



Johnston Middle School

Using Technology to Access SPACE!

ExxonMobil ExxonMobil ExxonMobil

1
00:00:04,630 --> 00:00:03,030
hi doug hi shannon my name is dave wheat

2
00:00:06,950 --> 00:00:04,640
and i'm the principal of johnston middle

3
00:00:08,710 --> 00:00:06,960
school and i'm coming to you live from

4
00:00:10,549 --> 00:00:08,720
the johnston middle school auditorium

5
00:00:12,310 --> 00:00:10,559
shannon i'm sure you've been you can

6
00:00:14,629 --> 00:00:12,320
visualize where we are right now asking

7
00:00:17,830 --> 00:00:14,639
these questions and it's such a great

8
00:00:19,189 --> 00:00:17,840
thrill for me to get to participate in

9
00:00:20,710 --> 00:00:19,199
this and a great thrill for our kids

10
00:00:23,509 --> 00:00:20,720
from parker and westbrook high school in

11
00:00:25,509 --> 00:00:23,519
johnston i want you to know my question

12
00:00:27,269 --> 00:00:25,519
is personal that your

13
00:00:28,950 --> 00:00:27,279

yearbook pictures from your middle

14

00:00:31,029 --> 00:00:28,960

school years are on display at the

15

00:00:38,950 --> 00:00:31,039

library right now what is your reaction

16

00:00:38,960 --> 00:00:43,430

man that's some bad fashion we got going

17

00:00:46,630 --> 00:00:44,950

oh no on think it's great i think it's

18

00:00:48,630 --> 00:00:46,640

very exciting that parker justin and

19

00:00:49,990 --> 00:00:48,640

westbrook are all come together because

20

00:00:52,869 --> 00:00:50,000

as you know those are the schools i

21

00:00:54,389 --> 00:00:52,879

attended in um hisd before i went out to

22

00:00:56,389 --> 00:00:54,399

rice university and then started working

23

00:00:57,750 --> 00:00:56,399

at nasa so i think it's great and we're

24

00:01:01,510 --> 00:00:57,760

really excited to be able to talk to you

25

00:01:01,520 --> 00:01:05,750

david i'd like to see those pictures

26
00:01:08,950 --> 00:01:07,270
doug you're welcome at johnston middle

27
00:01:10,550 --> 00:01:08,960
school anytime i'll keep them in a

28
00:01:11,830 --> 00:01:10,560
special place in my office they'll be

29
00:01:13,429 --> 00:01:11,840
right there for you when you get to

30
00:01:15,109 --> 00:01:13,439
houston

31
00:01:17,350 --> 00:01:15,119
what does it mean to the students here

32
00:01:19,590 --> 00:01:17,360
to have shannon walker up on the space

33
00:01:21,350 --> 00:01:19,600
station talking to them today i think

34
00:01:23,109 --> 00:01:21,360
it's just a great motivation for the

35
00:01:25,190 --> 00:01:23,119
students to see that someone that went

36
00:01:27,270 --> 00:01:25,200
to the school they're at has made it

37
00:01:29,749 --> 00:01:27,280
this far and has followed her dreams and

38
00:01:32,710 --> 00:01:29,759

it's kind of an inspiration to them to

39

00:01:34,149 --> 00:01:32,720

to um you know see that it can happen

40

00:01:39,350 --> 00:01:34,159

students here at johnson middle school

41

00:01:43,510 --> 00:01:41,910

arts fantastic principally uh is it

42

00:01:45,510 --> 00:01:43,520

difficult getting those students

43

00:01:47,510 --> 00:01:45,520

interested in the visual and performing

44

00:01:49,350 --> 00:01:47,520

arts you know to take an interest in

45

00:01:52,230 --> 00:01:49,360

science and math

46

00:01:54,310 --> 00:01:52,240

no you know we have um

47

00:01:55,749 --> 00:01:54,320

a lot of motivating and interesting

48

00:01:57,830 --> 00:01:55,759

science and math teachers that do

49

00:01:59,910 --> 00:01:57,840

everything we can to to draw those

50

00:02:01,910 --> 00:01:59,920

students in and and really we don't have

51
00:02:03,270 --> 00:02:01,920
to do that much of that for them they're

52
00:02:06,149 --> 00:02:03,280
they're interested they're eager to

53
00:02:08,550 --> 00:02:06,159
learn they're ready to go so we just tap

54
00:02:10,710 --> 00:02:08,560
into that and keep them going forward

55
00:02:12,390 --> 00:02:10,720
fantastic and how excited are these

56
00:02:13,990 --> 00:02:12,400
students to be doing this today they're

57
00:02:15,270 --> 00:02:14,000
so excited they've been waiting and

58
00:02:17,350 --> 00:02:15,280
waiting

59
00:02:19,350 --> 00:02:17,360
we had a lottery for who could attend in

60
00:02:20,550 --> 00:02:19,360
the auditorium and then all the other

61
00:02:22,869 --> 00:02:20,560
students will be watching in their

62
00:02:24,470 --> 00:02:22,879
classroom and watching the students find

63
00:02:26,390 --> 00:02:24,480

their name on the lottery list and

64

00:02:28,150 --> 00:02:26,400

screaming and excitement was just

65

00:02:46,150 --> 00:02:28,160

exhilarating from me so i know they're

66

00:02:51,190 --> 00:02:48,710

