ACC 300 · MEETING 22

Depreciation, estimate changes, and disposal

November 17, 2026



Unit 6: accounting for long-lived assets

Acquisition establishes recorded cost. We now account for that cost during use and at disposal.

Lecture 21

- **Acquisition cost:** Which payments belong in the asset's recorded cost?

Lecture 22 · Today

- **Depreciation and estimates:** How much cost belongs to each period?
- **Disposal:** What remains when the asset is sold?

Lecture 23

- **Impairment:** Can the company recover the remaining carrying amount?
- **Asset returns:** How effectively does it use its assets?

Which entrance-gate costs belong in the asset?

> We need the recorded asset cost before calculating depreciation.

Adrenaline Rush buys automated entrance gates, ready November 1, 2026. The park paid all amounts in cash and received all services in 2026.

Item	Amount	Item	Amount
Invoice price	$48,000	Installation	$2,800
Trade discount	($3,000)	Required testing	$1,000
Delivery	$1,200	Routine December maintenance	$1,800

Classify each amount and calculate the cost recorded for the entrance gates.

Gate cost includes preparation of the equipment

- **Capitalize preparation:** Include costs needed to bring the equipment to its intended location and condition for use.
- **Expense upkeep:** Routine maintenance after readiness keeps the gates operating.

Recorded asset cost = Net purchase price + Necessary preparation costs.

Net purchase price	Invoice price − Trade discount = $48,000 − $3,000 = $45,000
Necessary preparation	Delivery + Installation + Testing = $1,200 + $2,800 + $1,000 = $5,000
Recorded gate cost	$45,000 + $5,000 = **$50,000**

Routine maintenance: Expense $1,800 in 2026.

Source: ASC 360-10-30-1.

Depreciation assigns cost to service periods

Cost recovered through use

- An asset provides service across several periods.
- Allocate its depreciable cost to the periods receiving that service.

Cost recovered at disposal

- Residual value is the amount the company expects to recover at disposal.
- Exclude that expected recovery from depreciation.

Under US GAAP, allocate cost less residual value systematically and rationally. A rising resale price does not eliminate the cost allocation.

Source: ASC 360-10-35-4.

Useful life, residual value, and service pattern

Useful life

- How long will the company use the asset?
- Wear, obsolescence, and replacement plans can limit that period.

Residual value

- How much will the company recover at disposal?
- Exclude that amount from the cost allocated during use.

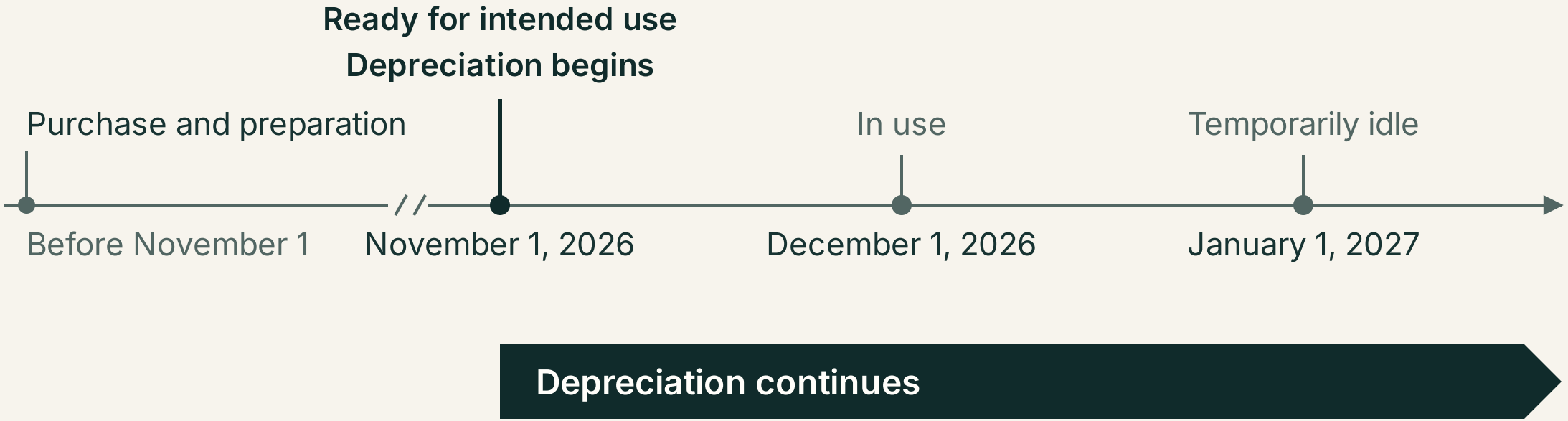
Service pattern

- Does use mainly consume service?
- Is service even over time?
- Is service greater early?

