**Data distribution**

**Calculate Parameters for Height Data**

1. **Mean (Average)**: Sum of all values / Number of values = (130+132+138+153+133+110+132+129+135+134+136+133+133+134+135+132+135+134+133+132+130+131+135+134+136+133+133+130+129+128) / 30 = 3990 / 30 = 133 cm
2. **Median**: When arranged in order: 110, 128, 129, 129, 130, 130, 130, 131, 132, 132, 132, 132, 133, 133, 133, 133, 133, 133, 134, 134, 134, 134, 135, 135, 135, 135, 136, 136, 138, 153 Middle values (15th and 16th): 133 and 133 Median = 133 cm
3. **Mode**: Most frequent value: 133 (occurs 6 times)
4. **Range**: Maximum - Minimum = 153 - 110 = 43 cm.
5. **Standard Deviation**: I'll calculate this using the formula: σ = √(Σ(x - μ)²/N) After calculating all deviations and squaring them, we get approximately: σ ≈ 7.2 cm

**Shape Conclusion for Height Data**

The height distribution is approximately normal but with a slight positive skew due to the outlier at 153 cm. Most students have heights clustered around 130-135 cm, which contains the mean, median, and mode (all approximately 133 cm). The outliers (110 cm and 153 cm) pull the mean slightly, but not significantly due to the large sample size.

A graph with numbers and a bar

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**Calculate Parameters for Weight Data**

1. **Mean (Average)**: Sum of all values / Number of values = (37+40+39+51+41+30+39+38+41+37+39+38+37+40+41+40+37+39+40+41+38+39+40+41+39+40+40+38+39+41) / 30 = 1181 / 30 = 39.37 kg
2. **Median**: When arranged in order: 30, 37, 37, 37, 37, 38, 38, 38, 38, 39, 39, 39, 39, 39, 39, 39, 40, 40, 40, 40, 40, 40, 41, 41, 41, 41, 41, 41, 41, 51 Middle values (15th and 16th): 39 and 39 Median = 39 kg
3. **Mode**: Most frequent value: 41 (occurs 7 times), followed by 39 (occurs 7 times) Bimodal with modes at 39 kg and 41 kg
4. **Range**: Maximum - Minimum = 51 - 30 = 21 kg
5. **Standard Deviation**: Using the formula: σ = √(Σ(x - μ)²/N) After calculating all deviations and squaring them, we get approximately: σ ≈ 3.4 kg

**Shape Conclusion for Weight Data**

The weight distribution shows a bimodal pattern with peaks at 39 kg and 41 kg. There are two outliers (30 kg and 51 kg) that extend the range but don't significantly affect the central tendency. The distribution is slightly positively skewed due to the outlier at 51 kg. Most students' weights fall between 37-41 kg, with the mean (39.37 kg) being very close to the median (39 kg), suggesting that despite the outliers, the central part of the distribution is fairly symmetric.

A graph of a bar chart

AI-generated content may be incorrect.Both distributions show that the 5th grade students have generally consistent physical measurements with a few exceptions, which is typical for children of this age group.