1

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

On this episode of MythBusters...

2

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

Come on, stay up there.

3

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

It's a wind special.

4

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

Whoa!

5

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

...as the team sparks up an American classic.

6

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

Did Ben Franklin really fly a kite in a storm

7

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

and survive a bolt from the blue?

8

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

Oh!

9

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

Meanwhile, both Adam and Jamie are getting ready...

10

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

Weird.

11

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

What's on pet?

12

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

...to tastefully test some scientific facts about flatulence.

13

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

Roger that. We have flatness contained.

14

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

Ah! Ah! Ah!

15

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

You are the MythBusters.

16

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

Adam Savage.

17

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

Answer all over my head, man.

18

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

And Jamie Heineman.

19

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

Gets me all worked up just looking at it.

20

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

Between them, more than 30 years special effects experience.

21

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

That was heavy.

22

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

Joining them, Grant Imahara.

23

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

Go get him, boy.

24

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

Tori Bellaci.

25

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

Whoa!

26

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

And Carrie Byron.

27

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

That was crazy!

28

00:01:03,000 --> 00:01:05,000

They don't just tell the myths.

29

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

Ah! Ah!

30

00:01:06,000 --> 00:01:09,000

They put them to the test.

31

00:01:15,000 --> 00:01:18,000

First up, a blast from the past

32

00:01:18,000 --> 00:01:22,000

as Carrie, Grant and Tori test an American legend.

33

00:01:27,000 --> 00:01:29,000

We got there, little doll?

34

00:01:29,000 --> 00:01:31,000

No, it's called an action figure.

35

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

And it's Ben Franklin.

36

00:01:32,000 --> 00:01:37,000

Is this the classic tale where Ben Franklin takes a kite out into a storm, flies it,

37

00:01:37,000 --> 00:01:41,000

it gets hit by lightning, and a key that he's tied to the end gets charged,

38

00:01:41,000 --> 00:01:43,000

and he discovers electricity.

39

00:01:43,000 --> 00:01:46,000

I've heard that in every school room I've ever been in.

40

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

Because I've been in a lot.

41

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

Apparently there's a little bit of controversy surrounding it.

42

00:01:52,000 --> 00:01:55,000

They think, well, did he actually fly the kite?

43

00:01:55,000 --> 00:01:58,000

Was he able to get something in the air in a storm?

44

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

Could he have done it without getting killed?

45

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

It sounds really, really dangerous.

46

00:02:03,000 --> 00:02:05,000

It could be very dangerous.

47

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

Or it could be a lot of fun.

48

00:02:07,000 --> 00:02:12,000

Fun fact or fiction, Franklin's kite flying bolt from the blue

49

00:02:12,000 --> 00:02:16,000

is a myth that took the US by storm.

50

00:02:16,000 --> 00:02:21,000

But did this famous spark in the dark really have a reason?

51

00:02:23,000 --> 00:02:26,000

So what we've got to do is start out with the kite

52

00:02:26,000 --> 00:02:30,000

and see if we could build a kite that will fly using period materials

53

00:02:30,000 --> 00:02:32,000

with Benjamin Franklin's specifications.

54

00:02:32,000 --> 00:02:36,000

Definitely have to do some small scale testing on conductivity.

55

00:02:36,000 --> 00:02:40,000

Yes, just to see if the string can actually get that charge all the way down to the key.

56

00:02:40,000 --> 00:02:44,000

And then another problem I see is finding a storm,

57

00:02:44,000 --> 00:02:48,000

getting the kite in the storm and having it hit by lightning.

58

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

Without killing all of us.

59

00:02:49,000 --> 00:02:52,000

Yeah, that seems like it's going to be a challenge.

60

00:02:52,000 --> 00:02:53,000

Yeah.

61

00:02:53,000 --> 00:02:54,000

Let's start with building the kites.

62

00:02:54,000 --> 00:02:57,000

Where they can follow Franklin's recipe,

63

00:02:57,000 --> 00:02:59,000

because he wrote most of it down,

64

00:02:59,000 --> 00:03:01,000

the square frame was made of cedar

65

00:03:01,000 --> 00:03:04,000

and the material was a silk handkerchief.

66

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

On the top of the kite was a lightning rod

67

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

and at the end of the string, the key.

68

00:03:09,000 --> 00:03:12,000

And lastly, Franklin flew it out of a window

69

00:03:12,000 --> 00:03:15,000

so that he didn't get dangerously damp.

70

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

Hey Grant, do you want to make the little kite while I make the big kite?

71

00:03:18,000 --> 00:03:20,000

Sure.

72

00:03:20,000 --> 00:03:24,000

No one knows the precise size of Franklin's kite,

73

00:03:24,000 --> 00:03:30,000

but silk hankies of his time were either 10 by 10 inches or 3 foot square.

74

00:03:30,000 --> 00:03:36,000

So the team is first going to build several of each size to see which flies best.

75

00:03:36,000 --> 00:03:40,000

Come on, stay up there. Stay up there.

76

00:03:40,000 --> 00:03:42,000

With the kites coming together,

77

00:03:42,000 --> 00:03:45,000

the team leaps from preschool to post grad.

78

00:03:45,000 --> 00:03:49,000

In a quest for the best string.

79

00:03:49,000 --> 00:03:54,000

The next part of the myth is we have to measure the resistance of the string

80

00:03:54,000 --> 00:03:56,000

that we're going to use for this.

81

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

And we have here the high resistance meter.

82

00:03:59,000 --> 00:04:02,000

So I need a one inch sample of each type of string we're going to try.

83

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

They're calculating which of the 18th century twines is the best conductor.

84

00:04:08,000 --> 00:04:13,000

For a nano semen.

85

00:04:13,000 --> 00:04:17,000

Because that will have the highest chance of conducting the electrical strike

86

00:04:17,000 --> 00:04:19,000

from the kite to the key.

87

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

Now check this out.

88

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

There's a difference in conductance between these two pieces of string.

89

00:04:24,000 --> 00:04:27,000

And in fact, the thicker one has much higher conductance.

90

00:04:27,000 --> 00:04:30,000

So that's what they're going to use.

91

00:04:30,000 --> 00:04:34,000

Now with the traditional kite strung up with the authentic hem twine,

92

00:04:34,000 --> 00:04:39,000

it's time to see which of the two sizes is the high flyer.

93

00:04:39,000 --> 00:04:41,000

I think she should definitely run with it.

94

00:04:41,000 --> 00:04:42,000

Okay.

95

00:04:42,000 --> 00:04:44,000

Go, Carrie Byron.

96

00:04:47,000 --> 00:04:49,000

Run, Forrest!

97

00:04:50,000 --> 00:04:52,000

You're almost there!

98

00:04:52,000 --> 00:04:57,000

Carrie's running like the wind, but for now her big kite can't even get off the ground.

99

00:04:57,000 --> 00:05:00,000

Can Grant's tiny rival do any better?

100

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

Go!

101

00:05:01,000 --> 00:05:02,000

Go!

102

00:05:02,000 --> 00:05:03,000

Go!

103

00:05:07,000 --> 00:05:09,000

Stability appears to be an issue.

104

00:05:09,000 --> 00:05:11,000

You don't say.

