



1
00:00:11,749 --> 00:00:03,350
station this is houston are you ready

2
00:00:15,589 --> 00:00:13,990
and houston station we are ready for the

3
00:00:17,189 --> 00:00:15,599
event

4
00:00:18,790 --> 00:00:17,199
cascade community schools this is

5
00:00:21,189 --> 00:00:18,800
mission control houston please call

6
00:00:23,429 --> 00:00:21,199
station for a voice check

7
00:00:25,189 --> 00:00:23,439
station this is trend fam with cascade

8
00:00:31,189 --> 00:00:25,199
community school students how do you

9
00:00:39,350 --> 00:00:33,670
good afternoon we hear you loud and

10
00:00:39,360 --> 00:00:45,910
loud and clear thank you

11
00:00:49,190 --> 00:00:47,590
i'm honored to have the opportunity to

12
00:00:51,430 --> 00:00:49,200
welcome all of you to the shoreline

13
00:00:54,069 --> 00:00:51,440

school district cascade k community

14

00:00:57,270 --> 00:00:54,079

school thank you to nasa oh astronauts

15

00:00:59,189 --> 00:00:57,280

chris cassidy and luca for mitano future

16

00:01:00,709 --> 00:00:59,199

of flight shoreline school district and

17

00:01:01,750 --> 00:01:00,719

everyone for making today's event

18

00:01:03,510 --> 00:01:01,760

possible

19

00:01:05,429 --> 00:01:03,520

we now move to the main part of our

20

00:01:13,830 --> 00:01:05,439

event questions and answers from our

21

00:01:18,149 --> 00:01:17,190

my my name is alden my question is for

22

00:01:20,390 --> 00:01:18,159

chris

23

00:01:22,710 --> 00:01:20,400

when an astronaut is outside the space

24

00:01:25,749 --> 00:01:22,720

station how does he get back into the

25

00:01:31,910 --> 00:01:25,759

space station and how do you prepare

26

00:01:36,390 --> 00:01:34,550

oh that's a fun question for me to

27

00:01:38,550 --> 00:01:36,400

answer for you today because we happen

28

00:01:40,789 --> 00:01:38,560

to be inside the airlock of the

29

00:01:42,710 --> 00:01:40,799

international space station right here

30

00:01:43,910 --> 00:01:42,720

with a spacesuit on either side of us

31

00:01:46,149 --> 00:01:43,920

that we're going to wear in just a

32

00:01:47,749 --> 00:01:46,159

handful of weeks in july when luca and i

33

00:01:50,710 --> 00:01:47,759

do a space walk

34

00:01:52,149 --> 00:01:50,720

and uh the way much like in the very

35

00:01:52,950 --> 00:01:52,159

cold of winter

36

00:01:54,469 --> 00:01:52,960

when

37

00:01:56,069 --> 00:01:54,479

you pr your mom and dad probably don't

38

00:01:57,910 --> 00:01:56,079

want you to just open the front door and

39

00:01:59,590 --> 00:01:57,920

walk outside you might have a little mud

40

00:02:01,109 --> 00:01:59,600

room or something where you go into

41

00:02:02,789 --> 00:02:01,119

close the door to the kitchen put on

42

00:02:04,870 --> 00:02:02,799

your warm clothes and then step out to

43

00:02:06,630 --> 00:02:04,880

the cold winter that's how we do it on a

44

00:02:08,869 --> 00:02:06,640

space station we'll put on our

45

00:02:10,550 --> 00:02:08,879

spacesuits go into our airlock close a

46

00:02:12,710 --> 00:02:10,560

small hatch right behind the two of us

47

00:02:14,550 --> 00:02:12,720

right now and then open a hatch to go

48

00:02:16,070 --> 00:02:14,560

outside and we leave that outside hatch

49

00:02:18,309 --> 00:02:16,080

open during the whole six hours while we

50

00:02:20,630 --> 00:02:18,319

do a spacewalk come back in through the

51
00:02:22,229 --> 00:02:20,640
same very same door and then reverse the

52
00:02:24,150 --> 00:02:22,239
process to come back to right to where

53
00:02:27,910 --> 00:02:24,160
we're standing right here right now and

54
00:02:30,630 --> 00:02:27,920
when we compare prepare to go home

55
00:02:32,949 --> 00:02:30,640
is the only thing we can do is uh

56
00:02:34,869 --> 00:02:32,959
cherish the moments we have here because

57
00:02:37,910 --> 00:02:34,879
it's gonna be over in the blink of an

58
00:02:40,229 --> 00:02:37,920
eye we work out all the time to stay fit

59
00:02:41,589 --> 00:02:40,239
physically but mentally it's hard to

60
00:02:46,070 --> 00:02:41,599
prepare to go home because it's such a

61
00:02:51,190 --> 00:02:48,470
my name is cece and

62
00:02:53,830 --> 00:02:51,200
my question is for luca how does the

63
00:03:09,990 --> 00:02:53,840

space station work and what is the main

64

00:03:18,149 --> 00:03:11,990

station this is houston acr we're not

65

00:03:27,030 --> 00:03:19,990

can you hear me now

66

00:03:38,070 --> 00:03:28,550

and break we can't hear your microphone

67

00:03:38,080 --> 00:03:47,110

