1
00:00:23,269 --> 00:00:21,429
bright young minds curious and probing

2
00:00:26,150 --> 00:00:23,279
young adults with the ability to

3
00:00:31,109 --> 00:00:26,160
comprehend complex problems and solve

4
00:00:35,030 --> 00:00:33,190
these students each possess unique

5
00:01:00,630 --> 00:00:35,040
talents that have cultivated will

6
00:01:05,030 --> 00:01:02,869
answering a need to ensure that these

7
00:01:07,109 --> 00:01:05,040
students go on to success

8
00:01:10,390 --> 00:01:07,119
is nasa's summer high school

9
00:01:12,550 --> 00:01:10,400
apprenticeship research program

10
00:01:14,390 --> 00:01:12,560
the program is an opportunity attracting

11
00:01:17,350 --> 00:01:14,400
young achievers with an interest in

12
00:01:20,870 --> 00:01:17,360
science and engineering

13
00:01:23,190 --> 00:01:20,880

founded in 1979 as a program designed to

14
00:01:24,550 --> 00:01:23,200
attract and serve underrepresented

15
00:01:27,030 --> 00:01:24,560
minorities

16
00:01:29,350 --> 00:01:27,040
the sharp program is helping to produce

17
00:01:33,030 --> 00:01:29,360
many scientists engineers and

18
00:01:36,950 --> 00:01:33,040
technicians who someday work for nasa or

19
00:01:40,469 --> 00:01:38,789
sharp students are getting the

20
00:01:42,390 --> 00:01:40,479
opportunity to focus in

21
00:01:44,710 --> 00:01:42,400
focus in on how you might use science

22
00:01:47,510 --> 00:01:44,720
and math and i really see that after

23
00:01:49,910 --> 00:01:47,520
they spend a few weeks really eight

24
00:01:51,670 --> 00:01:49,920
weeks rubbing elbows with engineers they

25
00:01:53,109 --> 00:01:51,680
begin to see what it's like to be an

26
00:01:55,109 --> 00:01:53,119
electrical engineer a mechanical

27
00:01:57,429 --> 00:01:55,119
engineer an aerospace engineer the

28
00:01:59,270 --> 00:01:57,439
really nuts and bolts of it and it helps

29
00:02:01,270 --> 00:01:59,280
them focus in a little bit more in terms

30
00:02:05,109 --> 00:02:01,280
of seeing how they might one day be in

31
00:02:08,550 --> 00:02:07,190
i like working with young people they're

32
00:02:10,630 --> 00:02:08,560
exciting they're full of energy they're

33
00:02:12,710 --> 00:02:10,640
full of enthusiasm

34
00:02:15,430 --> 00:02:12,720
these young people are have the energy

35
00:02:18,470 --> 00:02:15,440
to burn and they want to be an exciting

36
00:02:22,309 --> 00:02:18,480
place and reach out and really

37
00:02:24,630 --> 00:02:22,319
see that they can make a contribution

38
00:02:26,790 --> 00:02:24,640

in the program students are exposed to a

39
00:02:28,150 --> 00:02:26,800
scientific and technical work

40
00:02:31,030 --> 00:02:28,160
environment

41
00:02:33,190 --> 00:02:31,040
through interaction with nasa mentors

42
00:02:35,589 --> 00:02:33,200
they receive an insight into possible

43
00:02:37,110 --> 00:02:35,599
career opportunities

44
00:02:39,670 --> 00:02:37,120
they're here

45
00:02:42,229 --> 00:02:39,680
eight weeks to work directly with the

46
00:02:44,869 --> 00:02:42,239
engineers and with the in the technical

47
00:02:47,589 --> 00:02:44,879
field and to basically not only learn

48
00:02:50,070 --> 00:02:47,599
some specific technical duties

49
00:02:53,509 --> 00:02:50,080
but to understand what engineering is

50
00:02:55,190 --> 00:02:53,519
all about in a general sense as a mentor

51
00:02:57,110 --> 00:02:55,200
i work with the students in trying to

52
00:02:59,190 --> 00:02:57,120
encourage them in the engineering

53
00:03:01,589 --> 00:02:59,200
science and technology field

54
00:03:03,589 --> 00:03:01,599
i also try to get them to interact with

55
00:03:05,110 --> 00:03:03,599
the other engineers in my section

56
00:03:06,790 --> 00:03:05,120
programs like this get people exposed to

57
00:03:08,070 --> 00:03:06,800
the to the real world to the process of

58
00:03:09,670 --> 00:03:08,080
learning on a job which they're going to

59
00:03:11,190 --> 00:03:09,680
have whether they're in school or at

60
