Evaluating Risk: Are bacon sandwiches bad for you?



What does a 20% risk on top of a 5% risk really mean?

The chance that someone gets bowel cancer at some point in their life is 5% - but what does 5% really mean?		
1.	Colour 5% of the 100 smiley faces on this grid - choose faces randomly.	
2.	Colour a random 5% of the 60 smiley faces on this grid.	
3.	 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	
	For each of the questions above, write the number of coloured faces as a fraction of the total number of faces in the grid, then simplify it as far as possible.	
	What is 5% as a fraction?	

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The extra risk of getting bowel cancer if a person eats a bacon

sandwich every day is 20% - so what does that mean? On the next three grids, colour a random 20% of the smiley faces.		
5.	What is 20% of 100 smiley faces?	
6.	What is 20% of 10 smiley faces?	
	$\bigcirc \bigcirc $	
7.	What is 20% of 25 smiley faces?	
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8.	For each of these three questions, write the number of coloured faces as a fraction of the total number of faces in the grid, then simplify it as far as possible.	
	What is 20% as a fraction?	
What happens when we combine the basic risk of getting bowel cancer (5%) with the extra risk due to bacon sandwiches (20%)?		
9.	On each of your first three grids, see how many smiley faces are coloured in. Work out what 20% of that number is, then colour that additional number of faces in a different colour. These are the extra cases of bowel cancer caused by bacon sandwiches.	
	You may find that you do not have whole numbers of people. In that case, just shade part of a smiley face to represent the fraction after the decimal point.	

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What is 20% of 5% as a percentage, a decimal and a fraction?