1
00:00:17,269 --> 00:00:15,030
the shores of lake erie are not your

2
00:00:19,029 --> 00:00:17,279
typical school laboratory and that's

3
00:00:21,590 --> 00:00:19,039
exactly the point of a unique

4
00:00:24,870 --> 00:00:21,600
educational effort initiated by nasa's

5
00:00:26,870 --> 00:00:24,880
lewis research center in cleveland ohio

6
00:00:29,349 --> 00:00:26,880
called the student remote sensing

7
00:00:31,189 --> 00:00:29,359
project it's designed to excite young

8
00:00:33,910 --> 00:00:31,199
people like these from saint edward high

9
00:00:35,670 --> 00:00:33,920
school about scientific research

10
00:00:38,150 --> 00:00:35,680
the measurements they're taking today

11
00:00:40,549 --> 00:00:38,160
were part of 18 environmental impact

12
00:00:42,389 --> 00:00:40,559
studies they've designed themselves

13
00:00:44,069 --> 00:00:42,399

shoreline erosion and the flow of

14
00:00:45,830 --> 00:00:44,079
effluent from wastewater treatment

15
00:00:47,350 --> 00:00:45,840
plants are two of the topics under

16
00:00:49,270 --> 00:00:47,360
consideration

17
00:00:51,270 --> 00:00:49,280
as with any research proposal the

18
00:00:53,110 --> 00:00:51,280
students had to prepare an abstract

19
00:00:54,790 --> 00:00:53,120
determine the equipment they needed to

20
00:00:56,709 --> 00:00:54,800
carry out their studies

21
00:00:58,950 --> 00:00:56,719
and describe the specific research

22
00:01:00,869 --> 00:00:58,960
procedures they plan to use

23
00:01:03,510 --> 00:01:00,879
they'll also have to prepare reports

24
00:01:05,830 --> 00:01:03,520
summarizing their conclusions

25
00:01:08,149 --> 00:01:05,840
while these student researchers collect

26
00:01:10,469 --> 00:01:08,159
ground truth data one of their teachers

27
00:01:12,710 --> 00:01:10,479
brother david martin works with nasa

28
00:01:15,270 --> 00:01:12,720
pilot bill ricky to produce aerial

29
00:01:18,550 --> 00:01:15,280
photographs used in the studies

30
00:01:21,190 --> 00:01:18,560
their aircraft is an old t-34 navy

31
00:01:23,429 --> 00:01:21,200
trainer salvaged from a storage facility

32
00:01:26,469 --> 00:01:23,439
in arizona and given new life by the

33
00:01:29,030 --> 00:01:26,479
lewis aircraft maintenance team before

34
00:01:31,830 --> 00:01:29,040
leaving the hangar two cameras one a

35
00:01:36,390 --> 00:01:31,840
standard model and the other an infrared

36
00:01:41,350 --> 00:01:38,390
to bill rickey who spent a lot of time

37
00:01:44,310 --> 00:01:41,360
in advanced fighter jets the t-34 is

38
00:01:47,030 --> 00:01:44,320

hardly a high-performance aircraft

39
00:02:16,229 --> 00:01:47,040
but for brother martin the experience is

40
00:02:20,790 --> 00:02:18,869
ricky positions the aircraft and martin

41
00:02:29,430 --> 00:02:20,800
triggers the cameras which look through

42
00:02:33,190 --> 00:02:31,110
by comparing what they see in the

43
00:02:35,990 --> 00:02:33,200
imagery with measurements gathered in

44
00:02:37,910 --> 00:02:36,000
the field students employ the same

45
00:02:40,309 --> 00:02:37,920
scientific principles used by

46
00:02:42,630 --> 00:02:40,319
professional researchers and they had

47
00:02:44,630 --> 00:02:42,640
nothing to begin with no cookbook recipe

48
00:02:45,990 --> 00:02:44,640
no guidance no hints they had to design

49
00:02:48,070 --> 00:02:46,000
it for themselves

50
00:02:49,589 --> 00:02:48,080
i want them to take the film

51
00:02:51,110 --> 00:02:49,599
see what they can do with it maybe it

52
00:02:53,350 --> 00:02:51,120
will answer the question they raised

53
00:02:55,110 --> 00:02:53,360
maybe it won't but that's the beauty of

54
00:02:57,030 --> 00:02:55,120
science and in that sense it'll be a

55
00:02:58,710 --> 00:02:57,040
real learning experience it's not

56
00:03:00,470 --> 00:02:58,720
something that was given to them they

57
00:03:01,990 --> 00:03:00,480
can see now that they could put

58
00:03:02,949 --> 00:03:02,000
something together which is actually

59
00:03:05,110 --> 00:03:02,959
their own

60
00:03:06,390 --> 00:03:05,120
in a sense they are creating something

61
00:03:08,070 --> 00:03:06,400
new for each and every one of these

62
00:03:10,710 --> 00:03:08,080
experiments we did

63
00:03:13,270 --> 00:03:10,720

the goal is to involve more students and

64
00:03:16,149 --> 00:03:13,280
schools around the country and to use

65
00:03:19,110 --> 00:03:16,159
the t34 to do other types of classroom

66
00:03:20,229 --> 00:03:19,120
related studies including newton's laws

67
00:03:23,750 --> 00:03:20,239
of motion

68
00:03:27,030 --> 00:03:23,760
and microgravity research

69
00:03:30,070 --> 00:03:27,040
nasa's student remote sensing project