105

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

Grant's kite is doing more spins than a washing machine.

106

00:05:17,000 --> 00:05:19,000

And Carrie's has the same problem.

107

00:05:22,000 --> 00:05:26,000

So Team Tiny ties on a rock for added stability.

108

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

But then the kite turns psycho.

109

00:05:28,000 --> 00:05:29,000

Hey!

110

00:05:31,000 --> 00:05:33,000

It's the death kite.

111

00:05:33,000 --> 00:05:35,000

The kite of punishment.

112

00:05:35,000 --> 00:05:36,000

Oh!

113

00:05:39,000 --> 00:05:44,000

I made it all worthwhile.

114

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

Gotta stretch it out a little.

115

00:05:46,000 --> 00:05:53,000

While Tori massages his rocks from the rock, the others don't get any further.

116

00:05:53,000 --> 00:05:55,000

I don't think it's supposed to do that.

117

00:05:55,000 --> 00:06:02,000

If they're hoping to get this myth up and running, they're going to need a second wind.

118

00:06:02,000 --> 00:06:03,000

Here we go.

119

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

These kites are dangerous.

120

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

Meanwhile, a different wind is brewing for Adam and Jamie.

121

00:06:13,000 --> 00:06:15,000

Facts about flatulence.

122

00:06:15,000 --> 00:06:18,000

What kind of facts are there about flatulence?

123

00:06:18,000 --> 00:06:21,000

This is actually classic Mythbuster territory.

124

00:06:21,000 --> 00:06:26,000

We're going to investigate all of the things people have ever wanted to know about flatulence.

125

00:06:26,000 --> 00:06:30,000

Do you mean like when the guy passed so much gas that he suffocated?

126

00:06:30,000 --> 00:06:31,000

Yep.

127

00:06:31,000 --> 00:06:37,000

Or does lighting a match dissipate the smell of Chanel number two?

128

00:06:37,000 --> 00:06:42,000

And then finally, they're foods that make you pass more gas than other foods like beans.

129

00:06:42,000 --> 00:06:50,000

The Mythbusters have ranked the top ranked myths and none get any bigger than death by flatus.

130

00:06:50,000 --> 00:06:53,000

So, we got flatus to death.

131

00:06:53,000 --> 00:07:00,000

This is a myth about a large man living on a diet of beans and cabbage in a small, close room

132

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

who apparently suffocated by inhaling the deadly cloud of gas that hung above him.

133

00:07:06,000 --> 00:07:09,000

It's a myth from the boughs of the internet.

134

00:07:09,000 --> 00:07:14,000

But is this story toilet trash or does it have a ring of truth?

135

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

Can flatulence really be fatal?

136

00:07:18,000 --> 00:07:24,000

You know, in order to get started with this, we have to physically determine the actual size of a flatus

137

00:07:24,000 --> 00:07:26,000

and what its constituent components are.

138

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

Well, that means we have to come up with some sort of device to actually catch a flatus, right?

139

00:07:31,000 --> 00:07:35,000

Since the one place you normally see them is in the bathtub,

140

00:07:35,000 --> 00:07:41,000

I'm thinking of using a rig that uses water and a bathtub to actually capture them.

141

00:07:41,000 --> 00:07:46,000

So, before the boys can test the death by toxic flatulence myth,

142

00:07:46,000 --> 00:07:51,000

they first need to learn exactly what gases are found therein.

143

00:07:51,000 --> 00:07:56,000

So, Adam's building a bath-based flatus catcher.

144

00:07:56,000 --> 00:08:01,000

Adam's device should trap his trumpet in a tube as it bubbles up through water.

145

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

Once trapped, the awful aroma needs to be extracted.

146

00:08:05,000 --> 00:08:09,000

And that's where the flatus containment vessel comes in.

147

00:08:09,000 --> 00:08:16,000

So, what I'm going to do now is hook up my vacuum pump to this and pull a vacuum on this.

148

00:08:16,000 --> 00:08:20,000

Once I pull a vacuum, I'm going to close it and this thing will be under vacuum.

149

00:08:20,000 --> 00:08:26,000

And when I hook it up to the flatus catcher, it's going to capture the flatus and then I shut it off.

150

00:08:26,000 --> 00:08:30,000

Never has such ingenuity been focused at flatulence.

151

00:08:30,000 --> 00:08:34,000

Oh, hey! The cotton!

152

00:08:38,000 --> 00:08:40,000

That was great!

153

00:08:40,000 --> 00:08:47,000

With Adam's trap tuned up and a bubble bath on standby, everything is ready for the main event.

154

00:08:47,000 --> 00:08:51,000

My dignity and good television.

155

00:08:51,000 --> 00:08:53,000

They'll never meet.

156

00:08:53,000 --> 00:08:56,000

At least not on this show.

157

00:08:56,000 --> 00:09:00,000

But when Adam gets in to give gas, there's a problem.

158

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

Oh, God, it's so cold!

159

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

Oh, dude, that's wrong!

160

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

For some reason, the cold water is making me pucker up.

161

00:09:13,000 --> 00:09:16,000

The liquid chill is hindering his digestion.

162

00:09:16,000 --> 00:09:20,000

Try as he might, he just can't deliver the goods.

163

00:09:20,000 --> 00:09:23,000

I wasted a really good one at like six o'clock this morning.

164

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

It was like two seconds long, like a real...

165

00:09:28,000 --> 00:09:30,000

kind of thing.

166

00:09:30,000 --> 00:09:32,000

Wish I had that now.

167

00:09:32,000 --> 00:09:35,000

Later, more facts about flatulence.

168

00:09:35,000 --> 00:09:38,000

May have pungent or rotten egg odor.

169

00:09:38,000 --> 00:09:42,000

But next up, Franklin's kite finally flies.

170

00:09:42,000 --> 00:09:45,000

Yeah! We did it!

171

00:09:46,000 --> 00:09:50,000

Did Ben Franklin fly a kite in a thunderstorm,

172

00:09:50,000 --> 00:09:54,000

get struck by lightning via a key, and survive?

173

00:09:54,000 --> 00:09:58,000

Not if the Mythbusters kite flying team is anything to go by.

174

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

They've struggled to get a Franklin inspired kite off the ground,

175

00:10:02,000 --> 00:10:05,000

let alone do so in a thunderstorm.

176

00:10:05,000 --> 00:10:08,000

But Carrie has a plan B.

177

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

I'm making some changes in the kite design.

178

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

I'm taking advantage of the vagueness of Franklin's kite.

179

00:10:14,000 --> 00:10:17,000

I'm changing from the square cedar that we had before

180

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

to a more flexible doweling.

181

00:10:19,000 --> 00:10:22,000

I'm also going to change from a perfect square

182

00:10:22,000 --> 00:10:24,000

to a more diamond shape,

183

00:10:24,000 --> 00:10:28,000

which is traditionally what more you would think of a kite as looking like.

184

00:10:28,000 --> 00:10:30,000

To get this myth airborne,

185

00:10:30,000 --> 00:10:34,000

Carrie's decided to slightly alter Franklin's kite design.

186

00:10:34,000 --> 00:10:36,000

She's changing his square shape to a diamond,

187

00:10:36,000 --> 00:10:39,000

and making the frame of more modern cedar doweling.

