

Pressure

Name:

Date:

INQUIRY

A person in high heels sinks into soft ground, but someone in snow boots doesn't. Both weigh the same. Why?

Discuss with your partner. Write your initial ideas below:

Key Vocabulary

Term	Definition
Pressure	Force / area. Units: N/m ² or Pa.
Pascal (Pa)	1 Pa = 1 N/m ² .

Part A — Calculating

1. A box weighs 600 N and has base area 2 m². Calculate pressure. [2 marks]

Show your working:

2. A 60 kg student stands on one foot (area 0.015 m²). Calculate force (weight = mass x 10) then pressure. [3 marks]

Show your working:

Part B — Application

3. Explain why: (a) Knives are sharp (b) Tractor tyres are wide (c) Camels have broad feet. Use the pressure formula in each answer. [3 marks]

4. A Korean snowboard (area 0.45 m^2) vs a ski boot (area 0.04 m^2). Rider weighs 600 N . Calculate pressure for each. Which sinks less in snow? [3 marks]

Show your working: