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

On Mythbusters, a Titanic-sized legend will a sinking ship suck you down as it goes under?

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

The speed of descent is just like, whoosh!

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

Are goldfish in a bold board or simply stupid?

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

Oh, no, I'm back!

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

And does their memory last more than three seconds?

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

I got all the smart ones. You got all the stupid ones.

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

Don't blame me, I'm only the trombone player.

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

A musical myth with highly explosive results.

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

It hurts on fire.

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

Who are the Mythbusters?

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

Is my missing an eyebrow?

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

Adam Savage.

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

I always enjoyed seeing Adam in pain.

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

Oh!

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

And Jamie Heineman.

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

Jamie wants a big bone.

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

Between them, more than 30 years special effects experience.

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

Still kind of sexy.

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

They don't just tell the Myths, they put them to the test.

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00:01:11,000 --> 00:01:16,000

Well, there's a myth that says that if you're on a ship when it's sinking, it'll suck you down with it.

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00:01:16,000 --> 00:01:22,000

You're telling me this thing, when it goes down, I'm going to go down with it because it's going to suck me down?

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00:01:22,000 --> 00:01:23,000

Yeah.

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00:01:27,000 --> 00:01:31,000

A sinking ship is every sailor's worst nightmare.

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00:01:31,000 --> 00:01:34,000

Take this deliberate sinking in Canada.

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00:01:34,000 --> 00:01:39,000

It graphically illustrates the force created when a large ship goes under.

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00:01:40,000 --> 00:01:46,000

Heather Joseph Witham studies folklore, including harsh tales of the sea.

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00:01:46,000 --> 00:01:55,000

The idea is that if there's a large ship that's going to be sinking, the passengers need to get as far away from the ship as they possibly can.

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00:01:55,000 --> 00:02:02,000

Because the ship will go down in the water and a tremendous suction will be created and it will draw anyone and anything down with it.

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

When the Titanic went down, we have numerous accounts of people who were swimming or who were on lifeboats.

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00:02:08,000 --> 00:02:17,000

And they all said, our lives were saved because we had some strong men rowing the boat and we got far away from the suction of the boat sinking.

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00:02:19,000 --> 00:02:23,000

Well, Jamie, what are we going to test for this? What are the prevailing theories behind the boat sucking you down?

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00:02:23,000 --> 00:02:25,000

Well, apparently there are three.

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00:02:25,000 --> 00:02:33,000

And the first one is that air that mixes in with the water as it rushes up from the boat makes the water less dense.

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00:02:33,000 --> 00:02:37,000

And so it's like you're going to fall through the water quicker that way.

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00:02:37,000 --> 00:02:45,000

The second theory is that the cavities in the ship will create an area for the water to rush in and that will pull you into the ship.

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00:02:45,000 --> 00:02:52,000

And then the third one is that the ship moving through the water rapidly towards the bottom will create a vortex above it.

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00:02:52,000 --> 00:02:56,000

Kind of like drafting behind a truck when it's on the highway.

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00:02:56,000 --> 00:03:00,000

Well, you know, all those three theories seem to me simple enough to actually test in the shop.

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

I think I could build a small water rig for the bubbler and some weights and some small boats.

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00:03:04,000 --> 00:03:08,000

And we could see all three of these theories right in the shop.

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00:03:08,000 --> 00:03:15,000

But, you know, I still think we need a real boat. People aren't going to get it unless we do it with a real boat.

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00:03:16,000 --> 00:03:24,000

Until they find a suitable boat, Adam sets out to test the vortex and bubble density theories on a small scale.

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00:03:24,000 --> 00:03:32,000

Well, what I made is a miniature bubbling rig and we're trying to show whether or not the ship produces lots of bubbles and the bubbles lower the density of the water.

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00:03:32,000 --> 00:03:38,000

People sink whereas normally they'd float or whether it creates a vortex that pulls things in after it.

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00:03:38,000 --> 00:03:42,000

But Adam soon runs into some fundamental problems.

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00:03:42,000 --> 00:03:49,000

This would be the Titanic. This is a lead weight. It's pretty darn heavy. And let's say that is our person right there.

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00:03:49,000 --> 00:03:51,000

Ready?

48

00:03:57,000 --> 00:03:58,000

Squat.

49

00:03:58,000 --> 00:03:59,000

Nothing.

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00:03:59,000 --> 00:04:08,000

To make this work, Adam has to rethink his ratios of weight, density and buoyancy. Time to think

big.

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

Adam is building a rig, four feet square by ten feet high.

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00:04:14,000 --> 00:04:22,000

They will then attach an electric winch and guide wires to hold a special box that will simulate the action of a sinking boat.

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00:04:23,000 --> 00:04:37,000

So right now I'm actually just finishing up the PVC matrix that will be our bubbler and hopefully it will provide us with a really attractive stream of bubbles.

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00:04:37,000 --> 00:04:49,000

Then I'm going to make a panel for the top of this box which has a hole in it so that not only can we test what happens when you drop a weight in water but when you drop a weight with an air gap in it we can see what happens.

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00:04:49,000 --> 00:04:52,000

We're going to fill this with 25 pound barbell weights.

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00:04:56,000 --> 00:05:04,000

Meanwhile, the search for the ideal sinkable boat begins among the marinas of Embarcadero Cove in Oakland, California.

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00:05:04,000 --> 00:05:13,000

This hunt won't be easy. The boat they need must sink effortlessly. Any vessel too buoyant will be a problem.

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00:05:14,000 --> 00:05:19,000

The boat was a piece of junk which doesn't make me feel too bad about sinking it.

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00:05:19,000 --> 00:05:24,000

For a boat this size it's actually got a fair amount of volume which is what we need.

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00:05:24,000 --> 00:05:31,000

It would be a perfect boat for us except for the fact that it's wood and I don't think it will go down too quick because wood typically floats.

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00:05:32,000 --> 00:05:40,000

We're looking for the largest boat that we can afford to sink quickly and that by my mind would have to be a steel boat.

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00:05:40,000 --> 00:05:49,000

A heavy steel tugboat catches their eye but it quickly becomes obvious that this old hulk is way beyond their needs.

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00:05:49,000 --> 00:05:58,000

I think this boat is so perfect for our Titanic rig it would make me cry if we were able to get it. It does however look like quite a deal to make it go.

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00:05:58,000 --> 00:06:02,000

So testing the myth of the Titanic will have to wait.

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00:06:03,000 --> 00:06:10,000

Does a goldfish's memory last more than three seconds?

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00:06:10,000 --> 00:06:13,000

He's looking at it, he's trying to eat it.

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00:06:13,000 --> 00:06:16,000

Jamie and Adam are locked in combat.

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00:06:16,000 --> 00:06:18,000

We have to identify the smart ones.

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

Who's the superior fish wrangler?

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00:06:21,000 --> 00:06:24,000

Back in the Amazon when I used to train piranhas.

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00:06:24,000 --> 00:06:29,000

Oh and does a goldfish's memory last more than three seconds?

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00:06:33,000 --> 00:06:36,000

This myth is a pretty laid back one, huh Jamie?

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00:06:36,000 --> 00:06:50,000

Yeah, the myth says that you can put a goldfish in a small bowl and they're okay with it because they're so stupid that by the time they make it around the bowl in like about three seconds they've just forgotten where they were.