negative copy

68

00:03:58,830 --> 00:03:49,589

and houston can you hear us now

69

00:03:58,840 --> 00:04:14,710

mic negative copy

70

00:04:18,710 --> 00:04:16,629

and station this is houston acr we're

71

00:04:26,550 --> 00:04:18,720

not copying your mic um can we please

72

00:04:33,189 --> 00:04:29,590

hello how do you hear me now

73

00:04:36,310 --> 00:04:35,110

loud and clear okay so i was just about

74

00:04:38,790 --> 00:04:36,320

to say that

75

00:04:41,510 --> 00:04:38,800

the space station is very very big so in

76

00:04:43,430 --> 00:04:41,520

order for it to fly at 17

77

00:04:46,310 --> 00:04:43,440

hundred miles per hour

78

00:04:49,189 --> 00:04:46,320

it was built in small pieces kind of

79

00:04:51,030 --> 00:04:49,199

like a a lego station so

80

00:04:52,790 --> 00:04:51,040

first they brought a piece and then the

81

00:04:55,510 --> 00:04:52,800

space shuttle came and attached another

82

00:04:57,270 --> 00:04:55,520

one and so and so on until they built

83

00:05:00,070 --> 00:04:57,280

this huge

84

00:05:02,390 --> 00:05:00,080

station it's about a hundred yards long

85

00:05:05,110 --> 00:05:02,400

and 100 yards wide just like a football

86

00:05:08,150 --> 00:05:05,120

field and that's how it works we have

87

00:05:10,230 --> 00:05:08,160

solar panels that catch the sun the rays

88

00:05:11,909 --> 00:05:10,240

of the sun to produce electricity and

89

00:05:13,510 --> 00:05:11,919

that that provides enough electricity

90

00:05:14,710 --> 00:05:13,520

for all the stations and everything we

91

00:05:17,029 --> 00:05:14,720

do

92

00:05:19,830 --> 00:05:17,039

and and then we have recycling systems

93

00:05:21,189 --> 00:05:19,840

so that we can recycle our water and

94

00:05:22,469 --> 00:05:21,199

live inside the space station

95

00:05:24,870 --> 00:05:22,479

comfortably

96

00:05:27,430 --> 00:05:24,880

the main purpose of the space station is

97

00:05:30,310 --> 00:05:27,440

actually i would say three purposes

98

00:05:31,590 --> 00:05:30,320

uh i would say science technology and

99

00:05:34,550 --> 00:05:31,600

exploration

100

00:05:38,230 --> 00:05:34,560

and science we we do science every day

101
00:05:40,550 --> 00:05:38,240
uh we have over 150 experiments that we

102
00:05:41,990 --> 00:05:40,560
interact with daily

103
00:05:43,110 --> 00:05:42,000
they go from

104
00:05:46,230 --> 00:05:43,120
physics

105
00:05:48,550 --> 00:05:46,240
engineering new materials

106
00:05:51,510 --> 00:05:48,560
combustion science all kinds of things

107
00:05:53,830 --> 00:05:51,520
that we do here physiology so science is

108
00:05:55,990 --> 00:05:53,840
uh it takes a lot of our time

109
00:05:58,950 --> 00:05:56,000
second part is technology here in the

110
00:06:01,590 --> 00:05:58,960
station we we use new technology that

111
00:06:04,950 --> 00:06:01,600
that is being invented right now so that

112
00:06:07,590 --> 00:06:04,960
20 30 years from now uh a new generation

113
00:06:09,830 --> 00:06:07,600

of vastness can fly further away into

114

00:06:12,629 --> 00:06:09,840

into space and the third thing is

115

00:06:13,670 --> 00:06:12,639

exploration as i said all these things

116

00:06:16,790 --> 00:06:13,680

that we do

117

00:06:17,670 --> 00:06:16,800

are uh have a focus that is one day we

118

00:06:19,670 --> 00:06:17,680

need

119

00:06:21,510 --> 00:06:19,680

further away than the place we are right

120

00:06:23,830 --> 00:06:21,520

now and so the new technology and the

121

00:06:25,670 --> 00:06:23,840

science that we are discovering right

122

00:06:27,430 --> 00:06:25,680

now will help us

123

00:06:32,070 --> 00:06:27,440

further our exploration towards the

124

00:06:36,550 --> 00:06:34,390

my name is joey and my question is for

125

00:06:38,390 --> 00:06:36,560

chris

126

00:06:40,790 --> 00:06:38,400

what are some of the experiments you

127

00:06:45,830 --> 00:06:40,800

have done in space and are any of them

128

00:06:50,230 --> 00:06:47,990

oh it's fun to do experiments in space

129

00:06:52,309 --> 00:06:50,240

and yes they are some have been from

130

00:06:54,950 --> 00:06:52,319

kids the one that comes to mind right

131

00:06:56,870 --> 00:06:54,960

away is an experiment called spheres

132

00:06:59,110 --> 00:06:56,880

which is a small

133

00:07:01,270 --> 00:06:59,120

soccer ball sized satellite that

134

00:07:02,950 --> 00:07:01,280

maneuvers around with inside inside the

135

00:07:05,670 --> 00:07:02,960

