



Correlation: Fixing the Count to a Modern Date

Module 5 handout · Which Mexika day is today?

A correlation is a single anchor: one Mexika day equated to one day on a modern calendar. Everything else follows by counting. Correlations disagree because they anchor on different evidence — a colonial document, an astronomical event, or a living observation. Always state which correlation you are using.

Terms

Term	Meaning
Correlation	An equation between one day of the Mexika count and one day of a modern calendar.
Julian day number	A continuous day count used to compare calendars without ambiguity.
Anchor	The observed or documented event a correlation is fixed to.
Drift	The gap that opens between a fixed-rule calendar and the sun it is meant to track.
Observed year	A year whose length is set by when the anchoring sunrise actually occurs.
Leap year	The extension of the last nemontemi day across two days with the same tonalli, so the count keeps pace with the sun.

Ochoa's correlation

- The turn of the solar year is tied to the spring equinox sunrise observed at the Templo Mayor in Tenochtitlan, not to a fixed date on the Gregorian calendar.
- Because the anchor is observational, the year takes whatever length the observation gives: some years run 365 days, others 366.
- The extra day is the leap year: the last day of the nemontemi is repeated, extended across two days carrying the same tonalli. Sahagún and Durán both documented it — without it the count would drift 20 days against the solar year in about 83 years.
- The day of the observed equinox marks the bundling — the tying off — of the year; the new year begins the day after, on the opening sign of that year's bearer.
- The day begins at sunrise, so a Mexika day spans parts of two Gregorian dates.
- The 260-day count runs unbroken underneath; the correlation fixes where it stands, and counting does the rest.



Why correlations disagree

Basis of the anchor	Consequence
Colonial chronicle dates	Depends on which chronicler, and on Julian-to-Gregorian conversion; sources conflict by days.
A fixed Gregorian start date	Simple to compute, but drifts away from the sun it claims to track.
An observed horizon event	Stays true to the sky, but requires you to name the place of observation.
A reconstructed ancient date	Depends on contested readings of monuments and codices.



Quiz

1. What exactly does a correlation fix, and what follows from it automatically?

2. What event does Ochoa's correlation anchor the year to?

3. Why does an observation-based year sometimes contain 366 days?

4. How does this system handle the extra day the sun needs every four years?

5. Which day sign opens an Akatl year, and how does that help check a correlation?

6. Why must a correlation name a place, not just a date?

7. Two published correlations give different day signs for today. Is one necessarily wrong? Explain.

8. Why is a Julian day number useful when comparing correlations?

9. What is the practical rule whenever you publish a Mexika date?



Answer key

1. It fixes one Mexika day to one modern day. Every other date follows by counting forward or backward from that anchor.
2. The spring equinox sunrise as observed at the Templo Mayor in Tenochtitlan.
3. Because the year ends when the anchoring sunrise next occurs; the interval between two equinox sunrises is not a whole number of days, so the count of days between them varies.
4. By repeating the last day of the nemontemi across two days with the same tonalli — the leap year documented by Sahagún and Durán. The observed anchor decides when; no arithmetic rule is imposed from outside.
5. Zipaktli. Each bearer opens on a fixed sign (Akatl-Zipaktli, Tekpatl-Mikiztli, Kalli-Ozomahtli, Tochtli-Kozkakwawhtli), so the first day after the bundling must carry that sign; if it does not, the correlation is off.
6. Because a horizon sunrise event happens at a different moment and against different landmarks at every location; the anchor is only defined once the observing point is named.
7. Not necessarily wrong — they anchor on different evidence. They are different systems, and each is internally consistent; what matters is stating which one you use and keeping to it.
8. It is a plain continuous day count, so two correlations can be compared as a simple difference in days without calendar conversion errors.
9. State the correlation you used.

Study tip: pick one correlation and count by hand from a known date to today. Doing the arithmetic once teaches more about correlation than any table.