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00:06:50,000 --> 00:06:59,000

I think that we tell this story in order to play hate ourselves and allow us to keep animals in a small tank which usually we would perceive as being kind of cruel.

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

And you could certainly keep it in a small bowl because every time it goes around that bowl it's a new experience.

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00:07:06,000 --> 00:07:11,000

So what we really want to test here is what is the memory span of the average goldfish?

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00:07:11,000 --> 00:07:22,000

Well what I thought we'd do is build a maze and the goldfish will have to be taught how to make it through the maze and if they can remember that we'll know a little bit more how smart they are.

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00:07:22,000 --> 00:07:27,000

So what you're talking about is not just a goldfish intelligence test but a mythbusters intelligence test as well.

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00:07:28,000 --> 00:07:32,000

You can look at it that way. One that I think I will win.

80

00:07:32,000 --> 00:07:42,000

So the guys want to train goldfish to swim through a maze. If they do it they'll prove they're smarter than we think. The goldfish will look clever too.

81

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

Have you heard of the myth that goldfish only have three seconds of memory?

82

00:07:45,000 --> 00:07:55,000

Yes, I have. Their brains are pretty small and it's about two percent of their body weight so you can figure that they're not going to have too much of a memory.

83

00:07:55,000 --> 00:08:00,000

Steve, the pet shop guy, has all the fish and all the accessories the mythbusters need.

84

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

I think this is definitely the one for me, Jimmy. It's a deep sea diver with a shark.

85

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

But the goldfish have needs too.

86

00:08:07,000 --> 00:08:14,000

This is a 38 gallon. I have the best food for goldfish. You make sure that you have a good water conditioner.

87

00:08:14,000 --> 00:08:16,000

Those are perfect. What do we need? Ten of those?

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00:08:16,000 --> 00:08:17,000

Yeah, five.

89

00:08:17,000 --> 00:08:18,000

Five in each tank?

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00:08:18,000 --> 00:08:19,000

Yeah.

91

00:08:19,000 --> 00:08:20,000

Okay.

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00:08:20,000 --> 00:08:28,000

The easiest sail Steve's ever made. Two tanks, ten fish and enough supplies to feed a whale.

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00:08:28,000 --> 00:08:42,000

Jamie and Adam have given themselves 45 days to train the fish and bust the myth. They've each got a tank and each will devise their own training method.

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00:08:42,000 --> 00:08:44,000

The competition is heating up.

95

00:08:44,000 --> 00:08:56,000

I think that I shall be the best trainer purely because of the fact that training animals requires above all consistency.

96

00:08:56,000 --> 00:09:01,000

Adam is not a very consistent person.

97

00:09:01,000 --> 00:09:08,000

Turns out Jamie has another advantage. He used to own a pet shop and he knows his fish.

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00:09:08,000 --> 00:09:13,000

In addition to his time in the Special Forces and being the International WISTS champion and even being a lion owner,

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00:09:13,000 --> 00:09:18,000

Jamie is probably one of only a handful of people in the world who has actually trained a goldfish to ring a bell.

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00:09:18,000 --> 00:09:23,000

I don't have anything like that kind of pedigree with goldfish training regiments.

101

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

Oh, look at that.

102

00:09:25,000 --> 00:09:33,000

Undaunted, Adam is determined to rise to the ultimate challenge of teaching fish to swim through a maze.

103

00:09:33,000 --> 00:09:37,000

I think I'm in fact just going to leave mine totally uncovered.

104

00:09:38,000 --> 00:09:40,000

Oh, dear.

105

00:09:40,000 --> 00:09:43,000

I'm going to kick your goldfish ass.

106

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

The plan is to see what specific forces are in play when a ship sinks.

107

00:10:12,000 --> 00:10:17,000

At this point, I really don't know what's going to happen with this.

108

00:10:17,000 --> 00:10:24,000

My impression is that if you're floating above a boat as it's going down, it's not really going to pull you down.

109

00:10:24,000 --> 00:10:31,000

Jamie's pessimistic about the vortex theory, but he's open to the bubbles creating lower density.

110

00:10:31,000 --> 00:10:40,000

I don't know whether it's going to buoy you up because of all the bubbles going up or whether the bubbles will make the water in that area less dense will make it go down.

111

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

It'll be interesting to see.

112

00:10:43,000 --> 00:10:45,000

This is lead stock.

113

00:10:45,000 --> 00:10:55,000

Water density is the key, so they've made a hydrometer, a simple flotation device that measures the specific gravity or density of a liquid.

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00:10:55,000 --> 00:11:02,000

We will see how much the density of the water changes by how far this goes up and down when the water is aerated.

115

00:11:02,000 --> 00:11:05,000

That's perfect.

116

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

Experiment one, the bubble test.

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00:11:08,000 --> 00:11:13,000

A compressor will supply air to Adam's PVC bubble matrix.

118

00:11:13,000 --> 00:11:15,000

Okay, I'm going.

119

00:11:15,000 --> 00:11:17,000

All right, I'm going to watch it.

120

00:11:17,000 --> 00:11:20,000

Oh, that looks cool from here.

121

00:11:20,000 --> 00:11:25,000

Oh, it looks like it's going down.

122

00:11:25,000 --> 00:11:27,000

Yes, definitely.

123

00:11:27,000 --> 00:11:29,000

Way down.

124

00:11:29,000 --> 00:11:32,000

Okay, it's out of the...

125

00:11:32,000 --> 00:11:35,000

Looks like somebody's going to have to get their swim trunks on.

126

00:11:35,000 --> 00:11:40,000

And that was all the encouragement Adam needed on a warm California day.

127

00:11:40,000 --> 00:11:42,000

Can we blur out the love handles?

128

00:11:42,000 --> 00:11:44,000

Be nice to me, all right?

129

00:11:44,000 --> 00:11:52,000

Happy with the bubble effect, their first weight test should determine if volume makes it easier to be dragged down.

130

00:11:52,000 --> 00:12:00,000

So to get a closer simulation of a sinking boat, the box is positioned on the surface and loaded with 200 pounds.

131

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

They hope the inrush of water to the empty box will drive the vortex afield.

132

00:12:08,000 --> 00:12:10,000

Good, go.

133

00:12:14,000 --> 00:12:16,000

Wow.

134

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

I pulled it down.

135

00:12:18,000 --> 00:12:20,000

That was intense.

136

00:12:20,000 --> 00:12:23,000

I didn't realize that the result would be so marked.

137

00:12:23,000 --> 00:12:30,000

When I'm in the water as the weight releases, I can definitely feel it pushing this cushion of water out around it as it's plummeting.

138

00:12:30,000 --> 00:12:34,000

And I'll tell you straight up, based on what I see here, you would definitely get sucked down.

139

00:12:34,000 --> 00:12:39,000

And I think the bigger the object, the bigger the suck.

140

00:12:40,000 --> 00:12:46,000

To test Adam's bigger suction theory, they increase the box weight to 300 pounds.

141

00:12:46,000 --> 00:12:48,000

All right, hydrometer's ready?

142

00:12:48,000 --> 00:12:50,000

Okay, going.

143

00:12:50,000 --> 00:12:52,000

Go.

144

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

Nice sound.

145

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

Where's the hydrometer?

146

00:13:03,000 --> 00:13:05,000

There it is.

147

00:13:09,000 --> 00:13:11,000

That pretty much says it.

