



Understanding Math Kangaroo Rankings and Percentiles

How Math Kangaroo Ranks Are Determined

In Math Kangaroo, **both national and state ranks are assigned within each grade level based on students' scores**, from the highest to the lowest nationwide and within each state, respectively.

- Students are ranked by score, starting with the highest score.
- Students who earn the same score receive the same rank.
- The next student receives the next consecutive rank, even if previous ranks were shared.

This approach ensures that students with the same score are recognized equally, while still maintaining a clear and continuous rank order.

For example:

If three students receive the top score, they all get Rank 1. The next student (with the next highest score) will receive Rank 2, not Rank 4.

How Math Kangaroo Percentiles Are Calculated

Math Kangaroo calculates both National Percentiles and State Percentiles using the following standard formula:

$$\text{Percentile} = [(M + (0.5 \times R)) / Y] \times 100$$

Where:

- **M** = Number of students who scored below the student's score
- **R** = Number of students who scored exactly the same as the student
- **Y** = Total number of Y = Total number of students in the same grade (nationally or within the state)

This method ensures that **students with the same score receive the same percentile and rank**. Rankings and percentiles are based solely on score—national results include students from all locations, while state results are calculated within each state.

For example:

A Grade 5 student took the test in their state, where 200 students participated ($Y = 200$). 120 students scored lower ($M = 120$) and 10 scored the same ($R = 10$).

$$\text{Percentile} = [(120 + 0.5 \times 10) / 200] \times 100 = 62.5$$

The student's State Percentile is 62.5, meaning they scored better than approximately 62.5% of Grade 5 students in their state.