188

00:10:39,000 --> 00:10:43,000

Meanwhile, the boys are focusing on Franklin's kite flying shelter.

189

00:10:43,000 --> 00:10:47,000

We've got one hour to rip this thing apart and put a new window in.

190

00:10:47,000 --> 00:10:51,000

The race is on to build our room with a view.

191

00:10:55,000 --> 00:10:58,000

Okay, the bathroom's done.

192

00:10:58,000 --> 00:11:02,000

They're recycling a previous Mythbusters experiment.

193

00:11:02,000 --> 00:11:04,000

They're going to use the same method

194

00:11:04,000 --> 00:11:07,000

to make the room look like a real room.

195

00:11:07,000 --> 00:11:10,000

They're going to use the previous Mythbusters experiment

196

00:11:10,000 --> 00:11:13,000

into Franklin's kite flying HQ.

197

00:11:13,000 --> 00:11:16,000

I really think the Franklin family is going to love these new additions

198

00:11:16,000 --> 00:11:19,000

we made to their house.

199

00:11:19,000 --> 00:11:22,000

With the preparations well underway,

200

00:11:22,000 --> 00:11:24,000

job well done.

201

00:11:24,000 --> 00:11:26,000

Nice!

202

00:11:26,000 --> 00:11:29,000

The team can soon put this myth to the test,

203

00:11:29,000 --> 00:11:33,000

and there's three key things to find out.

204

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

Test one, can a kite attract a charge

205

00:11:35,000 --> 00:11:39,000

and conduct it down 18th century string to a key?

206

00:11:39,000 --> 00:11:42,000

Two, can the key get charged so much

207

00:11:42,000 --> 00:11:45,000

that it will spark to the kite flyer's finger?

208

00:11:45,000 --> 00:11:48,000

And three, can that spark be so great

209

00:11:48,000 --> 00:11:51,000

that the kite flyer flatlines?

210

00:11:51,000 --> 00:11:55,000

For test one, can the string conduct a charge to the key,

211

00:11:55,000 --> 00:11:57,000

the team hits the beach.

212

00:11:57,000 --> 00:12:01,000

They've got their kite flying shelter and Carrie's latest kite.

213

00:12:01,000 --> 00:12:04,000

It's a new shape, but the silk and the twine

214

00:12:04,000 --> 00:12:07,000

are based on Franklin's original guidelines.

215

00:12:07,000 --> 00:12:10,000

Here we are yet again trying to get a kite into the air.

216

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

This is our biggest and our best kite.

217

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

One, two, three.

218

00:12:16,000 --> 00:12:18,000

Hey!

219

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

Yeah! We did it!

220

00:12:22,000 --> 00:12:25,000

Now that the kite has got a second win,

221

00:12:25,000 --> 00:12:27,000

the mythbusting can begin.

222

00:12:27,000 --> 00:12:30,000

And for this first test, the fact that there's not a thunderstorm in sight

223

00:12:30,000 --> 00:12:32,000

shouldn't be a problem.

224

00:12:32,000 --> 00:12:34,000

Even on a dry day like today,

225

00:12:34,000 --> 00:12:37,000

we should be able to develop a static charge.

226

00:12:37,000 --> 00:12:39,000

The reason is that the movement of the air,

227

00:12:39,000 --> 00:12:42,000

the wind across the kite and the string

228

00:12:42,000 --> 00:12:45,000

should leave a net electrical charge.

229

00:12:45,000 --> 00:12:49,000

With 500 feet of the good conducting string let out,

230

00:12:49,000 --> 00:12:52,000

they're maximizing their chance for success.

231

00:12:52,000 --> 00:12:54,000

Do you want to get in the house and be all ready?

232

00:12:54,000 --> 00:12:56,000

You can be Ben Franklin, I'll bring it over to you.

233

00:12:56,000 --> 00:12:59,000

Okay, everything's all ready.

234

00:12:59,000 --> 00:13:04,000

All right, we're getting 3.8 kV.

235

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

Wow, the core.

236

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

Look at that!

237

00:13:07,000 --> 00:13:08,000

6 kV.

238

00:13:08,000 --> 00:13:10,000

We are building!

239

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

Test 1's a success.

240

00:13:12,000 --> 00:13:14,000

The key's a buzzin'.

241

00:13:14,000 --> 00:13:17,000

We're up to almost 10 kV.

242

00:13:17,000 --> 00:13:20,000

With a reading of 10,000 volts,

243

00:13:20,000 --> 00:13:22,000

the team moves on to test 2.

244

00:13:22,000 --> 00:13:24,000

Can Carrie get a shock off the key?

245

00:13:24,000 --> 00:13:26,000

No, no sparks.

246

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

Now that we've gotten it in the air and we've got the

247

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

copper rod at the end,

248

00:13:30,000 --> 00:13:31,000

do you want to bring it down,

249

00:13:31,000 --> 00:13:33,000

wet it and let it back up?

250

00:13:33,000 --> 00:13:35,000

Yeah, I think we should.

251

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

To try to get a spark, the team wets the string

252

00:13:38,000 --> 00:13:42,000

because water should dramatically increase its conductivity.

253

00:13:42,000 --> 00:13:45,000

The charge didn't seem to be building very quickly before,

254

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

but it is now.

255

00:13:47,000 --> 00:13:50,000

All the steady 16, 19 off the scale.

256

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

Do you want to try the next test?

257

00:13:52,000 --> 00:13:54,000

Definitely.

258

00:13:55,000 --> 00:13:57,000

Nothing.

259

00:13:57,000 --> 00:14:00,000

The wets string has more than double the voltage,

260

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

but it's still not enough to get a spark.

261

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

For that, they're going to have to jolt this experiment up.

262

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

Can flatulence be fatal?

263

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

To test this smelly saga,

264

00:14:16,000 --> 00:14:18,000

the Mythbusters must first learn

265

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

what gases make up the average trump.

266

00:14:21,000 --> 00:14:23,000

The FCV.

267

00:14:23,000 --> 00:14:25,000

Adam's built a stink catcher.

268

00:14:25,000 --> 00:14:27,000

Psst, psst.

269

00:14:27,000 --> 00:14:28,000

Closing valve number two.

270

00:14:28,000 --> 00:14:30,000

The dress rehearsal was a breeze.

271

00:14:30,000 --> 00:14:33,000

Roger that, we have flatus contained.

272

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

Ah, ah, ah, ah.

273

00:14:36,000 --> 00:14:38,000

But for the main event,

274

00:14:38,000 --> 00:14:40,000

he's had performance anxiety.

275

00:14:40,000 --> 00:14:41,000

You got one?

276

00:14:41,000 --> 00:14:43,000

I think so.

277

00:14:43,000 --> 00:14:45,000

Oh, it's a little tiny one.

278

00:14:45,000 --> 00:14:47,000

No, nothing.

279

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

Waiting for Adam to bubble up is rather unpleasant.

280

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

So here's a reassuring announcement about taste.

281

00:14:59,000 --> 00:15:01,000

This particular subject is, you know,

282

00:15:01,000 --> 00:15:03,000

it might offend some people if we're not careful.