148

00:13:11,000 --> 00:13:15,000

Wow, I mean it went all the way to the bottom and hung out there for a while.

149

00:13:15,000 --> 00:13:22,000

Once again, the box filled rapidly, dropped like a stone and pulled the hydrometer down entirely.

150

00:13:22,000 --> 00:13:27,000

Now it's Adam's turn to ride the vortex.

151

00:13:34,000 --> 00:13:36,000

Okay, ow, first of all.

152

00:13:36,000 --> 00:13:38,000

Second of all.

153

00:13:38,000 --> 00:13:41,000

Feel yourself in the vortex as you're going down.

154

00:13:41,000 --> 00:13:44,000

I mean, I did not separate from the box at all.

155

00:13:44,000 --> 00:13:47,000

My buoyancy had no bearing on the matter.

156

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

I just sunk right with it until I hit the bottom.

157

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

That was intense.

158

00:13:52,000 --> 00:13:57,000

The pool testing is done, and Adam's up for the real thing.

159

00:13:57,000 --> 00:14:06,000

Two boats have already been rejected as unsuitable, but after some good detective work, they find a very likely candidate.

160

00:14:06,000 --> 00:14:11,000

Another old tug, but at 9 tons, this one is more suitable.

161

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

It's a nice solid little hunk of steel.

162

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

I think it ought to go down like a rock.

163

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

It seems like it's pretty rugged.

164

00:14:18,000 --> 00:14:23,000

There's a lot of tight points for us to get a hold of, to tow it around and lift it and stuff like that.

165

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

So I think it's perfect.

166

00:14:25,000 --> 00:14:26,000

I think it's fantastic.

167

00:14:26,000 --> 00:14:27,000

It's totally ideal.

168

00:14:27,000 --> 00:14:34,000

I mean, yeah, it'd be great if it was bigger, but I gotta tell you that 300 pound weight yanked me down with a lot more force than I thought was possible.

169

00:14:34,000 --> 00:14:35,000

Yeah.

170

00:14:35,000 --> 00:14:36,000

This ought to do it quite handle it.

171

00:14:36,000 --> 00:14:37,000

Ship chosen.

172

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

Now, the preparation.

173

00:14:39,000 --> 00:14:41,000

We're going to go cut some holes in the boat.

174

00:14:41,000 --> 00:14:44,000

Sinking a boat isn't easy.

175

00:14:44,000 --> 00:14:52,000

In British Columbia, Canada, the artificial reef society regularly sends unwanted ships to the

bottom.

176

00:14:52,000 --> 00:14:57,000

They are reborn as prime diving sites and marine habitats.

177

00:14:57,000 --> 00:15:05,000

To send ships down safely, holes are cut on both sides so that water rushes in and the air rushes out.

178

00:15:10,000 --> 00:15:19,000

Jamie and Adam may need to scuttle their boat several times, so holes will be cut below the water line that can be replugged.

179

00:15:19,000 --> 00:15:24,000

What we have are some large threaded fittings, which we're going to weld into the holes that we cut in the boat.

180

00:15:24,000 --> 00:15:27,000

And we'll simply unscrew them to let water in.

181

00:15:28,000 --> 00:15:32,000

Unnecessary holes are sealed so the boat can be towed.

182

00:15:32,000 --> 00:15:37,000

To avoid polluting the bay, loose rust and other debris is cleaned off.

183

00:15:37,000 --> 00:15:41,000

And they have a solid plan for bringing the boat back up again.

184

00:15:41,000 --> 00:15:47,000

What we have is a cable harness, which we've had constructed to spec based on the weight of the boat.

185

00:15:47,000 --> 00:15:52,000

And it will have four lines on it going to a central point on the cable that the crane pulls up.

186

00:15:52,000 --> 00:16:04,000

When we want to bring the boat back up, then I will have to go down in scuba gear and reattach the rear two lines manually when the boat is on the bottom and then we'll pull it back up with the crane.

187

00:16:04,000 --> 00:16:13,000

A quick name change and myth Tenec is ready for launching, but no one told them changing a boat's name is bad luck.

188

00:16:13,000 --> 00:16:21,000

So this is the moment of truth. We get to see if the valves we welded in actually work or if the boat sinks right off the pier.

189

00:16:21,000 --> 00:16:23,000

My boat is that it doesn't sink.

190

00:16:29,000 --> 00:16:38,000

Well, all three of the valves are leaking right around the welds. Just a little tiny leak, but maybe we can throw a bilge pump in it tonight. I don't know.

191

00:16:38,000 --> 00:16:41,000

Those were Jamie's welds.

192

00:16:41,000 --> 00:16:50,000

One thing Adam does not dispute is Jamie's considerable underwater experience. For years he ran a dive business in the Caribbean.

193

00:16:50,000 --> 00:17:02,000

I'm a dive master. I've done thousands of dives. I've salvaged boats. I have spent, you know, person years in the water basically.

194

00:17:02,000 --> 00:17:15,000

I'm actually not all that excited about being in this particular water. You know, I like it where it's clear and warm and pretty and we're going to be in the bay and it's cold and dark and murky.

195

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

So while Jamie worries...

196

00:17:18,000 --> 00:17:20,000

Careful, it might roll and you get caught.

197

00:17:24,000 --> 00:17:28,000

It's day one of the Great Goldfish Challenge.

198

00:17:28,000 --> 00:17:30,000

How's it going?

199

00:17:30,000 --> 00:17:39,000

Jamie and Adam are trying to bust the myth that goldfish only have a three second memory by

training them to swim through a simple maze.

200

00:17:39,000 --> 00:17:51,000

This challenge has already transcended the myth. It's a battle for bragging rights. The boys each have their own tank and fish and are vying to prove they're the better trainer.

201

00:17:51,000 --> 00:17:53,000

The competition is fierce.

202

00:17:53,000 --> 00:17:58,000

Oh, he's so better not go get a tube and feed them with a tube because I'll kick his butt. That was my idea.

203

00:17:58,000 --> 00:18:08,000

In fact, Jamie has something entirely different in mind. He's making bright plastic holes which he hopes will be to the fishes liking.

204

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

I'm going to get them used to taking their food out of the middle of the hole by making this colorful hole that they'll easily recognize that has some mesh suspended in the middle of it that will put the food in.

205

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

Jamie's holes are already attracting interest.

206

00:18:27,000 --> 00:18:39,000

But will the fish be as attracted to the holes as Adam is?

207

00:18:39,000 --> 00:18:55,000

If someone comes down out of the hole, maybe they'll start to look around and eventually find it. There we go. You're looking at it. He's looking at it. He's trying to eat it. Oh my God, he's taking the bait almost.

208

00:18:55,000 --> 00:18:58,000

We have to identify the smart ones.

209

00:18:58,000 --> 00:19:08,000

School is in for Adam too. He's trying to be the goldfish to understand their needs. He has an idea.

210

00:19:08,000 --> 00:19:20,000

Instead of using the store-bought tank dividers, Adam is making his own out of plastic. He'll custom make the course based on his deep grasp of fish behavior.

211

00:19:20,000 --> 00:19:32,000

If I get them comfortable with the fact that they can go through, perhaps they'll understand that there is a way to get there because all they see is just this black ring that's exposed. They don't know that they can actually go and swim around over there.

212

00:19:32,000 --> 00:19:43,000

So they have their strategies and the battle of the fish tags is on. Adam's clear dividers versus Jamie's gaudy plastic.

