



1
00:00:13,810 --> 00:00:11,830
a NASA competition combining the

2
00:00:15,380 --> 00:00:13,820
strength of an athlete with the mind of

3
00:00:17,840 --> 00:00:15,390
a scientist is sweet

4
00:00:37,260 --> 00:00:17,850
the world and it could lead students on

5
00:00:42,040 --> 00:00:39,610
it's early April at the US Space and

6
00:00:44,380 --> 00:00:42,050
Rocket Center in Huntsville Alabama home

7
00:00:46,240 --> 00:00:44,390
to Space Camp the visitor center for

8
00:00:48,910 --> 00:00:46,250
NASA's Marshall Space Flight Center and

9
00:00:51,880 --> 00:00:48,920
an extensive museum about America's

10
00:00:54,250 --> 00:00:51,890
history of space exploration but for one

11
00:00:56,380 --> 00:00:54,260
special spring weekend it becomes a

12
00:00:58,479 --> 00:00:56,390
grueling half-mile track where a

13
00:01:00,520 --> 00:00:58,489

thousand of the world's future engineers

14

00:01:03,609 --> 00:01:00,530

gather to race against the clock in

15

00:01:09,730 --> 00:01:03,619

machines of their own design welcome to

16

00:01:12,039 --> 00:01:09,740

the NASA great moon buggy race work on

17

00:01:13,570 --> 00:01:12,049

this project began at least six months

18

00:01:15,999 --> 00:01:13,580

earlier at the beginning of the school

19

00:01:19,060 --> 00:01:16,009

year as students designed built and

20

00:01:21,280 --> 00:01:19,070

tested a sturdy collapsible lightweight

21

00:01:23,289 --> 00:01:21,290

vehicle addressing many of the same

22

00:01:25,690 --> 00:01:23,299

engineering challenges overcome by

23

00:01:27,819 --> 00:01:25,700

nasa's lunar rover development team at

24

00:01:30,640 --> 00:01:27,829

the marshall center in the late 1960s

25

00:01:32,500 --> 00:01:30,650

it's a lot of work definitely a lot of

26

00:01:34,210 --> 00:01:32,510

researching figuring out angles and

27

00:01:36,399 --> 00:01:34,220

figuring out just how everything's going

28

00:01:37,600 --> 00:01:36,409

to come together and then just reveal a

29

00:01:38,649 --> 00:01:37,610

lot of time it's like machining parts

30

00:01:40,930 --> 00:01:38,659

and actually it was really cool

31

00:01:43,690 --> 00:01:40,940

dedicated teams of students build their

32

00:01:46,000 --> 00:01:43,700

vehicles using trail bike tires aluminum

33

00:01:48,520 --> 00:01:46,010

composite metal struts drive trains

34

00:01:51,210 --> 00:01:48,530

gears suspension steering and braking

35

00:01:55,570 --> 00:01:51,220

systems they find or build themselves

36

00:01:57,490 --> 00:01:55,580

from high tech to all made in creating

37

00:01:59,860 --> 00:01:57,500

the annual NASA great moon buggy race

38

00:02:01,899 --> 00:01:59,870

the goal was to engage America's next

39

00:02:04,539 --> 00:02:01,909

generation of scientists engineers and

40

00:02:06,490 --> 00:02:04,549

explorers the agency wanted to encourage

41

00:02:09,190 --> 00:02:06,500

students to study science math

42

00:02:11,890 --> 00:02:09,200

engineering and technology since that

43

00:02:14,619 --> 00:02:11,900

first race in 1994 with just a handful

44

00:02:16,990 --> 00:02:14,629

of teams the event now includes separate

45

00:02:18,509 --> 00:02:17,000

high school and college divisions more

46

00:02:21,460 --> 00:02:18,519

than a thousand students and

47

00:02:25,960 --> 00:02:21,470

institutions from around the world our

48

00:02:29,140 --> 00:02:25,970

drivers spend much time riding their

49

00:02:33,580 --> 00:02:29,150

bicycles I think almost every day from

50

00:02:36,100 --> 00:02:33,590

the moment that we thought about going

51
00:02:38,199 --> 00:02:36,110
coming here to Hanceville since you are

52
00:02:40,449 --> 00:02:38,209
from a non engineering background we

53
00:02:43,030 --> 00:02:40,459
didn't had access to workshop a pretty

54
00:02:44,680 --> 00:02:43,040
good workshop so that was a biggest

55
00:02:47,199 --> 00:02:44,690
challenge because we had great ideas in

56
00:02:49,540 --> 00:02:47,209
in our mind but we needed machines to do

57
00:02:51,280 --> 00:02:49,550
that these students take what they learn

58
00:02:54,039 --> 00:02:51,290
in the classroom on the drafting table

59
00:02:56,949 --> 00:02:54,049
and in the machine shop and apply it in

60
00:02:58,539 --> 00:02:56,959
a real-world setting too many building

61
00:03:01,270 --> 00:02:58,549
the moon buggy is accomplishment enough

62
00:03:03,309 --> 00:03:01,280
but the true test is how well it runs on

63
00:03:05,380 --> 00:03:03,319

the simulated lunar obstacle course in

64

00:03:07,360 --> 00:03:05,390

Huntsville just a few short miles from

65

00:03:09,370 --> 00:03:07,370

