



1  
00:00:05,269 --> 00:00:02,550  
okay well what i have here is a little

2  
00:00:06,710 --> 00:00:05,279  
cup i made from an overhead transparency

3  
00:00:10,709 --> 00:00:06,720  
film that i found

4  
00:00:12,950 --> 00:00:10,719  
and i'm gonna roll the video now and

5  
00:00:16,470 --> 00:00:12,960  
i've also got a bag of coffee and it and

6  
00:00:18,310 --> 00:00:16,480  
we can suck our coffee out from a bag

7  
00:00:20,230 --> 00:00:18,320  
but don't drink it from a cup it's hard

8  
00:00:22,310 --> 00:00:20,240  
to do because you can't pick the cup up

9  
00:00:23,830 --> 00:00:22,320  
and get the liquid out and it's also

10  
00:00:27,109 --> 00:00:23,840  
easy to slosh

11  
00:00:29,509 --> 00:00:27,119  
so with the special shape of this cup

12  
00:00:35,350 --> 00:00:29,519  
the surface tension forces will

13  
00:00:37,830 --> 00:00:35,360

wick the coffee up along the edge there

14

00:00:39,910 --> 00:00:37,840

and as you can see as i'm putting some

15

00:00:42,229 --> 00:00:39,920

coffee there in the bag

16

00:00:44,549 --> 00:00:42,239

and the way this works is

17

00:00:46,630 --> 00:00:44,559

one the cross of this cup looks like an

18

00:00:49,190 --> 00:00:46,640

airplane wing

19

00:00:52,389 --> 00:00:49,200

and the sharp angle

20

00:00:55,029 --> 00:00:52,399

the the the narrow angle there will wick

21

00:00:56,869 --> 00:00:55,039

the the coffee up and this is what we

22

00:01:00,229 --> 00:00:56,879

use when we design fuel tanks for

23

00:01:02,549 --> 00:01:00,239

rockets to reignite in a weightless

24

00:01:04,950 --> 00:01:02,559

environment the veins in the tanks will

25

00:01:06,390 --> 00:01:04,960

wick the fluid into the suction port and

26

00:01:09,350 --> 00:01:06,400

if that angle

27

00:01:11,190 --> 00:01:09,360

is less than two times 90 minus the

28

00:01:13,670 --> 00:01:11,200

contact wetting angle then the liquid

29

00:01:15,670 --> 00:01:13,680

will rise like that so knowing this for

30

00:01:17,910 --> 00:01:15,680

a fuel tank you can make it into a cup

31

00:01:19,270 --> 00:01:17,920

and drink your fluid from

32

00:01:21,910 --> 00:01:19,280

so you could just

33

00:01:24,230 --> 00:01:21,920

sit there right on the edge of the cup

34

00:01:26,789 --> 00:01:24,240

and as you sit more fluid just keeps

35

00:01:29,590 --> 00:01:26,799

coming up and up and up and you can

36

00:01:32,069 --> 00:01:29,600

enjoy a cup of coffee in a weightless

37

00:01:34,710 --> 00:01:32,079

environment without having a separate

38

00:01:36,469 --> 00:01:34,720

from a bag

39

00:01:38,149 --> 00:01:36,479

and you could just keep dipping and

40

00:01:41,830 --> 00:01:38,159

sipping and sipping

41

00:01:45,030 --> 00:01:41,840

clear down to the last drop in the cup

42

00:01:47,590 --> 00:01:45,040

oh of course i did i mean and this may

43

00:01:50,149 --> 00:01:47,600

very well be what future space colonists

44

00:01:54,230 --> 00:01:50,159

end up using when they want to have a

45

00:01:55,990 --> 00:01:54,240

celebration and do a toast they can uh

46

00:01:58,469 --> 00:01:56,000

sip their coffee

47

00:02:00,389 --> 00:01:58,479

and their tea from cups like this like

48

00:02:02,389 --> 00:02:00,399

we do down here on earth without having

49

00:02:04,149 --> 00:02:02,399

to suck them from a bag

50

00:02:06,149 --> 00:02:04,159

i didn't want to take any ceramic up

51  
00:02:09,109 --> 00:02:06,159  
here

52  
00:02:12,309 --> 00:02:09,119  
or glass so i had god we really enjoyed

53  
00:02:16,150 --> 00:02:14,309  
and these advances and you can see i'm

54  
00:02:18,150 --> 00:02:16,160  
continuing to suck the coffee out or

55  
00:02:20,229 --> 00:02:18,160  
actually sip the coffee because we're no

56  
00:02:22,390 --> 00:02:20,239  
longer sucking out of a bag now we're

57  
00:02:25,110 --> 00:02:22,400  
we're drinking from a cup

58  
00:02:28,070 --> 00:02:25,120  
and the water the coffee continues to

59  
00:02:29,350 --> 00:02:28,080  
climb up that acute angle

60  
00:02:33,830 --> 00:02:29,360  
and

61  
00:02:38,949 --> 00:02:36,470  
good to the last drop

62  
00:02:43,430 --> 00:02:41,270  
that's uh the end of the video i wanted

63  
00:02:45,750 --> 00:02:43,440

to share that with you a little

64

00:02:46,949 --> 00:02:45,760

discovery we made by using a little