station this is houston are you ready

67

00:02:56,470 --> 00:02:51,200

for the event

68

00:02:59,030 --> 00:02:56,480

johnson middle school this is mission

69

00:03:00,790 --> 00:02:59,040

control houston please call station for

70

00:03:02,790 --> 00:03:00,800

a voice check

71

00:03:04,630 --> 00:03:02,800

station this is amber pinchback at

72

00:03:08,550 --> 00:03:04,640

johnston middle school here in houston

73

00:03:21,110 --> 00:03:10,949

amber we read you loud and clear welcome

74

00:03:25,589 --> 00:03:23,910

good morning from johnson space center

75

00:03:28,070 --> 00:03:25,599

i'm here with students from parker

76
00:03:30,229 --> 00:03:28,080
elementary johnson middle school and

77
00:03:32,149 --> 00:03:30,239
westbury high school

78
00:03:33,670 --> 00:03:32,159
we are excited to learn from you this

79
00:03:34,869 --> 00:03:33,680
morning on this out of this world

80
00:03:36,869 --> 00:03:34,879
experience

81
00:03:47,910 --> 00:03:36,879
let's get started with our first student

82
00:03:52,630 --> 00:03:49,830
middle school my question is for shannon

83
00:03:54,949 --> 00:03:52,640
walker miss walker i was being in the

84
00:03:56,789 --> 00:03:54,959
space of reminder of your childhood

85
00:04:00,630 --> 00:03:56,799
memories and dreams from looking up at

86
00:04:04,229 --> 00:04:02,309
you know that's a very good question i

87
00:04:05,830 --> 00:04:04,239
think what it reminds me the most of us

88
00:04:08,070 --> 00:04:05,840

when i was growing up i used to have

89

00:04:09,429 --> 00:04:08,080

dreams about being able to fly i would

90

00:04:11,270 --> 00:04:09,439

be running along and then i would be

91

00:04:13,270 --> 00:04:11,280

running so fast that i could just take

92

00:04:15,030 --> 00:04:13,280

off and then fly around my neighborhood

93

00:04:17,030 --> 00:04:15,040

and so being up in space reminds me of

94

00:04:18,469 --> 00:04:17,040

that because i do get to fly everywhere

95

00:04:21,749 --> 00:04:18,479

as opposed to walking around on the

96

00:04:25,830 --> 00:04:23,909

hi my name is katherine nicholson i'm

97

00:04:30,070 --> 00:04:25,840

5th grade at parker elementary my

98

00:04:33,990 --> 00:04:31,749

uh doug what are some of the most

99

00:04:35,749 --> 00:04:34,000

important real world discoveries and

100

00:04:43,990 --> 00:04:35,759

contributions that we have benefited

101
00:04:48,310 --> 00:04:46,310
wow that's a very good question uh do we

102
00:04:50,550 --> 00:04:48,320
have a couple hours

103
00:04:52,150 --> 00:04:50,560
but we've we've got

104
00:04:54,390 --> 00:04:52,160
there are a tremendous number of things

105
00:04:57,030 --> 00:04:54,400
that we have learned and discovered

106
00:04:59,909 --> 00:04:57,040
through the space program uh much of it

107
00:05:02,310 --> 00:04:59,919
when i was growing up in in school uh

108
00:05:04,629 --> 00:05:02,320
through the apollo in the early programs

109
00:05:06,550 --> 00:05:04,639
uh when we were trying to

110
00:05:07,270 --> 00:05:06,560
put people on the moon

111
00:05:09,270 --> 00:05:07,280
and

112
00:05:13,110 --> 00:05:09,280
probably the biggest things that i can

113
00:05:14,950 --> 00:05:13,120

think of are computing power and also

114

00:05:17,110 --> 00:05:14,960

cell cell phones

115

00:05:18,710 --> 00:05:17,120

this is technology that spun off from

116

00:05:20,790 --> 00:05:18,720

development of

117

00:05:23,430 --> 00:05:20,800

an engineering that was used in the

118

00:05:25,110 --> 00:05:23,440

development of spacecraft and and space

119

00:05:27,670 --> 00:05:25,120

hardware also our global positioning

120

00:05:29,749 --> 00:05:27,680

system uh that we have orbiting uh

121

00:05:32,070 --> 00:05:29,759

orbiting our planet uh to help us with

122

00:05:34,629 --> 00:05:32,080

communication so probably everybody in

123

00:05:36,950 --> 00:05:34,639

in that uh auditorium wherever you are

124

00:05:38,469 --> 00:05:36,960

uh you probably have a cell phone and uh

125

00:05:40,230 --> 00:05:38,479

that's not something that i had when i

126

00:05:42,390 --> 00:05:40,240

was uh i was in school and that's

127

00:05:44,310 --> 00:05:42,400

technology that really came about uh

128

00:05:46,070 --> 00:05:44,320

because of development uh through the

129

00:05:48,230 --> 00:05:46,080

through the space program and also

130

00:05:50,070 --> 00:05:48,240

computing but some of the most exciting

131

00:05:52,469 --> 00:05:50,080

things for me now that we're doing here

132

00:05:55,590 --> 00:05:52,479

on the space station we've actually got

133

00:05:57,990 --> 00:05:55,600

over 130 experiments going on here in

134

00:06:01,430 --> 00:05:58,000

