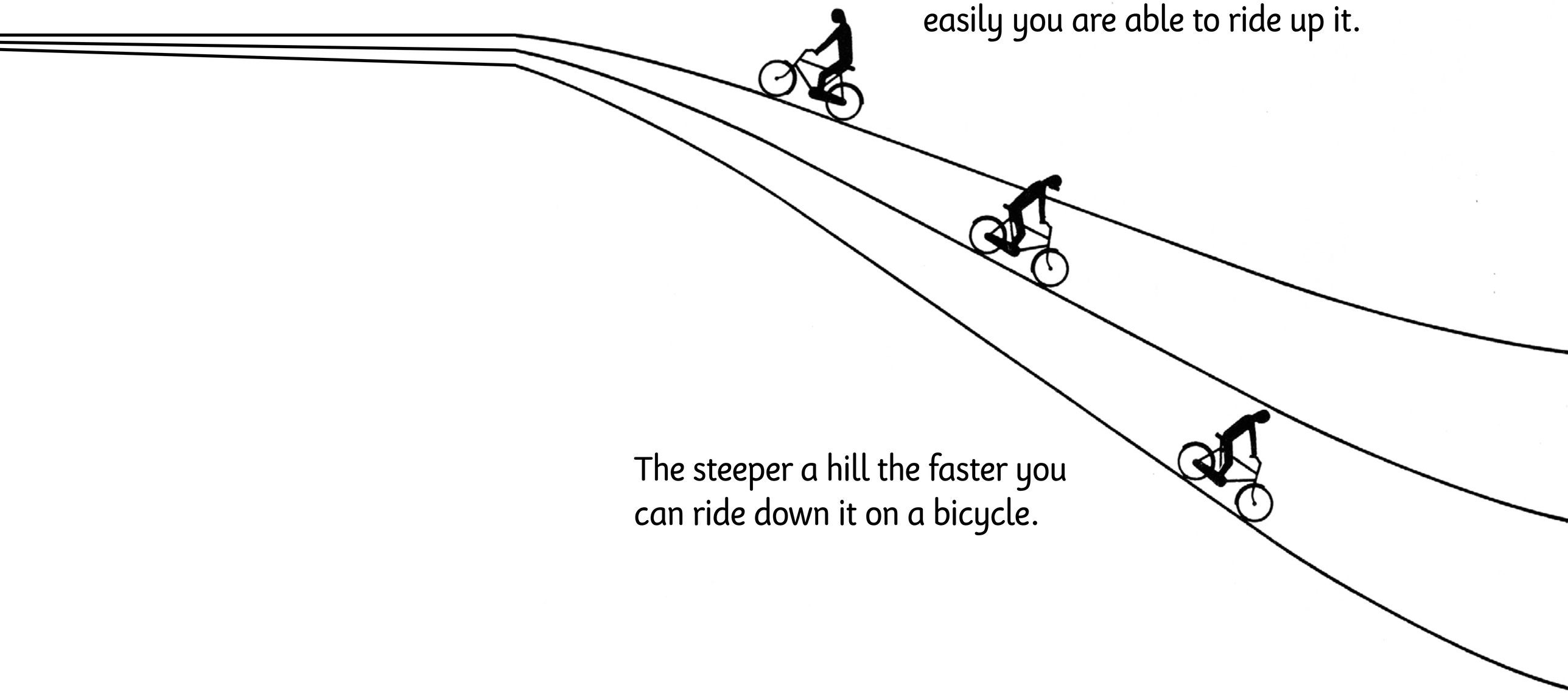
Visual science

# Distance, height and energy

- Touch the pink buttons and see what happens.
- Use the arrows to move backwards and forwards.
- Touch the cross to close a window.

# Distance, height and energy

The less steep the hill the more easily you are able to ride up it.

