



1
00:00:00,006 --> 00:00:01,116
[Sound Effects]

2
00:00:01,116 --> 00:00:04,386
My name is Bethany Dixon from
Rocklin, California and I teach

3
00:00:04,386 --> 00:00:06,706
at Western Sierra
Collegiate Academy,

4
00:00:06,986 --> 00:00:10,466
a Rockland Academy Family
School, and this is NASA Now!

5
00:00:11,516 --> 00:00:31,916
[Sound Effects]

6
00:00:32,416 --> 00:00:36,146
Hi I'm Maria and
this is NASA Now.

7
00:00:36,576 --> 00:00:39,126
During the course of this season
we are going to take a look

8
00:00:39,126 --> 00:00:42,666
at some of the exciting career
opportunities available at NASA.

9
00:00:43,106 --> 00:00:44,586
In today's program we catch

10
00:00:44,586 --> 00:00:48,536
up with teacher turned astronaut
Dottie Metcalf-Lindenburger

11
00:00:48,536 --> 00:00:50,106
and see what it takes to go

12

00:00:50,106 --> 00:00:52,386
from the classroom
to low Earth orbit.

13

00:00:52,906 --> 00:00:55,816
That's ahead, but first here's
what's happening at NASA Now.

14

00:00:56,516 --> 00:00:59,686
[Sound Effects]

15

00:01:00,186 --> 00:01:02,416
A lasting legacy on the moon.

16

00:01:02,846 --> 00:01:05,756
NASA's Gravity Recovery
and Interior Laboratory

17

00:01:05,866 --> 00:01:09,426
or GRAIL successfully completed
its mission to study differences

18

00:01:09,426 --> 00:01:10,426
in the moon's gravity.

19

00:01:10,886 --> 00:01:15,716
On December 17th 2012, GRAIL'S
two spacecraft, Ebb and Flow,

20

00:01:16,006 --> 00:01:18,136
successfully impacted
the lunar surface

21

00:01:18,246 --> 00:01:19,586
after their scheduled descent.

22

00:01:19,866 --> 00:01:22,696
The site was named the

Sally K. Ride Impact Site,

23

00:01:22,906 --> 00:01:25,846
in honor of late NASA
astronaut, Dr. Sally Ride;

24

00:01:26,116 --> 00:01:27,876
America's first female in space.

25

00:01:28,466 --> 00:01:31,266
Dr. Ride, who passed
away in July 2012,

26

00:01:31,576 --> 00:01:34,016
also led the mission's
MoonKAM program.

27

00:01:34,496 --> 00:01:37,886
The first camera on a planetary
mission dedicated entirely

28

00:01:37,886 --> 00:01:39,626
to education and
public outreach.

29

00:01:40,086 --> 00:01:44,366
MoonKAM took more than 115,000
images of the lunar surface.

30

00:01:44,836 --> 00:01:47,746
Imaging targets and the
spacecraft names were selected

31

00:01:47,746 --> 00:01:49,626
from student submissions
across the country.

32

00:01:49,806 --> 00:01:52,266
Following the mission,
images were returned

33

00:01:52,266 --> 00:01:53,766

to the students for
further study.

34

00:01:54,516 --> 00:01:57,066

[Sound Effects]

35

00:01:57,566 --> 00:02:02,016

She was a Mission Specialist on
the crew of STS 131 and spent

36

00:02:02,016 --> 00:02:03,906

over two weeks on board the ISS.

37

00:02:04,686 --> 00:02:07,976

So what was it like to go from
being a teacher to an astronaut,

38

00:02:07,976 --> 00:02:09,716

and how in the world
did she get there?

39

00:02:10,176 --> 00:02:12,256

Those are some of the
questions we will answer

40

00:02:12,256 --> 00:02:15,646

when Dottie Metcalf-Lindenburger
shares her incredible career.

41

00:02:16,031 --> 00:02:18,031

[Music]

42

00:02:18,046 --> 00:02:22,616

Since I've been here at NASA
I've been living my dream.

43

00:02:23,046 --> 00:02:24,396

And it's been quite exciting.

44

00:02:24,396 --> 00:02:26,486

I've met many new
people, learned so much

45

00:02:26,656 --> 00:02:29,026

about our space shuttle
which is now retired

46

00:02:29,026 --> 00:02:30,826

about the International
Space Station.

