



1
00:00:00,000 --> 00:00:03,000
(music)

2
00:00:03,000 --> 00:00:06,000
How hard is it to land Curiosity on Mars?

3
00:00:06,000 --> 00:00:10,000
On a scale from one to 10, landing on Mars is a 20!

4
00:00:10,000 --> 00:00:12,000
Curiosity is the biggest, most capable Mars rover yet,

5
00:00:12,000 --> 00:00:15,000
and needs a new type of landing to reach the ground safely.

6
00:00:15,000 --> 00:00:17,000
In this seven-minute trip to the surface of Mars,

7
00:00:17,000 --> 00:00:21,000
we have to slow down from over 13,000 miles an hour down to zero.

8
00:00:21,000 --> 00:00:24,000
Hundreds of things have to go just right. Curiosity must:

9
00:00:24,000 --> 00:00:27,000
hit the atmosphere at just the right angle;

10
00:00:27,000 --> 00:00:30,000
endure extreme heat from friction as it descends through the atmosphere;

11
00:00:30,000 --> 00:00:33,000
open its parachute at just the right time;

12
00:00:33,000 --> 00:00:35,000
use radar to know exactly how high it is;

13
00:00:35,000 --> 00:00:37,000

free itself from the parachute;

14

00:00:37,000 --> 00:00:41,000

perfectly fire eight rocket engines to slow final descent;

15

00:00:41,000 --> 00:00:43,000

drop down, dangling on four cables;

16

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

lock its wheels in place just before landing;

17

00:00:46,000 --> 00:00:48,000

and cut the cables right at the moment of touchdown.

18

00:00:48,000 --> 00:00:52,000

And even if we do everything right, Mars can always surprise us.