

# VOLUME OF PRISMS

## INVESTIGATION

### CAN MY CLASS BEAT A WORLD RECORD?



Two Guinness World Records for the most people to fit into a vehicle are:

- 30 people from an Austrian Youth Club into a VW Golf
- 354 English pupils into a 56-seater double-decker bus.

Here are the rules:

- All persons must be over 18 years of age.
- All persons must be over 1.525 metres tall.
- A standard production car must be used.
- No seats or other standard car parts may be removed.
- Windows, door, bonnet and boot must be closed on completion.
- The engine must be started on completion.
- 10 minutes is the maximum time allowed.

Because our class members are too young to attempt a world record, we'll use mathematics to calculate the total volume of all the students in our class, the volume of the teacher's car and then work out if we could break our own world record.

To calculate the volume of each student, assume that:

- The torso is a rectangular prism
- The head, neck, arms and legs are cylinders.

### WHAT'S MY VOLUME?

Ask a classmate to measure you.

Vertical length of head = _____cm	Width side to side = _____cm	Width top to chin = _____cm	Volume of my rectangular prism head =
Vertical length of my neck = _____cm	Diameter of my neck = _____cm	Volume of my cylindrical neck =	
Length of my arm = _____cm	Width of my arm = _____cm	Volume of my 2 cylindrical arms =	
Length of my leg = _____cm	Width of my leg = _____cm	Volume of my 2 cylindrical legs =	
MY TOTAL VOLUME = _____			

### WHAT'S THE CLASS VOLUME?

Total class volume = \_\_\_\_\_

### WHAT'S THE ESTIMATED INTERNAL VOLUME OF MY TEACHER'S CAR?

Total car volume (excluding the boot) = \_\_\_\_\_

WILL WE FIT? \_\_\_\_\_