00:03:13,830 --> 00:03:11,200
work

61
00:03:16,790 --> 00:03:13,840
given real world tasks and problems to

62
00:03:19,190 --> 00:03:16,800
solve these enthusiastic youth put their

63
00:03:21,350 --> 00:03:19,200

energy to work pushing the limits to

64
00:03:23,509 --> 00:03:21,360
come up with workable answers

65
00:03:25,670 --> 00:03:23,519
solutions that will actually be used

66
00:03:28,550 --> 00:03:25,680
because the projects that they work on

67
00:03:30,710 --> 00:03:28,560
are real projects

68
00:03:32,869 --> 00:03:30,720
i try to give them challenging projects

69
00:03:35,350 --> 00:03:32,879
usually projects that are above their

70
00:03:36,550 --> 00:03:35,360
head a little that makes them try a

71
00:03:38,949 --> 00:03:36,560
little harder

72
00:03:40,789 --> 00:03:38,959
and i think they really get a lot out of

73
00:03:43,190 --> 00:03:40,799
it

74
00:03:45,430 --> 00:03:43,200
the sharp program takes place at most

75
00:03:47,589 --> 00:03:45,440
nasa facilities

76
00:03:50,869 --> 00:03:47,599
at kennedy space center students learn

77
00:03:52,630 --> 00:03:50,879
about test checkout and launch of space

78
00:03:54,949 --> 00:03:52,640
vehicles

79
00:03:57,830 --> 00:03:54,959
across the country at ames research

80
00:03:59,910 --> 00:03:57,840
center projects concentrate on computer

81
00:04:01,910 --> 00:03:59,920
science for flight research and

82
00:04:04,710 --> 00:04:01,920
simulation

83
00:04:07,030 --> 00:04:04,720
at langley in hampton virginia the focus

84
00:04:10,550 --> 00:04:07,040
is on research and development of

85
00:04:12,470 --> 00:04:10,560
advanced air and spacecraft systems

86
00:04:15,270 --> 00:04:12,480
the summer high school apprenticeship

87
00:04:16,629 --> 00:04:15,280
research program is a major commitment

88
00:04:19,030 --> 00:04:16,639

by nasa

89
00:04:21,670 --> 00:04:19,040
its purpose is to make minority students

90
00:04:23,590 --> 00:04:21,680
aware of career opportunities and to

91
00:04:25,830 --> 00:04:23,600
encourage them to attain higher

92
00:04:26,710 --> 00:04:25,840
education it's been

93
00:04:30,230 --> 00:04:26,720
one

94
00:04:33,909 --> 00:04:30,240
thrilling 11-year span i have seen more

95
00:04:35,909 --> 00:04:33,919
than 190 kids come through the program

96
00:04:36,950 --> 00:04:35,919
received tremendous benefits from the

97
00:04:38,870 --> 00:04:36,960
program

98
00:04:41,590 --> 00:04:38,880
as a matter of fact

99
00:04:44,070 --> 00:04:41,600
more than 98 of those students who've

100
00:04:47,990 --> 00:04:44,080
entered the program have gone on into

101
00:04:49,830 --> 00:04:48,000
science math high tech type careers

102
00:04:52,469 --> 00:04:49,840
students demonstrating an interest in

103
00:04:56,469 --> 00:04:52,479
these fields participate in projects

104
00:04:58,469 --> 00:04:56,479
that are as diverse as the nasa centers

105
00:05:00,150 --> 00:04:58,479
in the shop program i'm learning how to

106
00:05:02,710 --> 00:05:00,160
run the diagnostic tests on the

107
00:05:03,590 --> 00:05:02,720
experimental computer which simulates

108
00:05:05,990 --> 00:05:03,600
what

109
00:05:07,670 --> 00:05:06,000
the space load experiments will be

110
00:05:08,870 --> 00:05:07,680
experiencing during the space missions

111
00:05:11,110 --> 00:05:08,880
open space

112
00:05:13,350 --> 00:05:11,120
it's very educational it's an experience

113
00:05:14,469 --> 00:05:13,360

i would have never had and i'm fortunate

114
00:05:15,990 --> 00:05:14,479
to be here

115
00:05:17,270 --> 00:05:16,000
so far in the shop program i've been

116
00:05:19,670 --> 00:05:17,280
working with

117
00:05:23,749 --> 00:05:19,680
test carriage with tet which tests

118
00:05:25,189 --> 00:05:23,759
aircraft tires for jet planes and if

119
00:05:28,070 --> 00:05:25,199
tests to see if

120
00:05:29,189 --> 00:05:28,080
when they land how much wear there is

121
00:05:31,189 --> 00:05:29,199
and we check

122
00:05:33,189 --> 00:05:31,199
how much wear there is on the tire after

