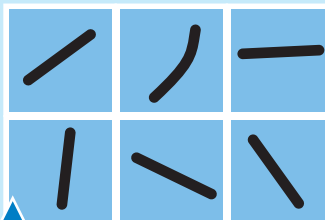
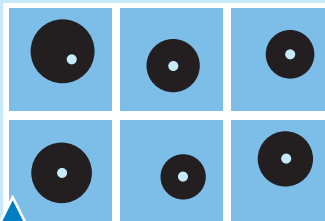


Humans may have core knowledge of geometry

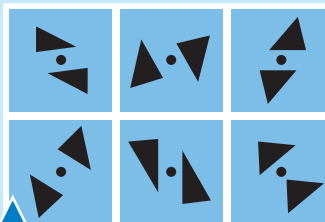
New research suggests that conceptual principles of geometry are inherently present in the human mind. *Mundurukú Indians*, isolated deep in Brazil's Amazon, showed that they understood concepts of geometry even though they do not have words for these concepts



Test idea of Euclidian geometry



Metric properties



Geometrical transformation

Procedure

14 Mundurukú children and 30 adults are asked, in Mundurukú language, to point to "weird" or "ugly" image from series of 45 slides. Each slide shows six images, among which is an "intruder"

Performance

Percentage of Mundurukú choosing correct intruder

Euclidian geometry 84%

Geometrical figures 79%

Topology 76%

Symmetrical figures 67%

Metric properties 62%

Chiral figures 56%
(intruder is mirror image)

Geometrical transformations 35%

*Performance of uneducated Mundurukú is identical to that of American children**



*Tests also performed by 26 American children (aged 6-13) and 28 adults (aged 17-49) at Harvard psychology department

Source: Science

Pictures: Alexandre Meneghini, Associated Press

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