213

00:19:43,000 --> 00:19:46,000

May the best fish man win.

214

00:19:46,000 --> 00:19:55,000

Eight days since the Goldfish Memory Challenge began and Adam's got a problem or rather his fish do.

215

00:19:55,000 --> 00:20:04,000

Smells. Oh no. Oh no. I've got a dead fish.

216

00:20:05,000 --> 00:20:13,000

It's okay. Something's going on. I don't like this whole thing. I'm going to call the pet store. I'm going to replace the water completely.

217

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

Jamie's water is clearer. Mine's really, really foggy.

218

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

The thing is, is the tank is really foggy and then last night one of the goldfish died.

219

00:20:26,000 --> 00:20:32,000

Turns out the filter hasn't removed the ammonia in the water created by the fish waste.

220

00:20:33,000 --> 00:20:39,000

A tank that's working correctly has a certain amount of bacteria that's grown in the filter that processes the ammonia.

221

00:20:39,000 --> 00:20:43,000

It actually takes like four to eight weeks for it to fully take effect.

222

00:20:43,000 --> 00:20:52,000

Given everything is going so swimmingly in Jamie's tank, perhaps Adam's solid plastic dividers are messing with the filter.

223

00:20:52,000 --> 00:20:57,000

Whenever the cause, eight weeks is time Adam just doesn't have.

224

00:20:57,000 --> 00:21:01,000

I'm trying to train them but it turns out I'm just trying to keep them alive.

225

00:21:02,000 --> 00:21:09,000

Jamie's fish aren't just alive. They're happy, healthy and apparently pretty smart.

226

00:21:09,000 --> 00:21:19,000

They seem to know automatically where the food is. I would say that even now, even though we haven't got them to go really through anything in terms of a maze as such,

227

00:21:19,000 --> 00:21:27,000

that the myth is busted because they clearly recognize either me or the location where the food is being delivered.

228

00:21:27,000 --> 00:21:31,000

They are clearly capable of some sort of minimal memory.

229

00:21:31,000 --> 00:21:36,000

I think the myth that goldfish are easy to maintain and hardy fish has also been busted.

230

00:21:38,000 --> 00:21:43,000

There are three weeks left in this challenge. Adam has a lot of ground to make up.

231

00:21:43,000 --> 00:21:46,000

Look, they're even growing little Jamie mustaches now.

232

00:21:46,000 --> 00:21:49,000

They're like, oh, thanks for the food every morning.

233

00:21:49,000 --> 00:22:06,000

The myth busters in a music store have Jamie and Adam given up their destructive ways.

234

00:22:06,000 --> 00:22:10,000

Are they replacing mayhem with Mozart?

235

00:22:10,000 --> 00:22:12,000

We're looking for something in a trombone.

236

00:22:12,000 --> 00:22:16,000

Okay, and like for a student.

237

00:22:16,000 --> 00:22:18,000

Well, actually we want to blow it up.

238

00:22:18,000 --> 00:22:20,000

You want to blow it up.

239

00:22:24,000 --> 00:22:27,000

So, hey, now we've got one to bust with a musical theme.

240

00:22:27,000 --> 00:22:33,000

Yes, we have a trombonist in an orchestra that was playing the 1812 Overture.

241

00:22:37,000 --> 00:22:45,000

And the trombonist decides to spice things up a bit by putting a firecracker into the mute of his trombone.

242

00:22:49,000 --> 00:22:53,000

He sets it off, intending to shoot the mute out over the audience.

243

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

However, it hits the conductor, knocks the conductor off the stage and into the audience,

244

00:23:04,000 --> 00:23:06,000

knocking them over like dominoes.

245

00:23:06,000 --> 00:23:22,000

Blows the bell of the trombone wide open, shoots the slide out, hitting the second violinist, I believe, and burns his lips.

246

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

And the music starts.

247

00:23:34,000 --> 00:23:36,000

What's the plan? Where do we start?

248

00:23:36,000 --> 00:23:39,000

Well, we're not going to be able to do anything without some trombones.

249

00:23:39,000 --> 00:23:41,000

And so to the music store.

250

00:23:41,000 --> 00:23:44,000

Okay, well, maybe we'll look at some used trombones.

251

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

So, follow me.

252

00:23:46,000 --> 00:23:52,000

Down in the best music basement, there's a band of merry men conducting repairs.

253

00:23:52,000 --> 00:23:57,000

It seems music does not always soothe the savage beast.

254

00:23:57,000 --> 00:24:08,000

We've had an instrument that an angry girlfriend took her anger out on, and this was a Selmer Paris saxophone originally.

255

00:24:08,000 --> 00:24:11,000

A sax scandal for sure.

256

00:24:11,000 --> 00:24:16,000

But the guys are more interested in creating a trombone tragedy.

257

00:24:16,000 --> 00:24:21,000

But these are your standard tenor trombone that are usually going to be used by a lead player.

258

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

I think the low end of the spectrum is exactly where we are.

259

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

We don't want to remove anything nicely playable from the world.

260

00:24:29,000 --> 00:24:32,000

We'd rather just take a junker and put it out of its misery.

261

00:24:32,000 --> 00:24:35,000

Those will all blow up about the same.

262

00:24:35,000 --> 00:24:39,000

The trombones are selected for their final curtain.

263

00:24:39,000 --> 00:24:43,000

Now the guys need a mute to silence the myth.

264

00:24:46,000 --> 00:24:48,000

Yeah, I think that's the one I like to look.

265

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

Yeah, this is like, you know, kind of looks like it ought to be fired like a stinger, you know.

266

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

All right.

267

00:25:03,000 --> 00:25:09,000

Back at the workshop, Buster the crash test dummy is being readied for his next indignity.

268

00:25:09,000 --> 00:25:13,000

This time he'll play the conductor hit by the mute.

269

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

That's if he can stand up.

270

00:25:15,000 --> 00:25:17,000

Let's see how you're standing up.

271

00:25:17,000 --> 00:25:19,000

Hold my hand.

272

00:25:20,000 --> 00:25:27,000

One standing crash test dummy, actually technically in the industry known as a pedestrian dummy.

273

00:25:27,000 --> 00:25:33,000

There'll be nothing pedestrian about the explosion if Jamie has his way.

274

00:25:33,000 --> 00:25:39,000

He's grinding up the fuel used in bottle rockets to help give the mute a lift.

275

00:25:39,000 --> 00:25:46,000

I made a long tube and we made it so that it inserts like so into the mute.

276

00:25:46,000 --> 00:25:51,000

And I believe this will actually propel this thing pretty good like a rocket.

277

00:25:55,000 --> 00:26:03,000

Understandably, none of the local concert halls were enthusiastic about having the myth busters come and blow up trombones.

278

00:26:03,000 --> 00:26:08,000

Instead, the guys have set up their own safer theater.

279

00:26:08,000 --> 00:26:12,000

He's pretty floppy. It's like trying to get a dead guy to stand up.

280

00:26:12,000 --> 00:26:19,000

Once again, Buster will take center stage, though it seems the limelight is losing its appeal.

281

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

It was a bold bid for freedom, but Buster will have to face the one-trombone firing squad.

282

00:26:30,000 --> 00:26:36,000

Expert pyrotechnician Jack Morocco will be helping with this special performance.

