

Hints, Advice  
and Info

## Mini-Contests



### Numbers Between the Pairs\*

We have a brainteaser that we have spent many hours on and cannot solve.

Thanks, Mitchell W.

Grade 4

Arrange the numbers 1, 1, 2, 2, 3, 3,....., 15, 15, 16, 16 in such a way that there is one number between the ones and two numbers between the twos and three numbers etc... and so on up to sixteen numbers between the sixteens.

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\* This puzzle is an extended version of Langford's problem.

July 7, 2004

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### Numbers Between the Pairs (solution)

There is a lot of solutions to this puzzle. Bellow we show some of your solutions with interesting comments.

#### Solution by Thiago Alexandre dos Santos

After a lot of thinking I finally solve this brain teaser.  
here's the answer:

8-9-10-11-12-13-14-15-16-8-7-9-3-10-5-11-3-12-7-13-5-  
14-6-15-2-16-4-2-1-6-1-4

#### Solution by Lee Root

I solved this by putting the numbers in a spread sheet  
and solving like a jigsaw puzzle

1.1  
2..2  
3...3  
16.....16

my answer is...

8, 9, 10, 11, 12, 13, 14, 15, 16, 8, 7, 9, 3, 10, 5, 11, 3, 12,  
7, 13, 5, 14, 4, 15, 6, 16, 2, 4, 1, 2, 1, 6

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### Solution by Hennie van der Merwe

The correct answer is:

6; 8; 11; 16; 12; 3; 5; 6; 14; 3; 8; 13; 5; 4; 11; 15; 10; 12;  
4; 9; 16; 2; 7; 14; 2; 13; 1; 10; 1; 9; 7; 15

Kept me out of work for a while. Thanks

Solution by Big Trev

4, 6, 3, 5, 15, 4, 3, 14, 6, 5, 7, 16, 10, 13, 2, 9, 12, 2, 7,  
11, 15, 8, 14, 10, 1, 9, 1, 13, 16, 12, 8, 11

You're right puzzles are great, but it'll be 1am before I get  
to bed and I have a busy day tomorrow!

Still, I have done it.  
Cheers for the puzzle...

### Solution by Alan Lemm

I have so far found 183 solutions to this puzzle. Below  
are two of them:

16-14-15-4-8-13-5-12-4-1-11-1-5-8-9-10-14-16-15-13-12-  
7-11-6-9-2-10-3-2-7-6-3

16-14-15-7-8-13-1-12-1-5-10-7-9-8-11-5-14-16-15-13-12-  
10-9-6-4-2-11-3-2-4-6-3

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### Solution by NickyG

I found an order: 9, 7, 10, 11, 12, 13, 14, 15, 16, 7, 9, 8, 5, 10, 1, 11, 1, 12, 5, 13, 8, 14, 6, 15, 3, 16, 4, 2, 3, 6, 2, 4.

I doubt this is the only one, though. I can't see an easy way to do this - I started by taking the large numbers first, writing down 8,9,10,11,12,13,14,15,16,8,,9,, 10,, 11,, 12,, 13,, 14,, 15,, 16 (where dot is a gap) and tried to fill in the gaps with the smaller numbers with something like 7,,6,,5,,4,,7,6,5,4. I couldn't get that to work, so I moved the 8s from the larger to the smaller numbers and tried again. This didn't work so then I thought about putting numbers around the clump of consecutive numbers on the left hand side of the list of larger numbers (the 8-16 clump). I made this clump smaller (in my solution it is 10-16) so I could fit the 7s round it, and then the 9s around the 7s. Then I managed to fill the gaps with the leftover numbers. I seemed to find my solution a bit by chance, which makes me think there are others.