



**BONUS EPISODE:**

# **CRYO KIDS**

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00:00:00,000 --> 00:00:03,340

If you've been watching this series, you know that NASA has

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00:00:03,340 --> 00:00:07,500

scientists posted all over the world studying Earth's frozen regions.

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00:00:07,500 --> 00:00:14,670

We've got people exploring ice sheets, glaciers, permafrost, sea ice, snow and even ice on other planets!

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00:00:14,670 --> 00:00:17,850

But even our top scientists need a little back-up sometimes.

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00:00:17,850 --> 00:00:20,410

I'm a scientist!

6

00:00:28,330 --> 00:00:30,540

Cryosphere

7

00:00:33,290 --> 00:00:35,390

Cryo Kids: Bonus Episode

8

00:00:40,030 --> 00:00:41,580

Do you like going outside to do science?

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00:00:41,580 --> 00:00:42,450

Yeah.

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00:00:42,450 --> 00:00:43,910

Why?

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00:00:43,910 --> 00:00:45,490

Cuz it's fun.

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00:00:45,490 --> 00:00:47,160

Yeah? What's your favorite part?

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00:00:47,160 --> 00:00:48,510

Frost tube.

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00:00:48,510 --> 00:00:50,540

Frost tube! Cool!

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00:00:50,540 --> 00:00:54,620

In this bonus episode of Cryosphere, we're following the micro-explorers

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00:00:54,620 --> 00:00:59,180

that are helping NASA collect data from their own backyard

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00:00:59,180 --> 00:01:01,200

Do you think it's going to be frozen?

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00:01:01,200 --> 00:01:02,400

Yeah.

19

00:01:02,400 --> 00:01:03,100

Yeaaaaah!

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00:01:03,100 --> 00:01:04,040

Why?

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00:01:04,040 --> 00:01:08,040

Because it's very frozen!

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00:01:08,640 --> 00:01:12,530

Here's the idea: students construct a Frost Tube that get put into a

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00:01:12,530 --> 00:01:15,540

hole in undisturbed and un-compacted soil.

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00:01:15,540 --> 00:01:20,840

During the cold months, students will measure the depth at which water in the Frost Tube freezes,

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00:01:20,840 --> 00:01:24,120

indicating that the surrounding soil has frozen.

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00:01:24,120 --> 00:01:28,330

This is one of many citizen science projects facilitated by GLOBE,

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00:01:28,330 --> 00:01:32,380

the Global Learning and Observations to benefit the Environment Program.

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00:01:32,380 --> 00:01:33,490

What's going on? What did you --

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00:01:33,490 --> 00:01:35,530

It's turning into ice!

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00:01:35,530 --> 00:01:37,790

How far down is the ice?

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00:01:38,740 --> 00:01:41,360

Whoa! It's a long way!

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00:01:41,360 --> 00:01:44,460

So is there still liquid in there?

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00:01:44,460 --> 00:01:49,930

It's a worldwide program that, so far, has collected over 130 million

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00:01:49,930 --> 00:01:55,050

measurements from more than 10 million students in 113 countries!

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00:01:55,050 --> 00:01:57,930

Are you a scientist? - Yeah -

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00:01:57,930 --> 00:02:04,320

These measurements are added to a massive worldwide database that's free and open to the public.

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00:02:04,320 --> 00:02:08,830

GLOBE connects my students with the rest of the world through science

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00:02:08,830 --> 00:02:12,780

and looking at climate change and how it's infecting the future.

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00:02:12,780 --> 00:02:16,770

GLOBE teachers like Terri are transforming the way kids see science

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00:02:16,770 --> 00:02:20,900

and how they'll respond to changes in their future environment.

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00:02:20,900 --> 00:02:25,340

Let me see your happy face!

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00:02:25,340 --> 00:02:28,960

Actually, we were so impressed with the kids of John Fredson School

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00:02:28,960 --> 00:02:33,990

that we decided to show their work to the scientists in the original NASA Explorers Cryosphere series

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00:02:33,990 --> 00:02:38,710

And they had a couple things to say.

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00:02:38,710 --> 00:02:41,510

Oh my god, that's awesome.

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00:02:42,140 --> 00:02:44,560

Oh my god.

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00:02:53,170 --> 00:02:56,520

That's awesome!

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00:02:56,520 --> 00:03:00,130

Wow, this is really, really cool

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00:03:00,130 --> 00:03:02,160

Hey students from Miss Terri's class!

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00:03:02,160 --> 00:03:03,680

I just got to see your video!

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00:03:03,680 --> 00:03:08,270

I was so impressed that you guys were braving the conditions of the snow

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00:03:08,270 --> 00:03:12,560

and all the crazy stuff to go and learn more about the permafrost

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00:03:12,560 --> 00:03:15,400

and where the water layer is, right outside your school

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00:03:15,400 --> 00:03:16,900

That looked incredible!

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00:03:16,900 --> 00:03:22,150

It is so exciting to see you guys and girls doing such great work

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00:03:22,150 --> 00:03:26,050

as we watch our planet change over time

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00:03:26,050 --> 00:03:27,160

Hey there, young scientists

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00:03:27,160 --> 00:03:29,170

Looks like you guys are doing some amazing things

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00:03:29,170 --> 00:03:34,720

Remember to keep warm, and take notes, and also stay curious

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00:03:34,720 --> 00:03:37,970

Oh my god, this is awesome. I loved seeing the

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00:03:37,970 --> 00:03:42,310

enthusiasm of these kids. They're outside, it's obviously really cold

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00:03:42,310 --> 00:03:46,510

but everyone is so excited to be out there making measurements for NASA

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00:03:46,510 --> 00:03:48,350

That's wicked cool

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00:03:48,350 --> 00:03:51,000

Because you're so right, science is so fun

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00:03:51,000 --> 00:03:54,810

I really hope that you'll continue believing in that

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00:03:54,810 --> 00:04:00,340

The best piece of advice I ever got was that whatever you do, do your best

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00:04:00,340 --> 00:04:04,450

And from all of us here at the Jet Propulsion Laboratory, remember:

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00:04:04,450 --> 00:04:08,100

Dare mighty things!

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00:04:08,100 --> 00:04:09,790

So keep up the great work!

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00:04:09,790 --> 00:04:11,840

Make sure that you're having fun no matter what

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00:04:11,840 --> 00:04:14,560

That's the key thing about pursuing a career in science

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00:04:14,560 --> 00:04:16,410

Make sure it's something you love