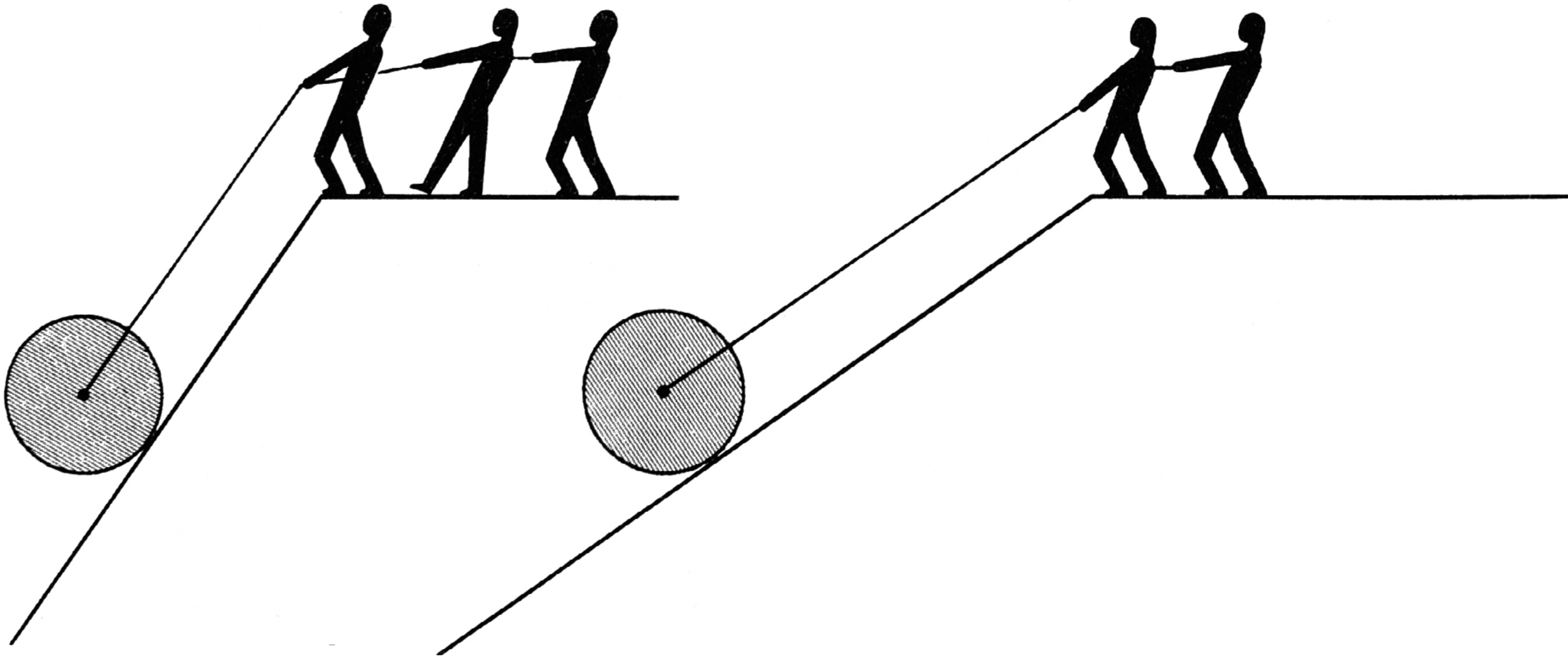


The steeper a hill the faster you can ride down it on a bicycle.

# Distance, height and energy

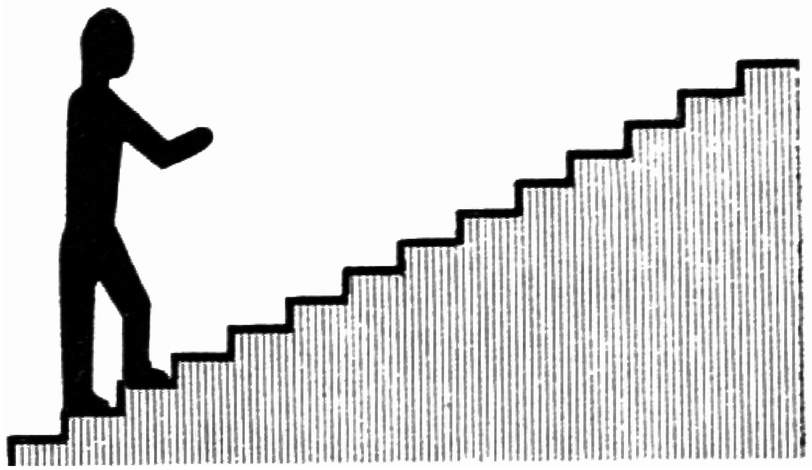
Three people can pull this weight up a steep slope.

Two people can pull it up a gentler slope.

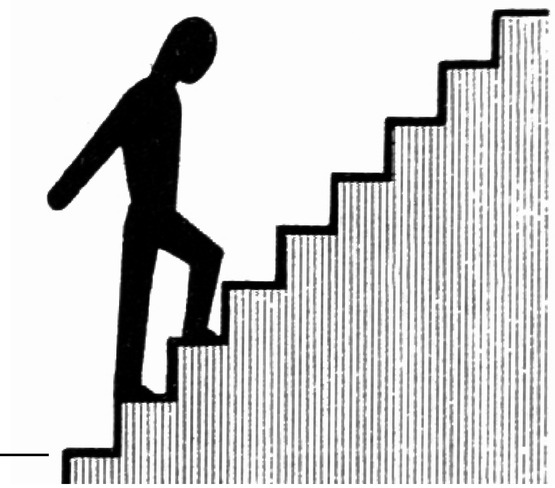


# Distance, height and energy

To reach the same height, all three spend the same amount of energy.



