

The Eureka Challenge Video Transcript

Music Plays

Graphic Text Display

Victorian Maths Challenge.

The Eureka Challenge.

SCENE 1

Host

Hi! Welcome to the Eureka Challenge. I'm Richa and I'm a Geotechnical Engineer. Geotechnical engineering is a branch of civil engineering that deals with the engineering behaviour of earth materials.

That's why I'm here, underground, to see how the foundations down here are supporting the structure up there.

<Host points to solid, underground corridor walls surrounding her, then up to the ceiling>

Geotechnical engineers are involved in the construction of many structures, including roads, tunnels, bridges, dams, and of course, towers.

Eureka tower, after which this challenge is named, is a 300metre high skyscraper located in Melbourne. At the time of its completion, it was one of the tallest residential buildings in the whole world.

Interestingly, the site of the Eureka tower's construction is an area of reclaimed swampland, so the tower has special foundations to reflect this.

Graphic Animation

A skyscraper emerges showing the deep foundations underground. Moving arrows point one direction above ground, and the opposite direction below ground, to demonstrate the host's point.

Host (off-screen)

Tall buildings need deep foundations, this is why a significant part of the building is constructed underground, to support the part that's above the ground. If something tries to push the top of the building to one side, the foundations effectively resist

and push it back in the opposite direction. In other words, they help to counter the movement that would make the building topple to one side.

Host

In this challenge, you won't have to go underground, but you will have to think about the stability of your structure, and how the height and weight affects it.

Using these maths concepts, you and your family will try to build the highest paper tower you can.

SCENE 2

Graphic Text Display

Maths Concepts.

Host

Look around the room you're in. They'll be some walls, a roof and maybe some pillars. Your walls will be spaced quite far apart, because they're strong; they're made of things like brick, timber or concrete. In relation to paper, that's much stronger!

But, when you make your own paper tower, the walls will have to be much closer together, because they're not as strong.

To build the tallest tower possible, you'll need to consider that the taller your tower becomes, the less stable it's going to be. As the height of your tower increases, its weight increases as well. This puts more pressure on the bottom half of your tower.

Be careful. In the 'Keep Going' section of this challenge you will try and put as much weight as possible on to our tower, so make sure you have a strong base.

Think about the design of your tower, how can you build it so the bottom part can support as much weight as possible?

SCENE 3

Graphic Text Display

The Challenge

Host

Time to get building! You will need some paper, some sticky tape, and a ruler to measure the height of your tower. As a family, you're ready to go!

Well that's it from me. Remember to take lots of photos and videos and share them on the challenge page.

Good luck with your tower!

<Host and viewer hears a few bangs, seemingly coming from the corridor walls>

I better check that!!

Graphic Text Display

The Education State. Victoria State Government.

Music Stops