

## Barbie and Body Measurements

1. **Measure** your:

- height
- arm span
- length of index finger
- length of nose (bridge to point)
- head circumference
- wrist circumference.

(Work in pairs or small groups to make the measuring easier.)

2. **Record** your personal measurements on a single class list (**spreadsheet**).

3. Also **record** your personal measurements in the left column of the table below.

Name:			Barbie		
Body part	Measurement	% of Height	Body part	Measurement	% of Height
height			height		
arm span			arm span		
index finger			index finger		
nose			nose		
head			head		
wrist			wrist		

4. Now calculate and record the **ratio** of each measurement to your height, and convert this to **percentage** of height. **Record** this personal information in the “% of height” column.

5. **Compare** the % of height data for members of your group.

6. We will also use **spreadsheet formulae** to calculate **ratios** of body parts to heights for the whole class (using decimal or percentage representation).

7. Now we’ll use **spreadsheet formulae** to find the **mean** (average) of each body ratio for the class. What similarities and any differences do you notice? What is the physical meaning of these?

8. Make similar **measurements** for **Barbie** and record these in the table above. Calculate her body **ratios** (express also as percentage of height) and record these. **Compare** her proportions with the average proportions of human students calculated from our class set of data.

**Is Barbie a realistic representation of human proportions?**

**What would Barbie look like if she was scaled up to human height?**