Notice something here:

- we can now differentiate vector fields on surfaces in a meaningful way

- You may not have noticed, but previously we couldn't — Derivative wasn't necessarily on surface, which often doesn't make sense.

  - eg. a ball is moving on a surface w/ velocity $\underline{v}$; what acceleration occurs w.r.t. the surface?

A: compute acceleration in the usual way

THEN project to ~~not~~ tangent plane.