where the original lunar Rovers were

66

00:03:13,630 --> 00:03:09,380

tested we've gone down flights of stairs

67

00:03:15,370 --> 00:03:13,640

you know ditches parking lot speed bumps

68

00:03:17,620 --> 00:03:15,380

everything just beat it as hard as

69

00:03:18,850 --> 00:03:17,630

possible you know break it at home that

70

00:03:21,339 --> 00:03:18,860

way we can fix it and make it better

71

00:03:24,880 --> 00:03:21,349

rather to get here and break it and just

72

00:03:27,640 --> 00:03:24,890

be out of the time a pair of students

73

00:03:29,770 --> 00:03:27,650

one male one female steer and provide

74

00:03:32,110 --> 00:03:29,780

the power to drive their creation around

75

00:03:35,080 --> 00:03:32,120

this special track filled with serious

76
00:03:39,780 --> 00:03:35,090
obstacles one may find on the moon this

77
00:03:44,050 --> 00:03:42,250
the long history of this event proves

78
00:03:48,039 --> 00:03:44,060
that running a clean race is nearly

79
00:03:49,930 --> 00:03:48,049
impossible teams can be penalized if

80
00:03:53,589 --> 00:03:49,940
something falls off their buggy during

81
00:03:55,720 --> 00:03:53,599
the race if they veer off the track or

82
00:03:58,300 --> 00:03:55,730
if they have to get off their buggy to

83
00:04:00,339 --> 00:03:58,310
get it moving again and sometimes moon

84
00:04:02,800 --> 00:04:00,349
buggies on the track simply can't finish

85
00:04:04,539 --> 00:04:02,810
in the allotted time but teams have a

86
00:04:06,610 --> 00:04:04,549
second chance to make repairs and

87
00:04:09,610 --> 00:04:06,620
improve their times because there is a

88
00:04:11,349 --> 00:04:09,620

second one of the race the next day even

89

00:04:13,000 --> 00:04:11,359

then many teams will just have to take

90

00:04:14,890 --> 00:04:13,010

pride in the fact that they completed

91

00:04:16,900 --> 00:04:14,900

the project and made the journey to

92

00:04:19,029 --> 00:04:16,910

Huntsville even if they had to carry

93

00:04:21,310 --> 00:04:19,039

their budget across the finish line I

94

00:04:23,710 --> 00:04:21,320

made it at the top of the hill we're

95

00:04:26,230 --> 00:04:23,720

going down the other side and then our

96

00:04:29,020 --> 00:04:26,240

drive chain just shattered right in

97

00:04:31,690 --> 00:04:29,030

front of us so i was looking at

98

00:04:32,700 --> 00:04:31,700

Stephanie and I said go let's go and

99

00:04:34,290 --> 00:04:32,710

push it

100

00:04:37,350 --> 00:04:34,300

and as we were getting tired she's like

101
00:04:38,790 --> 00:04:37,360
let's go to the end that's good NASA and

102
00:04:40,410 --> 00:04:38,800
the major sponsors for the events

103
00:04:42,540 --> 00:04:40,420
provide prizes in nearly a dozen

104
00:04:45,930 --> 00:04:42,550
different categories including best

105
00:04:48,090 --> 00:04:45,940
rookie team and best safety design but

106
00:04:50,100 --> 00:04:48,100
the grand prize in each division goes to

107
00:04:53,220 --> 00:04:50,110
the team with the fastest time and the

108
00:04:55,050 --> 00:04:53,230
fewest penalties even if a team doesn't

109
00:04:57,840 --> 00:04:55,060
come home with a trophy the experience

110
00:05:00,510 --> 00:04:57,850
is a reward unto itself the lessons

111
00:05:03,150 --> 00:05:00,520
learned as a member of a team the chest

112
00:05:06,240 --> 00:05:03,160
to design build and race a vehicle they

113
00:05:08,340 --> 00:05:06,250

created and applying those math science

114

00:05:11,580 --> 00:05:08,350

and technical skills in a down-to-earth

115

00:05:14,090 --> 00:05:11,590

hands-on competition the design this

116

00:05:16,710 --> 00:05:14,100

year it was a whole team effort

117

00:05:19,470 --> 00:05:16,720

everybody had their own ideas we changed

118

00:05:21,720 --> 00:05:19,480

our steering mechanism from last year

119

00:05:23,490 --> 00:05:21,730

and we changed the seating around a

120

00:05:25,290 --> 00:05:23,500

little bit so that we can have a little

121

00:05:27,990 --> 00:05:25,300

bit more support when we're trying to

122

00:05:29,850 --> 00:05:28,000

peddle that extra right the NASA great

123

00:05:31,800 --> 00:05:29,860

moon buggy race brings the excitement of

124

00:05:34,440 --> 00:05:31,810

space exploration within reach of these

125

00:05:36,630 --> 00:05:34,450

students while encouraging knowledge of

126

00:05:39,530 --> 00:05:36,640

science technology engineering and math

127

00:05:41,850 --> 00:05:39,540

that could carry them to other worlds

128

00:05:43,610 --> 00:05:41,860

for more information on the NASA great

129

00:05:47,480 --> 00:05:43,620

moon buggy race including how to qualify