283

00:15:03,000 --> 00:15:05,000

Well, we have to be very tasteful.

284

00:15:05,000 --> 00:15:08,000

And, you know, I think we should start by

285

00:15:08,000 --> 00:15:12,000

doing this entire segment without ever once using the word f***.

286

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

Didn't you just do that?

287

00:15:14,000 --> 00:15:16,000

No, they bleep that right out.

288

00:15:16,000 --> 00:15:19,000

Well, the technical term for it is flatus.

289

00:15:19,000 --> 00:15:21,000

And that's where we should begin.

290

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

Back at the bath,

291

00:15:23,000 --> 00:15:26,000

Adam's body has had time to adjust to the cold,

292

00:15:26,000 --> 00:15:29,000

and his numb bum starts bubbling.

293

00:15:30,000 --> 00:15:33,000

Hey, we got one!

294

00:15:37,000 --> 00:15:43,000

We got a nice 13 and a half milliliter flatus.

295

00:15:43,000 --> 00:15:47,000

I think this is the first time anyone's ever tried this on television.

296

00:15:47,000 --> 00:15:54,000

The second, third, and fourth times soon follow through.

297

00:15:54,000 --> 00:15:58,000

Then they're logged before the team draws straws

298

00:15:58,000 --> 00:16:01,000

to see who has to take them to the lab.

299

00:16:01,000 --> 00:16:05,000

Yet another one of my very unique missions that Jamie and Adam have sent me on,

300

00:16:05,000 --> 00:16:13,000

I have four specimens of flatus to bring into the UCSF mass spectrometry facility.

301

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

They're going to test them and see exactly what's in them.

302

00:16:17,000 --> 00:16:19,000

Lucky, lucky them.

303

00:16:19,000 --> 00:16:22,000

Well, what we're going to do is take this sample,

304

00:16:22,000 --> 00:16:24,000

and we'll open up the stopcock at the top.

305

00:16:24,000 --> 00:16:28,000

We'll put this syringe in, pull a volume of air out of there,

306

00:16:28,000 --> 00:16:30,000

and then we're going to inject it on here,

307

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

and they will be analyzed to tell what they are.

308

00:16:33,000 --> 00:16:37,000

You know they'll be troubled when it all sounds so simple.

309

00:16:37,000 --> 00:16:40,000

Oh, God!

310

00:16:40,000 --> 00:16:45,000

A quick spray of not so much odocolone as odicolon.

311

00:16:45,000 --> 00:16:46,000

That can't be good for you.

312

00:16:46,000 --> 00:16:48,000

Once injected into the machine,

313

00:16:48,000 --> 00:16:54,000

the ingredients of Adam's gastric gas will be broken up according to their mass.

314

00:16:54,000 --> 00:16:57,000

So what are the main constituents of the sample we just took?

315

00:16:57,000 --> 00:17:00,000

So what we're mainly seeing is 28 and 32,

316

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

which would be nitrogen and oxygen,

317

00:17:02,000 --> 00:17:04,000

which of course is the main constituents of our air.

318

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

There's a little bit of 40, which would be argon,

319

00:17:07,000 --> 00:17:10,000

which also is a normal constituent of air.

320

00:17:10,000 --> 00:17:13,000

We're seeing some methane and some carbon dioxide.

321

00:17:13,000 --> 00:17:15,000

So it's not just hot air.

322

00:17:15,000 --> 00:17:19,000

There is odorless methane and carbon dioxide.

323

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

And that's not all.

324

00:17:21,000 --> 00:17:25,000

Adam's air salute also contains hydrogen sulfide

325

00:17:25,000 --> 00:17:30,000

and methylmercaptan, the smelly gases of flattis.

326

00:17:30,000 --> 00:17:34,000

With the ingredients of Adam's wretched recipe established,

327

00:17:34,000 --> 00:17:36,000

I hope there's the weirdest thing you have to do today.

328

00:17:36,000 --> 00:17:40,000

the team is ready to see if flatulence can be fatal.

329

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

300,000.

330

00:17:42,000 --> 00:17:45,000

Later, Franklin's kite gets fried.

331

00:17:45,000 --> 00:17:47,000

There's our lightning.

332

00:17:47,000 --> 00:17:52,000

And up next, Buster tests death by flattis.

333

00:17:52,000 --> 00:17:55,000

This might be the meanest thing we've ever done to him.

334

00:17:58,000 --> 00:18:02,000

Flattulence. Like it or not, we all do it.

335

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

But is it ever possible to pass so much gas in one night that it turns deadly?

336

00:18:09,000 --> 00:18:15,000

To test this tall tale, Adam and Jamie first need to build a suitably small bedroom.

337

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

Then they need a test subject.

338

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

Yes, the ever-unfortunate Buster.

339

00:18:21,000 --> 00:18:22,000

There we go.

340

00:18:22,000 --> 00:18:27,000

And with the room sealed up, everything's ready for the gas.

341

00:18:27,000 --> 00:18:33,000

The analysis of Adam's airstrike showed that most flattis gases are harmless,

342

00:18:33,000 --> 00:18:36,000

but some can be fatal in high doses.

343

00:18:36,000 --> 00:18:41,000

To find the mythical killer, they're going to test each noxious gas in turn,

344

00:18:41,000 --> 00:18:43,000

starting with carbon dioxide.

345

00:18:43,000 --> 00:18:47,000

The reason we're going to start with CO2 is because of all the constituent gases

346

00:18:47,000 --> 00:18:51,000

that make up your flattis, it's the one we think really has the highest potential

347

00:18:51,000 --> 00:18:56,000

to be the most deadly and come out in amounts large enough to actually be plausible.

348

00:18:56,000 --> 00:19:01,000

Regular air does contain carbon dioxide, but there's so little of it,

349

00:19:01,000 --> 00:19:05,000

just 0.03% that it's harmless.

350

00:19:05,000 --> 00:19:09,000

But at higher concentrations, it turns nasty.

351

00:19:09,000 --> 00:19:13,000

At concentrations of about 2%, we have cerebral dilation,

352

00:19:13,000 --> 00:19:20,000

we have increased blood pressure, nausea, confusion, some minor side effects like that.

353

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

At about 8%, we have nausea and vomiting.

354

00:19:24,000 --> 00:19:28,000

At about 10%, we have death within minutes.

355

00:19:28,000 --> 00:19:33,000

And to see if they can get to the magic 10%, they're going to go for broke.

356

00:19:33,000 --> 00:19:40,000

The largest flattis, like recorded in the research we have, is 170 milliliters per hour.

357

00:19:40,000 --> 00:19:47,000

And given that the largest amount of CO2 in flattis in the study we have is 80%,

358

00:19:47,000 --> 00:19:49,000

that's 140 milliliters of flattis.

359

00:19:49,000 --> 00:19:52,000

This might be the meanest thing we've ever done to him.

360

00:19:52,000 --> 00:19:55,000

Slow but deadly.

361

00:19:55,000 --> 00:20:01,000

But how deadly will this record level of CO2 from flattis really be?

362

00:20:03,000 --> 00:20:06,000

Three, two, one.

363

00:20:06,000 --> 00:20:11,000

Alright, that is one hour's worth of CO2 in flattis production.

