

Fading in Sunlight

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The problem

Printed pages fade in direct sunlight, especially if certain types of ink and paper are used. Propose quantitative parameters to study the prolonged exposure of ink and paper to sunlight.



Defining terms

Light, is the electromagnetic radiation which the eye can see. Depending on the situation the light can be a wave or small particulates.



Colours, why we can see them?

The color information related to electrical information is derived from specialized photosensitive eye receptors, the angle, each reacting to light detection of a specific wavelength range. A color that takes shape in the brain may come from a frequency or combination of more frequencies of the visible spectrum.



How light effects colours?

Sun's ultraviolet radiation changes the chemical construction of dyestuff, especially when it comes to darker coloured objects.



Hypothesis

According to what was said before, colour will probably fade when it is exposed on sunlight.



Conducting the experiment

Materials used

- 1.different coloured cartons
- 2.my mobile's phone camera
- 3.thermometre
- 4.an app which measured the moisture



Explaining the procedure

Firstly, we cut one piece of each carton. We made sure that the pieces were the same and we placed them at a balcony so that they are exposed on sunlight. We kept them there for 20 days and every day we were checking the temperature, the amount of clouds and the moisture. We were taking pictures ever so often and when the 20th day came we placed them all in room and we compared them to the cartons that we kept inside a room where they were not exposed on sunlight.



Results

DAY 1

Sunny

Temperature:20-22 C

Moisture:74-79%

DAY 2

A little amount of clouds

Temperature:19-24 C

Moisture:72-76%



DAY 3

A little amount of clouds

Temperature:17-23 C

Moisture:77-80%

DAY 4

Sunny

Temperature:22-26 C

Moisture:70-74%

DAY 5

Rainy

Temperature:15-18 C

Moisture:94-97%

DAY 6

Cloudy

Temperature:19-23 C

Moisture:91-95%

DAY 7

A little amount of clouds

Temperature:20-25 C

Moisture:87-90%

DAY 8

Sunny

Temperature:23-27 C

Moisture:86-89%



DAY 9

Sunny

Temperature:21-26 C

Moisture:82-85%

DAY 10

Sunny

Temperature:19-24 C

Moisture:84-87%

DAY 11

A little amount of clouds

Temperature:17-21 C

Moisture:85-89%

DAY 12

Sunny

Temperature:19-22 C

Moisture:83-85%

DAY 13

Sunny

Temperature:20-26 C

Moisture:87-92%

DAY 14

Rainy

Temperature:15-18 C

Moisture:94-99%



DAY 15

Sunny

Temperature:19-23 C

Moisture:91-94%

DAY 16

Cloudy

Temperature:17-21 C

Moisture:84-88%

DAY 17

Sunny

Temperature:20-26 C

Moisture:78-82%

DAY 18

Sunny

Temperature:21-23 C

Moisture:76-79%

DAY 19

A little amount of clouds

Temperature:16-20 C

Moisture:78-81%

DAY 20

Sunny

Temperature:21-27 C

Moisture:75-79%

Highlights of the experiment



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Conclusion

Hypothesis: correct

Colours fade in sunlight. Our results showed that darker colours fade more than light colours.



Details of the experiment

We used red, purple, blue (dark colors) and green, yellow (light colors) to spot the difference between the effect of sunlight on dark and light colors

We used a thermometer so that our results would be valid since it's the most reliable way

We used an app because we firmly believe that it is the most reliable way to measure moisture

We exposed them at a balcony because it was the only place where they would be exposed on sunlight



THANK YOU
FOR
YOUR ATTENTION

