1
00:00:04,280 --> 00:00:02,659
big problem that we're all facing today

2
00:00:05,840 --> 00:00:04,290
is that the United States is falling

3
00:00:07,130 --> 00:00:05,850
behind other countries in science

4
00:00:09,890 --> 00:00:07,140
technology engineering and mathematics

5
00:00:12,169 --> 00:00:09,900
that's a big problem so the question is

6
00:00:14,780 --> 00:00:12,179
what we do our solution that we have is

7
00:00:17,180 --> 00:00:14,790
a project called imagine Mars where we

8
00:00:25,660 --> 00:00:17,190
ask students to imagine and design a

9
00:00:34,090 --> 00:00:31,630
I ASL Arabia Terra and um the reason in

10
00:00:36,820 --> 00:00:34,100
which we chose it was because it's a

11
00:00:39,700 --> 00:00:36,830
flat surface it's like a valley here

12
00:00:41,350 --> 00:00:39,710
this is my habitat on Mars but first we

13
00:00:43,869 --> 00:00:41,360

have the map here so pretty much

14
00:00:46,360 --> 00:00:43,879
explaining like our position and our

15
00:00:49,330 --> 00:00:46,370
purpose of setting up so right here is

16
00:00:52,540 --> 00:00:49,340
placed on a hellish planet and it's like

17
00:00:54,759 --> 00:00:52,550
the lowest surface on Mars but it was so

18
00:00:58,479 --> 00:00:54,769
many hair no head summer and Tony Senate

19
00:01:01,329 --> 00:00:58,489
eat Weiner why did you guys choose that

20
00:01:04,240 --> 00:01:01,339
particular location on Mars to pitcher

21
00:01:05,680 --> 00:01:04,250
community well since we're on Mars and

22
00:01:07,899 --> 00:01:05,690
it's far away from the Sun we want to

23
00:01:10,149 --> 00:01:07,909
try and get as much sunlight and he

24
00:01:11,950 --> 00:01:10,159
doesn't can imagine Mars fits into this

25
00:01:14,110 --> 00:01:11,960
process called project-based learning

26
00:01:16,090 --> 00:01:14,120
that means we give the students a task

27
00:01:17,920 --> 00:01:16,100
that they need to achieve and in order

28
00:01:20,140 --> 00:01:17,930
to achieve that tough they need to learn

29
00:01:23,320 --> 00:01:20,150
things along the way the task that we're

30
00:01:25,240 --> 00:01:23,330
giving them is they need to build a

31
00:01:28,350 --> 00:01:25,250
community on launch if you go to another

32
00:01:31,630 --> 00:01:28,360
planet you might as well start fresh and

33
00:01:34,920 --> 00:01:31,640
yeah healthier that's welcoming because

34
00:01:39,219 --> 00:01:34,930
I am the head of botany agriculture and

35
00:01:41,919 --> 00:01:39,229
I just i'm in charge of like the plants

36
00:01:45,730 --> 00:01:41,929
and what we're going to eat on nutrition

37
00:01:48,380 --> 00:01:45,740
plans which we won't eat meat no don't

38
00:01:51,090 --> 00:01:48,390

need help you

39
00:01:53,490 --> 00:01:51,100
they started on this process this

40
00:01:55,380 --> 00:01:53,500
exploration process to look into their

41
00:01:56,609 --> 00:01:55,390
own community figure out the things they

42
00:01:58,320 --> 00:01:56,619
liked about it and things that they

43
00:02:00,359 --> 00:01:58,330
would change and they worked with

44
00:02:01,679 --> 00:02:00,369
architects took tours of these amazing

45
00:02:03,690 --> 00:02:01,689
places like the Center for green

46
00:02:05,399 --> 00:02:03,700
technology and they saw how green

47
00:02:10,919 --> 00:02:05,409
technology was being used throughout the

48
00:02:13,979 --> 00:02:10,929
city and we went to the green technology

49
00:02:16,770 --> 00:02:13,989
center yeah a wall of plants think they

50
00:02:19,229 --> 00:02:16,780
didn't grow in saw you they grew it like

51
00:02:20,670 --> 00:02:19,239
out of water to hydroponics so that's

52
00:02:24,990 --> 00:02:20,680
what we basically used so we can grow

53
00:02:27,300 --> 00:02:25,000
our trees vegetables we also went to the

54
00:02:29,309 --> 00:02:27,310
conservatory and air quality was so

55
00:02:31,890 --> 00:02:29,319
perfect in there and it was all captured

56
00:02:34,020 --> 00:02:31,900