364

00:20:11,000 --> 00:20:15,000

Well, we're showing absolutely no change on the meter.

365

00:20:15,000 --> 00:20:21,000

The meter is staying at 0.03%, nowhere near the 10% needed for fatality.

366

00:20:21,000 --> 00:20:24,000

Let's add two more hours, that's half the night.

367

00:20:24,000 --> 00:20:27,000

If we don't see any change in the reading, we'll add four more hours.

368

00:20:27,000 --> 00:20:28,000

Okay.

369

00:20:28,000 --> 00:20:30,000

We'll get to eight hours, full eight hours sleep.

370

00:20:31,000 --> 00:20:35,000

With no change in the reading so far, they decided to pull out all the stops

371

00:20:35,000 --> 00:20:38,000

and add a whole night's worth of gas.

372

00:20:38,000 --> 00:20:43,000

And that is eight hours worth of flattis.

373

00:20:43,000 --> 00:20:47,000

Of CO2 from flattis entered into Buster's little bedroom.

374

00:20:47,000 --> 00:20:49,000

What does the meter say?

375

00:20:49,000 --> 00:20:52,000

Well, we're actually up to 0.06%.

376

00:20:52,000 --> 00:20:56,000

The level's doubled, but it's still way too low to be deadly.

377

00:20:56,000 --> 00:21:01,000

If you want to get to 10%, 2600 hours.

378

00:21:01,000 --> 00:21:06,000

It's 110 days to reach the leaf limit of CO2 in a sealed room

379

00:21:06,000 --> 00:21:09,000

if all you're doing is passing gas.

380

00:21:09,000 --> 00:21:15,000

Look, breathing is going to cost much more CO2 production than flattis.

381

00:21:15,000 --> 00:21:19,000

To see whether the man in the myth could have breathed himself to death,

382

00:21:19,000 --> 00:21:23,000

it's out with Buster and in with Jamie.

383

00:21:23,000 --> 00:21:28,000

Being sealed up in a small room to go to sleep in may sound relaxing,

384

00:21:28,000 --> 00:21:32,000

but not when the carbon dioxide level is rising.

385

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

Twenty minutes.

386

00:21:34,000 --> 00:21:35,000

Okay.

387

00:21:35,000 --> 00:21:36,000

Let's see here.

388

00:21:36,000 --> 00:21:37,000

Wow.

389

00:21:37,000 --> 00:21:42,000

The CO2 concentration is 0.14.

390

00:21:42,000 --> 00:21:48,000

Already, breathing has produced twice as much CO2 as eight hours worth of flattulence.

391

00:21:48,000 --> 00:21:55,000

So in a room this size, exactly how long would it take for death by breathing to occur?

392

00:21:55,000 --> 00:21:58,000

We're at 1.28% now.

393

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

Wow, you've been in there for four hours.

394

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

If you extrapolate that out, it takes four hours to get to 1.3%.

395

00:22:06,000 --> 00:22:11,000

I mean, we're talking somewhere around 36 hours to get to 10%.

396

00:22:11,000 --> 00:22:13,000

36 hours.

397

00:22:13,000 --> 00:22:17,000

Way too long to have killed the sleeping man in the myth.

398

00:22:17,000 --> 00:22:20,000

So the mythical killer wasn't CO2.

399

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

Neither breathing nor flattis can raise the level to a deadly amount in just one night.

400

00:22:26,000 --> 00:22:31,000

Could any other colon components be the culprit?

401

00:22:31,000 --> 00:22:39,000

To find out, Adam hits the books to calculate whether any other gluteal gases are even theoretically possible.

402

00:22:39,000 --> 00:22:42,000

Like methane, deadly at 2%.

403

00:22:42,000 --> 00:22:45,000

But how long would that take?

404

00:22:45,000 --> 00:22:49,000

441 days.

405

00:22:49,000 --> 00:22:51,000

So, methane's out the window.

406

00:22:51,000 --> 00:22:53,000

What about hydrogen sulfide?

407

00:22:53,000 --> 00:23:03,000

That's 193,220 episodes of flattis, or 22 years of solid gas passing.

408

00:23:03,000 --> 00:23:05,000

That's a commitment.

409

00:23:05,000 --> 00:23:09,000

This malodorous myth is busted.

410

00:23:09,000 --> 00:23:14,000

Next on MythBusters, did Ben Franklin really discover electricity?

411

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

Or was the new punk fashion?

412

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

In the Ben Franklin myth, the team has shown that a key tied to a kite string can get charged up.

413

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

But the famous spark has so far proved elusive.

414

00:23:27,000 --> 00:23:29,000

Listen to me.

415

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

So they're going to up the ante.

416

00:23:31,000 --> 00:23:34,000

Take me to your leader.

417

00:23:34,000 --> 00:23:39,000

And Jamie's van der Graf generator should provide the necessary power.

418

00:23:39,000 --> 00:23:43,000

It's capable of generating a charge of 100,000 volts.

419

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

And if this charge strikes the kite...

420

00:23:46,000 --> 00:23:50,000

That is cool.

421

00:23:50,000 --> 00:23:57,000

It may be powerful enough to travel down the string and then arc from the key to the finger.

422

00:23:57,000 --> 00:24:02,000

Well, without going out into a rainstorm to fly our kite, which would be really dangerous,

423

00:24:02,000 --> 00:24:06,000

we're actually going to use the van der Graf generator to generate a high voltage.

424

00:24:06,000 --> 00:24:16,000

And that would simulate the charge separation that you would find high up in the atmosphere where the clouds are on cloudy, very cloudy or rainy day.

425

00:24:16,000 --> 00:24:25,000

It's the next best thing to a thunderstorm and should be much more powerful than their static charge beach test.

426

00:24:25,000 --> 00:24:33,000

The team is going to position Kari's kite next to the generator, run 500 feet of traditional twine around the car park,

427

00:24:33,000 --> 00:24:38,000

and then wait to see if the charge will jump from the antique key at the end.

428

00:24:38,000 --> 00:24:45,000

I'm just going to move the kite close to the van der Graf so that we can actually get it to discharge onto the kite.

429

00:24:45,000 --> 00:24:53,000

If they can get a strike right onto the kite, they should boost their chances of getting an arc from the key.

430

00:24:53,000 --> 00:24:57,000

It's hardly a lightning bolt, but will it be enough?

431

00:24:57,000 --> 00:25:02,000

It's very tiny, but...

432

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

And you'll miss it, but there is a tiny spark which has a big repercussion.

433

00:25:08,000 --> 00:25:14,000

Electricity can be conducted down a kite string to a key and then jumped to a finger.

434

00:25:14,000 --> 00:25:23,000

Test two passed, but for test three, if the charge was 10,000 times stronger, could Franklin have survived?

435

00:25:23,000 --> 00:25:27,000

Well, obviously we can't fly a kite out in a storm because it's completely dangerous.

436

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

Way too dangerous kids at home do not try that.

437

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

So maybe we need a little more of a controlled circumstance.

438

00:25:33,000 --> 00:25:38,000

How about the facility the electric company has used it in a phone and a lightning storm?