the four laboratories are on board

135

00:06:03,990 --> 00:06:01,440

and we've got some wonderful

136

00:06:07,590 --> 00:06:04,000

experiments in the medical field helping

137

00:06:10,150 --> 00:06:07,600

us to develop different ways to

138

00:06:12,670 --> 00:06:10,160

to refine pharmaceuticals

139

00:06:15,189 --> 00:06:12,680

ways of looking at transport of these

140

00:06:17,350 --> 00:06:15,199

pharmaceuticals in the bloodstream

141

00:06:19,830 --> 00:06:17,360

to be able to fight off

142

00:06:22,469 --> 00:06:19,840

diseases and cancers and things like

143

00:06:24,230 --> 00:06:22,479

that that plague us uh as human beings

144

00:06:25,670 --> 00:06:24,240

on the earth and so we're looking into

145

00:06:26,950 --> 00:06:25,680

some of those things

146

00:06:29,909 --> 00:06:26,960

and how to develop

147

00:06:33,110 --> 00:06:29,919

new materials as well um the debakey

148

00:06:35,270 --> 00:06:33,120

heart is uh is a is a spin-off that

149

00:06:37,029 --> 00:06:35,280

that i know has come from the

150

00:06:40,150 --> 00:06:37,039

engineering in the space program and the

151
00:06:42,309 --> 00:06:40,160
development of small uh pumps uh that

152
00:06:44,390 --> 00:06:42,319
are used and that were spun off to the

153
00:06:46,950 --> 00:06:44,400
medical field so we've got a tremendous

154
00:06:48,950 --> 00:06:46,960
amount of activity

155
00:06:50,950 --> 00:06:48,960
that we're trying to bring back uh to

156
00:06:53,189 --> 00:06:50,960
the planet to make our lives better

157
00:06:55,110 --> 00:06:53,199
another thing uh is the just our earth

158
00:06:57,270 --> 00:06:55,120
observation we've got cameras

159
00:06:59,110 --> 00:06:57,280
hyperspectral cameras uh

160
00:07:02,309 --> 00:06:59,120
that take different uh photographs of

161
00:07:04,309 --> 00:07:02,319
the earth to to look at drainage at crop

162
00:07:07,510 --> 00:07:04,319
usage and things like that to better

163
00:07:10,469 --> 00:07:07,520

assist our farmers and when when and how

164

00:07:13,189 --> 00:07:10,479

to plant crops and where are the best

165

00:07:15,510 --> 00:07:13,199

fields to lay fallow and also to plant

166

00:07:17,990 --> 00:07:15,520

for the next growing season so it's a

167

00:07:19,830 --> 00:07:18,000

tremendous amount of uh of opportunity

168

00:07:21,909 --> 00:07:19,840

and uh and

169

00:07:27,029 --> 00:07:21,919

and contributions that the space program

170

00:07:31,909 --> 00:07:29,270

my name is brandon jennings and i'm in

171

00:07:34,230 --> 00:07:31,919

the 9th grade at westbury high school my

172

00:07:35,990 --> 00:07:34,240

question is for shannon walker

173

00:07:39,749 --> 00:07:36,000

what has been the most exhilarating

174

00:07:41,749 --> 00:07:39,759

experience in space this far

175

00:07:43,350 --> 00:07:41,759

brianne the answer is by far it's got to

176

00:07:45,909 --> 00:07:43,360

be my launch

177

00:07:49,029 --> 00:07:45,919

i launched on a russian soyuz rocket out

178

00:07:51,029 --> 00:07:49,039

of kazakhstan and to feel the the power

179

00:07:51,749 --> 00:07:51,039

of the engines when we first took off

180

00:07:54,150 --> 00:07:51,759

and

181

00:07:55,830 --> 00:07:54,160

have us hurtling upwards towards space

182

00:07:57,670 --> 00:07:55,840

is the most exciting thing by far that

183

00:07:59,430 --> 00:07:57,680

i've done as part of this living on the

184

00:08:01,029 --> 00:07:59,440

space station is great it's very

185

00:08:03,749 --> 00:08:01,039

interesting every day is bring something

186

00:08:05,749 --> 00:08:03,759

new but for just sheer excitement the

187

00:08:10,790 --> 00:08:05,759

launch was it and i suspect the landing

188

00:08:13,749 --> 00:08:12,469

my name is amber basso i'm a seventh

189

00:08:16,230 --> 00:08:13,759

grader at johnson middle school my

190

00:08:17,749 --> 00:08:16,240

question is for doug wheelock doug what

191

00:08:22,070 --> 00:08:17,759

happens system on the space station

192

00:08:27,270 --> 00:08:24,950

that's a great that's a great question

193

00:08:29,749 --> 00:08:27,280

because we had a big breakdown if you

194

00:08:31,589 --> 00:08:29,759

remember just a couple of months ago

195

00:08:34,870 --> 00:08:31,599

we had a pump module fail outside and we

196

00:08:37,589 --> 00:08:34,880

had to uh kind of put all of our uh

197

00:08:39,269 --> 00:08:37,599

creative thinking together with our uh

198

00:08:41,589 --> 00:08:39,279

both up here on the space station and

199

00:08:43,190 --> 00:08:41,599

with our ground support teams in houston

200

00:08:47,350 --> 00:08:43,200

and

201

00:08:48,150 --> 00:08:47,360

