

The Pop Ups. Stay seated. Three, two, one, ignition. Get ready for an adventure of magnificent proportion.

The Pop Ups. (Singing.) I don't know what you've been told, but we're in a golden age - so many discoveries that are jumping off the page. Wow in the world. Wow in the world. Wow in the world. Wow in the world. Wow in the world. Wow in the world. Wow in the world. Wow in the world.

The Pop Ups. With Guy and Mindy. We're on our way, Houston.

Guy. Okay, let's see here; bucket hat, check. Sunblock, check. Beach towel, check. Now for the big decision. Which frisbee I'm going to bring? Hmm...

(Soundbite of doorbell.)

Guy. Coming!

(Soundbite of walking and door opening.)

Mindy. Good morning, Guy Raz!

Guy. Mindy?

Mindy. That's my name! You ready for the big beach trip?

Guy. Yeah, I'm just finishing packing my tote bag, but...uh...are you?

Mindy. Yeah! What do you mean?

Guy. Well, what I mean is you're covered from head to toe in snow gear!

Mindy. Yeah, well it is going to be pretty cold when we get there.

Guy. Mindy, it's ninety degrees outside today!

Mindy. Well, not where we're going, it's not.

Guy. Oh no. This isn't going to be one of those crazy adventures where you take me to a Siberian icy tundra and then try to tell me that it's actually a beach is it?

Mindy. What?! No! I'm not taking you to Siberia, Guy Raz!

Guy. Phew!

Mindy. I'm taking you to Mars!

Guy. Oh no.

Mindy. Why do you think I have the wow machine idling out front?

Guy. Mindy, the Wow Machine? What in the wow are you talking about?

Mindy. Oh! Well, I'm talking about a brand new study released by a group of scientists at NASA, that explains that the best beaches in our solar system are not here on earth, they're on Mars!

Guy. But Mindy, how can you have a beach without any water?

Mindy. Oh there's water, alright! A whole bunch of it.

Guy. Huh?

Mindy. Well, not any more there's not. But a little over four billion years ago, there was!

So what do you say? Want to turn Mars into your very own private beach resort?!

Guy. Okay, I'm in! Let's do it!

Mindy. Boo-yah! Reggie!

Reggie. Coo.

Mindy. Rev up the engine!

Guy. Oh but Mindy, I'm packed for an earthling beach. Exactly how cold *is* it going to be when we get there?

Mindy. Oh! Let me just check my weather app, here. Oh, okay, uh, it says here that on Mars, it is currently minus eighty six degrees below freezing.

Guy. Huh?! minus eighty-six degrees Fahrenheit!

Mindy. Don't worry, Guy Raz. I'm pretty sure that old coat that I made out of Boo-Boo Beanie Boppers is in the Wow Machine, that'll keep you nice and warm.

Guy. Ugh, fine.

Mindy. Yes! Alright, follow me.

(Soundbite of door closing.)

Mindy. Walk walk walk walk walk... after you, Guy Raz! Hello, Wow Machine! Hello, Reggie!

Reggie. Coo.

Mindy. Okay, now just take a seat and strap yourself in there, buddy. I just need to add the coordinates here. Let's see, uh, Mars. Four billion years in the past. And, ready?

(Soundbite of buckling up.)

Guy. Uhh.

(Soundbite of buttons beeping.)

Mindy. Good. 'Cause here we—

Guy and Mindy. –Go!

(Soundbite of Mindy and Guy travel through time and space.)

Reggie. Coo!

Mindy. Alright. Easy does it. One billion, two billion, three billion years ago and, stop!

(Soundbite of squeaky brakes.)

Mindy. Ah! Stop!

Reggie. Coo!

Mindy. Gah! The brakes are jammed again, Guy Raz!

Guy. Ugh!

Mindy. Gah! Hand me that wrench.

Reggie. Coo.

(Soundbite of banging and screeching.)

Mindy. Ahh, there we go!

Guy. Ugh.

Reggie. Coo.

Mindy. Another perfect landing. How you doin', buddy?