123
00:05:35,350 --> 00:05:33,199
every run i learned about a lot of

124
00:05:36,710 --> 00:05:35,360
different areas of engineering that

125
00:05:39,270 --> 00:05:36,720
i don't think i ever would have known

126
00:05:40,870 --> 00:05:39,280
about i've been working with the

127
00:05:43,029 --> 00:05:40,880
the computer simulation software

128
00:05:44,950 --> 00:05:43,039
simulation of the f-18 so i spent a lot

129
00:05:46,710 --> 00:05:44,960
of time on there and then different

130
00:05:48,710 --> 00:05:46,720
programs are used to evaluate the data

131
00:05:50,550 --> 00:05:48,720
i'm getting out of the simulation

132
00:05:52,070 --> 00:05:50,560
there is a lot of learning involved

133
00:05:53,670 --> 00:05:52,080
there's a lot of learning and a lot of

134
00:05:56,230 --> 00:05:53,680
hands-on experience and those are the

135
00:05:58,390 --> 00:05:56,240
two real benefits of the program

136
00:06:00,390 --> 00:05:58,400
in my area we're working on the pfma

137
00:06:01,909 --> 00:06:00,400
which is the prototype

138
00:06:04,629 --> 00:06:01,919

flight manipulator

139
00:06:07,270 --> 00:06:04,639
and i'm tele-operating the

140
00:06:08,950 --> 00:06:07,280
pfma when i first came here on the first

141
00:06:10,629 --> 00:06:08,960
day i went to this meeting

142
00:06:12,629 --> 00:06:10,639
it was like i was flooded with all this

143
00:06:14,390 --> 00:06:12,639
information and i could barely pick out

144
00:06:16,309 --> 00:06:14,400
anything that they were saying and the

145
00:06:17,189 --> 00:06:16,319
more that i read the more i understood

146
00:06:17,990 --> 00:06:17,199
it

147
00:06:23,189 --> 00:06:18,000
and

148
00:06:24,870 --> 00:06:23,199
work with the arm then it then it all

149
00:06:29,510 --> 00:06:24,880
starts to fall in place and i actually

150
00:06:33,430 --> 00:06:31,909
the value of the sharp program cannot be

151
00:06:35,990 --> 00:06:33,440
underestimated

152
00:06:39,350 --> 00:06:36,000
of the more than 1200 apprentices who

153
00:06:41,909 --> 00:06:39,360
have participated since 1979

154
00:06:44,710 --> 00:06:41,919
many have gone on to become engineers

155
00:06:46,150 --> 00:06:44,720
and scientists for nasa and private

156
00:06:48,550 --> 00:06:46,160
industry

157
00:06:50,309 --> 00:06:48,560
it is important to recognize that as we

158
00:06:52,390 --> 00:06:50,319
move toward the future

159
00:06:54,790 --> 00:06:52,400
the numbers of young people available to

160
00:06:56,070 --> 00:06:54,800
fill important research positions is

161
00:06:58,390 --> 00:06:56,080
shrinking

162
00:07:01,029 --> 00:06:58,400
a strong effort must be made to capture

163
00:07:03,589 --> 00:07:01,039

the talent of these youth

164
00:07:06,230 --> 00:07:03,599
sharp is playing an important role in

165
00:07:08,629 --> 00:07:06,240
directing underrepresented minorities

166
00:07:10,070 --> 00:07:08,639
into an area we must be concerned about

167
00:07:12,309 --> 00:07:10,080
as a nation

168
00:07:14,390 --> 00:07:12,319
it can become even more

169
00:07:17,029 --> 00:07:14,400
if our country is to be strong in

170
00:07:19,749 --> 00:07:17,039
science and engineering it will take the

171
00:07:21,350 --> 00:07:19,759
students of today to do it

172
00:07:23,270 --> 00:07:21,360
and without a doubt they're going to be

173
00:07:25,270 --> 00:07:23,280
our future and we'd like to be our

174
00:07:27,510 --> 00:07:25,280
future engineers constructive and

175
00:07:29,830 --> 00:07:27,520
developing and building our country that

176
00:07:31,990 --> 00:07:29,840
we can confront the year 2000 we can

177
00:07:34,790 --> 00:07:32,000
confront the future and that may be also

178
00:07:35,749 --> 00:07:34,800
mean not only on this planet but out in

179
00:07:39,589 --> 00:07:35,759
further

180
00:07:42,390 --> 00:07:39,599
outreaches and outposts in space

181
00:07:44,710 --> 00:07:42,400
sharp is a success and is a model for

182
00:07:46,710 --> 00:07:44,720
other programs to follow