



What is the Chance of Getting Struck by Lightning Globally?

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Rationale

A dramatic, dark sky with heavy, swirling clouds. A bright, glowing light source, likely a lightning bolt or a bright sun breaking through, illuminates the center of the frame, creating a stark contrast with the surrounding dark, stormy atmosphere.

The reason we chose this topic was because neither of us could really think of a suitable topic but then it struck our heads that it would be amazing if we did 'What is the Chance of getting struck by lightning?' and we both thought it was interesting.



Our Aim And Was It Achieved

Our aim in this project was mainly trying to find out what the chance of getting struck by lightning was and the increase and decrease of lightning strikes and deaths caused by lightning, approximately. Our Aim has been achieved and we can conclude that the chance of getting struck by lightning is 0.000250572093.

The Curriculum We Based Our Work On

		5 Exceed expectations of students learning level	4	3 Evident and appropriate to learning level	2	1	0 Not evident
Investigation process	Choice of topic	1. Provides an appropriate aim or learning intention. Predicts results and/or describes a hypotheses to be tested.					
		2. Explains how and why they chose the topic and approach to the investigation.					
	Plan of the investigation	3. Lists the mathematical strategies and content that have been used in the investigation..					
		4. Describes how the mathematical strategies and content have been used to achieve results.					
Communication of findings		5. Analyses their findings and publishes these appropriately.					
		6. Writes a conclusion that discusses the key findings of the investigation. Was my initial aim/ hypotheses achieved?					
		7. Reflects on the mathematical learning achieved from the investigation.					
		8. Communicates the investigations and findings appropriately to the given audience.					
Maths focus	Validity	9. Uses correct mathematical terms and symbols.					
		10. Uses accurate mathematical skills.					
	Understanding	11. Analyses mathematical connections within the investigation.					
	Creative	12. Uses critical and creative thinking to explore mathematics within the investigation.					
Application	Legibility	13. Presents the investigation in a legible, logical and appealing manner.					
	Acknowledgements	14. Acknowledges resources used (including reference materials and assistance from other people).					
	Evidence	15. Has provided detailed evidence of work (such as draft, workings and/or notes) ensuring the investigation is a true representation of the students learning and understanding.					

A hand is shown from the bottom left, holding a large, 3D red question mark. The background is a bright blue sky with scattered white clouds. The text is overlaid on the image in a yellow, sans-serif font.

Is the chance of dying from a lightning strike decreasing?

Throughout the years modern medicine has become much more effective and has decreased the chance of any human dying.

From 1940 to 2015 the number of lightning strike fatalities has decreased by 3163.

Big Question

What is the Chance of Getting Struck by lightning?

1940-1970: 221,382, out of 1,700,000,000 (approximately)

We got the population of the world and divided by the number of people who got struck by lightning. Then we need to convert the 221,382 into a percentage from 0 to 100

What Math We've Been Doing

We used all these forms of mathematical problem solving to figure out our final equation and to help us figure out all of our questions.

1. Division
2. Subtraction
3. Addition
4. Reading data and analyzing data
5. Decimals
6. Conversion
7. 10 digit numbers
8. Increasing and decreasing

Hypothesis



In our opinion by the year 2010 the number of lightning strikes will decrease by a significant amount.

FYI: We did the hypothesis before we did the majority of our work.

$$\begin{array}{r} 2'292 \\ - 1'241 \\ \hline 951 \end{array}$$

$$\begin{array}{r} 120 \\ + 152 \\ \hline 272 \end{array}$$

$$\begin{array}{r} 1920 \\ + 1277 \\ \hline 3197 \end{array}$$

$$\begin{array}{r} 91 \\ + 1604 \\ \hline 1695 \end{array}$$

$$\begin{array}{r} 3120 \\ - 1301 \\ \hline 2119 \end{array}$$

$$\begin{array}{r} 777 \\ + 226 \\ \hline 1003 \end{array}$$

$$\begin{array}{r} 2397 \\ + 225 \\ \hline 2622 \end{array}$$

$$\begin{array}{r} 5191 \\ + 2905 \\ \hline 8096 \end{array}$$

$$\begin{array}{r} 1482 \\ + 1273 \\ \hline 2755 \end{array}$$

$$\begin{array}{r} 772 \\ + 5134 \\ \hline 5906 \end{array}$$

$$\begin{array}{r} 61046 \\ + 4255 \\ \hline 65301 \end{array}$$

$$\begin{array}{r} 12351 \\ + 5406 \\ \hline 17757 \end{array}$$

This slide has to be presented or you will not be able to see all the working out

Brainstorming

Find out where the most fatalities took place at.

