The Wintu language is rather synthetic in structure. In its technique of synthesis it is mainly agglutinative, but it is also characterized by a certain amount of fusion and symbolism. The most important morphological processes (in order of importance) are suffixation, vocalic ablaut, reduplication, with very limited amounts of prefixation, consonant ablaut, compounding, proclisis, postclisis, and rarely suppletion. The most extensive phonological processes are vowel harmony, vowel lengthening, and consonantic elision, with a small amount of consonantic modification. These changes are for the most part not mechanical but are induced by specific elements. Wintu stands between Yokuts and Takelma (two related Penutian languages) in having less formal apparatus than Takelma and more than Yokuts, but more derivational apparatus than Takelma, and perhaps less than Yokuts.

The word-classes are verbs, substantives, and uninflected words. Most stems can occur with verb or substantive derivation and inflection, while some stems are limited to only one class, and a few stems occur in either of the first two classes and also in the third. The first two classes are characterized by inflection, but the last occurs always in a fixed (invariant) form. The verb is the most complex of these, as regards number of subclasses, as well as morphologically and phonologically. Two types of verbs are distinguished, verbs proper and sentence connectives. Verbs proper include atonal modal auxiliaries, independent verbs (including a subclass of adjectival verbs, and subordinate verbs). The substantive is less complex than the verb, especially as regards derivation, and falls into three subclasses: nouns, pronouns and adjectives. The substantive inflection is more complex than that of the verb, especially pronouns.

Fundamental unanalyzable root morphemes (many of which show partial semantic and formal resemblance of a symbolic nature on the submorphic level are mostly monosyllabic, although some disyllabic consonantal roots are found, and a few triconsonantal loans. Stems composed of a root plus a thematic suffix (usually a vowel or consonant plus vowel) in all but one case contain two vowels; for verbs these vowels belong to the same vowel harmonization series. Stems may undergo one or two ablaut changes, the ablaut grade in each instance being defined by following suffixes. Most verbs show two stems. Three major types of affixes are distinguished: prefixes of direction (a very limited number) and one of instrument or accompaniment; suffixes of limited number, derivational in function (in several position classes); and suffixes of inflectional word-forming function in one final position class, the three member morphemes of which are mutually exclusive and obligatory. A few verbs are denominatives. Verbs may be inflected for one of three persons, although it is clear that this may also be viewed as inflection for first person only, the other two persons being only covertly marked by certain modal suffixes which occur elsewhere. Verbs are derivationally marked for various categories: tense, aspect, evidence, voice and mood, although some of these categories are expressed in complex periphrastic constructions with several auxiliary verbs expressing negative, interrogative, desiderative, tense, aspect, and evidential categories. Auxiliary verbs occur independently with related meanings. Substantives are formed either from roots without further analyzable derivation or from roots with a thematic suffix composing the stem, deverbative forms composed of verb stems plus nominalizing elements,
or compound stems. To these themes (roots and stems) inflectional suffixes marking number, gender, case, and aspect are added. Nouns are inflected for two aspects, generic and particular, two numbers (in some cases sg. and plural, elsewhere dual, rarely in one number only but potentially able to be pluralized), rarely for two genders, and for one, two or four morphological cases. Pronouns are inflected for three numbers, three persons when singular, four persons when dual or plural, two aspects, and various cases. While there is a great proliferation of pronouns, they are rarely employed and not all series are complete for all categories. Pronouns show several further subdivisions, into personal, interrogative and demonstrative types. Adjectives are inflected for aspect and case, and include a subcategory of numerals. Substantives may be preceded by a class of proclitics (possessives, directionals, vocative), followed by the root, followed by a stem-forming thematic suffix, followed by two position classes of inflectional suffixes (number, aspect/case/) which form words. Nouns may further be followed by a post-clitic.