283

00:26:36,000 --> 00:26:38,000

Just another day of blowing something up.

284

00:26:38,000 --> 00:26:44,000

For the first attempt, they'll be using a lethal variety of Chinese fireworks.

285

00:26:44,000 --> 00:26:50,000

This is one of those myths that has a whole sequence of events that have to go off like clockwork for this to be replicated accurately.

286

00:26:51,000 --> 00:27:01,000

Remember, this story is about a musician with an explosive in his trombone, who apparently blew over the conductor during the 1812 overture.

287

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

I think it's going to be a nice loud bang. I think it's going to destroy the mute right off.

288

00:27:06,000 --> 00:27:12,000

I don't think anything that we're going to be able to do is actually going to get them mute to Buster.

289

00:27:13,000 --> 00:27:14,000

Continuity's good.

290

00:27:14,000 --> 00:27:16,000

Alright. Is everyone behind the barrier?

291

00:27:17,000 --> 00:27:23,000

For safety, they'll set the charge off remotely from behind Lexan Blast screens.

292

00:27:24,000 --> 00:27:26,000

Alright, we're all rolling. Here we go.

293

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

Give us a count down.

294

00:27:28,000 --> 00:27:30,000

In three, two, one.

295

00:27:30,000 --> 00:27:31,000

One.

296

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

Beautiful.

297

00:27:37,000 --> 00:27:38,000

That was fantastic.

298

00:27:38,000 --> 00:27:46,000

Those Chinese firecrackers packed quite a wallop. The front of the mute is blown out in spectacular fashion.

299

00:27:49,000 --> 00:27:51,000

Did that hit him in the chest?

300

00:27:51,000 --> 00:27:52,000

Yes, it did.

301

00:27:52,000 --> 00:27:59,000

It smacked him head on. It blew the front right off of our mute and smacked into the music stand,

302

00:27:59,000 --> 00:28:01,000

knocking it over and it hit Buster.

303

00:28:01,000 --> 00:28:04,000

I would have knocked Buster over if it hadn't hit the music stand first.

304

00:28:04,000 --> 00:28:07,000

The horn doesn't seem to have received any abuse at all.

305

00:28:08,000 --> 00:28:13,000

I mean, the mute's actually been pushed out wherever it was contacting the horn. It was really hard

to get out.

306

00:28:14,000 --> 00:28:19,000

And actually, also contrary to the myth, the slide did not move either.

307

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

So, only part of the myth is working and the guys are really hoping for more trombone bang for their buck.

308

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

Do you like doing it again?

309

00:28:30,000 --> 00:28:31,000

Sure, why not?

310

00:28:32,000 --> 00:28:38,000

You know, it's when you get really excited that I get really nervous. If you could calm down just a little bit.

311

00:28:44,000 --> 00:28:50,000

So how much mayhem would an exploding trombone cause during the 1812 overture?

312

00:28:50,000 --> 00:29:00,000

Jamie's about to try out his rocket-propelled mute, as many crushed-up model rocket engines as he can squeeze in, and a little more for good measure.

313

00:29:01,000 --> 00:29:02,000

Hey, Jack?

314

00:29:02,000 --> 00:29:03,000

Yes?

315

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

What would you think about also if I dumped a bunch of that crap down in the bell of the thing?

316

00:29:09,000 --> 00:29:12,000

Yeah, we might actually blow that whole stand over.

317

00:29:12,000 --> 00:29:13,000

That's good.

318

00:29:13,000 --> 00:29:14,000

We like that.

319

00:29:14,000 --> 00:29:15,000

We like that.

320

00:29:15,000 --> 00:29:16,000

Here you go, Jamie.

321

00:29:16,000 --> 00:29:17,000

Hold your breath.

322

00:29:21,000 --> 00:29:24,000

So how much is in here?

323

00:29:25,000 --> 00:29:28,000

It goes all the way to the tip. That's six rocket engines.

324

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

Got a regular Panzerfaust here.

325

00:29:32,000 --> 00:29:39,000

Jack is torn between caution and the myth-busting credo of Jett and Ate First, ask questions later.

326

00:29:39,000 --> 00:29:42,000

Well, I sure hope we don't fly-baland our limits here.

327

00:29:43,000 --> 00:29:47,000

Alright, in three, two, one...

328

00:29:52,000 --> 00:29:54,000

Whoa, what's that?

329

00:29:57,000 --> 00:29:59,000

Well, it didn't go anywhere.

330

00:30:03,000 --> 00:30:04,000

That is gunpowder.

331

00:30:04,000 --> 00:30:06,000

I'm not using that trombone.

332

00:30:07,000 --> 00:30:08,000

Oh, I'm not.

333

00:30:08,000 --> 00:30:09,000

That is gunpowder.

334

00:30:09,000 --> 00:30:11,000

I'm not using that trombone.

335

00:30:12,000 --> 00:30:13,000

Holy crap!

336

00:30:14,000 --> 00:30:17,000

Why is he smoking so much? It looks like it did hit him.

337

00:30:17,000 --> 00:30:18,000

This hurts on fire.

338

00:30:20,000 --> 00:30:22,000

And look, the slide's still in place.

339

00:30:22,000 --> 00:30:23,000

The slide?

340

00:30:24,000 --> 00:30:26,000

I think if it didn't blow off with that, it's not gonna...

341

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

The slide is still in place.

342

00:30:32,000 --> 00:30:36,000

The mute flew out with enough force to knock Buster over.

343

00:30:37,000 --> 00:30:41,000

Once again, he's wondering about the Mythbusters medical plan.

344

00:30:41,000 --> 00:30:42,000

Oh my god.

345

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

Oh, hey, that's hot.

346

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

Yeah, it'll be hot.

347

00:30:44,000 --> 00:30:45,000

Hey, yeah.

348

00:30:51,000 --> 00:30:55,000

And the police, well, they just want to know what the heck is going on.

349

00:30:55,000 --> 00:30:58,000

Jack, have you got your permit handy?

350

00:30:59,000 --> 00:31:05,000

Believe it or not, in its wisdom, the city of San Francisco has given the Mythbusters

351

00:31:05,000 --> 00:31:09,000

a license to wreak exactly this sort of havoc.

352

00:31:09,000 --> 00:31:13,000

I think any day when we do something that brings the cops flocking to us,

353

00:31:13,000 --> 00:31:16,000

but then they have to let us continue doing what we're doing,

354

00:31:16,000 --> 00:31:18,000

is the perfect Mythbusters day.

355

00:31:19,000 --> 00:31:22,000

But it seems this myth isn't perfect.

356

00:31:22,000 --> 00:31:25,000

Buster didn't fall back into the audience,

357

00:31:25,000 --> 00:31:28,000

and the trombone just won't play ball.

358

00:31:28,000 --> 00:31:30,000

It didn't even remotely peel off the bell,

359

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

like peel it back like a banana, like the myth says.

360

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

And what we had was more powerful than any firecracker.

361

00:31:36,000 --> 00:31:39,000

In fact, it's even more powerful than they thought.

362

00:31:39,000 --> 00:31:42,000

There's trombone shrapnel everywhere.

363

00:31:42,000 --> 00:31:45,000

So these pieces right here bounced off the Lexan.

364

00:31:45,000 --> 00:31:47,000

There's a piece, there's a piece over there,

365

00:31:47,000 --> 00:31:48,000

a piece over there.

