000

and down.

699

00:43:04,000 --> 00:43:08,000

We had 11 landed up,

700

00:43:08,000 --> 00:43:10,000

and 13 landed down.

701

00:43:10,000 --> 00:43:12,000

That's close enough.

702

00:43:12,000 --> 00:43:15,000

At long last, a truly random sample.

703

00:43:15,000 --> 00:43:17,000

I'd say that's pretty much what I'd expect

704

00:43:17,000 --> 00:43:20,000

in terms of any kind of random statistical anomaly

705

00:43:20,000 --> 00:43:22,000

of heads up, heads down.

706

00:43:22,000 --> 00:43:24,000

I think it can mean only one thing.

707

00:43:24,000 --> 00:43:26,000

It's time to butter the toast.

708

00:43:26,000 --> 00:43:28,000

It's time to butter the toast.

709

00:43:29,000 --> 00:43:30,000

Okay, this is it.

710

00:43:30,000 --> 00:43:31,000

The buttered test.

711

00:43:31,000 --> 00:43:32,000

You ready?

712

00:43:32,000 --> 00:43:33,000

Oh, I'm ready, baby.

713

00:43:33,000 --> 00:43:34,000

I've got my butter standing by.

714

00:43:34,000 --> 00:43:36,000

Okay, we're fully loaded.

715

00:43:36,000 --> 00:43:37,000

200 degrees.

716

00:43:38,000 --> 00:43:39,000

On deck.

717

00:43:39,000 --> 00:43:42,000

In the field of buttered toast dropping,

718

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

On deck.

719

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

This is poetry in motion.

720

00:43:47,000 --> 00:43:48,000

You all right down there?

721

00:43:48,000 --> 00:43:49,000

I'm fine.

722

00:43:50,000 --> 00:43:51,000

On deck.

723

00:43:51,000 --> 00:43:53,000

These guys are cooking.

724

00:43:53,000 --> 00:43:55,000

On deck.

725

00:43:55,000 --> 00:43:57,000

The results of anything you're showing the toast

726

00:43:57,000 --> 00:44:01,000

prefer to land buttered slide up.

727

00:44:01,000 --> 00:44:03,000

Or does it?

728

00:44:03,000 --> 00:44:04,000

Last one coming through.

729

00:44:04,000 --> 00:44:07,000

Throughout the ages, millions have wondered.

730

00:44:08,000 --> 00:44:11,000

Now the waiting is almost over.

731

00:44:11,000 --> 00:44:12,000

Amazing.

732

00:44:13,000 --> 00:44:16,000

We had 12 up, 12 down.

733

00:44:16,000 --> 00:44:19,000

24 slices of bread just like the first test.

734

00:44:20,000 --> 00:44:22,000

No difference at all.

735

00:44:22,000 --> 00:44:23,000

Myth busted.

736

00:44:23,000 --> 00:44:26,000

For the answer of off a table,

737

00:44:26,000 --> 00:44:29,000

does toast prefer butter up or butter down?

738

00:44:29,000 --> 00:44:31,000

I'd say it does not prefer either.

739

00:44:32,000 --> 00:44:34,000

There's still stacks of bread in stock.

740

00:44:34,000 --> 00:44:37,000

So why retire a perfectly good rig?

741

00:44:37,000 --> 00:44:39,000

This is Myth Busters after all.

742

00:44:39,000 --> 00:44:42,000

So they go for broke and take to the roof.

743

00:44:42,000 --> 00:44:46,000

It's 27 feet, 5 inches to the toast drop.

744

00:44:46,000 --> 00:44:49,000

The first test we're going to do is unbuttered toast.

745

00:44:49,000 --> 00:44:51,000

We're going to do 50 slices.

746

00:44:51,000 --> 00:44:53,000

Then we're going to do buttered toast.

747

00:44:53,000 --> 00:44:54,000

50 slices.

748

00:44:54,000 --> 00:44:57,000

It's a sample of 100 pieces of bread.

749

00:44:57,000 --> 00:44:59,000

It should be very definitive.

750

00:44:59,000 --> 00:45:01,000

If you lie awake wondering what happens

751

00:45:01,000 --> 00:45:03,000

when toast drops off a roof,

752

00:45:03,000 --> 00:45:05,000

your sleepless nights are almost over.

753

00:45:07,000 --> 00:45:09,000

Toast rig is ready.

754

00:45:09,000 --> 00:45:10,000

Bread is loading.

755

00:45:11,000 --> 00:45:13,000

Let's do some science.

756

00:45:13,000 --> 00:45:14,000

Toast on deck.

757

00:45:14,000 --> 00:45:15,000

Here it comes.

758

00:45:15,000 --> 00:45:16,000

First one's away.

759

00:45:16,000 --> 00:45:17,000

Toast on deck.

760

00:45:19,000 --> 00:45:20,000

Toast on deck.

761

00:45:20,000 --> 00:45:21,000

Here it comes.

762

00:45:21,000 --> 00:45:23,000

Bombs away.

763

00:45:23,000 --> 00:45:25,000

Starting to sound like a techno song.

764

00:45:27,000 --> 00:45:28,000

Toast on deck.

765

00:45:28,000 --> 00:45:29,000

Watch out, falling toast.

766

00:45:29,000 --> 00:45:30,000

Bombs away.

767

00:45:31,000 --> 00:45:32,000

Toast on deck.

768

00:45:32,000 --> 00:45:33,000

Here comes another one.

769

00:45:33,000 --> 00:45:34,000

Bombs away.

770

00:45:34,000 --> 00:45:35,000

Toast on deck.

771

00:45:35,000 --> 00:45:36,000

Bombs away.

772

00:45:36,000 --> 00:45:37,000

Toast on deck.