47

00:02:30,826 --> 00:02:34,416

And I'm learning more now about
our international partners

48

00:02:34,416 --> 00:02:35,916

and the vehicles
that we're using

49

00:02:36,296 --> 00:02:38,596

to supply our International
Space Station.

50

00:02:39,516 --> 00:02:42,556

[Music]

51

00:02:43,056 --> 00:02:46,916

One day, when I was teaching
my high school class,

52

00:02:47,206 --> 00:02:50,056

one of my students
asked me, "How do you go

53

00:02:50,056 --> 00:02:51,246

to the bathroom in space?"

54

00:02:51,836 --> 00:02:52,706

It's a great question.

55

00:02:52,706 --> 00:02:54,856

I didn't know what that
toilet looked like.

56

00:02:55,666 --> 00:02:58,126

So I went to the NASA website.

57

00:02:58,276 --> 00:03:01,086

I found out just what the
shuttle toilet looked like,

58

00:03:01,396 --> 00:03:02,476

learned how you can use it.

59

00:03:02,846 --> 00:03:05,086

And at the same time
they were posting

60

00:03:05,266 --> 00:03:07,196

for teachers to become
astronauts.

61

00:03:07,266 --> 00:03:10,406

I thought this is a
perfect job so I applied.

62

00:03:10,776 --> 00:03:13,456

I knew that it would be very
unlikely that I'd get the job.

63

00:03:13,746 --> 00:03:16,836

But again, I set my goals
high and I worked hard.

64

00:03:17,516 --> 00:03:19,576

[Music]

65

00:03:20,076 --> 00:03:23,796

There's not one single day
that's ever the same whether

66

00:03:23,796 --> 00:03:27,306

we're in classes
learning about systems

67

00:03:27,396 --> 00:03:29,096

of the International
Space Station

68

00:03:29,316 --> 00:03:33,106

or how the new visiting
vehicles work, or whether we're

69

00:03:33,106 --> 00:03:36,266

in our Russian classes
learning the other language

70

00:03:36,306 --> 00:03:37,816

of the space station.

71

00:03:38,456 --> 00:03:41,716

Sometimes we're flying out in
a T-38 and practicing checklist

72

00:03:41,756 --> 00:03:45,096

and how to work as a team
in a very real environment.

73

00:03:45,416 --> 00:03:47,046

Sometimes we're in the
Neutral Buoyancy Lab

74

00:03:47,096 --> 00:03:50,426

and we're practicing 6-hour
long space walks underwater

75

00:03:50,496 --> 00:03:52,966

because it's the closest
that we can get to being

76

00:03:52,966 --> 00:03:54,456

in a simulated weightlessness.

77

00:03:55,226 --> 00:03:59,176

Other times, we're in front
of lots of video screens

78

00:03:59,226 --> 00:04:02,406

and practicing robotics
because the best way for us

79

00:04:02,476 --> 00:04:05,156

to do our robotics is
through simulators.

80

00:04:05,666 --> 00:04:08,456

And so all of those
things are ways

81

00:04:08,506 --> 00:04:11,766

that we have a different
daily schedule and then

82

00:04:11,766 --> 00:04:13,766

in between there, we
have desk jobs, too,

83

00:04:13,766 --> 00:04:15,976

where we're supporting those
people that are flying in space.

84

00:04:16,516 --> 00:04:19,586

[Music]

85

00:04:20,086 --> 00:04:23,906

When you're in space from the very first moment that you start

86

00:04:23,906 --> 00:04:27,706
to feel this weightlessness, you start to get this fluid shift

87

00:04:27,706 --> 00:04:30,176
and all the fluids start to go up towards your head

88

00:04:30,176 --> 00:04:33,016
and to places that they normally don't because, you know,

89

00:04:33,016 --> 00:04:36,076
here on earth, fluids shift down due to gravity.

90

00:04:36,856 --> 00:04:40,006
And at first, this makes you feel really stuffy,

91

00:04:40,006 --> 00:04:42,376
it can make you feel a little bit nauseous

92

00:04:42,376 --> 00:04:45,846
because your stomach is floating up where it's not normally at

93

00:04:45,846 --> 00:04:46,726
and it just takes some--

94

00:04:46,726 --> 00:04:49,586
a matter of a day or so before you start to feel pretty normal.