off so I guess if you have good captured

57
00:02:38,690 --> 00:02:34,030
off air maybe we can filter that errant

58
00:02:42,300 --> 00:02:38,700
two tanks to keep fit and also to

59
00:02:45,180 --> 00:02:42,310
conserve energy and a build up energy

60
00:02:47,630 --> 00:02:45,190
you have bikes hooked up to a main

61
00:02:50,070 --> 00:02:47,640
battery that's a secondary power source

62
00:02:51,660 --> 00:02:50,080
the students had amazing ideas they

63
00:02:53,880 --> 00:02:51,670

created a lot of solutions to living on

64
00:02:56,550 --> 00:02:53,890
the planet Mars but it didn't end there

65
00:02:58,800 --> 00:02:56,560
they had to visualize those ideas using

66
00:03:00,750 --> 00:02:58,810
3d architectural software

67
00:03:02,370 --> 00:03:00,760
and they only had a short time to do it

68
00:03:04,110 --> 00:03:02,380
but their energy and their excitement

69
00:03:06,839 --> 00:03:04,120
about their ideas really gave them

70
00:03:08,580 --> 00:03:06,849
momentum to learn this software and they

71
00:03:11,430 --> 00:03:08,590
went from not ever having touched or

72
00:03:13,440 --> 00:03:11,440
user software before to coming up with

73
00:03:17,590 --> 00:03:13,450
these amazing designs that that we see

74
00:03:23,360 --> 00:03:20,960
Sabet at is called zero Calvin first

75
00:03:26,300 --> 00:03:23,370
you'll notice this tower piece is called

76
00:03:31,010 --> 00:03:26,310
the solar tower solar tower is a 90-foot

77
00:03:33,500 --> 00:03:31,020
high tower full of photovoltaic thing we

78
00:03:36,530 --> 00:03:33,510
up here we had a total family it held

79
00:03:38,960 --> 00:03:36,540
with the heavy in the air we have an

80
00:03:41,480 --> 00:03:38,970
underground drilling system we drove

81
00:03:43,850 --> 00:03:41,490
into the surface of the ice once we get

82
00:03:46,940 --> 00:03:43,860
to the ice layer the ice surface which

83
00:03:49,699 --> 00:03:46,950
is like a subterranean I surface cuts on

84
00:03:53,210 --> 00:03:49,709
the ground it petite tip of the drill

85
00:03:55,940 --> 00:03:53,220
keeps the surface of the ice absorbs it

86
00:03:58,370 --> 00:03:55,950
blew the drill and it holds them these

87
00:04:00,860 --> 00:03:58,380
capsules these capsules they have a UV

88
00:04:02,940 --> 00:04:00,870

light at the top of them to destroy any

89
00:04:05,440 --> 00:04:02,950
type of bacteria

90
00:04:07,630 --> 00:04:05,450
this was exciting this was something to

91
00:04:11,680 --> 00:04:07,640
do for summer that wouldn't have

92
00:04:13,449 --> 00:04:11,690
happened without imaging mass and it was

93
00:04:15,610 --> 00:04:13,459
something that they can go back to

94
00:04:17,530 --> 00:04:15,620
school and report during the summer this

95
00:04:19,420 --> 00:04:17,540
is what I did and they can write a paper

96
00:04:21,370 --> 00:04:19,430
on it and they can apply the knowledge

97
00:04:24,250 --> 00:04:21,380
straight into the classroom which is

98
00:04:25,870 --> 00:04:24,260
really great because it emphasizes as i

99
00:04:29,129 --> 00:04:25,880
said before careers that normally

100
00:04:32,350 --> 00:04:29,139
wouldn't be exposed to kids technology

101
00:04:35,800 --> 00:04:32,360
science and all the other careers and

102
00:04:38,500 --> 00:04:35,810
the kids now are talking about being

103
00:04:41,860 --> 00:04:38,510
architects some of them being doctors

104
00:04:44,890 --> 00:04:41,870
some of them being scientists themselves

105
00:04:49,420 --> 00:04:44,900
or engineers so it's it's really just a

106
00:04:51,580 --> 00:04:49,430
great career open if you look at their

107
00:04:53,430 --> 00:04:51,590
project in the amount of time that they

108
00:04:56,110 --> 00:04:53,440
actually were working with the software

109
00:04:57,610 --> 00:04:56,120
and there's a means of transformation in

110
00:04:59,170 --> 00:04:57,620
their knowledge and then their skills

111
00:05:00,850 --> 00:04:59,180
and it just goes to show you what can