773

00:45:37,000 --> 00:45:38,000

Bombs away.

774

00:45:40,000 --> 00:45:41,000

You're doing great, Carrie.

775

00:45:41,000 --> 00:45:42,000

Thank you.

776

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

You know I went to college for this.

777

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

Bombs away.

778

00:45:46,000 --> 00:45:48,000

Jamie, as soon as we're done with this one,

779

00:45:48,000 --> 00:45:50,000

let's check out results and go right to the butter test.

780

00:45:50,000 --> 00:45:51,000

You got it.

781

00:45:52,000 --> 00:45:53,000

Here it comes.

782

00:45:53,000 --> 00:45:54,000

Toast on deck.

783

00:45:54,000 --> 00:45:55,000

The last one.

784

00:45:55,000 --> 00:45:56,000

Bombs away.

785

00:45:58,000 --> 00:45:59,000

All right, Scotty.

786

00:45:59,000 --> 00:46:00,000

What are the results?

787

00:46:01,000 --> 00:46:03,000

Okay, out of 48 slices,

788

00:46:03,000 --> 00:46:05,000

26 landed face up.

789

00:46:06,000 --> 00:46:09,000

So that's really close to statistically even handed.

790

00:46:09,000 --> 00:46:10,000

Exactly.

791

00:46:10,000 --> 00:46:13,000

For a while it was exactly 50%.

792

00:46:13,000 --> 00:46:15,000

All right, well you guys ready for the butter test?

793

00:46:15,000 --> 00:46:17,000

I am so ready for butter, I love butter.

794

00:46:17,000 --> 00:46:20,000

Give us about two minutes to get all the pats ready and we'll go.

795

00:46:21,000 --> 00:46:23,000

Time to butter up.

796

00:46:24,000 --> 00:46:26,000

Initiating the butter sequence.

797

00:46:26,000 --> 00:46:29,000

Butter sequence is initiating.

798

00:46:30,000 --> 00:46:31,000

First piece.

799

00:46:31,000 --> 00:46:32,000

Away.

800

00:46:34,000 --> 00:46:36,000

Butter side up.

801

00:46:36,000 --> 00:46:37,000

Away.

802

00:46:39,000 --> 00:46:40,000

Butter up.

803

00:46:40,000 --> 00:46:42,000

You're watching history in the making.

804

00:46:42,000 --> 00:46:44,000

This must be what the Wright brothers felt like

805

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

or possibly Edison with his light bulb.

806

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

Away.

807

00:46:47,000 --> 00:46:50,000

With each toast drop, the tension mounts.

808

00:46:51,000 --> 00:46:53,000

What's the breakdown so far?

809

00:46:53,000 --> 00:47:00,000

Out of 17 drops, the butter has landed up 12 times.

810

00:47:00,000 --> 00:47:02,000

So butter up is winning.

811

00:47:02,000 --> 00:47:06,000

Okay, my toast, my toast always lands butter side up.

812

00:47:06,000 --> 00:47:08,000

Last slice.

813

00:47:08,000 --> 00:47:09,000

Here we go.

814

00:47:10,000 --> 00:47:14,000

Last slice is a charm and away.

815

00:47:15,000 --> 00:47:17,000

Let's just throw stuff on him now.

816

00:47:21,000 --> 00:47:23,000

Come on, stop making messes.

817

00:47:23,000 --> 00:47:25,000

You're not going to clean it up.

818

00:47:26,000 --> 00:47:28,000

That's one messy sidewalk.

819

00:47:28,000 --> 00:47:32,000

But it's a small price to pay for a scientific discovery.

820

00:47:32,000 --> 00:47:34,000

So, so.

821

00:47:34,000 --> 00:47:39,000

On the dry toast, the X landed up 26 times out of 48.

822

00:47:39,000 --> 00:47:45,000

On the butter toast, the butter side landed up 29 times out of 48.

823

00:47:45,000 --> 00:47:48,000

Adam, I actually saw what was going on here.

824

00:47:48,000 --> 00:47:54,000

The ones that were landing butter side up were ones that had been kind of pressed in a little bit

825

00:47:54,000 --> 00:47:57,000

because it forms a dish in the bread.

826

00:47:57,000 --> 00:48:02,000

And just like a leaf coming off a tree, if it comes off neutral and it's curved,

827

00:48:02,000 --> 00:48:05,000

it doesn't want to float down like this.

828

00:48:05,000 --> 00:48:07,000

It wants to go like that.

829

00:48:07,000 --> 00:48:09,000

I totally agree with that assessment.

830

00:48:09,000 --> 00:48:11,000

I saw the same thing from up there.

831

00:48:11,000 --> 00:48:16,000

So I guess the thing is, is that if you really want to ensure, in general,

832

00:48:16,000 --> 00:48:19,000

your toasts landing buttered side up or down,

833

00:48:19,000 --> 00:48:24,000

we can tell you that you should butter with a good vigor

834

00:48:24,000 --> 00:48:31,000

and that resultant bowl will make your toast generally fall buttered side up.

835

00:48:31,000 --> 00:48:38,000

When brushed off a table, toast shows a tendency to flip once, then land topside down.

836

00:48:38,000 --> 00:48:44,000

But without human interference, when dropped from mid-air, it's a different story.

837

00:48:44,000 --> 00:48:49,000

In none of our testing, no matter what we did, we discovered no statistical predilection

838

00:48:49,000 --> 00:48:51,000

towards buttered side down.

839

00:48:51,000 --> 00:48:53,000

That's busted.

840

00:48:53,000 --> 00:48:54,000

Busted.

841

00:48:54,000 --> 00:48:56,000

Okay. You guys going to wrap it up? I'm going to go.

842

00:49:14,000 --> 00:49:16,000

Thank you.