95

00:04:49,636 --> 00:04:52,556
That's the amazing thing about

your brain is that it starts

96

00:04:52,646 --> 00:04:55,846

to recognize what the new
normal is and adapt to it.

97

00:04:56,086 --> 00:04:58,756

And then you have to figure
out some other things to do

98

00:04:58,806 --> 00:05:00,886

for your body, for
instance just taking care

99

00:05:00,886 --> 00:05:03,516

of like brushing your teeth,
putting your contacts in,

100

00:05:03,516 --> 00:05:05,476

washing your hair,
using the bathroom,

101

00:05:05,476 --> 00:05:07,436

all of these things take
a little bit more effort

102

00:05:07,486 --> 00:05:07,976

than they do here on earth.

103

00:05:08,516 --> 00:05:11,706

[Music]

104

00:05:12,206 --> 00:05:16,086

I want you to be just as
equally excited about science,

105

00:05:16,256 --> 00:05:18,636

engineering and math
and technology.

106

00:05:19,416 --> 00:05:22,736

And here's why, because
we're going places.

107

00:05:23,176 --> 00:05:25,996

NASA's got big dreams too
and I hope you do too.

108

00:05:26,456 --> 00:05:29,626

We're thinking about exploring
beyond low Earth orbit.

109

00:05:30,016 --> 00:05:31,336

We're trying to build
a spacecraft

110

00:05:31,506 --> 00:05:32,446

that will get us there.

111

00:05:32,686 --> 00:05:36,636

And so you guys are going to be
the ones that go explore for us.

112

00:05:37,276 --> 00:05:39,946

And we're going to be using
your minds and your dreams

113

00:05:40,076 --> 00:05:43,186

to propel us further and
further into our solar system.

114

00:05:44,516 --> 00:05:46,896

[Sound effects]

115

00:05:47,396 --> 00:05:50,166

Did you know that space
is anything but empty?

116

00:05:50,576 --> 00:05:53,966

In fact there's a corrosive gas called Atomic Oxygen that exists

117

00:05:54,036 --> 00:05:56,756

in low earth orbit and is helping to restore artwork

118

00:05:56,866 --> 00:05:59,386

and clean surgical implants right here on Earth.

119

00:06:00,046 --> 00:06:02,406

In an effort to learn more about atomic oxygen,

120

00:06:02,456 --> 00:06:05,106

and the negative effects it has on satellites and spacecraft,

121

00:06:05,206 --> 00:06:08,206

NASA scientists discovered that this corrosive gas could help

122

00:06:08,206 --> 00:06:09,976

to restore fire-damaged artwork

123

00:06:10,286 --> 00:06:11,996

and remove bacterial contaminants

124

00:06:11,996 --> 00:06:13,976

from surgical implants.

125

00:06:14,046 --> 00:06:14,756

Now you know.

126

00:06:15,421 --> 00:06:17,421

[Sound Effects]

127

00:06:17,826 --> 00:06:20,026

If you would like to join
the team at NASA just

128

00:06:20,026 --> 00:06:22,696

like astronaut Dottie
Metcalf- Lindenburger,

129

00:06:22,966 --> 00:06:26,946

there's no better time to plot
your career path than now.

130

00:06:27,046 --> 00:06:29,496

Teacher's you can point your
students towards a great career

131

00:06:29,496 --> 00:06:31,556

website where they
can explore a variety

132

00:06:31,556 --> 00:06:33,126

of opportunities
that exist at NASA.

133

00:06:33,776 --> 00:06:36,156

You can find it by checking
out the extension activity

134

00:06:36,156 --> 00:06:39,186

for this program on the NASA
Explorer Schools Virtual Campus.

135

00:06:40,206 --> 00:06:41,706

Well that's it for NASA NOW.

136

00:06:41,776 --> 00:06:44,566

Be sure to visit our facebook
page and leave a comment.

137

00:06:44,936 --> 00:06:47,466

We'll see you next
time on NASA NOW!

138

00:06:48,516 --> 00:06:54,146

[Sound Effects]