366

00:31:48,000 --> 00:31:49,000

Right there behind you.

367

00:31:49,000 --> 00:31:53,000

And I heard that it felt them ricochet off the Lexan.

368

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

So Buster isn't the only one in danger here,

369

00:31:57,000 --> 00:32:01,000

but they'll try once more to recreate the myth.

370

00:32:01,000 --> 00:32:05,000

Jack's reloading a new trombone with even more powder.

371

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

Ready to fire in three, two, one.

372

00:32:31,000 --> 00:32:38,000

This myth just doesn't want to be replicated.

373

00:32:38,000 --> 00:32:42,000

No matter how hard Buster tries.

374

00:32:47,000 --> 00:32:49,000

That's like some kind of modern art.

375

00:32:49,000 --> 00:32:52,000

And this slide did not leave the table.

376

00:32:52,000 --> 00:32:54,000

It's just a piece of paper.

377

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

It's just a piece of paper.

378

00:32:56,000 --> 00:32:58,000

It's just a piece of paper.

379

00:32:58,000 --> 00:32:59,000

Modern art.

380

00:32:59,000 --> 00:33:02,000

And this slide did not leave the trombone.

381

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

We have taken this myth absolutely to pieces.

382

00:33:05,000 --> 00:33:07,000

This is another rarity for us.

383

00:33:07,000 --> 00:33:10,000

Every aspect of it is completely impossible.

384

00:33:10,000 --> 00:33:12,000

Hey, it still makes noise.

385

00:33:13,000 --> 00:33:16,000

The rest just didn't happen.

386

00:33:16,000 --> 00:33:20,000

This musical myth has had its swan song.

387

00:33:22,000 --> 00:33:25,000

So the spirit of the myth is kind of there,

388

00:33:25,000 --> 00:33:27,000

but I'd say overall the myth is busted.

389

00:33:27,000 --> 00:33:29,000

I'd say we did the best we could with it,

390

00:33:29,000 --> 00:33:31,000

and yeah, it's absolutely busted.

391

00:33:39,000 --> 00:33:43,000

It's been nearly six weeks since the Goldfish Challenge began.

392

00:33:43,000 --> 00:33:47,000

Today, all their hard work will be put to the test.

393

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

Remember, they're testing the myth

394

00:33:50,000 --> 00:33:53,000

Goldfish only have a three-second memory

395

00:33:53,000 --> 00:33:56,000

by trying to train them to swim through a simple maze.

396

00:33:56,000 --> 00:34:01,000

The Heinemann technique is to associate orange plastic with food.

397

00:34:01,000 --> 00:34:02,000

It's working.

398

00:34:02,000 --> 00:34:04,000

Oh, look, they see the orange thing.

399

00:34:04,000 --> 00:34:06,000

They're wanting to go for it.

400

00:34:06,000 --> 00:34:09,000

Jamie appears to have science on his side.

401

00:34:09,000 --> 00:34:13,000

Studies have shown that Goldfish repeatedly respond to color

402

00:34:13,000 --> 00:34:15,000

for food rewards.

403

00:34:15,000 --> 00:34:19,000

In other words, they seem to have memory longer than three seconds.

404

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

Camp Savage has struck troubled waters with an ammonia problem.

405

00:34:24,000 --> 00:34:27,000

There are only two contenders left.

406

00:34:27,000 --> 00:34:30,000

And they just like, you know, bang their heads in the corner over here.

407

00:34:30,000 --> 00:34:36,000

The first to get fish through their maze wins and busts the myth.

408

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

Timeless starting now.

409

00:34:40,000 --> 00:34:41,000

They're off and racing.

410

00:34:41,000 --> 00:34:45,000

Hey, guys. Here's your food.

411

00:34:45,000 --> 00:34:47,000

Corn boys, there you go.

412

00:34:49,000 --> 00:34:52,000

Jamie's school has learned its lessons well.

413

00:34:54,000 --> 00:34:57,000

But Adam's guys must have been playing hooky.

414

00:34:57,000 --> 00:35:01,000

I think it's quite obvious what's happening or not happening.

415

00:35:01,000 --> 00:35:07,000

They seem to be fascinated with their reflection on the other end of the tank.

416

00:35:07,000 --> 00:35:11,000

Jamie's crew is halfway through and going swimmingly.

417

00:35:11,000 --> 00:35:13,000

You know you want it.

418

00:35:13,000 --> 00:35:17,000

Look at them. They're frantic to get through there.

419

00:35:17,000 --> 00:35:19,000

Maybe I should give them a compass.

420

00:35:20,000 --> 00:35:25,000

Who's to say luck doesn't play a part in these things?

421

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

They're through the first barrier, but not for long.

422

00:35:29,000 --> 00:35:31,000

No, no, no, no, back.

423

00:35:31,000 --> 00:35:34,000

There's no backtracking in Jamie's tank.

424

00:35:34,000 --> 00:35:37,000

The first fish is through.

425

00:35:37,000 --> 00:35:38,000

One minute.

426

00:35:38,000 --> 00:35:42,000

The rest of the gang isn't far behind, except one.

427

00:35:42,000 --> 00:35:46,000

Interesting to note there's one fish that is the stupidest one.

428

00:35:46,000 --> 00:35:51,000

There's a little redhead in back and he's the skinniest.

429

00:35:52,000 --> 00:35:56,000

Adam apparently has two skinny fish.

430

00:35:56,000 --> 00:36:00,000

I don't understand the total ignorance of this panel.

431

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

It's like this wall doesn't even exist for him.

432

00:36:03,000 --> 00:36:09,000

I would say that without a doubt, one minute to make it through the maze is a lot quicker than random.

433

00:36:10,000 --> 00:36:12,000

And for Adam's fish?

434

00:36:12,000 --> 00:36:14,000

Nine minutes.

435

00:36:15,000 --> 00:36:21,000

Day 43 of the Goldfish Memory Test and Adam is still behind.

436

00:36:21,000 --> 00:36:23,000

Listen, I don't have any work to do on this experiment.

437

00:36:23,000 --> 00:36:26,000

These fish have a lot of work to do.

438

00:36:26,000 --> 00:36:33,000

I'm just giving them the framework with which to prove themselves for all goldfish kind.

439

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

Adam just got stupid fish. What are you going to do?

440

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

Alright boys, you ready?

441

00:36:44,000 --> 00:36:48,000

Meanwhile, Jamie's A students are lining up at the gate.

442

00:36:48,000 --> 00:36:51,000

They're looking perky this morning.

443

00:36:51,000 --> 00:36:53,000

What's going for it?

444

00:36:53,000 --> 00:36:55,000

The starting gun has sounded.

445

00:36:55,000 --> 00:36:58,000

Jamie's looking to go under 60 seconds.

446

00:37:01,000 --> 00:37:03,000

Oh, oh, oh.

447

00:37:03,000 --> 00:37:08,000

Yay, that was, let's see, 25 seconds. It's a record.

448

00:37:10,000 --> 00:37:12,000

They were like definitely...

449

00:37:12,000 --> 00:37:14,000

Way to go guys.

450

00:37:14,000 --> 00:37:16,000

Mine are eating your own poo.

451

00:37:19,000 --> 00:37:21,000

Well, they seem healthy for all that.

452

00:37:21,000 --> 00:37:25,000

I know that everyone's going to take me to task for wasting these fishes' time.