Guy. Uhh, good, I guess?

Reggie. Coo.

Mindy. Okay, let's just see where we ended up.

(Soundbite of pulling up window shades.)

Guy. Woah.

Reggie. Coo.

Mindy. Yeah, pretty wild, huh?

Guy. Mindy, what in the world is that thing?

Reggie. Coo!

Mindy. That, Guy Raz, is ancient Mars.

Guy. That's, Mars?

Mindy. Yup, four billion years in the past. Before it got all touristy.

Reggie. Coo.

Guy. Are you sure?

Mindy. Well, let me just double check here.

(Soundbite of bleeps and bloops.)

Mindy. Yup, this is dolphinitely ancient Mars.

Guy. Wow! There's so much water down there! Is this what those NASA scientists were talking about, Mindy?

Mindy. You know it, Guy Raz. They predicted that this ancient martian ocean was about two thousand feet deep, and contained about a quarter of the water of the Atlantic Ocean.

Reggie. Coo!

Guy. It looks like it's covering about a quarter the planet.

Mindy. Yeah, it does, doesn't it?

Guy. So what happened to all this water? How come we don't see any of it when we look up at the red planet today?

Mindy. Well, there are a lot of theories.

(Soundbite of whoosh and chimes.)

Guy. Yeah?

Reggie. Coo.

Mindy. Most scientists believe that a part of it was literally blasted off into space by solar winds.

(Soundbite of giant whoosh and crash.)

Guy. Solar winds? You mean those highly charged particles that the sun blasts out across the solar system.

Mindy. You know it! Scientists think that they could have broken the water apart into hydrogen and oxygen, and then just sent it off into space!

Reggie. Coool!

Guy. Woah, like a giant hand dryer blasting the water off of your hands after you've finished washing them!

Mindy. Uh huh! Exactoritos.

Guy. And so where did the rest of the water go?

Reggie. Coool.

Mindy. Well, this new research paper suggests that most of the martian water, up to ninety-nine percent of it, was sucked up into the rocks.

(Soundbite of water flushing.)

Reggie. Coool?

Guy. Sucked up into the rocks? Like a sponge?

Mindy. Well, sort of. These NASA scientists were able to make this hypothesis, or educated guess, based on rock samples from the martian surface.

Guy. Oh, right! And I think they collected those rock samples using rovers, right?

(Soundbite of robot servo motors whirring.)

Mindy. That's right! These little sophisticated robots called 'rovers' have been driving around Mars for the last twenty years performing all kinds of science experiments.

(Soundbite of rover rolling over gravel.)

Guy. And during some of these science experiments, they collected rocks from the martian surface?

Mindy. Exactly. And inside these rock samples scientists found what they call 'hydrated minerals.'

Guy. Hydrated minerals?

Mindy. Yeah!

Guy. So, when water is added to the crystal structure of a mineral?

(Soundbite of water drop and shimmer.)

Reggie. Coo.

Mindy. And scientists studying this could see that sometime in the past, these rocks had been soaked by liquid water.

Guy. And by using this data, I guess they were able to predict that Mars once had a giant ocean?

(Soundbite of waves crashing.)

Mindy. You know it!

Reggie. Coo!

Guy. Wow! I mean, it's hard to imagine that an entire ocean could just disappear into rocks.

Mindy. Well, I mean it didn't happen overnight. It took at least one billion years! But after that, Mars was as dry as a bone, leaving behind dry riverbeds and canyons that we can still see on Mars today!

(Soundbite of wind blowing, whoosh, and shimmer.)

Guy. Well, what are we waiting for, Mindy? Let's go check it out before all this water gets sucked up!

Reggie. Coo coo!

Mindy. That's the spirit, Guy Razzy! You wanna get some hot chocolate before we go?

Guy. Hot chocolate?

Mindy. Yeah! Remember? It's going to be minus eighty-something degrees below freezing when we get there.

Guy. Oh yeah, I almost forgot!

Reggie. Coo!