What is something we should add?

How will we work out the chance?

What procedures will we have to use?

What questions should we ask Andrew?

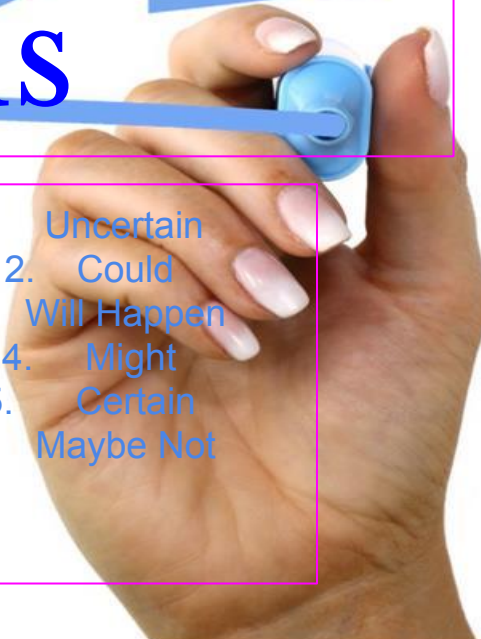
How will we get the information?

CHANCE

Chance Words

1. 100%
2. Most Likely
3. Never
4. 50,50
5. Maybe
6. Unlikely
7. Likely
8. Surely
9. Definitely
10. Possible

11. Uncertain
12. Could
13. Will Happen
14. Might
15. Certain
16. Maybe Not



Data

When	Where	Amount Of People That Died	Decrease deaths from previous 9 years	Injuries	Increase from deaths previous 9 years
1940-1949	The Global world	3293	No data from previous 9 years	0	No data from previous 9 years
1950-1958	The Global world	1841	1452	142	No Increase
1960-1969	The Global world	1928	No Decrease	91	87
1970-1979	The Global world	977	951	1604	No Increase
1980	The Global world	726	251	2120	No Increase
1991-2000	The Global world	546	180	3071	No Increase
2000-2010	The Global world	442	104	2357	No Increase
2011-2015	The Global world	130	No data from previous 9 years	625	No data from previous 9 years

Questions we Asked Andrew Khaw our STEM Professionals in schools ambassador from BoM.

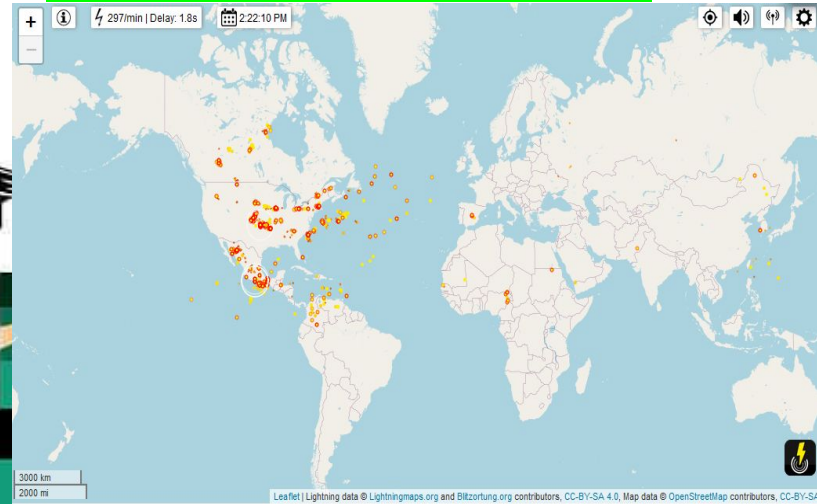
1. On the BoM website where would we find the most information about lightning storms globally?
2. How many thunderstorms occur a day and where would we find this information?
3. In your opinion the likely chance of being struck by lightning would be?