439

00:25:38,000 --> 00:25:42,000

Well, we're going to have to find a subject to test this stuff on because I'm not going to do it.

440

00:25:42,000 --> 00:25:44,000

And I know you guys aren't going to do it.

441

00:25:44,000 --> 00:25:47,000

Okay, so maybe we're going to build a Ben Franklin.

442

00:25:47,000 --> 00:25:48,000

Okay.

443

00:25:48,000 --> 00:25:53,000

Well, I don't want to build a whole ballistics gel body, so maybe we can just do a torso, a couple hands, and a couple feet,

444

00:25:53,000 --> 00:25:58,000

and then have a resistor in the middle that would match the conductivity of the human body.

445

00:25:58,000 --> 00:26:03,000

For the final part of the circuit, they're going to build a ballistics gel Ben Franklin.

446

00:26:03,000 --> 00:26:10,000

To see whether he could survive the biggest jolt, the electric company can throw it as kite.

447

00:26:10,000 --> 00:26:12,000

And it's down to Tori to build him.

448

00:26:12,000 --> 00:26:18,000

His head, hands, and feet will be made from that old Mythbusters favorite.

449

00:26:18,000 --> 00:26:22,000

Ballistics gel, I love it.

450

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

While his skeleton will be made from something a little more solid.

451

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

What I'm going to use is some PVC pipe, you know, for legs, arms.

452

00:26:30,000 --> 00:26:34,000

This is going to give me my structure to keep him standing up straight.

453

00:26:34,000 --> 00:26:39,000

It's also non-conductive because we don't want to change the resistance of the body.

454

00:26:39,000 --> 00:26:47,000

Tori's doing everything he can to ensure that his Franklin body double is as close to human as possible.

455

00:26:48,000 --> 00:26:58,000

And once Head Case Ben is all set, the team votes for the Pacific Gas and Electric Test Facility to fly this fable once and for all.

456

00:26:58,000 --> 00:27:01,000

That's a death ray.

457

00:27:01,000 --> 00:27:05,000

People of Earth, submit to me.

458

00:27:05,000 --> 00:27:12,000

In this thunderdome, they can generate man-made lightning pulsing with almost a million volts.

459

00:27:12,000 --> 00:27:18,000

So the team is going to position the kite next to the power line and wait to strike lucky.

460

00:27:18,000 --> 00:27:23,000

Something which outside this test facility is very, very dangerous.

461

00:27:28,000 --> 00:27:38,000

The real problem with flying your kite near a power line is that the kite doesn't have to touch the power line for an arc to occur.

462

00:27:38,000 --> 00:27:45,000

And it's a real hazard to anyone who's trying to do anything near a power line.

463

00:27:45,000 --> 00:27:51,000

And never fly a kite with metal on it, or with metal twine.

464

00:27:51,000 --> 00:27:56,000

It's just not sensible, as the team is about to see.

465

00:27:56,000 --> 00:28:00,000

I dastardly scheme. It's coming together.

466

00:28:01,000 --> 00:28:09,000

With Ballistics Gel, Franklin's heart monitor wired up, and the key within touching distance of his finger,

467

00:28:09,000 --> 00:28:16,000

Kari's kite is hauled up to the power line to see if Franklin will live or fry.

468

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

Really shocked the crap out of me.

469

00:28:20,000 --> 00:28:23,000

Later, Franklin's in for a shock.

470

00:28:24,000 --> 00:28:30,000

But next up, Adam waxes lyrical about bean-induced flatulence.

471

00:28:30,000 --> 00:28:34,000

7.31 a.m., nice loud brap, followed by two pops.

472

00:28:37,000 --> 00:28:42,000

In facts about flatulence, it's time to test an all-time classic.

473

00:28:43,000 --> 00:28:53,000

We've all heard it. Beans, beans, good for your heart. The more you eat, the more you produce flatus.

474

00:28:53,000 --> 00:28:58,000

Or do you? The mythbusters are going to lift the lid on this stinky story.

475

00:29:04,000 --> 00:29:09,000

So Adam, you know a lot of people may not realize that the gas contained in flatus can come from a couple of different sources.

476

00:29:09,000 --> 00:29:16,000

It's true. The first type is actually pretty much like a butt burp. Just as swallowed air can be belched out of your mouth,

477

00:29:16,000 --> 00:29:19,000

it can also make its way all the way through your system and come out the other end.

478

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

The other way is from the breakdown of food in your gut. There are bacteria, enzymes and acids in there that,

479

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

when they break down your food during digestion, they create gas as a byproduct.

480

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

And of course, different types of food would create different quantities of gas, right?

481

00:29:33,000 --> 00:29:38,000

That's what we're testing. And apparently, these bacteria go ballistic for beans.

482

00:29:39,000 --> 00:29:47,000

To put this to the test, the team has spent three days recording every gas movement

483

00:29:50,000 --> 00:29:57,000

to try to establish their average rate of flatus output on a regular run-of-the-mill diet.

484

00:29:58,000 --> 00:30:06,000

And the results are in. On a regular diet, in a normal day, they know that Carrie passes gas three times.

485

00:30:06,000 --> 00:30:12,000

Jay needs six and Adam an impressive ten. So, bring on the beans.

486

00:30:12,000 --> 00:30:18,000

Refried beans. Refried pinto. Refried black beans.

487

00:30:19,000 --> 00:30:25,000

There's a hell of beans, and they're all for Adam, because the others are going to be eating different,

488

00:30:25,000 --> 00:30:31,000

supposedly flatus-inducing diets. Jamie's going to be munching nothing but meat.

489

00:30:31,000 --> 00:30:34,000

New York steak. That's one meal.

490

00:30:34,000 --> 00:30:40,000

While Carrie is on the bubbles, fizzy drinks are another alleged gas producer.

491

00:30:41,000 --> 00:30:45,000

And back at the shop, dinner is served.

492

00:30:45,000 --> 00:30:51,000

I figure I'll start this experiment with a nice ribeye steak.

493

00:30:51,000 --> 00:30:54,000

I figure I'll save the New York strip for dinner.

494

00:30:54,000 --> 00:31:00,000

Jamie seems to have the lion's share of the diet, especially when compared to Adam.

495

00:31:01,000 --> 00:31:02,000

Oh.

496

00:31:05,000 --> 00:31:10,000

It's not bad. Weird. Not bad.

497

00:31:10,000 --> 00:31:17,000

But that's definitely better than Carrie, who's on a 24-hour carbonated liquid menu.

498

00:31:17,000 --> 00:31:20,000

I hope my dentist isn't watching.

499

00:31:20,000 --> 00:31:27,000

Once it's all gone down the hatch, the team goes back to work.

500

00:31:28,000 --> 00:31:33,000

Where they keep recording any gas production.

501

00:31:33,000 --> 00:31:36,000

They all continued their diets at home.

502

00:31:36,000 --> 00:31:41,000

But did they sleep soundly, or did things go bump in the night?

503

00:31:41,000 --> 00:31:47,000

All right, kids, it's been 24 hours on the new diet. What were the results?

504

00:31:47,000 --> 00:31:52,000

Well, my meat diet cut my flatulence production by about 50%.

505

00:31:52,000 --> 00:31:53,000

Carrie?

