



Engineering in the News

Monday 2 November 2026

Born to Engineer · a 10-minute tutor time pack

Three stories this week: flood defences, a pocket eye scanner and an electric railway

Duct tape beats sandbags in flood tests



Image: Chris Gallagher on Unsplash

CONSTRUCTION AND INFRASTRUCTURE

- University of Hull engineers flooded six types of front door to a depth of 60 cm.
- Duct tape on the outside cut leakage by 97 to 98%.
- A wall of 54 sandbags managed only about 70%.

The science behind it

Pressure in liquids rises with depth: $p = \rho gh$ (GCSE Physics, forces)

Jobs behind the story

Hydraulic engineer · Laboratory technician

A hospital eye scanner shrunk onto a chip



Image: Siloton

HEALTH

- Bristol start-up Siloton has won £8.4 million to build a handheld eye scanner.
- Its photonic chip does the job of a desktop OCT machine.
- Clinical trials will run at Sunderland Specialist Eye Hospital.

The science behind it

Light reflects off each layer of the retina and the waves interfere (A-level Physics, waves)

Jobs behind the story

Photonics engineer · Biomedical engineer

Wales electrifies its Valleys railway



Image: Transport for Wales

TRANSPORT

- Transport for Wales has finished electrifying 170 km of track in the South Wales Valleys.
- Under low Victorian bridges, trains switch to batteries.
- The project won the top prize at the 2026 construction and infrastructure awards.

The science behind it

Batteries store energy, then recharge from the wires (GCSE Physics, electricity)

Jobs behind the story

Electrification engineer · Track engineer

Five-minute debate

Pick a statement. Half the group argues for it, half against.

1

Flood defences

Every home in a flood risk area should keep a roll of duct tape by the front door.

2

Eye scanner

Health checks done at home will one day replace most hospital appointments.

3

Railway

Batteries are a smarter fix than rebuilding every low Victorian bridge.

Two-minute challenge

Estimate how hard a 60 cm flood pushes on a front door 0.9 m wide.

1

Pressure at the bottom

$$p = 1,000 \times 9.81 \times 0.6 \approx 5,900 \text{ Pa}$$

2

Average over the wet door

$$\text{Half: } 2,943 \text{ Pa on } 0.9 \times 0.6 = 0.54 \text{ m}^2$$

3

Force = pressure × area

$$2,943 \times 0.54 \approx 1,600 \text{ N}$$

Answer

About 1,600 N

The weight of a 162 kg mass,
pressing on the bottom of one door.

More stories: borntoengineer.com/stem-news

Supports Gatsby Benchmark 4: linking curriculum learning to careers.