

Your query scans 2 TB to read one day.

D8A.ACADEMY/RESOURCES/PARTITION-PRUNING

WHAT IT IS

partition	one chunk of table per day
pruning	read only the days you need
no date filter	← you pay for every day.

WHAT KILLS PRUNING

wrap the column	CAST, FORMAT_DATE
subquery filter	not a constant
wrong column	created_at only

WRITE IT RIGHT

raw column	event_date, untouched
vs a constant	a literal or CURRENT_DATE()
ranges	>= start AND < end
isolate it	← column alone, left side.

CLUSTER: LEVER 2

partition	coarse: the date
cluster	fine: user_id, country
up to 4 columns	order matters

GUARDRAILS

require filter	require_partition_filter
dry run	bytes before you run
max bytes billed	query fails, not the budget

GOTCHAS

LIMIT 10	is not a partition filter
SELECT *	every column is billed
other engines	same idea, other rules

WORTH MEMORIZING

01 Coarse partition, fine cluster

Partition on the date everyone filters by. Cluster on the columns they filter next.

```
-- BigQuery: one partition per day
CREATE TABLE shop.events (
  event_date DATE, user_id STRING, amount NUMERIC
) PARTITION BY event_date
CLUSTER BY user_id
OPTIONS (require_partition_filter = TRUE);

SELECT SUM(amount) FROM shop.events
WHERE event_date = '2026-10-08' -- 1 partition
AND user_id = 'u_42';          -- few blocks
```

→ With require_partition_filter, a query that has no usable filter on event_date is rejected instead of billed. Before any big query, read the dry run estimate: it is free.

02 Trap: the filter is there, the scan is full

Three BigQuery filters that look selective and read every partition anyway.

THE FILTER	WHAT HAPPENS	WRITE INSTEAD
FORMAT_DATE('%Y%m', event_date) = '202610'	column hidden, full scan	event_date range, raw
event_date = (SELECT MAX(...))	not a constant, full scan	compute it, pass a literal
created_at >= ... only	wrong column, full scan	add the event_date filter

→ Interview phrasing: pruning needs the raw partition column compared to a constant. Some wrappers still prune, like DATE(ts) on a TIMESTAMP partition, so I never guess: I dry run and read the bytes.