506

00:31:53,000 --> 00:31:54,000

I doubled.

507

00:31:54,000 --> 00:31:57,000

I went from a 2 to a 5 with carbonated beverages.

508

00:31:57,000 --> 00:31:58,000

Right on.

509

00:31:58,000 --> 00:32:00,000

With a ton of belching.

510

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

Everything that wasn't a belch came out the other end.

511

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

I had stunning results on the beans.

512

00:32:06,000 --> 00:32:10,000

I had 9 during the day, 11 more late at night and early in the morning.

513

00:32:10,000 --> 00:32:15,000

I didn't even count the ones while I was sleeping, so it was like a 100% increase for me, too.

514

00:32:15,000 --> 00:32:17,000

You're a lucky family.

515

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

The results are in.

516

00:32:19,000 --> 00:32:22,000

For this crew, at least, meat is busted.

517

00:32:22,000 --> 00:32:27,000

While bubbly beverages and beans are confirmed big time.

518

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

So, bring on the final flatulent fact.

519

00:32:33,000 --> 00:32:39,000

So, how about the myth that lighting a match after you've passed gas will get rid of the smell?

520

00:32:39,000 --> 00:32:46,000

Well, the question there is, is it eliminating the smelly gases, or is it actually just masking it with the smell of a burnt match?

521

00:32:47,000 --> 00:32:51,000

Matches of long bean the friend of those with stentsy stomachs.

522

00:32:51,000 --> 00:32:55,000

Would do they fight the flattice by burning off the smelly gases?

523

00:32:55,000 --> 00:32:58,000

Or do they just conceal the deal?

524

00:32:58,000 --> 00:33:03,000

To find out, they've got the two smelliest gases that were in Adam's flattice.

525

00:33:03,000 --> 00:33:06,000

Hydrogen sulfide and methylmercaptain.

526

00:33:06,000 --> 00:33:09,000

They have pungent or rotten egg odor.

527

00:33:10,000 --> 00:33:17,000

They're going to inject a known concentration of these flammable fumes one by one into Adam's sealed chamber.

528

00:33:17,000 --> 00:33:24,000

I'm just taping it up so that it actually holds the gas we're going to put in. It doesn't let any air in.

529

00:33:24,000 --> 00:33:30,000

Then they'll light Jamie's remote controlled match to see if the smelly gas concentration changes.

530

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

There we go.

531

00:33:35,000 --> 00:33:40,000

With a hydrogen sulfide meter in the chamber, it's that gas that they add first.

532

00:33:40,000 --> 00:33:48,000

It's stabilized at 76 parts per million. It's been that way for several minutes. There's no circulation going on here.

533

00:33:48,000 --> 00:33:50,000

All right, let's do it.

534

00:33:51,000 --> 00:33:57,000

With the match lit and fully burnt, has the concentration of hydrogen sulfide changed at all?

535

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

Still reading the exact same thing 76 parts per million that it was when we started.

536

00:34:04,000 --> 00:34:09,000

The matches had no effect on the hydrogen sulfide level, so it's time for test two.

537

00:34:09,000 --> 00:34:11,000

Methylmercaptain.

538

00:34:11,000 --> 00:34:15,000

That's not the friendly rotten egg smell that smells like propane.

539

00:34:15,000 --> 00:34:17,000

No, it's the right stuff to be sure.

540

00:34:17,000 --> 00:34:18,000

That smells like poo.

541

00:34:18,000 --> 00:34:23,000

Different gas, same result. No change in concentration.

542

00:34:24,000 --> 00:34:32,000

The idea that burning a match is actually consuming the smelly gases of flattice turns out to be totally bogus.

543

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

Meter work fine, our chamber work great. Lit and match didn't notice any drop in the parts per million.

544

00:34:39,000 --> 00:34:44,000

So a match doesn't burn off the smell. It just masks it with its own whiff.

545

00:34:44,000 --> 00:34:48,000

But does it conceal both stinky flattice gases equally?

546

00:34:48,000 --> 00:34:53,000

I've rigged a sniff tube onto our chamber. We're going to feed a little more of the smelly gases in there.

547

00:34:53,000 --> 00:34:59,000

We're going to light a match and then we're going to bring out an impartial viewer who hasn't been exposed to these stinky things all day.

548

00:34:59,000 --> 00:35:06,000

And they're going to waft at the sniff tube and tell us if the smell is worse or better or hasn't changed at all.

549

00:35:07,000 --> 00:35:18,000

Well in the first of these sniffing tests, an hours worth of hydrogen sulfide from flattice is injected into the chamber for a lucky researcher, John, to inhale.

550

00:35:19,000 --> 00:35:27,000

I want to do a pre-match lighting smell test. You're going to give us a scale of 1 to 10 and then stand back, light the match.

551

00:35:27,000 --> 00:35:32,000

Then you give us a post-match lighting 1 to 10 if you notice any difference at all.

552

00:35:32,000 --> 00:35:36,000

Ok. Alright. So you ready? Pre-match. I'm ready. Step in.

553

00:35:41,000 --> 00:35:47,000

You got something? I would give it a 5 or 6. 5.5.

554

00:35:47,000 --> 00:35:51,000

So keep that in your head. Stand back over here. Jamie, let's light the match.

555

00:35:52,000 --> 00:35:55,000

Ok, lighting the match. The nose.

556

00:35:58,000 --> 00:36:03,000

About the same. About the same? Really?

557

00:36:03,000 --> 00:36:09,000

According to the nose, the match has had little masking effect on the hydrogen sulfide.

558

00:36:09,000 --> 00:36:14,000

So what about the other killer component? An hours worth of methylmer captain.

559

00:36:19,000 --> 00:36:23,000

A scale of 1 to 10, this was somewhere around a 4. Ok.

560

00:36:23,000 --> 00:36:28,000

So it's a pre-match 4 for the mercaptain, but will this one change?

561

00:36:32,000 --> 00:36:38,000

Not as prevalent. It wasn't very intense to begin with. It was about a 4, but I would drop it down to maybe a 2.

562

00:36:38,000 --> 00:36:45,000

Fantastic. That's a bonafide result. It didn't diminish the smell of the hydrogen sulfide, but it did of the methylmer captains.

563

00:36:45,000 --> 00:36:49,000

Results, man! That's what it's all about!

564

00:36:50,000 --> 00:36:55,000

Coming right up. 480,000 volts.

565

00:36:55,000 --> 00:36:59,000

Will Franklin survive a bolt from the blue?

566

00:37:05,000 --> 00:37:12,000

Storm kite flyers beware. A bolt of lightning can have over 100 million volts of power.

567

00:37:12,000 --> 00:37:16,000

That's way higher than anything humans can replicate.

568

00:37:16,000 --> 00:37:21,000

But at the Franklin Thunderdome, the team is going to give the kite its best shot.

569

00:37:21,000 --> 00:37:29,000

We've got a great pain to set up the experiment to Franklin's original specifications in this controlled environment.

570

00:37:29,000 --> 00:37:38,000

Now we're going to test under a variety of conditions, wet string, dry string, and what we're really after is what the effect is on the person who's holding the kite.