we also have a lot of uh

202

00:08:51,190 --> 00:08:48,160

of

203

00:08:52,310 --> 00:08:51,200

clear creative minds that are thinking

204

00:08:53,509 --> 00:08:52,320

and helping us

205

00:08:54,790 --> 00:08:53,519

work through these problems on the

206

00:08:57,030 --> 00:08:54,800

ground so

207

00:08:59,509 --> 00:08:57,040

we take a look at the problem and

208

00:09:01,590 --> 00:08:59,519

and see what lies ahead and then

209

00:09:07,110 --> 00:09:01,600

look for potential solutions and then

210

00:09:10,710 --> 00:09:08,870

hello my name is christian garcia i'm a

211

00:09:12,630 --> 00:09:10,720

at johnston middle school my

212

00:09:14,949 --> 00:09:12,640

question is for shannon welcome mrs

213

00:09:16,710 --> 00:09:14,959

walker if there is no gravity space how

214

00:09:19,269 --> 00:09:16,720

will you generate enough force to

215

00:09:21,590 --> 00:09:19,279

exercise your muscles

216

00:09:24,070 --> 00:09:21,600

that's an excellent question

217

00:09:26,389 --> 00:09:24,080

we do it in a couple of different ways

218

00:09:27,910 --> 00:09:26,399

we have three main exercise devices that

219

00:09:30,630 --> 00:09:27,920

we have on the station one is an

220

00:09:32,470 --> 00:09:30,640

exercise bike and much like the racing

221

00:09:33,670 --> 00:09:32,480

bikes our feet are strapped to the pedal

222

00:09:37,990 --> 00:09:33,680

so that

223

00:09:39,670 --> 00:09:38,000

we're pedaling it to exercise our legs

224

00:09:41,190 --> 00:09:39,680

we have a treadmill that we use and we

225

00:09:42,550 --> 00:09:41,200

actually have a harness that goes over

226
00:09:45,590 --> 00:09:42,560
our shoulders and around our waist that

227
00:09:47,030 --> 00:09:45,600
straps us down to the treadmill so that

228
00:09:49,030 --> 00:09:47,040
we stay on the treadmill and we can

229
00:09:51,030 --> 00:09:49,040
actually adjust the amount of force with

230
00:09:52,870 --> 00:09:51,040
which we are

231
00:09:55,030 --> 00:09:52,880
touching the treadmill to exercise our

232
00:09:57,030 --> 00:09:55,040
body and the last way

233
00:09:58,630 --> 00:09:57,040
the last thing we do is essentially lift

234
00:09:59,829 --> 00:09:58,640
weights in space

235
00:10:01,829 --> 00:09:59,839
we have

236
00:10:03,430 --> 00:10:01,839
what we call a resistive exercise device

237
00:10:05,190 --> 00:10:03,440
it's kind of like

238
00:10:07,190 --> 00:10:05,200

one of those solo flexes or something

239

00:10:08,949 --> 00:10:07,200

except we use evacuated cylinders

240

00:10:10,870 --> 00:10:08,959

instead of big rubber bands to create

241

00:10:14,550 --> 00:10:10,880

resistance that we push against and pull

242

00:10:18,470 --> 00:10:16,870

hi my name is grace mitchell and i am in

243

00:10:19,509 --> 00:10:18,480

the fifth grade at parker elementary

244

00:10:21,750 --> 00:10:19,519

school

245

00:10:23,910 --> 00:10:21,760

my question is for doug

246

00:10:26,069 --> 00:10:23,920

doug what advice would you give young

247

00:10:28,470 --> 00:10:26,079

people today about the importance of

248

00:10:31,110 --> 00:10:28,480

pursuing science and the future of space

249

00:10:32,470 --> 00:10:31,120

exploration

250

00:10:35,110 --> 00:10:32,480

well that uh

251
00:10:37,670 --> 00:10:35,120
the great that's the 64 thousand dollar

252
00:10:38,949 --> 00:10:37,680
question today is uh is uh what i would

253
00:10:41,110 --> 00:10:38,959
encourage you to do

254
00:10:42,790 --> 00:10:41,120
actually what i uh

255
00:10:44,150 --> 00:10:42,800
the biggest advice i would give you if

256
00:10:46,550 --> 00:10:44,160
you are

257
00:10:47,509 --> 00:10:46,560
in the interested in the science uh

258
00:10:50,389 --> 00:10:47,519
field

259
00:10:52,949 --> 00:10:50,399
is to um is to just uh don't be afraid

260
00:10:55,509 --> 00:10:52,959
of science uh science is fun

261
00:10:58,870 --> 00:10:55,519
and uh science in engineering and things

262
00:11:01,829 --> 00:10:58,880
like this are are about solving problems

263
00:11:04,310 --> 00:11:01,839

and and discovering new things and so so

264

00:11:08,150 --> 00:11:04,320

sometimes that that unknown

265

00:11:10,710 --> 00:11:08,160

of of an unsolved problem or or unknown

266

00:11:13,670 --> 00:11:10,720

uh discovery as of yet

267

00:11:15,750 --> 00:11:13,680

can cause uh some anxiety and and cause

268

00:11:18,470 --> 00:11:15,760

people not to study math and science and

269

00:11:20,389 --> 00:11:18,480

so my encouragement to you would be to

270

00:11:22,870 --> 00:11:20,399

to uh develop that love for math and

271

00:11:25,430 --> 00:11:22,880

science and uh pursue your dream whether

272