Mindy. And go check in the back of the Wow Machine. I think I've got that Boo-Boo Beanie Bopper coat back there.

Guy. Uhh.

Mindy. You can wear it to keep you warm!

Reggie. Coo!

Guy. Not really my style, but-

Mindy. Well, there are some other costume options back there, as well. Go check them out, find something to keep you warm, and I am going to make us two of my world-famous double chocolate hot fudge chocolate hot chocolates.

Reggie. Coo! Coo.

Mindy. I've never made these before in my life.

Reggie. Coo.

Guy. Well, ok Mindy.

Mindy. [Humming to herself as she makes hot chocolate.]

(Soundbite of stove turning on and stirring.)

Guy. Okay, let's see what we've got here. Uhh, cockroach costume? Nope. Flamingo bathing suit? Uh, I think that's off-brand. A couple of space suits

from NASA? Mindy, how did you get your hands on those? Exploding ants costumes? Pass! Ooh, oh wait, this looks okay.

Mindy. Did anyone order a hot chocola-

(Soundbite of Mindy slipping and crashing.)

Reggie. Coo.

Guy. Are you okay, Mindy!

Mindy. Ugh, I think I broke my butt.

Guy. Did you save the hot chocolate?

Mindy. No, it looks like I spilled it all over the-

(Soundbite of buzzing and sparking.)

Mindy. Control panel.

(Soundbite of sparking intensifies.)

Guy. Uh, Mindy?

(Soundbite of alarm.)

Ship computer. Warning. Double chocolate hot fudge chocolate hot chocolate detected on internal components.

Mindy. Uh oh.

(Soundbite of sparking intensifies further.)

Guy. Mindy? What's happening?

Reggie. Coo!

Ship computer. Complete malfunction imminent. Initiating emergency procedure alpha-alpha-doodie-butt.

Mindy. Uh, nothing good! Hold on, everyone!

(Soundbite of the Wow Machine speeding away.)

Guy. Woah.

Mindy. Oof, I don't know what just happened, but I'm glad I strapped all those boo-boo beanie boppers to the bumper, huh?

Guy. Uh-huh.

Mindy. Well, let me see what the damage is here.

(Soundbite of seat belt unbuckling, keyboard clicking, and bleeps and bloops.)

Mindy. Okay, it looks like we are back in the present day.

Guy. Oh, thank goodness!

Reggie. Coo!

Mindy. And.

(Soundbite of keyboard clicking and bleeps and bloops.)

Mindy. We have crash landed on Mars.

Reggie. Coo.

Guy. Wha- present day Mars? Mindy, there are no beaches on present day Mars! It's dry as a dust bowl!

(Soundbite of keyboard clicking.)

Mindy. And that's not even the worst of it, Guy Raz. Looks like we sprung a flat tire!

(Soundbite of computer beeping.)

Reggie. Coo.

Guy. The Wow Machine has tires?

Mindy. Not any more, it doesn't! We're gonna have to pump this baby up again. Here, pass me one of those space suits.

Guy. Alright.

(Soundbite of Guy passing Mindy a space suit.)

Guy. Here you go.

Mindy. Thank you! Oh! And look, there's one for you, too.

Guy. Oh, thanks.

Mindy. Okay, let me just put this on, here.

(Soundbite of space suit rustling.)

Mindy. There we go!

(Soundbite of helmet sealing shut.)

Mindy. Zip it up.

(Soundbite of zipper and exertion.)

Mindy. And, done! How you doin' Guy Razzy?

(Soundbite of exertion.)

Guy. Almost there, Mindy.

(Soundbite of exertion.)

Guy. Err! Ah!

(Soundbite of exertion, plop, and helmet sealing shut.)

Mindy. Alright, I think we're ready to open up the hatch.

(Soundbite of exertion and hatch creaking open.)

Guy. Woah! Look at this place, Mindy!

Mindy. I know, Guy Raz! It's one great big red desert!

Guy. Yeah, it stretches all the way out to the horizon!

Mindy. It's bonkerballs!

(Soundbite of something falling off the Wow Machine.)