453

00:37:25,000 --> 00:37:27,000

Hey, they're both in the second chamber though.

454

00:37:28,000 --> 00:37:30,000

Oh, they go back.

455

00:37:32,000 --> 00:37:34,000

Can they remember for three seconds?

456

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

I'd wager. You bet. And a lot more.

457

00:37:38,000 --> 00:37:47,000

George Barlow from the University of California Berkeley is a professor of integrated biology and a big fan of goldfish.

458

00:37:47,000 --> 00:37:51,000

I guess there's some debate about this. Does condition behavior actually qualify as memory?

459

00:37:51,000 --> 00:38:03,000

Sure. Any task that you can, in quotes, teach to an animal and then retest later, you have a very objective way of evaluating whether it remembered it.

460

00:38:03,000 --> 00:38:11,000

From what you've told me, I would say, yeah, you've blown away the myth that they can only remember for three seconds.

461

00:38:11,000 --> 00:38:18,000

And one of the purported reasons behind the myth is so that people who keep goldfish in small bowls don't feel so bad.

462

00:38:18,000 --> 00:38:22,000

Do you think that it's actually cruel to keep goldfish in a bowl like that?

463

00:38:22,000 --> 00:38:24,000

Well, we'll never know.

464

00:38:24,000 --> 00:38:36,000

I'd off Hitler thought it was cruel to keep goldfish in a bowl because there was no corner for them in which to hide and had a law made prohibiting the use of bowls for goldfish.

465

00:38:36,000 --> 00:38:43,000

But I think in general, just an awful lot of fish kept in aquaria are bored.

466

00:38:45,000 --> 00:38:50,000

Okay, guys. Are you awake this morning?

467

00:38:51,000 --> 00:39:01,000

Jamie is confident his fish are drawing on all their memory cells. It's the final day, day 45. Will they find their food faster?

468

00:39:01,000 --> 00:39:03,000

Okay, that's a go.

469

00:39:03,000 --> 00:39:05,000

All right, time for starting.

470

00:39:05,000 --> 00:39:08,000

There we go. We're going through one.

471

00:39:08,000 --> 00:39:11,000

I'll go back through.

472

00:39:14,000 --> 00:39:17,000

Oh, they're looking like they're going to do it.

473

00:39:17,000 --> 00:39:18,000

Twenty seconds.

474

00:39:18,000 --> 00:39:21,000

Oh, they've lost the record.

475

00:39:22,000 --> 00:39:24,000

Twenty-five seconds.

476

00:39:24,000 --> 00:39:27,000

There we go. Almost.

477

00:39:27,000 --> 00:39:32,000

Thirty-five seconds. Come on, handsome. There it goes.

478

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

There we go.

479

00:39:34,000 --> 00:39:36,000

Not bad at all. Forty seconds.

480

00:39:36,000 --> 00:39:44,000

Forty seconds. I think that judging by what I'm seeing, that that's probably the threshold plus or minus 30 seconds to get through.

481

00:39:44,000 --> 00:39:54,000

And 30 seconds, I think, is pretty good to make it through four holes. It's clear that they've learned, and it's clear that they do, in fact, have a memory longer than three seconds.

482

00:39:54,000 --> 00:40:04,000

Absolutely. I mean, I'm impressed how fast that is. You know, my fish, on average, sort of randomly take between like three and 20 minutes to get to their food.

483

00:40:04,000 --> 00:40:07,000

I mean, you guys definitely know what's going on.

484

00:40:07,000 --> 00:40:09,000

Myth busted.

485

00:40:11,000 --> 00:40:13,000

Thanks, Adam.

486

00:40:13,000 --> 00:40:15,000

All right. Good night, fish.

487

00:40:18,000 --> 00:40:23,000

See, it's that kind of behavior that screwed him up. It's like, good night, fish. Yeah, that helps.

488

00:40:26,000 --> 00:40:28,000

They don't need to be trained anymore.

489

00:40:33,000 --> 00:40:38,000

Does a sinking ship create a powerful drag on those in the water?

490

00:40:38,000 --> 00:40:41,000

Adam can't wait to find out.

491

00:40:41,000 --> 00:40:46,000

But unlike Jamie, during the test, Adam won't be using scuba.

492

00:40:46,000 --> 00:40:52,000

So in case of emergency, he has to learn to breathe from another diver's regulator.

493

00:40:52,000 --> 00:40:57,000

I've been waiting half my life to see what it feels like to breathe underwater, and that's just like really cool.

494

00:40:57,000 --> 00:41:03,000

So I'm dying to be on that boat when it goes down. Like, I'm psyched to have done that. Like, I can't wait.

495

00:41:04,000 --> 00:41:10,000

There are many amazing survival stories from ships lost at sea, especially during war,

496

00:41:10,000 --> 00:41:15,000

yet none so evocative as those told of the Titanic.

497

00:41:15,000 --> 00:41:20,000

One story that contradicts the myth is that of Chief Baker Charles Jofin.

498

00:41:20,000 --> 00:41:24,000

Now, this man was having a good time the evening the Titanic sank.

499

00:41:24,000 --> 00:41:29,000

He was drinking a little bit, and then the entire trauma happened with the Titanic,

500

00:41:29,000 --> 00:41:33,000

and he found himself on the stern of the boat as the boat was going down.

501

00:41:33,000 --> 00:41:39,000

He said that going down with the boat while standing on the stern felt exactly like riding down an elevator.

502

00:41:39,000 --> 00:41:47,000

He said it was smooth sailing going down, and when it reached the water, he just stepped off into the water without even getting his hair wet.

503

00:41:47,000 --> 00:41:51,000

Swam around for a while and was picked up by a lifeboat and lived.

504

00:41:52,000 --> 00:41:57,000

It's test day, and Adam's excited enough to be up before dawn.

505

00:41:57,000 --> 00:42:00,000

Good morning. Good morning.

506

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

Well, everyone else crapped out. I think we're the only one who's taking the journey across the bay to deliver our little tugboat right here.

507

00:42:09,000 --> 00:42:15,000

It's really nice being on the bay at dawn. As the sun comes up, it's quite beautiful.

508

00:42:15,000 --> 00:42:22,000

And our little tug, the Miphthannock, is handling the trip just fine. It should be ready to sink.

509

00:42:22,000 --> 00:42:29,000

Across the bay, the San Francisco Dry Dock workers are preparing for this unusual event.

510

00:42:29,000 --> 00:42:33,000

Their skill will help sink the boat and recover it.

511

00:42:33,000 --> 00:42:39,000

Oh, my life. My dad used to tell me that if a boat sinks, you have to swim away as quick as you can because you will be sucked down with it.

512

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

The tugboat captain was very excited.

513

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

I'm very excited because you will be sucked down with it.

514

00:42:45,000 --> 00:42:51,000

The tugboat captain, Greg Urban, knows these chilly murky waters and the dangers they hold.

515

00:42:51,000 --> 00:42:55,000

I'm very interested in seeing what happens. I'm glad it's you that's going to be standing on deck and not me.

516

00:42:55,000 --> 00:42:58,000

So I think you're going to get sucked down with it.

517

00:42:58,000 --> 00:43:02,000

Despite the prediction, Jamie's still looking on the bright side.

518

00:43:02,000 --> 00:43:08,000

Well, you know, it's a little brisk this morning, but at least it's warmer in the water, perhaps.