00:11:28,069 --> 00:11:25,440

it's uh whether it's in uh math science

273

00:11:31,190 --> 00:11:28,079

engineering um we would love to have you

274

00:11:33,509 --> 00:11:31,200

come work with us at nasa and do

275

00:11:34,710 --> 00:11:33,519

something you love and uh because if you

276

00:11:36,470 --> 00:11:34,720

do something if you're doing something

277

00:11:38,870 --> 00:11:36,480

you love you're bound to be very good at

278

00:11:39,910 --> 00:11:38,880

it and then just do your best and study

279

00:11:41,110 --> 00:11:39,920

hard and

280

00:11:43,350 --> 00:11:41,120

and

281

00:11:46,949 --> 00:11:43,360

the sky is no longer the limit uh you

282

00:11:49,509 --> 00:11:47,670

hi

283

00:11:51,590 --> 00:11:49,519

my name is daniel marks and i am a

284

00:11:54,310 --> 00:11:51,600

freshman at westbury high school and my

285

00:11:56,550 --> 00:11:54,320

question is for shannon walker

286

00:11:58,389 --> 00:11:56,560

shannon what was your major in college

287

00:12:00,949 --> 00:11:58,399

and how did it help you become an

288

00:12:03,269 --> 00:12:00,959

astronaut

289

00:12:05,110 --> 00:12:03,279

daniel my major in college was physics

290

00:12:07,590 --> 00:12:05,120

which i realize is kind of a daunting

291

00:12:09,990 --> 00:12:07,600

topic for a lot of people but physics is

292

00:12:11,990 --> 00:12:10,000

is really the basics for everything that

293

00:12:13,910 --> 00:12:12,000

you do in math science and engineering

294

00:12:16,150 --> 00:12:13,920

except for math of course but

295

00:12:17,910 --> 00:12:16,160

so i use physics every day up here not

296

00:12:19,670 --> 00:12:17,920

the least of which is when i'm moving

297

00:12:21,829 --> 00:12:19,680

around of course

298

00:12:23,590 --> 00:12:21,839

one of einstein's equations f equals $m a$

299

00:12:26,150 --> 00:12:23,600

so whenever

300

00:12:27,910 --> 00:12:26,160

we push off we keep going as second law

301

00:12:29,829 --> 00:12:27,920

body emotion stays in motion until

302

00:12:31,910 --> 00:12:29,839

something stops it so

303

00:12:33,990 --> 00:12:31,920

when we move we keep going until we stop

304

00:12:35,590 --> 00:12:34,000

ourselves somehow or we run into a wall

305

00:12:39,350 --> 00:12:35,600

so we definitely use physics every day

306

00:12:43,670 --> 00:12:41,910

hello my name is lisa esmeralda fuentes

307

00:12:46,870 --> 00:12:43,680

i'm an 8th grader at johnston middle

308

00:12:49,350 --> 00:12:46,880

school my question is for doug wheelock

309

00:12:51,430 --> 00:12:49,360

doug how do you conduct experiments in

310

00:12:54,230 --> 00:12:51,440

zero gravity if the experiment includes

311

00:12:56,230 --> 00:12:54,240

the use of liquids

312

00:12:57,190 --> 00:12:56,240

you have to be very careful you really

313

00:13:02,790 --> 00:12:57,200

do

314

00:13:05,030 --> 00:13:02,800

experiments that up here that are using

315

00:13:06,629 --> 00:13:05,040

liquid in fact we have a marangoni

316

00:13:09,670 --> 00:13:06,639

experiment that's actually creating a

317

00:13:12,230 --> 00:13:09,680

bridge that's actually a liquid bridge

318

00:13:15,269 --> 00:13:12,240

and we're looking at the transport of

319

00:13:17,190 --> 00:13:15,279

material like energy through this bridge

320

00:13:18,389 --> 00:13:17,200

and so we actually have to be very very

321

00:13:21,350 --> 00:13:18,399

careful

322

00:13:23,509 --> 00:13:21,360

we have isolation systems on our racks

323

00:13:26,470 --> 00:13:23,519

that keep from many vibrations we try

324

00:13:28,389 --> 00:13:26,480

not to touch the experiment racks uh to

325

00:13:30,150 --> 00:13:28,399

create any kind of jostling or anything

326

00:13:31,670 --> 00:13:30,160

like that and so when we have

327

00:13:33,110 --> 00:13:31,680

microgravity

328

00:13:34,310 --> 00:13:33,120

we try to be

329

00:13:36,629 --> 00:13:34,320

have a period of what's called

330

00:13:37,990 --> 00:13:36,639

quiescence where we we try not to fire

331

00:13:40,389 --> 00:13:38,000

the thrusters

332

00:13:42,790 --> 00:13:40,399

um on the on the space station we use

333

00:13:44,470 --> 00:13:42,800

only the momentum wheels so it's a very

334

00:13:47,590 --> 00:13:44,480

very smooth ride

335

00:13:49,269 --> 00:13:47,600

and we try to keep our hands from uh

336

00:13:51,189 --> 00:13:49,279

from touch are pushing off of the

337

00:13:53,750 --> 00:13:51,199

experiments so we have to be very

338

00:13:56,870 --> 00:13:53,760

careful but liquid when it's uh when

339

00:13:59,030 --> 00:13:56,880

it's in space actually sort of tends to

340

00:14:01,189 --> 00:13:59,040

