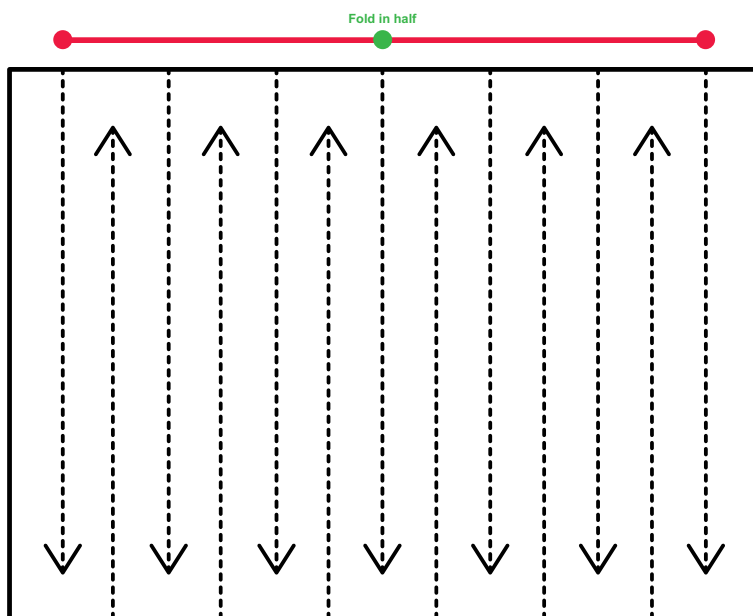




# Ivarr the Boneless

Find out how Ivarr the Boneless made one ox's hide wrap around land the size of a town. Using the same trick, how well will you do?

**Can you climb through a sheet of A4 card?  
Bet you can!**



1. Measure the **perimeter** of an A4 piece of card by adding up all of its sides.
2. Fold the card in half. Keep the folded edge at the top where the red line is.
3. Copy the picture above using a pencil. You can draw as many lines as you like and make the lines as close as you like. **BUT** if you make the space in between the lines too thin, the paper may rip when you open it out in a moment.
4. Cut along the dotted lines but stop when you get to the arrow head – don't cut all the way through.
5. Now cut along the fold you made but only along the part shown with the red line above. **DON'T** go right to the ends of the folded paper or you'll just have a heap of hamster bedding!
6. Open up the paper to form a big hoop. (If it tears you can always repair it with tape.)
7. Now...can you climb through a piece of A4 paper?
8. Measure how long the hoop of paper is now – this is your perimeter.
9. How many classmates can you fit inside your hoop?
10. Record all your results in the table below.

## results:

1. Perimeter of your A4 card (**BEFORE** you cut it up) \_\_\_\_\_
2. Perimeter of your hoop (**AFTER** you cut it up) \_\_\_\_\_
3. Number of classmates that can fit inside your hoop \_\_\_\_\_
4. Can you use multiplication and Pi to work out the maximum surface area of:
  - a sheet of A4 card? \_\_\_\_\_ cm<sup>2</sup>
  - your hoop? \_\_\_\_\_ cm<sup>2</sup>
5. How much bigger is the area covered by your hoop? \_\_\_\_\_ cm<sup>2</sup>
6. What percentage increase is this? \_\_\_\_\_ %