

Colorado Trails - Hiking Data Analysis



About this project

This project analyzes 20 popular Colorado hiking trails using data compiled from AllTrails and Colorado State Parks. Each table and formula was built from scratch to show how Excel can turn raw data into something actually readable and useful.

Total Trails	Avg Distance (mi)	Avg Elev Gain (ft)	Avg Rating	Dog-Friendly Trails	Permit Required
20	6.3	1663	4.6	15	2

Trail Data Table:

Trail Name	Location / Region	Difficulty	Distance (mi)	Elevation Gain (ft)	Highest Point (ft)	Est. Time (hrs)	Trail Type	Best Season	Dog Friendly	Permit Required	Rating
Longs Peak	Rocky Mountain NP	Expert	15	5100	14259	12	Out & Back	Jul-Sep	No	Yes	4.7
Maroon Bells Loop	Aspen	Moderate	9.5	1800	11900	5	Loop	Jun-Oct	Yes	No	4.9
Hanging Lake	Glenwood Canyon	Moderate	2.8	1030	7323	2.5	Out & Back	May-Oct	No	Yes	4.8
Sky Pond	Rocky Mountain NP	Hard	9	1780	11183	5.5	Out & Back	Jul-Oct	Yes	No	4.8
Emerald Lake	Rocky Mountain NP	Easy	3.6	600	10110	2	Out & Back	Jun-Oct	Yes	No	4.7
Grays & Torreys Peak	Summit County	Hard	8	3600	14270	6	Out & Back	Jul-Sep	No	No	4.7
Mount Bierstadt	Summit County	Moderate	7	2850	14060	5	Out & Back	Jul-Sep	No	No	4.6
Chautauqua Park Loop	Boulder	Easy	3	450	6200	1.5	Loop	Year-Round	Yes	No	4.5
Royal Arch	Boulder	Moderate	3.6	1380	7024	2.5	Out & Back	Mar-Nov	Yes	No	4.6
Lake Isabelle	Indian Peaks Wilderness	Moderate	8.2	900	11900	4	Out & Back	Jul-Oct	Yes	No	4.8
Brainard Lake Loop	Indian Peaks Wilderness	Easy	4.5	400	10500	2	Loop	Jun-Oct	Yes	No	4.5
St. Vrain Glacier	Indian Peaks Wilderness	Hard	12	2500	12200	7	Out & Back	Jul-Sep	Yes	No	4.4
Pawnee Pass	Indian Peaks Wilderness	Hard	10.6	2800	12541	6.5	Out & Back	Jul-Sep	Yes	No	4.6
Bear Lake Loop	Rocky Mountain NP	Easy	0.8	20	9475	0.5	Loop	Year-Round	Yes	No	4.4
Mills Lake	Rocky Mountain NP	Easy	5.6	700	9940	3	Out & Back	Jun-Oct	Yes	No	4.8
Flatirons Loop	Boulder	Moderate	5	1100	6850	2.5	Loop	Mar-Nov	Yes	No	4.5
Devil's Head Lookout	Rampart Range	Easy	2.6	940	9748	2	Out & Back	May-Oct	Yes	No	4.6
Quandary Peak	Breckenridge	Hard	6.7	3350	14265	5.5	Out & Back	Jul-Sep	No	No	4.7
Three Sisters Park	Evergreen	Easy	2.1	250	7040	1	Loop	Year-Round	Yes	No	4.3
Herman Gulch	Clear Creek County	Moderate	6.8	1700	12500	4	Out & Back	Jun-Oct	Yes	No	4.5

Conditional Formatting Applied:

- Difficulty Badges — Color-coded per value: Easy, Moderate, Hard, Expert. Rules update automatically if data changes.

Avg Metrics by Difficulty

Difficulty	Average of Distance (mi)	Average of Elevation Gain (ft)	Average of Est. Time (hrs)	Average of Rating
Easy	3.2	480	1.7	4.54
Moderate	6.1	1537	3.6	4.67
Hard	9.3	2806	6.1	4.64
Expert	15	5100	12	4.70

Built using a PivotTable with Difficulty in Rows and Average of Distance, Elevation Gain, Est. Time, and Rating in Values. Conditional formatting was applied to the Difficulty column using color-coded rules for each level.

Counts by Region

Location / Region	Count of Trails	Average of Distance (mi)	Average of Elevation Gain (ft)
Aspen	1	9.5	1800
Boulder	3	3.9	977
Breckenridge	1	6.7	3350
Clear Creek County	1	6.8	1700
Evergreen	1	2.1	250
Glenwood Canyon	1	2.8	1030
Indian Peaks Wilderness	4	8.8	1650
Rampart Range	1	2.6	940
Rocky Mountain NP	5	6.8	1640
Summit County	2	7.5	3225

Built using a PivotTable with Location / Region in Rows and Count of Trails, Average Distance, and Average Elevation Gain in Values. Shows which areas of Colorado have the most trail density in this dataset.

