



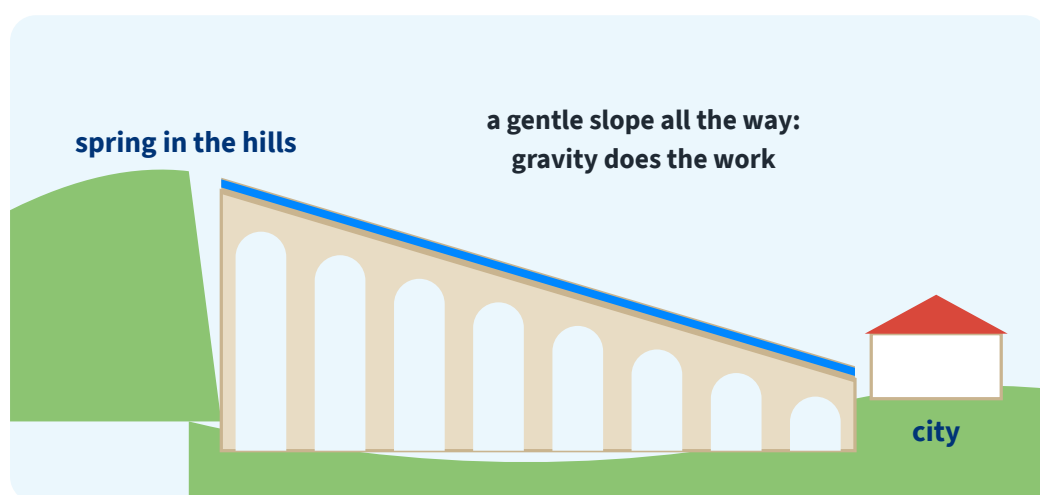
Design Challenge: Build an Aqueduct 设计引水渠

NAME _____

PERIOD _____

DATE _____

A town is 10 km from a spring in the hills. Design an **aqueduct** 引水渠 that brings the water to the town, **with no pumps**: only gravity.



1. Plan

- ☐ The water channel goes **downhill the whole way**, gently
- ☐ Where the land dips (a valley), the channel goes over **arches**
- ☐ Where a hill is in the way, the channel goes **through a tunnel** or around it
- ☐ The channel is **covered**, to keep the water clean

2. Sketch your aqueduct

Draw the spring, the town, and your aqueduct between them. Label: **spring**, **channel**, **arches**, **town**, and the **slope**.

SIDE VIEW: SPRING ON THE LEFT, TOWN ON THE RIGHT



3. Explain

a. Why must the channel slope down *gently*, not steeply?

b. Why did Romans build arches instead of a solid wall across a valley? (Think: stone, weight, water from rain.)

c. Name one thing a Roman city used aqueduct water for.

✓ ANSWER KEY

a. Too steep and the water rushes, wears away the channel and can overflow; Roman channels often dropped only a few meters over many kilometers. **b.** Arches use much less stone, are lighter, and let rivers, rain and people pass underneath. **c.** Public baths, fountains, toilets, homes, farms, mills.