What Andrew Showed Us

One of the things Luke and I were really fascinated about, is this site that shows how many lightning storms are happening right now. If you zoom in you can see that we took this screenshot at 2:22: PM and all the yellow/red dots are thunderstorms that were happening right that moment. Next to the time you can see how many lightning storms are happening per minute. That was something really interesting that we spotted while we were taking the screenshot.

[THE LINK TO THE WEBSITE](#)



Answers from Andrew (The Email He Sent Us)

Hi,

If you want to have a look at what educational material the Bureau has for students and teachers, you can go to the BoM Homepage:
www.bom.gov.au

Look at the bottom right hand corner for "Students and Teachers", can click/navigate your way around here.
You'll find a lot of material here.

As for lightning specifically:

1. Scienceworks museum has a good FAQ page:

<https://museumsvictoria.com.au/scienceworks/visiting/lightning-room/lightning-faqs/>

2. Scienceworks also has a lightning room:

<https://museumsvictoria.com.au/scienceworks/visiting/lightning-room/>

3. A good site to see where lightning strikes are happening globally, in real-time:

<https://www.lightningmaps.org/>

You can zoom in and out to get a close up view.

There are lots of stats/archived data available on this site - just look at the left hand corner, and you'll see 3 regions: Europe, Oceania, America
Click on the one of interest and navigate around.

4. Beyond the above suggested sites, you can't do much worse using the keywords "lightning strike likelihood" into Google.

Facts



How does the Tesla coil make lightning?

The Tesla Coil is plugged in to a power source. It contains electrical Transformers which increase the voltage to between 2 and 2.8 million volts. The electricity runs around the flat coil at the bottom, which magnetically charges the tall upright coil. When the tall coil builds up enough electricity, it escapes from the top of the coil, down to the ground, taking the easiest path it can forming volts of lightning.

How Lightning Is Formed?

The movement of ice and water in a cloud in a thunderstorm forms electrical charge and it is split into two different categories, positive and negative charge. All the positive charge clumps together and when the negative charge attracts toward it it gets powerful enough to fly through the air as what is called and looks like, lightning.



The Chance of Getting Struck by
Lightning Globally

0.000250572093

Conclusion: Was our Aim Achieved?

c o n c l u s i o n

Our aim was to try and find out what the chance of getting struck by lightning is and to an extent we believe that we are mostly correct, however you obviously cannot be 100% certain. We think the chance of getting struck by lightning is 0.000250572093. Our other aim was to find out the decrease and increase of lightning strikes and deaths caused by lightning throughout the previous years and in our opinion we think we have done an accurate job at it, our aim was achieved.

Bibliography

<https://www.iweathernet.com/thunderstorms/annual-lightning-injuries-fatalities-1940-to-2015>

<http://www.chanceandchoice.com/course-overview/number/>

<https://www.thesaurus.com/browse/chance=UT>

<https://www.lightningmaps.org/#m=oss;t=3;s=0;o=0;b=:ts=0;y=29.0754;x=-86.2207;z=3;d=2;dl=2;dc=0;>

<http://www.bom.gov.au/info/thunder/index.shtml>

<https://museumsvictoria.com.au/scienceworks/visiting/lightning-room>

THE BEST WEBSITE: [bom.gov.au](http://www.bom.gov.au)

We'd Like To Thank All These People For Helping Us Complete Our Project

First of all we'd like to thank Mrs M and her wonderful class of year 1/2s. They helped us with our chance words which we used to improve our slide even more

Secondly we'd like to thank Andrew for providing us with vital information at the last second when we needed it most and for researching it while he was still working at BoM, You are SUCH a Hero THANK YOU!

And finally most of all we'd like to thank Mrs Dame without her giving us advice through all of the project we most likely wouldn't have even finished our project!

Everyone on this page is a HERO to us!!!

