



# Propping up Pisa

## STEM Activity guide

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## Aim

This activity is intended for use as a drop-in activity at careers conventions. It uses the famous structure of the Leaning Tower of Pisa to teach participants about the importance of building structures on suitable ground conditions.

## Instructions

Challenge the participants to rebuild the Tower of Pisa (but straight!). Give them the tower segments and explain they have to build the tower as high as they can on the base provided.

They will get to about 4-5 segments before the tower falls down due to the instability of the sponge – just like the instability of the soil under the real tower.

Ask the participants why they think the tower falls down. You can talk about the real Leaning Tower of Pisa in Italy, explaining that it got its name because it started to lean while it was being built. This was because the soil below was too soft and as one side of the tower sank, the builders compensated by off-setting the new layers of construction going up.

Let the participants explore ideas for rebuilding the tower. If required, you can suggest the use of piles and challenge them to rebuild the tower with the plastic piles going into the 'bedrock' (plasticine). Try to guide them through the solution rather than 'giving the answer away'!

Reset the activity by removing the plastic piles and deconstructing the tower.

### More information

Please note that the Leaning Tower of Pisa was 'saved' by civil engineers in the early 2000s (it was in danger of imminent collapse) but the solution they used was not piles but grouting of the soil and some steel supports inside the structure.

## Materials provided:

- 10 x tower segments
- 1 x transparent Perspex tray
- 1 (+1 spare) sponge layer with hexagonal cuts (representing soil)
- 1 (+1 spare) thin felt layer with hexagonal cuts (representing grass)
- 1 x layer of plasticine (representing bedrock)

## Borrow the Propping up Pisa kit

If you want to borrow the Propping up Pisa kit please contact us at [careers@ice.org.uk](mailto:careers@ice.org.uk)

You will need to commit to return the kit safely back to ICE following your event.