Mindy. Whoops, almost forgot! We've got the Wow Machine to fix! Here, let me just set this thing up here.

(Soundbite of exertion, hissing and pump starting.)

Mindy. There we go. The wings should be all inflated and ready to go again in just a couple of minutes.

Guy. Wings? I thought we had a flat tire!

Mindy. Tire? Guy Raz, it's a Wow Machine, it doesn't have tires!

Guy. Ugh.

Mindy. Wanna go for a space walk?

Guy. Do I?! Lead the way!

Mindy. Alright! Space-walk-space-walk-space-walk-space-walk.

(Soundbite of robotic noises.)

Mindy. Woah. Wait a minute. Did you hear that?

Guy. Hear what?

(Soundbite of robotic noises.)

Mindy. That!

Guy. Yeah, I did. It sounded like a-

(Soundbite of robotic noises.)

Mindy / Guy. Robot!

(Soundbite of robotic noises.)

Guy. Look over there, Mindy.

Mindy. Woah, what is that thing? It looks like a giant computer chip on wheels.

Guy. Mindy, I'm pretty sure that's the Perseverance Rover.

Mindy. The what?

Guy. The Perseverance Rover. It's a robot that NASA sent up to Mars in 2021 to try and find out whether life ever existed here.

Mindy. Right, because if a planet has liquid water–

Guy. *Or* if a planet *once* had liquid water–

Mindy. Then there's a chance that life also existed there!

Guy. That's right, Mindy! And one thing that most scientists agree on, is that water is key to creating life in the universe.

Mindy. So is that why there are so many different things living on Earth? Because there's so much water?

Guy. Well, that's *one* of the reasons. In places on Earth where there's not much water, there's also much less variation in the sort of animals that live there.

Mindy. Huh, so these scientists at NASA think that if liquid water used to exist here on Mars–

Guy. –Then there's a chance that *life* also existed here!

Mindy. Woah.

Guy. Yeah, I bet that little rover is off to one of those dried up riverbeds we were talking about before!

Mindy. Because that's where the water used to be!

Guy. Exactly!

(Soundbite of robot servo motor whirring.)

Guy. Just think about it, Mindy. If we were to find out that life once existed here on Mars, it would change everything!

Mindy. Uh huh!

Guy. It would change how we see the universe—

Mindy. Uh huh.

Guy. It would change what we've always thought of our planet as uniquely special—

Mindy. Mhm.

Guy. As one of the only places where life can thrive—

Mindy. Okay. Walk walk walk walk walk walk.

(Soundbite of footsteps and robot servo motor whirring.)

Guy. But we've always had a hunch that it might be possible elsewhere, but we've never had proof, but soon this little rover might just get that proof! I mean, wouldn't that be amazing, Mindy? Uh, Mindy?

(Soundbite of metal clunk.)

Mindy. Yee-haw!

(Soundbite of robot servo motor whirring.)

Guy. Mindy! What are you doing on that rover!?

Mindy. Ha ha ha ha! I'm taking this Perseverance Rover for a ride, Guy Raz!

Guy. Ugh!

Mindy. Here, give me your hand. I'll help you up.

Guy. Mindy! Get off that thing! That robot costs two point two billion dollars, and took seven months to get here!

Mindy. Pft! Seven months...they should have just asked me to take it! How long did it take us to get here? Three? Four seconds?

Guy. Mindy!

Mindy. Okay, fine. I'll get down.

(Soundbite of Mindy jumping down.)

Guy. Ugh! Thank you!

Mindy. So long, perseverance! And good luck finding those origins of extraterrestrial life or whatever!

Guy. Ugh.

Mindy. Alright. That wow machine should be finished pumping itself back up now. Want to head back?

Guy. Please!

Mindy. Alright! Space-walk-space-walk-space-walk. Whew! You know what, Guy Raz? I think I might have been right.

(Soundbite of footsteps.)

Guy. About what?

Mindy. Beaches. Maybe Earth does have the best beaches after all.

Guy. I told you that!