The person on the gently rising stairs uses little energy per step, but has to climb quite a long way.

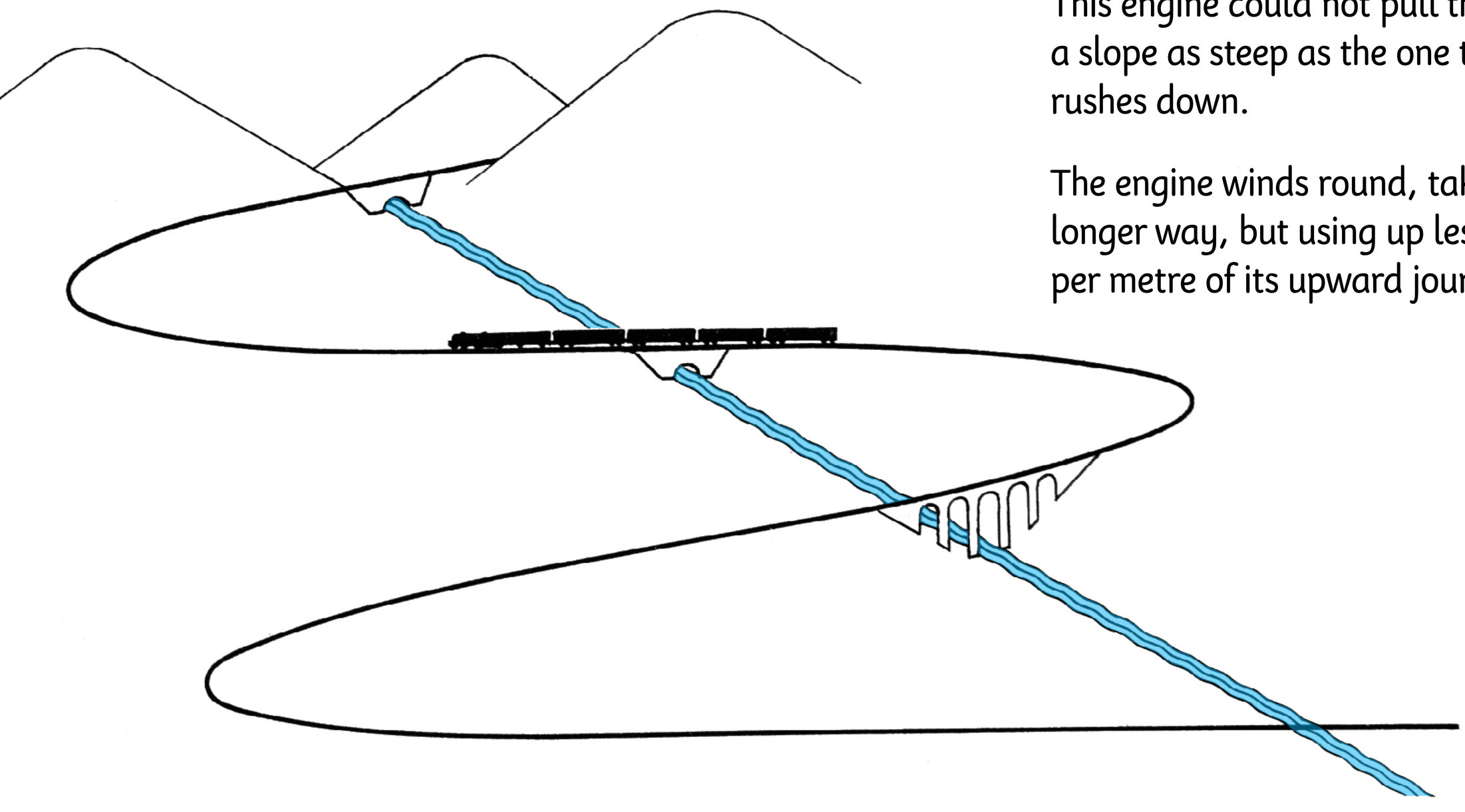


The person on the steep flight of stairs uses more energy climbing each step, but has fewer steps to climb.

The person on the ladder uses even more energy on each step of his climb, but they only have to climb a few steps.

# Distance, height and energy

Why does the train travel uphill in a long winding route instead of in a shorter straight line?



This engine could not pull the train up a slope as steep as the one the river rushes down.

The engine winds round, taking a longer way, but using up less energy per metre of its upward journey.