MISSION IMAGINATION

Waste Management

1
00:00:11,509 --> 00:00:09,830
hi i'm kristen fortson the international

2
00:00:13,350 --> 00:00:11,519
space station program stowage and

3
00:00:15,990 --> 00:00:13,360
disposal lead at the johnson space

4
00:00:17,830 --> 00:00:16,000
center welcome to mission imagination

5
00:00:19,750 --> 00:00:17,840
i'm very excited to be here today to

6
00:00:22,070 --> 00:00:19,760
talk to you about the disposal aspect of

7
00:00:23,750 --> 00:00:22,080
my job because really i like talking

8
00:00:25,589 --> 00:00:23,760
trash

9
00:00:28,070 --> 00:00:25,599
do the astronauts generate the same type

10
00:00:29,669 --> 00:00:28,080
of trash we generate on the ground

11
00:00:31,669 --> 00:00:29,679
the trash that's generated on the

12
00:00:33,270 --> 00:00:31,679
international space station is the same

13
00:00:35,350 --> 00:00:33,280

kind of trash that you would expect to

14
00:00:37,670 --> 00:00:35,360
be generated by your community and not

15
00:00:39,430 --> 00:00:37,680
just by your household things that you

16
00:00:42,790 --> 00:00:39,440
expect to end up in the trash like

17
00:00:44,549 --> 00:00:42,800
microbial wipes food wrappers do end up

18
00:00:46,709 --> 00:00:44,559
in the trash other things you might not

19
00:00:49,029 --> 00:00:46,719
expect is dirty laundry we don't have

20
00:00:51,350 --> 00:00:49,039
any washing machines on orbit and so

21
00:00:54,310 --> 00:00:51,360
dirty clothes dirty towels

22
00:00:55,590 --> 00:00:54,320
socks tennis shoes those also end up in

23
00:00:59,270 --> 00:00:55,600
the trash

24
00:01:00,869 --> 00:00:59,280
the international space station and

25
00:01:02,549 --> 00:01:00,879
that's because there's a lot of moving

26
00:01:04,789 --> 00:01:02,559
parts up there to keep all the systems

27
00:01:06,469 --> 00:01:04,799
running to keep space station working

28
00:01:08,789 --> 00:01:06,479
and because the crew is doing a lot of

29
00:01:11,030 --> 00:01:08,799
experiments up there so things that end

30
00:01:14,870 --> 00:01:11,040
up in the trash because of that include

31
00:01:17,830 --> 00:01:14,880
fans filters experiment pieces finally

32
00:01:21,910 --> 00:01:17,840
what ultimately ends up in the trash

33
00:01:23,670 --> 00:01:21,920
human solid and liquid waste

34
00:01:26,310 --> 00:01:23,680
how does waste management work on the

35
00:01:28,710 --> 00:01:26,320
international space station

36
00:01:30,550 --> 00:01:28,720
well first of all you have cargo ships

37
00:01:32,469 --> 00:01:30,560
that come and deliver cargo they are the

38
00:01:34,469 --> 00:01:32,479

same ships that we use to get rid of the

39
00:01:37,030 --> 00:01:34,479
trash cargo ships come to the

40
00:01:38,710 --> 00:01:37,040
international space station about once

41
00:01:40,789 --> 00:01:38,720
every three or four months which means

42
00:01:43,510 --> 00:01:40,799
you're to have three or four months of

43
00:01:45,030 --> 00:01:43,520
trash building up on the space station

44
00:01:47,910 --> 00:01:45,040
that means that you have to have a

45
00:01:49,590 --> 00:01:47,920
designated area to stow the trash after

46
00:01:51,749 --> 00:01:49,600
we unload cargo from the visiting

47
00:01:53,830 --> 00:01:51,759
vehicle we then backfill it with trash

48
00:01:55,109 --> 00:01:53,840
and once the vehicle is full of trash we

49
00:01:56,950 --> 00:01:55,119
shut the hatch

50
00:01:59,429 --> 00:01:56,960
unbirth it from the international space

51
00:02:02,149 --> 00:01:59,439
station and then it deorbits and burns

52
00:02:03,910 --> 00:02:02,159
up in the atmosphere so next time you're

53
00:02:06,069 --> 00:02:03,920
wishing on a falling star

54
00:02:08,550 --> 00:02:06,079
it might be falling trash it's still

55
00:02:10,070 --> 00:02:08,560
science

56
00:02:11,670 --> 00:02:10,080
what is the stowage and disposal

57
00:02:13,510 --> 00:02:11,680
department doing to prepare for the

58
00:02:15,350 --> 00:02:13,520
future journey to mars

59
00:02:17,270 --> 00:02:15,360
we're having to re-look at the whole way

60
00:02:19,430 --> 00:02:17,280
that we manage disposal

61
00:02:21,510 --> 00:02:19,440
on a journey to mars the vehicle that

62
00:02:23,510 --> 00:02:21,520
launches is the only vehicle involved

63
00:02:25,430 --> 00:02:23,520

which means once you launch and all the

64
00:02:27,190 --> 00:02:25,440
way on your trip to mars you're going to

65
00:02:28,869 --> 00:02:27,200
be building up trash and you're going to

66
00:02:30,630 --> 00:02:28,879
have to live with it

67
00:02:32,070 --> 00:02:30,640
so this means that you need to figure

68
00:02:33,670 --> 00:02:32,080
out a space where you're going to stow

69
00:02:35,830 --> 00:02:33,680
the trash so it doesn't get in the way

70
00:02:37,430 --> 00:02:35,840
of the rest of your stowage and you need

71
00:02:39,509 --> 00:02:37,440
to figure out a way to contain it so

72
00:02:41,430 --> 00:02:39,519
that it doesn't start to grow things or

73
00:02:43,350 --> 00:02:41,440
stink

74
00:02:45,509 --> 00:02:43,360
now it is time for you to put science

75
00:02:47,750 --> 00:02:45,519
technology engineering and mathematics

76
00:02:51,589 --> 00:02:47,760
to work something we do at nasa every

77
00:02:54,949 --> 00:02:51,599
day good luck on challenge number two