

Depreciation is the allocation of the cost of a plant or fixed asset (equipment, building, truck, etc.) to expense over the useful life of the asset. The sum-of-the-years'-digits (SYD) method is an accelerated method of depreciation. This means that the amount of depreciation expense in the early years of the asset's life is greater than the amount using the straight-line method. The depreciation expense in later years will be less than the original straight-line amount. The total depreciation expense over the life of the asset will be the same under any depreciation method: cost minus the estimated salvage value.

**Sum-of-the-years'-digits (SYD) depreciation expense** for one full year of the asset's life = **Asset's depreciable cost** *times* (asset's **years of life remaining** at the beginning of the year *divided by* the **sum of the years' digits**)

Calculation of the **sum-of-the-years'-digits (SYD) depreciation expense** for one full year for an asset with a *10-year useful life* :

Cost of asset	\$	140,000	C
<i>minus</i> Estimated salvage value	\$	20,000	ES
= Depreciable cost	\$	120,000	DC (C - ES)
<i>times</i> SYD fraction		10 / 55	F in 1st of 10 yrs.
= <b>Depreciation expense for full year</b>	\$	<b>21,818</b>	DE (DC x F)

Journal entry for a full year's depreciation:

debit	Depreciation expense	21,818	DE
credit	Accumulated depreciation		21,818 DE

Notes:

**F** The SYD fraction has as its *denominator* the total of the digits from 1 through the number of years of the asset's life. In the example above, a 10-year life means the denominator will be 55, the sum of the following digits: 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10.

The *numerator* in the SYD fraction will be the number of years of life remaining as of the beginning of the year. The asset with a 10-year life will have a numerator of 10 at the time it is placed into service. At the beginning of the second year of the asset's life, the numerator of the SYD fraction will be 9, and so on.

This means that the depreciation expense in the first year of a 10-year asset's life will be 10/55 of the asset's depreciable cost. The second year of the asset's life will have depreciation of 9/55 of the asset's depreciable cost. The third year will be 8/55, and the tenth year will be 1/55.