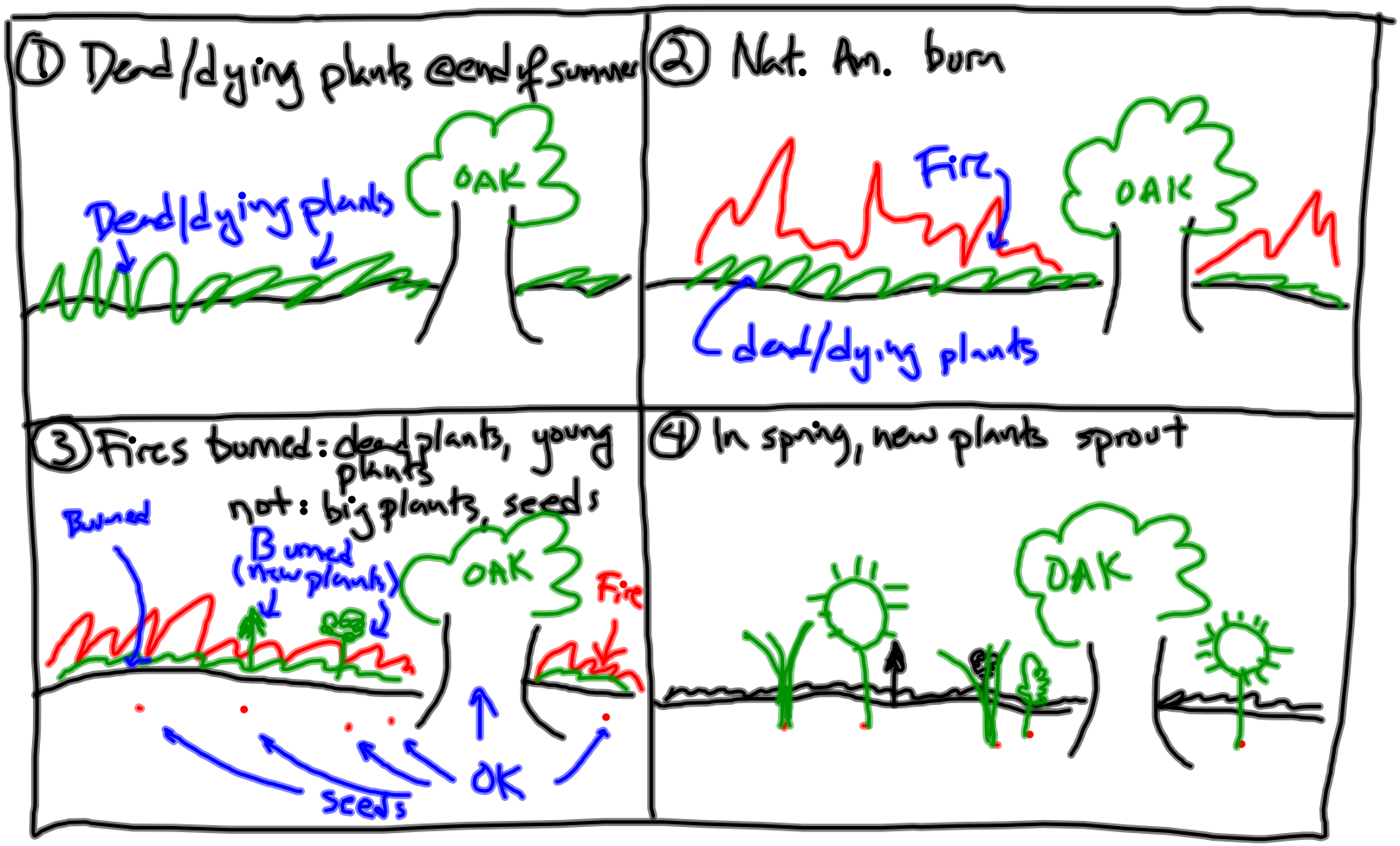
How Fire Maintains Oak Savanna



How Doug Firs Take over when there's no fire

WHAT IF:

- Initial conditions were different?
- Laws of physics & nature were different?
- People behaved differently?
  - or organisms in general

① Native Americans burned annually...

- Promoted growth of useful plants
- Hunting was easier

WHAT IF...

- The native Americans didn't set fires?
- The European Americans had been unable to dominate the N.A.'s?
- What if the fires had been hotter?

(2)

1. Stays the same
2. New shrubs & trees establish
3. Doug firs grow faster
4. Doug firs block sunlight; oaks die

WHAT IF:

- The oak trees didn't require sunlight?
- Fully grown oaks <u>never't</u> fire resistant?
- Douglas firs grew more slowly
- Massive floods occurred around the time of the burning?
- Doug firs couldn't grow here?

(3)

1. Dead/dying plants @ end of summer
2. Native Americans burn
3. Fires burn dead plants, young plants, but NOT old plants (trees) and seeds
4. In spring, seeds sprout & process restarts

WHAT IF:

- Small shrubs were fire-resistant?
- It rained in the summer/early fall?
- Seeds were intolerant of fire?
- New plants couldn't sprout in ashes?

(5) In 1850: Ash swale

- Oregon ash trees
- Horsetail
- Trailing BB
- Pacific Dogwood
- Cow parsnip

Now: Farmland
Residences
Ash swale

1850 Ash swale → leave it alone → Now Ash swale

6

- New plants would not come from seeds
- Maybe some plants don't need seeds — those plants would dominate...