coalesce together into like a big ball

341

00:14:02,629 --> 00:14:01,199

so when it's together it actually wants

342

00:14:04,629 --> 00:14:02,639

to stay together

343

00:14:06,470 --> 00:14:04,639

until you uh until somebody pushes

344

00:14:08,550 --> 00:14:06,480

against it so that's why we try to keep

345

00:14:10,069 --> 00:14:08,560

our hands off the experiments but uh

346

00:14:13,910 --> 00:14:10,079

while they're operating but it's a great

347

00:14:18,389 --> 00:14:16,150

hi i'm kenneth collins and i'm an 8th

348

00:14:20,710 --> 00:14:18,399

grader at johnston middle school and my

349

00:14:23,110 --> 00:14:20,720

question is for shannon walker miss

350

00:14:25,430 --> 00:14:23,120

walker what is it like to

351

00:14:27,829 --> 00:14:25,440

what is it like to launch on a soyuz

352

00:14:30,550 --> 00:14:27,839

rocket

353

00:14:32,710 --> 00:14:30,560

it is absolutely fantastic it is is

354

00:14:34,470 --> 00:14:32,720

truly exciting when you uh when we're

355

00:14:35,350 --> 00:14:34,480

sitting there on the launch pad waiting

356

00:14:37,350 --> 00:14:35,360

to go

357

00:14:38,870 --> 00:14:37,360

um we're watching the clock count down

358

00:14:40,550 --> 00:14:38,880

to our launch time and then all of a

359

00:14:42,230 --> 00:14:40,560

sudden shortly before it launches you

360

00:14:44,629 --> 00:14:42,240

can hear all the valves and you can feel

361

00:14:46,550 --> 00:14:44,639

the valves moving in the rocket getting

362

00:14:48,150 --> 00:14:46,560

ready getting the fuel go to the

363

00:14:50,150 --> 00:14:48,160

locations it needs to go and then all of

364

00:14:52,069 --> 00:14:50,160

a sudden the engines light and and you

365

00:14:53,670 --> 00:14:52,079

feel this great force pushing you off

366

00:14:55,910 --> 00:14:53,680

the earth and you're going faster and

367

00:14:57,670 --> 00:14:55,920

faster and faster and

368

00:14:59,350 --> 00:14:57,680

you know very short eight and a half

369

00:15:01,189 --> 00:14:59,360

minutes later you're in space and it is

370

00:15:03,750 --> 00:15:01,199

just the most wonderful ride anybody can

371

00:15:07,990 --> 00:15:06,230

hi my name is vanessa flores i'm a ninth

372

00:15:10,790 --> 00:15:08,000

grader at westbury high school and my

373

00:15:12,550 --> 00:15:10,800

question is to doug woodlock

374

00:15:15,189 --> 00:15:12,560

how did you stay determined throughout

375

00:15:18,790 --> 00:15:15,199

every obstacle you faced on the journey

376

00:15:23,189 --> 00:15:21,030

well um gosh it's uh

377

00:15:24,949 --> 00:15:23,199

i think it's just determination and

378

00:15:26,870 --> 00:15:24,959

belief in yourself and belief in your

379

00:15:28,470 --> 00:15:26,880

dreams and

380

00:15:30,949 --> 00:15:28,480

it can get you through anything you know

381

00:15:32,629 --> 00:15:30,959

we uh regardless of whether you're

382

00:15:34,550 --> 00:15:32,639

studying to be an astronaut if you want

383

00:15:36,790 --> 00:15:34,560

to be a teacher or

384

00:15:39,269 --> 00:15:36,800

a doctor or whatever it might be

385

00:15:40,949 --> 00:15:39,279

you're going to face obstacles and

386

00:15:43,509 --> 00:15:40,959

and you can look at them and the way

387

00:15:45,829 --> 00:15:43,519

i've approached uh the obstacles that i

388

00:15:48,230 --> 00:15:45,839

faced are we're all going to run into

389

00:15:49,910 --> 00:15:48,240

problems uh some of our problems are

390

00:15:52,230 --> 00:15:49,920

different than other folks problems but

391

00:15:53,350 --> 00:15:52,240

um but you can look at it two ways

392

00:15:58,310 --> 00:15:53,360

either

393

00:16:00,710 --> 00:15:58,320

the problem

394

00:16:02,550 --> 00:16:00,720

you know take over your uh steal your

395

00:16:04,629 --> 00:16:02,560

dreams from you and

396

00:16:05,670 --> 00:16:04,639

and i don't like that second option i'd

397

00:16:07,509 --> 00:16:05,680

rather

398

00:16:10,949 --> 00:16:07,519

look for a look for a solution to the

399

00:16:13,590 --> 00:16:10,959

problem and uh you have resources that

400

00:16:15,829 --> 00:16:13,600

your training your schooling and uh you

401
00:16:19,030 --> 00:16:15,839
have people around you that would help

402
00:16:22,150 --> 00:16:19,040
you and hopefully for that uh for uh in

403
00:16:24,790 --> 00:16:22,160
that realm your your teachers are are

404
00:16:26,629 --> 00:16:24,800
your friends your parents uh there are

405
00:16:28,710 --> 00:16:26,639
people that want to help you pursue your

406
00:16:31,350 --> 00:16:28,720
goals and dreams as well so i would say

407
00:16:33,110 --> 00:16:31,360
just stay focused on what your goals are

408