space station and there we have three of

136

00:07:07,670 --> 00:07:05,680

them and they can maneuver relative to

137

00:07:09,749 --> 00:07:07,680

the walls or relative to each other and

138

00:07:11,589 --> 00:07:09,759

what's going to happen this summer are

139

00:07:13,189 --> 00:07:11,599

students just like you guys are

140

00:07:15,909 --> 00:07:13,199

participating in writing some of the

141

00:07:17,830 --> 00:07:15,919

computer code that will be used for

142

00:07:20,230 --> 00:07:17,840

different obstacle avoidance and certain

143

00:07:22,550 --> 00:07:20,240

types of um programs that are that these

144

00:07:24,230 --> 00:07:22,560

spheres will run to have a competition

145

00:07:26,790 --> 00:07:24,240

amongst different types of schools so

146

00:07:28,469 --> 00:07:26,800

that's one that i find particularly fun

147

00:07:31,350 --> 00:07:28,479

and students just like you can be a part

148

00:07:36,070 --> 00:07:31,360

of

149

00:07:37,670 --> 00:07:36,080

my name is luata and my question is for

150

00:07:40,710 --> 00:07:37,680

luka

151
00:07:43,029 --> 00:07:40,720
what is the most

152
00:07:45,589 --> 00:07:43,039
interesting

153
00:07:48,070 --> 00:07:45,599
experiment you have done

154
00:08:00,950 --> 00:07:48,080
on the space

155
00:08:03,189 --> 00:08:00,960
for about two weeks so um right now

156
00:08:06,629 --> 00:08:03,199
until now uh most of these payments i've

157
00:08:08,550 --> 00:08:06,639
done have been uh on myself so i have

158
00:08:10,390 --> 00:08:08,560
objects of the payment

159
00:08:13,029 --> 00:08:10,400
almost like a guinea pig

160
00:08:15,430 --> 00:08:13,039
and this is parents are experiences of

161
00:08:18,950 --> 00:08:15,440
physiology we try to figure out what

162
00:08:20,950 --> 00:08:18,960
what's happening to uh to our body and

163
00:08:22,790 --> 00:08:20,960

and what's what's changing because of

164

00:08:24,390 --> 00:08:22,800

the lack of weight so

165

00:08:28,150 --> 00:08:24,400

one thing one that i

166

00:08:30,790 --> 00:08:28,160

find very interesting is a study on how

167

00:08:34,070 --> 00:08:30,800

our our eyesight changes because of the

168

00:08:36,870 --> 00:08:34,080

different environment and uh just last

169

00:08:38,630 --> 00:08:36,880

week we uh together with my with my

170

00:08:41,750 --> 00:08:38,640

colleagues we were

171

00:08:43,990 --> 00:08:41,760

scanning uh the eyes and uh and doing

172

00:08:46,710 --> 00:08:44,000

all sorts of different tests to see how

173

00:08:49,269 --> 00:08:46,720

the shape changes how our our uh

174

00:08:51,269 --> 00:08:49,279

perception changes and and and then in

175

00:08:54,870 --> 00:08:51,279

the future we will be able maybe to

176

00:09:01,590 --> 00:08:54,880

control these changes and and find a way

177

00:09:07,590 --> 00:09:03,269

my name is

178

00:09:09,590 --> 00:09:07,600

samantha and my question is for chris

179

00:09:13,430 --> 00:09:09,600

what did you

180

00:09:16,310 --> 00:09:13,440

imagine it would be like to go to space

181

00:09:22,150 --> 00:09:16,320

and how is the reality different from

182

00:09:25,750 --> 00:09:24,230

can you imagine if right there in the

183

00:09:27,430 --> 00:09:25,760

room that you're talking to me from

184

00:09:29,110 --> 00:09:27,440

instead of your feet being on the floor

185

00:09:31,110 --> 00:09:29,120

you're floating around with all of your

186

00:09:32,230 --> 00:09:31,120

classmates in the middle of that

187

00:09:34,230 --> 00:09:32,240

classroom

188

00:09:37,110 --> 00:09:34,240

that's what i envisioned to be like and

189

00:09:38,790 --> 00:09:37,120

guess what it was exactly like that

190

00:09:41,110 --> 00:09:38,800

that's how we live every single day it

191

00:09:43,190 --> 00:09:41,120

is so much fun to float around here and

192

00:09:45,509 --> 00:09:43,200

uh and just pass

193

00:09:47,110 --> 00:09:45,519

the rooms that we have and float up to

194

00:09:49,590 --> 00:09:47,120

the window and look down at our

195

00:09:51,990 --> 00:09:49,600

wonderful planet it's just a thrill and

196

00:09:54,150 --> 00:09:52,000

i wish that every person

197

00:09:55,590 --> 00:09:54,160

down there on earth can experience it

198

00:09:59,110 --> 00:09:55,600

because we're really fortunate that we

199

00:10:05,110 --> 00:10:02,310

my name is ami and my question is for

200

00:10:13,430 --> 00:10:05,120

luca how long are people generally on

201
00:10:20,710 --> 00:10:14,949
we couldn't really hear that question

202
