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**From:** jeffrey E. <jeevacation@gmail.com>  
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**To:** Barnaby Marsh

Combinations in the Sample Space <<http://mathforum.org/dr.math/faq/faq.prob.intro.html#note>>

In a two-child family, there are four and only four possible combinations of children. We will label boys B and girls G; in each case the first letter represents the oldest child:

{BB, BG, GB, GG}

When we know that one child is a boy, there cannot be two girls, so the sample space shrinks to:

{BB, BG, GB}

Two of the possibilities in this new sample space include girls:

{BG, GB}

and since there are two combinations out of three that include girls, the probability that the second child is a girl is 2/3.

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