519

00:43:08,000 --> 00:43:11,000

Somehow I don't think so.

520

00:43:11,000 --> 00:43:15,000

With all his underwater expertise, Jamie knows this is risky.

521

00:43:15,000 --> 00:43:21,000

He's enlisted a dive buddy, Sean Willis, a professional with 13 years experience.

522

00:43:21,000 --> 00:43:26,000

Tough to estimate what the visibility will be like. Sometimes currents make it better.

523

00:43:26,000 --> 00:43:30,000

With the silty bottom, often currents can stir it up a little bit worse.

524

00:43:30,000 --> 00:43:34,000

So it makes things a little harder, a little bit more dangerous, a little more complicated.

525

00:43:35,000 --> 00:43:40,000

The tugtoes the myth-tannic out to the end of the dry dock.

526

00:43:40,000 --> 00:43:46,000

To make salvage as easy as possible, it will be sunk right under the shadow of the big crane.

527

00:43:46,000 --> 00:43:52,000

Swing it out, swing it out. Swing it out some more.

528

00:43:52,000 --> 00:43:58,000

The boat is going to sink. We're going to find it. We're going to hook the cables up to it.

529

00:43:58,000 --> 00:44:04,000

We're going to bring it back up and we're going to do it again until we get too cold or too tired

to do it.

530

00:44:04,000 --> 00:44:11,000

Hey, Adam, just letting you know we've got 50 feet underneath your boat right now. 50 feet of water. Very cold water.

531

00:44:14,000 --> 00:44:20,000

The biggest fear that I have is Adam's safety. You know, we don't really know what's going to happen with this boat.

532

00:44:20,000 --> 00:44:26,000

The water's murky. It's cold. It's deep. This is a dangerous stunt that we're doing.

533

00:44:26,000 --> 00:44:30,000

And I guess Adam's life is in my hands.

534

00:44:34,000 --> 00:44:38,000

Adam doesn't wait around as the sea instantly gushes in.

535

00:44:38,000 --> 00:44:40,000

They're only opening one valve. One valve.

536

00:44:47,000 --> 00:44:51,000

The main job now is keeping the sinking ship in reach of the crane.

537

00:44:51,000 --> 00:44:53,000

So hold on.

538

00:44:56,000 --> 00:45:00,000

The tug gives the mythatic a gentle nudge into position.

539

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

Two feet away. All right, you're buffing.

540

00:45:07,000 --> 00:45:10,000

All right, it's going down, bro. It's going down.

541

00:45:12,000 --> 00:45:18,000

Surprised by the sea's rapid inflow, Adam veils out early and misses his chance.

542

00:45:19,000 --> 00:45:23,000

Time to reflect and rethink the strategy.

543

00:45:28,000 --> 00:45:35,000

The speed of descent was just like whoosh. I mean, my job I know was to stay with the boat and feel the suction.

544

00:45:35,000 --> 00:45:41,000

But I swear to God, sitting on there, my body just goes, move that way. Not that way.

545

00:45:41,000 --> 00:45:44,000

Survival kicked in at a critical moment.

546

00:45:45,000 --> 00:45:56,000

While Adam ponders his next brush with death, Jamie and Sean work 40 feet down in the dark for 30 minutes to reattach the salvage lines.

547

00:45:56,000 --> 00:46:00,000

Question is, are they game for take two?

548

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

Are you insinuating that I might not have the Cajones to follow through on this job?

549

00:46:05,000 --> 00:46:08,000

I know you've got the Cajones to do it. I'm only saying...

550

00:46:08,000 --> 00:46:09,000

Then what's the question?

551

00:46:09,000 --> 00:46:10,000

All right.

552

00:46:10,000 --> 00:46:17,000

I don't really want to. I don't think that we're going to see anything different than what we already saw with that boat.

553

00:46:17,000 --> 00:46:24,000

You know, for us to get in that sweet spot might take us a half a dozen fries, and all it represents to me is a lot of work.

554

00:46:24,000 --> 00:46:31,000

But if you want to do it on game, I just, you know, it was hard.

555

00:46:31,000 --> 00:46:37,000

It's a difficult decision to scuttle the boat again, but they need a result.

556

00:46:37,000 --> 00:46:41,000

They resolve to do it with the cables in place, but slacken.

557

00:46:41,000 --> 00:46:45,000

We've seen what the boat does. It's nothing that scary.

558

00:46:45,000 --> 00:46:52,000

I feel pretty good about lowering it on with the cables still attached this time, because they're so heavy, they just go down into the water.

559

00:46:52,000 --> 00:46:55,000

Okay, hold on to that hand back there.

560

00:46:55,000 --> 00:47:00,000

This will be their last attempt to tackle the old Titanic myth.

561

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

Would someone in the water be pulled down with the ship?

562

00:47:04,000 --> 00:47:09,000

You guys watch out for the cable. Don't get tangled up on the cable.

563

00:47:09,000 --> 00:47:13,000

Okay, be careful. It might roll and you get caught.

564

00:47:13,000 --> 00:47:16,000

It's going to roll, guys.

565

00:47:16,000 --> 00:47:20,000

Be careful.

566

00:47:23,000 --> 00:47:26,000

Stay with it. Stay out. Stay with it.

567

00:47:26,000 --> 00:47:28,000

There you go.

568

00:47:28,000 --> 00:47:30,000

Woo!

569

00:47:30,000 --> 00:47:34,000

Did you get sucked in there, then?

570

00:47:34,000 --> 00:47:38,000

Have you seen nobody get sucked in?

571

00:47:40,000 --> 00:47:42,000

No suction.

572

00:47:42,000 --> 00:47:48,000

No suction at all. I mean, I could not have been more central to the boat where it went down.

573

00:47:48,000 --> 00:47:56,000

I sat on it, the entire boat just dropped underneath me, and I hit the water, my neck hit the water, and I never went any lower.

574

00:47:56,000 --> 00:47:57,000

And what did I say?

575

00:47:57,000 --> 00:48:01,000

Okay, once again, Heinemann, you're absolutely right about how the boat sank.

576

00:48:01,000 --> 00:48:06,000

So I say, let's get this puppy back up and call it a day. I need a drink.

577

00:48:08,000 --> 00:48:15,000

So no vortex with the myth tenning, but how do they explain the dramatic tests in the swimming pool?

578

00:48:15,000 --> 00:48:22,000

In our test, we used like 300 pounds and it went right down really quickly.

579

00:48:22,000 --> 00:48:27,000

The boat's not built like that. It's a lot larger surface area. It didn't go down that fast.

580

00:48:27,000 --> 00:48:32,000

Well, you know, Jamie, I'm going to go out on the limb here and say, there is no effect. That myth is busted.

581

00:48:32,000 --> 00:48:38,000

Yeah, I'd agree. You know, I was right there, too. I didn't feel it. I didn't see it. It didn't happen.

582

00:48:38,000 --> 00:48:45,000

You know, and with all the rigging and stuff that are on a normal ship, there are some very good reasons to swim away from a boat that's going down.

583

00:48:45,000 --> 00:48:49,000

It could pull you down. You get caught in the rigging, but none of them involve suction.

584

00:48:49,000 --> 00:48:55,000

And I know our boat wasn't as big as one of these, but with a nine ton boat, I think you would have felt something.

585

00:48:55,000 --> 00:48:56,000

I'd agree.