00:10:29,269 --> 00:10:23,590
my name is ami

203
00:10:34,710 --> 00:10:29,279
luca how long are people generally on

204
00:10:39,350 --> 00:10:37,509
that's a very good question so um in my

205
00:10:42,630 --> 00:10:39,360
generation

206
00:10:44,949 --> 00:10:42,640
we have uh astronauts come up for what

207
00:10:48,150 --> 00:10:44,959
for things that are called expeditions

208
00:10:51,110 --> 00:10:48,160
and each expedition is about six months

209
00:10:52,949 --> 00:10:51,120
so chris came up in in march and he will

210
00:10:55,829 --> 00:10:52,959
go it will be going back in september

211
00:10:57,670 --> 00:10:55,839
after about six months and i only came

212
00:11:01,990 --> 00:10:57,680
up two weeks ago and i will be going

213
00:11:08,870 --> 00:11:04,310

my name is addison

214

00:11:21,190 --> 00:11:11,829

what is daily life like up in space and

215

00:11:25,750 --> 00:11:23,190

addison i think you said what do i feel

216

00:11:28,790 --> 00:11:25,760

like when i'm in space and

217

00:11:31,190 --> 00:11:28,800

when you first arrive here your body

218

00:11:32,710 --> 00:11:31,200

kind of has to have some adjusting to do

219

00:11:34,069 --> 00:11:32,720

and you can see luke in here playing

220

00:11:36,470 --> 00:11:34,079

with a

221

00:11:38,550 --> 00:11:36,480

ball of water and that reminds me that

222

00:11:39,430 --> 00:11:38,560

all of the fluid that we have in our

223

00:11:41,190 --> 00:11:39,440

body

224

00:11:43,269 --> 00:11:41,200

is the right amount for when we're on

225

00:11:45,590 --> 00:11:43,279

earth but when we get to space we have

226

00:11:48,069 --> 00:11:45,600

too much so we spend the first day or

227

00:11:49,590 --> 00:11:48,079

two going to the bathroom a lot until we

228

00:11:51,190 --> 00:11:49,600

get the right amount of fluid in our

229

00:11:53,670 --> 00:11:51,200

body and the

230

00:11:55,590 --> 00:11:53,680

fluid moves around and it sort of uh

231

00:11:57,910 --> 00:11:55,600

stuffed up face and when you when i saw

232

00:11:59,829 --> 00:11:57,920

luca three weeks ago he and karen had

233

00:12:01,990 --> 00:11:59,839

big puffy faces just like i did when i

234

00:12:04,310 --> 00:12:02,000

first got here but now our bodies are

235

00:12:06,230 --> 00:12:04,320

used to it and we feel just the same as

236

00:12:08,150 --> 00:12:06,240

when we do when we're on earth but

237

00:12:12,949 --> 00:12:08,160

coming home is going to be a different

238

00:12:19,350 --> 00:12:15,990

hello my name is cosmo

239

00:12:20,389 --> 00:12:19,360

and my question is for luca do you have

240

00:12:23,590 --> 00:12:20,399

special

241

00:12:33,110 --> 00:12:23,600

eyes jobs that contribute to the space

242

00:12:36,310 --> 00:12:34,389

first of all i would like to

243

00:12:38,470 --> 00:12:36,320

congratulate you on your name that's a

244

00:12:41,750 --> 00:12:38,480

that's a great name

245

00:12:42,949 --> 00:12:41,760

and for a future astronaut so

246

00:12:44,470 --> 00:12:42,959

all of us

247

00:12:46,470 --> 00:12:44,480

on the space station are called the

248

00:12:49,190 --> 00:12:46,480

flight pioneers

249

00:12:50,870 --> 00:12:49,200

which really is just it's just a name to

250

00:12:52,389 --> 00:12:50,880

say that we are astronauts on the space

251
00:12:54,870 --> 00:12:52,399
station because here

252
00:12:56,629 --> 00:12:54,880
we all do everything so

253
00:12:59,590 --> 00:12:56,639
right now chris is showing you one of

254
00:13:01,670 --> 00:12:59,600
the tools that we use for for an eva so

255
00:13:03,110 --> 00:13:01,680
in about a month

256
00:13:04,710 --> 00:13:03,120
that's what chris and i will be doing

257
00:13:07,030 --> 00:13:04,720
we'll be going outside

258
00:13:09,590 --> 00:13:07,040
to fix a couple of things grab its

259
00:13:11,509 --> 00:13:09,600
payments and bring them back in prepare

260
00:13:15,350 --> 00:13:11,519
this fashion for the arrival of a new

261
00:13:18,230 --> 00:13:15,360
module but when we are inside we are all

262
00:13:20,550 --> 00:13:18,240
space plumbers we all cook our own food

263
00:13:21,670 --> 00:13:20,560

or prepare food for somebody else

264

00:13:24,069 --> 00:13:21,680

we have

265

00:13:25,829 --> 00:13:24,079

to fix things like electricians uh we

266

00:13:28,150 --> 00:13:25,839

have to make videos like i'm doing right

267

00:13:29,190 --> 00:13:28,160

now and and so

268

00:13:30,710 --> 00:13:29,200

really

269

00:13:32,790 --> 00:13:30,720

there is

270

00:13:34,870 --> 00:13:32,800