571

00:37:38,000 --> 00:37:48,000

It's the third and most crucial part of this myth-busting. With a 700,000-volt man-made strike, will Franklin turn to toast?

572

00:37:48,000 --> 00:37:58,000

Well, gelatin Ben is standing by to find out. His kite's flying high, the keys next to his finger, and his heart monitors wired up.

573

00:37:58,000 --> 00:38:03,000

Just 6 milliamps across the heart, and Franklin will fly his lacer.

574

00:38:04,000 --> 00:38:19,000

What I hope's going to happen is that we're going to see something spectacular, that the lightning is going to strike that copper rod, travel down this string, hit the key, arc over to his finger, and then just light him on fire.

575

00:38:19,000 --> 00:38:22,000

Okay, out and going hot. Going hot.

576

00:38:22,000 --> 00:38:27,000

We're at 60,000 volts. 60,000 volts.

577

00:38:27,000 --> 00:38:31,000

And for this first test, they're using the dry string.

578

00:38:31,000 --> 00:38:35,000

400,000. The voltage is climbing fast.

579

00:38:35,000 --> 00:38:42,000

It's like you're kind of terrifying. I'm kind of filled with a little dread here.

580

00:38:46,000 --> 00:38:48,000

Here's our lightning.

581

00:38:48,000 --> 00:38:58,000

A special camera called a Corona Cam shows just how much electricity is being slapped onto the kite. It really is in severe shock.

582

00:38:59,000 --> 00:39:04,000

But Ben is undeterred. There's no sparking from the key.

583

00:39:04,000 --> 00:39:08,000

So it's out with the dry string and in with the wet.

584

00:39:08,000 --> 00:39:15,000

So now we're going to start our second test. So we had to wet the string down, which hopefully will conduct the electricity a little bit better.

585

00:39:15,000 --> 00:39:20,000

Remember, it was the wet string that got the tiny spark with the vandergraf.

586

00:39:20,000 --> 00:39:22,000

This should be the main event.

587

00:39:22,000 --> 00:39:23,000

Really?

588

00:39:23,000 --> 00:39:24,000

Yeah.

589

00:39:24,000 --> 00:39:25,000

This is going to be it, huh?

590

00:39:25,000 --> 00:39:26,000

Bring her up.

591

00:39:26,000 --> 00:39:28,000

300,000.

592

00:39:28,000 --> 00:39:33,000

As the voltage rises, one big bolt could frazzle Franklin.

593

00:39:33,000 --> 00:39:36,000

But then disaster strikes.

594

00:39:36,000 --> 00:39:38,000

Oh, it just burned the string.

595

00:39:38,000 --> 00:39:40,000

Oh!

596

00:39:40,000 --> 00:39:42,000

Oh!

597

00:39:42,000 --> 00:39:46,000

With the string severed, there's no way for the lightning to reach the key.

598

00:39:46,000 --> 00:39:48,000

Oh, no!

599

00:39:48,000 --> 00:39:51,000

The voltage just increased enough to catch the string on fire.

600

00:39:51,000 --> 00:39:53,000

This is not something that I expected, actually.

601

00:39:53,000 --> 00:40:01,000

Slowly building charge up top, singe the string and grad is stumped for a solution until tarry has a brainwave.

602

00:40:01,000 --> 00:40:07,000

What's happening right now is we're pumping voltage through our string and it's catching on fire.

603

00:40:07,000 --> 00:40:16,000

Obviously, we just saw, is there a way that we can build a charge at the generator and then raise the kite into it so that it's an instant discharge?

604

00:40:16,000 --> 00:40:21,000

It's an ingenious idea that may just prevent the string from igniting.

605

00:40:21,000 --> 00:40:23,000

Okay, going high.

606

00:40:23,000 --> 00:40:37,000

With gelatin Franklin standing by and the authentic key in position, the generator's charge is rising fast.

607

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

I never get tired of hearing that noise.

608

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

480,000.

609

00:40:42,000 --> 00:40:45,000

480,000 volts.

610

00:40:45,000 --> 00:40:47,000

Should we send it up?

611

00:40:47,000 --> 00:40:49,000

Let's send it up.

612

00:40:49,000 --> 00:40:51,000

There she goes.

613

00:40:51,000 --> 00:40:53,000

Up, up and away.

614

00:40:53,000 --> 00:40:59,000

With the kite approaching the danger zone, it's now or never for this mill.

615

00:41:01,000 --> 00:41:03,000

There it goes!

616

00:41:05,000 --> 00:41:15,000

They struck gold. The kite is hit repeatedly and the charge does travel down the wet string where it finally jumps from the key to Franklin's finger.

617

00:41:15,000 --> 00:41:19,000

But after that shock, does he still have a heart?

618

00:41:19,000 --> 00:41:22,000

It looks like you've got enough to kill him.

619

00:41:22,000 --> 00:41:24,000

Yeah, look at that.

620

00:41:24,000 --> 00:41:26,000

Just enough.

621

00:41:26,000 --> 00:41:28,000

Then he'll be dead.

622

00:41:28,000 --> 00:41:30,000

Definitely dead.

623

00:41:30,000 --> 00:41:34,000

Grant's heart monitor reading proves that Franklin would have fried.

624

00:41:34,000 --> 00:41:40,000

Even this man-made lightning contained ample power to kill this famous kite flyer.

625

00:41:40,000 --> 00:41:46,000

This is only a fraction of what a lightning bolt would be. We're looking at just a tiny, tiny, tiny little lightning bolt here.

626

00:41:46,000 --> 00:41:51,000

And we've fried bent out. Could you imagine if it was a real storm and a real lightning bolt?

627

00:41:51,000 --> 00:41:53,000

There'd be no way he'd survive.

628

00:41:53,000 --> 00:41:54,000

He'd be dead.

629

00:41:54,000 --> 00:41:57,000

Smoke straight down the string, straight through his heart.

630

00:41:57,000 --> 00:41:59,000

And we killed a dead president.

631

00:41:59,000 --> 00:42:01,000

He was never president.

632

00:42:05,000 --> 00:42:07,000

Wasn't he?

633

00:42:07,000 --> 00:42:09,000

Dead.

634

00:42:10,000 --> 00:42:12,000

Dead.

635

00:42:18,000 --> 00:42:26,000

Alright, so when we started this myth, we stated that Ben Franklin, going out flying a kite in a storm, gets hit by lightning. That was the myth.

636

00:42:26,000 --> 00:42:31,000

He'd definitely get killed if he flew a kite in a lightning storm. I mean, we've definitely proven that.

637

00:42:31,000 --> 00:42:37,000

But, I mean, the experiment itself, that's pretty feasible. I mean, you can get electricity down a kite string.

638

00:42:37,000 --> 00:42:41,000

Not only is it feasible, we did it ourselves and we got a shock off the key.

639

00:42:41,000 --> 00:42:46,000

Yeah, and that was on a dry day, not too cloudy, and we were still able to get that.

640

00:42:46,000 --> 00:42:48,000

The experiment itself confirms.

641

00:42:48,000 --> 00:42:49,000

Yeah, it's confirmed.

642

00:42:49,000 --> 00:42:51,000

But the myth is a story busted.

643

00:42:51,000 --> 00:42:53,000

That was busted.