

The One with the Space Waste

- Dianne** I hear that you have an interest in going to space?
- Maddy** Yes, I am so interested in going to space. I hope to go soon.
- Dianne** I hope, so, I hope, so. I'm an astronaut candidate.
- Maddy** Oh, that's so cool.
- Dianne** This is a place where we can practise that sort of stuff, like getting used to being in space.
Let's suit up.
- Maddy** Okay.
- Dianne** Good to go.
Welcome to Mars.
- Maddy** Whoa.
- Dianne** How cool is this?
- Maddy** Whoa, this is, so cool.
- Dianne** What it is, it's a simulation of Mars. The idea is to have an area where we've got a mock up, of Mars. We can learn about Mars, and the soil systems, and geological systems are there. Then we can work out, can we live on Mars? So, it's a sustainable food system. It's going to be something we have to be able to grow, and will have to look after itself continually, right?
- Do you know much about sustainability?
- Maddy** Sustainability is, how long you can keep something going.
- Dianne** Yeah. Yes. Sustainability, it's really important to think about. We have to use what we have so intelligently, so that's available to continue to use in the future. That's really sustainability on this planet too, isn't it? How would we treat our soil, our food, our materials, our waste, our energy, everything. We gotta think about using it wisely today, so it's still available to us in the future.
- Maddy** How would you package the food, or store food, to go to space?

Dianne The sort of food that people eat on the space station today is, usually freeze-dried. It'll be packaged often in vacuum sealed packs. Then they reconstitute it. A bit like two-minute noodles, what we do on Mars, is we would be able to grow real food, in a hydroponic system. We'd be able to have normal vegetables and that growing there, and fruits. Trees eventually, but not for some time. But that means we wouldn't have to package them. We can just plant a seed, and it will grow because there's gravity, so roots will be able to actually establish themselves.

Imagine the first salad that you have on Mars after seven months flying to Mars, with freeze dried food, and you get to Mars, and then you've gotta grow the food. How long does it take for lettuce to grow?

Maddy A few weeks, a few months, even?

Dianne A few weeks, a few months, exactly. So it's going to be months before you get your first salad. I mean, imagine going to the supermarket and you've gone and grabbed a bag of carrots, or something like that. And you've eaten a good chunk of the carrot and left some of it, and just tossed it away. How long has it taken to grow that?

Maddy Oh, yeah, and then you're not eating all of it. You're just throwing it away.

Dianne You're throwing it away and how many nutrients that are being disposed of, how much water has gone into growing that carrot, and what about all of the nutrients in the soil as well, that are now gone that who knows where they're going. They're going to landfill maybe?

I think about when we leave Earth. You're in a spaceship and you're watching the planet from afar, seeing it shrinking. But all you'd see would be oceans, rivers, mountains, forests.

Maddy You wouldn't see houses.

Dianne You wouldn't see houses. You wouldn't see borders. You wouldn't see division. You would just see life. We have this extraordinary planet, so lush with life. What can I do? What can we all do to preserve it?