we don't have a special job

271

00:13:36,550 --> 00:13:34,880

once we're here we have to be scientists

272

00:13:38,389 --> 00:13:36,560

we just have to be able to do a little

273

00:13:40,470 --> 00:13:38,399

bit of everything and that's why the

274

00:13:43,030 --> 00:13:40,480

ground people are so important to us

275

00:13:44,710 --> 00:13:43,040

because they help us reminding us uh

276

00:13:46,550 --> 00:13:44,720

everything that we have to every

277

00:13:49,750 --> 00:13:46,560

everything that we have to know in order

278

00:13:52,949 --> 00:13:49,760

to do it well

279

00:13:55,030 --> 00:13:52,959

my name my name is isaiah my question is

280

00:14:04,949 --> 00:13:55,040

for chris

281

00:14:10,550 --> 00:14:07,910

i think you were asking about food and

282

00:14:14,150 --> 00:14:10,560

it's just so happy you are talking to

283

00:14:16,710 --> 00:14:14,160

the two right guys to talk about food

284

00:14:18,790 --> 00:14:16,720

karen will attest the two of us can eat

285

00:14:20,870 --> 00:14:18,800

a lot of food each day and we do our

286

00:14:22,790 --> 00:14:20,880

part to make sure that we don't have too

287

00:14:24,790 --> 00:14:22,800

much food on the space station i love

288

00:14:26,870 --> 00:14:24,800

all the food here my favorite happens to

289

00:14:32,069 --> 00:14:26,880

be seafood gumbo

290

00:14:33,750 --> 00:14:32,079

and my and my favorite drink is a is a

291

00:14:35,509 --> 00:14:33,760

mango peach smoothie actually they're

292

00:14:38,629 --> 00:14:35,519

very tasty we have so we have a whole

293

00:14:43,269 --> 00:14:38,639

selection of food and snacks

294

00:14:54,870 --> 00:14:44,870

and luke is demonstrating how we drink

295

00:14:58,870 --> 00:14:56,550

my name is nathan

296

00:15:01,189 --> 00:14:58,880

and my question is for luca

297

00:15:08,389 --> 00:15:01,199

do you feel that it is worth the risk to

298

00:15:14,069 --> 00:15:11,509

that's a great question so um every

299

00:15:17,110 --> 00:15:14,079

every exploration and times is some sort

300

00:15:20,550 --> 00:15:17,120

of risk that is that there's no doubt

301
00:15:22,230 --> 00:15:20,560
500 years ago when columbus uh sailed on

302
00:15:24,150 --> 00:15:22,240
his on his three little ships across the

303
00:15:27,189 --> 00:15:24,160
atlantic covered

304
00:15:29,590 --> 00:15:27,199
what became america he faced a lot of

305
00:15:31,670 --> 00:15:29,600
risks and so all explorers do

306
00:15:33,990 --> 00:15:31,680
but the thing is um

307
00:15:37,030 --> 00:15:34,000
first of all it's in our nature it's the

308
00:15:39,030 --> 00:15:37,040
nature of the human the human being to

309
00:15:41,430 --> 00:15:39,040
to question what he knows and and to

310
00:15:43,590 --> 00:15:41,440
always look for what he doesn't know

311
00:15:45,749 --> 00:15:43,600
so it's it's just something in our dna

312
00:15:48,150 --> 00:15:45,759
that we have to do and the second thing

313
00:15:50,389 --> 00:15:48,160

is that thanks to all the studies and

314

00:15:54,310 --> 00:15:50,399

the fantastic engineers on the ground

315

00:15:55,990 --> 00:15:54,320

the work uh for us every day and with us

316

00:15:57,670 --> 00:15:56,000

they make something very hard look

317

00:15:58,790 --> 00:15:57,680

simple but

318

00:16:01,509 --> 00:15:58,800

more than that

319

00:16:02,870 --> 00:16:01,519

they take that risk and minimize it to

320

00:16:04,470 --> 00:16:02,880

the point that it's actually it's

321

00:16:06,629 --> 00:16:04,480

actually safer to buy on the space

322

00:16:09,189 --> 00:16:06,639

station be driving downtown in an

323

00:16:11,509 --> 00:16:09,199

italian city

324

00:16:15,670 --> 00:16:11,519

where where i mean we hear we have rules

325

00:16:18,150 --> 00:16:15,680

and and uh and all kind of safety

326

00:16:19,110 --> 00:16:18,160

aspects that keep us safe

327

00:16:20,870 --> 00:16:19,120

so

328

00:16:22,629 --> 00:16:20,880

i would definitely say yes there is a

329

00:16:23,910 --> 00:16:22,639

risk but it's certainly worth taking the

330

00:16:26,310 --> 00:16:23,920

risk to

331

00:16:29,430 --> 00:16:26,320

forward go forward in our nature and

332

00:16:31,910 --> 00:16:29,440

forward our restoration

333

00:16:35,110 --> 00:16:31,920

hi my name is elijah and my question is

334

00:16:37,030 --> 00:16:35,120

for chris what aspects of life and space

335

00:16:43,590 --> 00:16:37,040

are difficult and what

336

00:16:47,430 --> 00:16:45,829

