discuss and explain the different depreciation methods

The main depreciation methods are straight-line, declining balance (including double-declining), units of production, and sum-of-the-years-digits. Each method follows a different logic for spreading an asset's cost over its useful life and suits different types of assets and usage patterns.[1] [2]

Straight-line method

Straight-line depreciation spreads the asset's depreciable cost evenly over its useful life, giving the same expense every year until it reaches its salvage value.[3] [1]

- **Formula**: $\text{Depreciation} = \frac{\text{Cost} - \text{Salvage value}}{\text{Useful life}}$.[1]
- Common for assets that provide uniform benefits over time, such as buildings, office furniture, and many types of equipment.[4] [1]

Declining balance & double-declining

Declining balance methods are **accelerated** methods that apply a fixed rate to the asset's beginning book value each year, resulting in higher expenses in early years and lower later on.[2] [1]

- Regular declining balance uses a chosen rate; double-declining balance (DDB) uses roughly $2\times$ the straight-line rate, so depreciation is fastest at the beginning.[3] [1]
- Often used for technology or equipment that loses value or usefulness quickly, and where maintenance costs rise as the asset ages.[4] [1] [3]

Units of production

Units of production ties depreciation to actual usage rather than time, so expense varies with output or hours of use.[5] [1]

- **Formula** (one common form): $\text{Depreciation} = \left(\frac{\text{Cost} - \text{Salvage value}}{\text{Total estimated units}}\right) \times \text{Units this period}$.[1]
- Useful for production-focused assets such as machines where wear and tear depend mainly on units produced or hours operated.[4] [1]

Sum-of-the-years-digits (SYD)

Sum-of-the-years-digits is another accelerated method that assigns higher depreciation in early years and less later, but using a fraction based on the remaining life.[2] [1]

- **Concept**: Each year's rate equals $\frac{\text{Remaining life}}{\text{Sum of the years' digits}}$, multiplied by the depreciable base $(\text{Cost} - \text{Salvage value})$.[3]
- Often chosen when an asset is expected to generate more economic benefit in the early part of its life, but the pattern is not as aggressive as declining balance.[6] [1]

Choosing a method

The "best" method depends on how the asset generates benefits and on reporting or tax objectives.[1] [3]

- Straight-line is simple and widely used when benefits are even over time.[7] [1]
- Accelerated methods (declining balance, SYD) better match assets with front-loaded benefits or rapid obsolescence.[2] [3]
- Units of production fits situations where usage or output, not years, drives wear-and-tear and cost allocation.[5] [1]

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