# Outdoor Learning Weather Considerations
# San Mateo County

Resources developed by San Mateo County Office of Education's (SMCOE)
Environmental Literacy and Sustainability Initiative (ELSI) • Last updated November 2020



In schools, there are two different learning spaces to choose from: the outdoors and the indoors. Learning indoors is the status quo, and used most frequently on a daily basis. Outdoor learning encompasses a wide variety of educational opportunities such as lessons focused around learning from the outdoors (nature studies), or lessons taught within the outdoors (this can be any subject area). In many cases lessons that are traditionally taught indoors could easily be taught in an outdoor setting. Learning from and within the outdoors has many health and academic benefits, and is a recommended learning environment, in particular during COVID-19. However, in order to ensure a positive learning experience for students, teachers and sites must be equipped with the proper infrastructure and supplies. Additionally, outdoor conditions must be taken into account such as wind, rain, temperature, precipitation, air quality, etc. Generally, the climate in San Mateo County is temperate, making outdoor learning ideal for much of the year. The tables below outline historical and future weather patterns with an analysis of the number of days that outdoor learning could be done safely in San Mateo County. [1]

## Outdoor Learning Weather Conditions Criteria

| | Good Conditions | Moderate Conditions | Poor Conditions |
|---|---|---|---|
| Wind | Wind speeds below 15mph | Wind above 15mph but below 25mph | Wind exceeds 25mph and are sustained for at least 30 minutes, or are gusty from low to high speeds[2] |
| Temperature | Temperatures between 50℉ and 85℉[3] | Temperatures between 40-50 ℉ or between 85 - 90℉ | Temperatures of 90+℉ with no shade. Temperature of 40℉ and below[4] |
| Precipitation and storms | No Thunder and lightning and/or precipitation | No Thunder and lightning some precipitation | Thunder and lightning and/or heavy precipitation [5] |
| Air Quality[6] | Good Air Quality Index (AQI) rating between 0 - 50 | Moderate AQI rating between 51 - 100 | Unhealthy - Hazardous AQI rating between 101 - 500 |

[1] Image
[2] Source for wind: Child Care Weather Watch
[3] Source for temperature: Outdoor Learning Center
[4] Source for poor temperature conditions: Paulding County School District
[5] Source for generally poor weather in lower temperatures: New York Times
[6] Source for Air Quality Index Ratings for school activities: San Mateo County Office of Education

## SMC Outdoor Learning Weather - *Historical Data and Future Projections*

**Quick Overview**:This analysis uses the fiscal year and includes all 365 days; not the traditional 180 instructional days of a school calendar. The fiscal year cycle incorporates both summer and weekend programs during which outdoor classrooms can be used.

| Fiscal year *July 1- June 30* | **Past**[7] | | | | | **Present** | **Future**[8] | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **2015-2016** | **2016-2017** | **2017-2018** | **2018-2019** | **2019-2020** | **2020-2021** | **2021-2022** | **2022-2023** | **2023-2024** | **2024-2025** |
| Good Condition Days | 289 | 270 | 275 | 281 | 290 | 279 | 278 | 276 | 276 | 272 |
| Moderate Condition Days | 56 | 77 | 58 | 61 | 62 | 64 | 65 | 66 | 67 | 69 |
| Poor Condition Days | 21 | 18 | 32 | 23 | 14 | 22 | 22 | 23 | 23 | 24 |

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For more information about Outdoor Learning, visit our webpage and contact elsi@smcoe.org

[7] Source for Past and Current Data: Time and Date
[8] Future data synthesized from Cal-Adapt

## Seasonal Appendix of SMC Outdoor Learning Weather

This is a more detailed breakdown of the past chart. The following charts show the history and the future San Mateo County outdoor learning weather during different parts of the year.

The following formula was used to calculate the future weather: average of 2015-2020 x 1.0184 ^ years after 2020

| Mar 1 - May 31 | Past[9] | | | | | Present | Future[10] | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Good Condition Days | - | 63 | 65 | 75 | 76 | 66 | 55 | 55 | 53 | 53 |
| Moderate Condition Days | - | 20 | 23 | 13 | 12 | 26 | 17 | 17 | 18 | 18 |
| Poor Condition Days | - | 9 | 4 | 4 | 4 | 0 | 5 | 5 | 6 | 6 |

| June 1 - July 31 | Past[9] | | | | | Present | Future[10] | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Good Condition Days | 50 | 35 | 36 | 28 | 49 | 48 | 41 | 40 | 40 | 40 |
| Moderate Condition Days | 11 | 23 | 21 | 28 | 8 | 11 | 17 | 18 | 18 | 18 |
| Poor Condition Days | 0 | 3 | 4 | 5 | 4 | 2 | 3 | 3 | 3 | 3 |

| Aug 1 - Nov 30 | Past[9] | | | | | Present | Future[10] | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Good Condition Days | 105 | 101 | 96 | 94 | 100 | 98 | 99 | 98 | 98 | 98 |
| Moderate Condition Days | 10 | 18 | 17 | 17 | 14 | 4 | 13 | 14 | 14 | 14 |
| Poor Condition Days | 7 | 3 | 9 | 11 | 8 | 20 | 10 | 10 | 10 | 10 |

[9] Source for Past and Current Data: Time and Date

[10] Future data synthesized from Cal-Adapt

| Dec 1 - Feb 29 | Past[9] | | | | | Present | Future[10] | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **2015-2016** | **2016-2017** | **2017-2018** | **2018-2019** | **2019-2020** | **2020-2021** | **2021-2022** | **2022-2023** | **2023-2024** | **2024-2025** |
| Good Condition Days | 78 | 73 | 82 | 72 | 84 | 78 | 77 | 77 | 77 | 77 |
| Moderate Condition Days | 12 | 12 | 8 | 17 | 3 | 10 | 11 | 11 | 11 | 11 |
| Poor Condition Days | 1 | 6 | 1 | 2 | 4 | 3 | 3 | 3 | 3 | 3 |