well that's an interesting question i

337

00:16:50,150 --> 00:16:47,440

would say

338

00:16:53,350 --> 00:16:50,160

the daily part that's difficult is

339

00:16:55,430 --> 00:16:53,360

managing all of the things we have to do

340

00:16:57,430 --> 00:16:55,440

the ground team

341

00:17:00,069 --> 00:16:57,440

puts a schedule for us each day and it's

342

00:17:03,350 --> 00:17:00,079

broken down into as small slivers as

343

00:17:05,990 --> 00:17:03,360

five minutes and and to fit that all

344

00:17:07,990 --> 00:17:06,000

into one day is hard for them and it's

345

00:17:10,069 --> 00:17:08,000

sometimes challenging for us to manage

346

00:17:11,909 --> 00:17:10,079

it all and make sure we complete all of

347

00:17:13,829 --> 00:17:11,919

the objectives for the day that's

348

00:17:16,829 --> 00:17:13,839

probably the daily hardest thing the

349

00:17:18,390 --> 00:17:16,839

other hardest thing or other hard thing

350

00:17:20,949 --> 00:17:18,400

um

351

00:17:22,949 --> 00:17:20,959

is to always be concentrating and

352

00:17:25,189 --> 00:17:22,959

realize that at any time we could do

353

00:17:26,949 --> 00:17:25,199

something that could be bad for the

354

00:17:29,110 --> 00:17:26,959

space station or bad for ourselves or

355

00:17:30,390 --> 00:17:29,120

our crewmates those two things combined

356

00:17:32,150 --> 00:17:30,400

are always in the back of our heads as

357

00:17:34,470 --> 00:17:32,160

we make our way through the day even on

358

00:17:37,190 --> 00:17:34,480

a normal a normal day and the things

359

00:17:39,350 --> 00:17:37,200

that are are easy to do is just enjoy

360

00:17:41,669 --> 00:17:39,360

being up here we're all we're here for

361

00:17:44,549 --> 00:17:41,679

six months which sounds like a long time

362

00:17:47,669 --> 00:17:44,559

but i've been an astronaut for almost um

363

00:17:49,590 --> 00:17:47,679

10 years nine years or so and uh and

364

00:17:52,070 --> 00:17:49,600

this is the only time i'll be up here

365

00:17:54,070 --> 00:17:52,080

for uh so far for these for

366

00:17:56,150 --> 00:17:54,080

extended period of time so we really

367

00:17:57,830 --> 00:17:56,160

want to take advantage of it and just

368

00:18:01,510 --> 00:17:57,840

enjoying the moment is something that's

369

00:18:03,909 --> 00:18:01,520

very easy to do every day

370

00:18:06,070 --> 00:18:03,919

my name is andrew and my question is for

371

00:18:13,029 --> 00:18:06,080

luca how does the space station benefit

372

00:18:17,270 --> 00:18:15,590

well it kind of goes back to uh

373

00:18:18,870 --> 00:18:17,280

the question that you asked me before

374

00:18:20,549 --> 00:18:18,880

about what is the main purpose of the

375

00:18:22,310 --> 00:18:20,559

space station so

376

00:18:24,870 --> 00:18:22,320

uh earlier i said

377

00:18:27,430 --> 00:18:24,880

science exploration and technology well

378

00:18:28,870 --> 00:18:27,440

uh two of those things actually can be

379

00:18:31,990 --> 00:18:28,880

you can be put

380

00:18:34,070 --> 00:18:32,000

direct on the ground uh as we as we are

381

00:18:35,750 --> 00:18:34,080

speaking i'll tell you i'll give you an

382

00:18:37,190 --> 00:18:35,760

example there is a study going on right

383

00:18:39,270 --> 00:18:37,200

now in the space station one of the

384

00:18:41,750 --> 00:18:39,280

experiments that my crew mature and i

385

00:18:43,590 --> 00:18:41,760

are doing it's called procaine and it's

386

00:18:46,630 --> 00:18:43,600

a special diet

387

00:18:49,270 --> 00:18:46,640

that studies a balance between proteins

388

00:18:51,909 --> 00:18:49,280

and potassium in our body to prevent

389

00:18:53,990 --> 00:18:51,919

loss of calcium from our bones

390

00:18:57,110 --> 00:18:54,000

what happens is that here on the space

391

00:19:00,870 --> 00:18:57,120

tension because of the lack of weight

392

00:19:03,029 --> 00:19:00,880

uh we we have a very fast onset of

393

00:19:05,430 --> 00:19:03,039

osteoporosis which is exactly that it's

394

00:19:07,350 --> 00:19:05,440

the loss of calcium from the bones but

395

00:19:09,110 --> 00:19:07,360

that doesn't happen only in states a lot

396

00:19:10,549 --> 00:19:09,120

of people on earth are affected by

397

00:19:12,470 --> 00:19:10,559

osteoporosis

398

00:19:14,710 --> 00:19:12,480

so imagine if

399

00:19:16,310 --> 00:19:14,720

thanks to the results of this study we

400

00:19:17,990 --> 00:19:16,320

can go back to earth and tell people

401
00:19:20,630 --> 00:19:18,000