00:16:37,110 --> 00:16:33,120
and stay determined and believe in

409
00:16:40,310 --> 00:16:37,910
hi

410
00:16:42,550 --> 00:16:40,320
my name is jared simprin and i'm in the

411
00:16:45,829 --> 00:16:42,560
fifth grade at parker elementary school

412
00:16:48,230 --> 00:16:45,839
my question is for shane and walker

413
00:16:51,430 --> 00:16:48,240

what challenges do you face as a female

414

00:16:55,430 --> 00:16:52,870

you know that's a very interesting

415

00:16:57,269 --> 00:16:55,440

question and as i as i think back over

416

00:16:59,990 --> 00:16:57,279

my career that i've had i've worked at

417

00:17:01,749 --> 00:17:00,000

nasa for over 20 years i really can't

418

00:17:04,549 --> 00:17:01,759

think of one thing or any particular

419

00:17:08,069 --> 00:17:04,559

challenge i faced as being a female

420

00:17:10,230 --> 00:17:08,079

the jobs are open to everyone

421

00:17:12,549 --> 00:17:10,240

so much of of what we do depends on your

422

00:17:14,069 --> 00:17:12,559

brain and not your physical size and so

423

00:17:16,870 --> 00:17:14,079

that doesn't really matter too much i

424

00:17:18,789 --> 00:17:16,880

will say that preparing for a spacewalk

425

00:17:20,949 --> 00:17:18,799

is difficult for me because it does take

426

00:17:22,870 --> 00:17:20,959

a lot of physical strength but that's

427

00:17:24,710 --> 00:17:22,880

not something that i can't do because

428

00:17:27,350 --> 00:17:24,720

i'm female i just have to work a little

429

00:17:29,350 --> 00:17:27,360

bit harder at it so um

430

00:17:31,430 --> 00:17:29,360

you know in particular i don't think

431

00:17:34,390 --> 00:17:31,440

i've faced any any major challenges

432

00:17:39,430 --> 00:17:36,710

hi my name is marquise walker and i'm a

433

00:17:41,270 --> 00:17:39,440

7th grader at johnston middle school my

434

00:17:43,909 --> 00:17:41,280

question is for doug

435

00:17:47,270 --> 00:17:43,919

doug how often do you go on a space walk

436

00:17:49,510 --> 00:17:47,280

and how long are you outside the station

437

00:17:52,390 --> 00:17:49,520

well that's a good question we we don't

438

00:17:54,789 --> 00:17:52,400

go very often but we um we had this part

439

00:17:56,710 --> 00:17:54,799

that broke a couple of months ago and we

440

00:17:59,510 --> 00:17:56,720

had to do three spacewalks and we did

441

00:18:01,350 --> 00:17:59,520

three spacewalks in the span of about

442

00:18:03,110 --> 00:18:01,360

10 or 12 days

443

00:18:05,029 --> 00:18:03,120

and so um

444

00:18:06,470 --> 00:18:05,039

it's it's a lot of hard work

445

00:18:08,150 --> 00:18:06,480

physically it's a lot of hard work and

446

00:18:09,430 --> 00:18:08,160

it takes a lot of planning

447

00:18:13,669 --> 00:18:09,440

and

448

00:18:15,350 --> 00:18:13,679

spacewalk it was actually for a little

449

00:18:17,110 --> 00:18:15,360

over eight hours

450

00:18:20,789 --> 00:18:17,120

outside and it was the longest space

451

00:18:23,190 --> 00:18:20,799

walk in iss uh space station history so

452

00:18:26,070 --> 00:18:23,200

um it was it was pretty long and it's

453

00:18:28,470 --> 00:18:26,080

it's a long time to go uh without food

454

00:18:29,750 --> 00:18:28,480

and uh and uh without a chance to really

455

00:18:31,990 --> 00:18:29,760

kind of uh

456

00:18:33,750 --> 00:18:32,000

uh kind of relax and everything you have

457

00:18:34,710 --> 00:18:33,760

to kind of stay at your very top of your

458

00:18:36,789 --> 00:18:34,720

game

459

00:18:39,029 --> 00:18:36,799

and um and then the other spacewalks are

460

00:18:41,669 --> 00:18:39,039

usually a spacewalk lasts about seven

461

00:18:44,070 --> 00:18:41,679

hours to seven and a half hours and so

462

00:18:45,029 --> 00:18:44,080

uh that's how long you're outside

463

00:18:47,909 --> 00:18:45,039

so

464

00:18:49,990 --> 00:18:47,919

hopefully um you know lord willing if

465

00:18:52,150 --> 00:18:50,000

if we don't have any other problems we

466

00:18:56,150 --> 00:18:52,160

we won't have any other planned space

467

00:18:58,310 --> 00:18:56,160

walks during our stay here

468

00:19:00,870 --> 00:18:58,320

hi i'm arthur hippolyta and i'm an

469

00:19:03,270 --> 00:19:00,880

eighth grader at johnston middle school

470

00:19:05,669 --> 00:19:03,280

and my question is for shannon walker

471

00:19:08,830 --> 00:19:05,679

shannon how does your work help improve

472

00:19:11,669 --> 00:19:08,840

communication systems here on

473

00:19:13,669 --> 00:19:11,679

earth you know that that's a very

474

00:19:15,110 --> 00:19:13,679

interesting question um

475

00:19:16,549 --> 00:19:15,120

i would think

476

