Composting Types

by **biological process** (non-mechanical or low-tech: pile, bin, shovel, machine shovel)

	temperature (in compost)	outside temperature	time	note	organisms	organisms' temperature
psychrophilic composting *(cold composting or slow composting)*						
	-18 – 13 °C (0 – 55 °F)	—	6 months - 2 years		psychrophiles also cryophiles	-15 – 10 °C (5 – 50 °F)
mesophilic composting *(low temperature composting)*						
	21 – 32 °C (70 – 90 °F)	minimum: 4 °C (39 °F)	6 months - 2 years	Usually the pre and post stages of thermophilic composting; Conditions for vermiculture (earthworms may appear or can be added)	mesophiles	25 – 40 °C (77 – 104 °F)
thermophilic composting *(high temperature composting)*						
	50 – 74 °C (122 – 166 °F) *Optimal: 50–70 °C (122–158 °F)*	minimum: 13 °C (55 °F)	12 weeks - 1 year (up to 6 months for average maturation period)	Preferable to keep below 66°C (150°F) to prevent beginning killing beneficial microorganisms and to prevent nutrient burn off.	thermophiles	45 – 80 °C (113 – 176 °F)
hyperthermophilic composting *(very high temperature composting)*						
	72 – 82 °C (162 – 180 °F)	—	If adding to active pile, first 6 hours results in liquid evaporation and cellulose destruction; maturation in a week(?) or longer	To compost meat and compostable plastics; high mass reduction rate (30+ to 1); do not let temperature go to 93°C (200°F), it's a fire hazard if not managed well, though rare.	hyperthermophiles	60 – 122 °C (140 – 252 °F) *Organisms' optimal range: 80–105 °C (176–221°F)*