look you don't have to take medicines

402
00:19:21,669 --> 00:19:20,640
you don't have to undergo special

403
00:19:23,830 --> 00:19:21,679
medical

404
00:19:26,310 --> 00:19:23,840
operations but you can just follow a

405
00:19:28,549 --> 00:19:26,320
very simple diet and that will keep you

406
00:19:31,430 --> 00:19:28,559
keep up keep osteoporosis away and keep

407
00:19:33,270 --> 00:19:31,440
your bones and your body healthy so uh

408
00:19:34,789 --> 00:19:33,280
covers the discoveries that we do here

409
00:19:37,029 --> 00:19:34,799
on the station the science and the

410
00:19:38,789 --> 00:19:37,039
technology that we that we are inventing

411
00:19:43,350 --> 00:19:38,799
they actually have a lot of protection

412
00:19:47,830 --> 00:19:45,430
um hi my name is nicholas and my

413
00:19:49,590 --> 00:19:47,840

question is for chris

414

00:19:51,990 --> 00:19:49,600

what were some of your fears about going

415

00:19:56,710 --> 00:19:52,000

into space and how did you overcome

416

00:20:00,710 --> 00:19:58,310

well nicholas

417

00:20:02,070 --> 00:20:00,720

i at one time heard a famous astronaut

418

00:20:03,590 --> 00:20:02,080

named john young

419

00:20:06,710 --> 00:20:03,600

say this and i couldn't agree with him

420

00:20:08,789 --> 00:20:06,720

more and that is if on launch day

421

00:20:10,390 --> 00:20:08,799

you don't have a little bit of fear then

422

00:20:12,950 --> 00:20:10,400

you don't understand what's happening

423

00:20:15,190 --> 00:20:12,960

behind you and uh and i think that's

424

00:20:17,669 --> 00:20:15,200

really well said now

425

00:20:19,350 --> 00:20:17,679

i'll caveat that with we have a lot of

426
00:20:21,190 --> 00:20:19,360
really smart people putting a lot of

427
00:20:24,310 --> 00:20:21,200
effort into making the program as safe

428
00:20:26,149 --> 00:20:24,320
as it can be but each and every one of

429
00:20:29,190 --> 00:20:26,159
us has on launch day as we climb into

430
00:20:31,270 --> 00:20:29,200
the rocket we always appreciate the

431
00:20:33,110 --> 00:20:31,280
amount of energy and power that we're

432
00:20:35,190 --> 00:20:33,120
sitting on top of as we blast off in

433
00:20:37,909 --> 00:20:35,200
into space

434
00:20:39,510 --> 00:20:37,919
so that's one thing that we we

435
00:20:41,669 --> 00:20:39,520
roll over in our minds but in the end of

436
00:20:44,390 --> 00:20:41,679
the day when we strap in and put the

437
00:20:46,470 --> 00:20:44,400
seat belts to click and uh and wait for

438
00:20:48,230 --> 00:20:46,480

that countdown clock to go to zero we're

439

00:20:51,110 --> 00:20:48,240

there to do a job and we're there to do

440

00:20:53,669 --> 00:20:51,120

it as best as we can and uh and i think

441

00:20:55,350 --> 00:20:53,679

for all of us will agree that

442

00:20:57,590 --> 00:20:55,360

when it time comes to launch it's all

443

00:21:00,149 --> 00:20:57,600

about getting here doing responding to

444

00:21:04,149 --> 00:21:00,159

any problems that arise and then getting

445

00:21:11,909 --> 00:21:08,230

my name is emeline my question is for

446

00:21:21,909 --> 00:21:13,909

what

447

00:21:24,950 --> 00:21:24,070

oh that's a that's a very good question

448

00:21:27,029 --> 00:21:24,960

again

449

00:21:29,350 --> 00:21:27,039

you guys have all the all very good

450

00:21:31,990 --> 00:21:29,360

questions so again

451
00:21:34,549 --> 00:21:32,000
i've only only been here for two weeks

452
00:21:36,230 --> 00:21:34,559
so that's like going camping and you

453
00:21:38,230 --> 00:21:36,240
know you can go camping and you don't

454
00:21:40,549 --> 00:21:38,240
miss anything for about two weeks so the

455
00:21:43,110 --> 00:21:40,559
time to miss things still uh really

456
00:21:44,470 --> 00:21:43,120
hasn't come however i will tell you that

457
00:21:47,029 --> 00:21:44,480
i am italian

458
00:21:48,789 --> 00:21:47,039
and one thing that italian really really

459
00:21:51,270 --> 00:21:48,799
like is coffee

460
00:21:54,630 --> 00:21:51,280
now i have i have adjusted all kinds of

461
00:21:57,830 --> 00:21:54,640
different coffees cappuccinos

462
00:21:59,990 --> 00:21:57,840
long coffee short coffees

463
00:22:01,750 --> 00:22:00,000

sure wish it was an espresso machine

464

00:22:05,350 --> 00:22:01,760

here on the station like we used to make

465

00:22:07,110 --> 00:22:05,360

a nice short espresso cup wake me up in

466

00:22:08,870 --> 00:22:07,120

the morning and give me a job of energy

467

00:22:11,029 --> 00:22:08,880