00:19:19,029 --> 00:19:16,559

you know today i can't think of a

477

00:19:22,310 --> 00:19:19,039

specific experiment that we've got going

478

00:19:23,990 --> 00:19:22,320

on right now directly in communications

479

00:19:26,470 --> 00:19:24,000

of course throughout the history of the

480

00:19:27,990 --> 00:19:26,480

space program we've developed everything

481

00:19:30,789 --> 00:19:28,000

uh one of the main ones of course is

482

00:19:31,909 --> 00:19:30,799

satellite communication so

483

00:19:34,470 --> 00:19:31,919

everything that uses satellite

484

00:19:36,549 --> 00:19:34,480

communications which is a lot these days

485

00:19:39,270 --> 00:19:36,559

came out of the space program i know

486

00:19:41,190 --> 00:19:39,280

we've got an experiment coming up that

487

00:19:42,870 --> 00:19:41,200

we'll be looking at how to better track

488

00:19:44,789 --> 00:19:42,880

the ships in the sea

489

00:19:47,110 --> 00:19:44,799

similarly to the way that we track

490

00:19:49,510 --> 00:19:47,120

airplanes going across our country all

491

00:19:51,029 --> 00:19:49,520

the airplanes in the the

492

00:19:52,630 --> 00:19:51,039

control centers know where all the

493

00:19:54,310 --> 00:19:52,640

airplanes are based on the radar

494

00:19:55,110 --> 00:19:54,320

tracking system but we don't have the

495

00:19:56,789 --> 00:19:55,120

same

496

00:19:58,470 --> 00:19:56,799

kind of system for all the ships out in

497

00:20:00,390 --> 00:19:58,480

the sea and so we we're trying to

498

00:20:02,390 --> 00:20:00,400

develop a way to better uh track the

499

00:20:05,510 --> 00:20:02,400

ship so we can keep an eye on how

500

00:20:09,270 --> 00:20:07,669

hi doug hi shannon my name is dave wheat

501
00:20:11,590 --> 00:20:09,280
and i'm the principal of johnston middle

502
00:20:13,990 --> 00:20:11,600
school and i'm coming to you live from

503
00:20:15,750 --> 00:20:14,000
the johnston middle school auditorium

504
00:20:17,190 --> 00:20:15,760
i'm sure you've been you can visualize

505
00:20:19,669 --> 00:20:17,200
where we are right now asking these

506
00:20:20,870 --> 00:20:19,679
questions and it's such a great thrill

507
00:20:22,950 --> 00:20:20,880
for me

508
00:20:24,390 --> 00:20:22,960
to get to participate in this and a

509
00:20:26,549 --> 00:20:24,400
great thrill for our kids from parker

510
00:20:29,270 --> 00:20:26,559
and westbrook high school in johnston i

511
00:20:31,830 --> 00:20:29,280
want you to know my question is personal

512
00:20:33,510 --> 00:20:31,840
that your yearbook pictures from your

513
00:20:35,350 --> 00:20:33,520

middle school years are on display at

514

00:20:43,750 --> 00:20:35,360

the library right now what is your

515

00:20:48,149 --> 00:20:45,750

man that's some bad fashion we got going

516

00:20:49,669 --> 00:20:48,159

on

517

00:20:51,430 --> 00:20:49,679

oh no i think it's great i think it's

518

00:20:53,430 --> 00:20:51,440

very exciting that parker justin and

519

00:20:54,789 --> 00:20:53,440

westbrook have all come together because

520

00:20:57,590 --> 00:20:54,799

as you know those are the schools i

521

00:20:59,190 --> 00:20:57,600

attended in um hisd before i went out to

522

00:21:01,110 --> 00:20:59,200

rice university and then started working

523

00:21:02,549 --> 00:21:01,120

at nasa so i think it's great and we're

524

00:21:06,230 --> 00:21:02,559

really excited to be able to talk to you

525

00:21:06,240 --> 00:21:10,470

david i'd like to see those pictures

526
00:21:13,750 --> 00:21:11,990
doug you're welcome at johnston middle

527
00:21:15,270 --> 00:21:13,760
school anytime i'll keep them in a

528
00:21:16,549 --> 00:21:15,280
special place in my office they'll be

529
00:21:17,830 --> 00:21:16,559
right there for you when you get to

530
00:21:20,149 --> 00:21:17,840
houston

531
00:21:21,830 --> 00:21:20,159
i also want you to know doug and shannon

532
00:21:23,590 --> 00:21:21,840
that you we are so grateful for you

533
00:21:25,270 --> 00:21:23,600
spending this time with us today you

534
00:21:27,590 --> 00:21:25,280
have inspired a whole generation of

535
00:21:29,750 --> 00:21:27,600
parker lions and johnston greyhounds and

536
00:21:31,590 --> 00:21:29,760
westbury rebels to achieve their goals

537
00:21:36,950 --> 00:21:31,600
and achieve their dreams we're going to

538
00:21:36,960 --> 00:21:42,630

goodbye from

539

00:21:42,640 --> 00:21:52,230

thank you so much

540

00:21:52,240 --> 00:22:06,390

thank you very much

541

00:22:06,400 --> 00:22:17,510

all right

542

00:22:22,710 --> 00:22:20,070

station this is houston acr thank you

543

00:22:24,630 --> 00:22:22,720

that concludes the event