Trail Type Breakdown

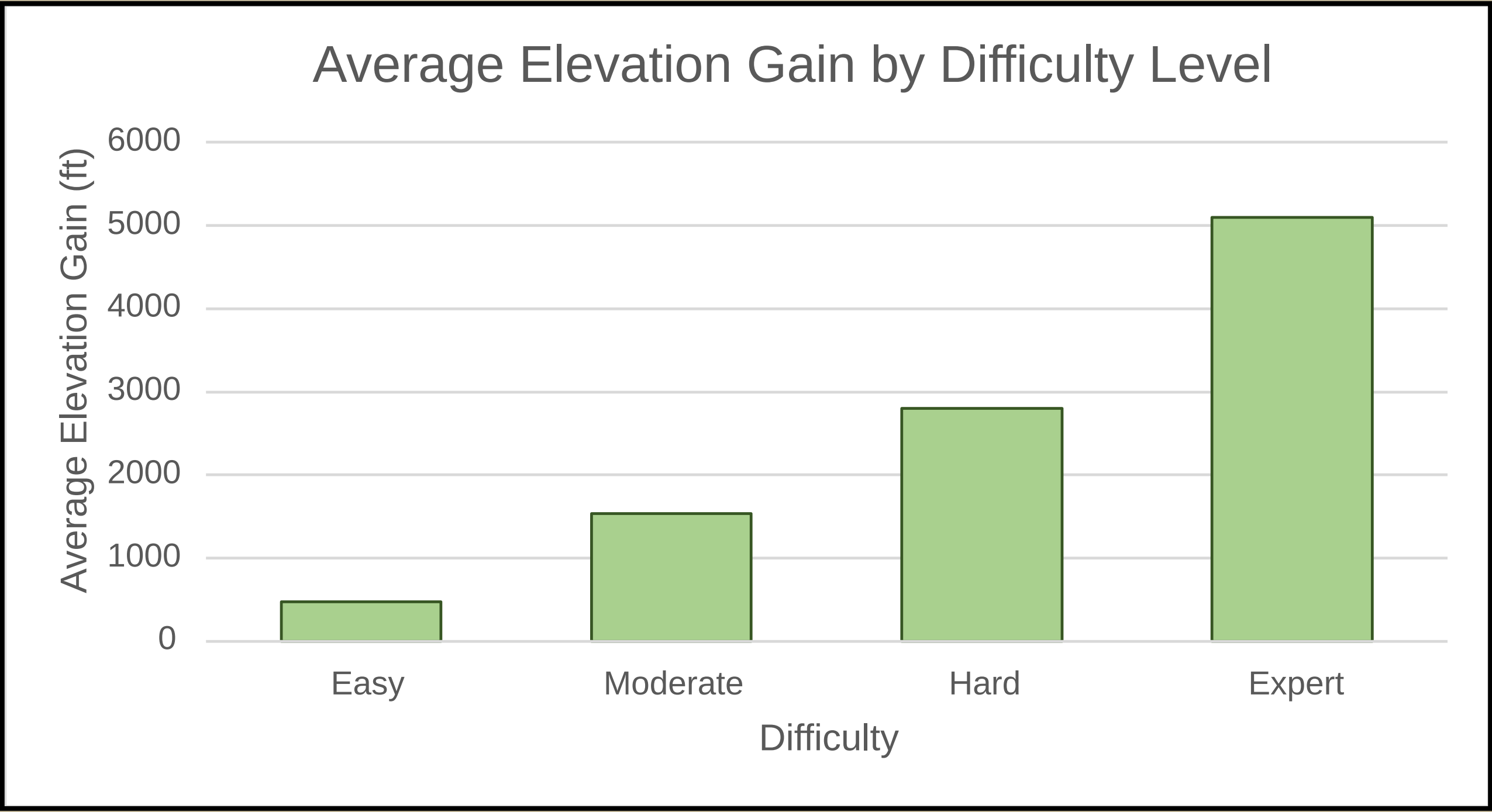
Trail Type	Count of Trails	Average of Distance (mi)	Average of Elevation Gain (ft)	Average of Est. Time (hrs)
Loop	6	4.15	670	2
Out & Back	14	7.25	2088	5

Built using a PivotTable with Trail Type in Rows. Out & Back trails make up 70% of the dataset and average nearly twice the elevation gain of loop trails.

Top 5 Trails by User Rating

Rank	Trail Name	Region	Difficulty	Dist (mi)	Elev Gain	Rating
1	Maroon Bells Loop	Aspen	Moderate	9.5	1800	4.9
2	Sky Pond	Rocky Mountain NP	Hard	9	1780	4.8
3	Hanging Lake	Glenwood Canyon	Moderate	2.8	1030	4.8
4	Lake Isabelle	Indian Peaks Wild.	Moderate	8.2	900	4.8
5	Mills Lake	Rocky Mountain NP	Easy	5.6	700	4.8

The Top 5 table was built by applying an IF formula to flag any trail with a rating of 4.8 or above, then using LARGE to confirm the top rating values in the dataset. The results were filtered and pulled into a separate summary table for cleaner presentation. Trails with a tied rating of 4.8 were ordered by elevation gain as a tiebreaker.



Built as a PivotChart directly from the Avg Metrics by Difficulty pivot table. Shows clearly how elevation commitment scales with difficulty. Expert trails gain over 10x more elevation than Easy ones.