that's that's something that i could

468

00:22:12,950 --> 00:22:11,039

certainly use and it will make everybody

469

00:22:14,710 --> 00:22:12,960

happy because it would be would wake me

470

00:22:16,390 --> 00:22:14,720

up instead of

471

00:22:18,149 --> 00:22:16,400

instead of being half asleep for the

472

00:22:19,909 --> 00:22:18,159

first half of the day

473

00:22:21,909 --> 00:22:19,919

but other than that

474

00:22:23,909 --> 00:22:21,919

um i would say that i really miss my

475

00:22:25,669 --> 00:22:23,919

family and my daughters but when i think

476

00:22:28,149 --> 00:22:25,679

about that i also have to think about

477

00:22:30,149 --> 00:22:28,159

all my my colleagues in the in the air

478

00:22:32,710 --> 00:22:30,159

force that are deployed somewhere else

479

00:22:33,990 --> 00:22:32,720

and those guys are deployed for for

480

00:22:35,590 --> 00:22:34,000

months and months away from their

481

00:22:36,710 --> 00:22:35,600

families and certainly they don't get to

482

00:22:41,750 --> 00:22:36,720

enjoy

483

00:22:47,430 --> 00:22:45,990

my name is abigail and my question is

484

00:22:51,669 --> 00:22:47,440

for chris

485

00:22:58,630 --> 00:22:51,679

what kind of training did you need to be

486

00:23:03,669 --> 00:23:02,470

abigail that's a great question um

487

00:23:06,950 --> 00:23:03,679

so

488

00:23:09,750 --> 00:23:06,960

it generally takes about five years or

489

00:23:13,029 --> 00:23:09,760

so from the time you become an astronaut

490

00:23:15,430 --> 00:23:13,039

until you are really going to space so

491

00:23:17,430 --> 00:23:15,440

that's about same amount of time as when

492

00:23:19,830 --> 00:23:17,440

you enter kindergarten until you

493

00:23:22,070 --> 00:23:19,840

graduate elementary school and that's

494

00:23:24,710 --> 00:23:22,080

the amount of training we go through and

495

00:23:28,310 --> 00:23:24,720

the first two years of that is largely

496

00:23:30,630 --> 00:23:28,320

just learning the basics about

497

00:23:33,350 --> 00:23:30,640

life in space and how do you do business

498

00:23:36,549 --> 00:23:33,360

to get here live safely and come home

499

00:23:38,870 --> 00:23:36,559

and then the next few years are really

500

00:23:41,029 --> 00:23:38,880

specific training for the exact mission

501
00:23:42,710 --> 00:23:41,039
that you're going to be on luca and i

502
00:23:45,029 --> 00:23:42,720
were training for two and a half years

503
00:23:47,510 --> 00:23:45,039
before we arrived here on space station

504
00:23:48,789 --> 00:23:47,520
me a couple months ago and luca uh just

505
00:23:49,909 --> 00:23:48,799
a few weeks ago

506
00:23:55,669 --> 00:23:49,919
and

507
00:23:57,430 --> 00:23:55,679
then maybe if things work out we might

508
00:23:59,350 --> 00:23:57,440
get to come again in a few years down

509
00:24:01,669 --> 00:23:59,360
the road three four five six however

510
00:24:03,510 --> 00:24:01,679
many years it is but it's a long process

511
00:24:06,630 --> 00:24:03,520
there's a lot to learn and the main

512
00:24:09,029 --> 00:24:06,640
thing we need to have is a core

513
00:24:10,950 --> 00:24:09,039

fundamental understanding of how to

514

00:24:12,710 --> 00:24:10,960

safely operate the space station and

515

00:24:14,870 --> 00:24:12,720

respond to any emergencies and that's

516

00:24:16,070 --> 00:24:14,880

why it takes so long the other part to

517

00:24:17,669 --> 00:24:16,080

the to the

518

00:24:19,510 --> 00:24:17,679

length of training is it's an

519

00:24:21,269 --> 00:24:19,520

international space station which means

520

00:24:23,190 --> 00:24:21,279

we travel to all different countries

521

00:24:25,669 --> 00:24:23,200

that are partners on the space station

522

00:24:27,669 --> 00:24:25,679

and train in those locations on the

523

00:24:29,750 --> 00:24:27,679

systems that those countries provide to

524

00:24:32,390 --> 00:24:29,760

the space station so it's a great deal

525

00:24:35,909 --> 00:24:32,400

of school and uh but it's one that's

526

00:24:39,350 --> 00:24:37,750

thank you astronauts chris and luca for

527

00:24:51,110 --> 00:24:39,360

your time we really enjoyed learning

528

00:24:55,190 --> 00:24:53,110

station to all of you in washington

529

00:24:59,510 --> 00:24:55,200

state we enjoy being with you have a

530

00:25:04,549 --> 00:25:01,909

station this is houston acr thank you

531

00:25:06,230 --> 00:25:04,559

that concludes our event

532

00:25:08,630 --> 00:25:06,240

thank you cast cape community school