Depreciable amount = Cost – Residual value.

Depreciation begins when the asset is ready for use

Adrenaline Rush's entrance gates



Straight-line allocates equal annual amounts

Straight-line fits an even pattern of service. It assigns the same depreciation to each full year of useful life.

$$\text{Annual depreciation} = \frac{\text{Cost} - \text{Residual value}}{\text{Useful life}}$$

Adrenaline Rush's gates: cost $50,000; residual value $5,000; useful life 10 years. The park expects even service.

Gate depreciable amount = $50,000 − $5,000 = **$45,000**.

$$\text{Gate annual depreciation} = \frac{\$45{,}000}{10 \text{ years}} = \$4{,}500$$

Partial-year depreciation uses a stated convention

A time-based method needs a fraction of annual depreciation when an asset is ready for use for only part of a year.

Monthly convention

- Count the months the asset is ready for use.

Partial-year depreciation

$$\text{Partial-year depreciation} = \text{Annual depreciation} \times \frac{\text{Months counted}}{12}.$$

Daily convention

- Count the days the asset is ready for use.

Partial-year depreciation

$$\text{Partial-year depreciation} = \text{Annual depreciation} \times \frac{\text{Days counted}}{\text{Days in the year}}.$$

- **Purpose:** A convention makes partial-year allocation practical and consistent.
- **Other conventions:** Half-year and modified half-year conventions also exist. Use the company's stated book convention; tax rules do not automatically apply.

Gate depreciation for November through December

- **Monthly convention:** The park uses the same monthly convention for all its depreciable assets.
- **2026 period:** The gates are ready November 1, 2026. Record 2 months of annual depreciation.

$$\text{2026 depreciation} = \text{Annual depreciation} \times \frac{\text{Months ready for use}}{12}.$$

$$\text{2026 depreciation} = \$4{,}500 \times \frac{2}{12} = \$750.$$

DECEMBER 31, 2026: RECORD GATES DEPRECIATION

Depreciation expense	$750	
Accumulated depreciation		$750

Cost stays fixed as carrying amount falls

Credit accumulated depreciation rather than reducing the asset's recorded cost. Keep original cost and accumulated depreciation in separate accounts.

Adrenaline Rush's gates:

Balance sheet excerpt	December 31, 2026	December 31, 2027
Entrance gates	$50,000	$50,000
Less: accumulated depreciation	($750)	($5,250)
Carrying amount	**$49,250**	**$44,750**

2027 receives a full year's depreciation: $750 + $4,500 = $5,250 accumulated depreciation.

Carrying amount = Cost – Accumulated depreciation.

iClicker | Question 1 of 5

Healing Hands's MRI scanner cost $970,000. It arrived September 1, 2026, and was ready for use October 1. Residual value is $70,000, and useful life is 5 years. Healing Hands uses a monthly convention. What is 2026 straight-line depreciation?

A $60,000

B $180,000

C $45,000

D $48,500

iClicker | Answer 1 of 5

Correct answer: C

Healing Hands's MRI scanner cost $970,000. It arrived September 1, 2026, and was ready for use October 1. Residual value is $70,000, and useful life is 5 years. Healing Hands uses a monthly convention. What is 2026 straight-line depreciation?

A **$60,000**
This choice counts 4 months from the September 1 arrival, before the scanner was ready.

B **$180,000**
This choice records a full year. The scanner was ready for only 3 months of 2026.

C **$45,000**
C is correct. Depreciation begins when the scanner is ready. October through December is 3 months: $\$180{,}000 \times \frac{3}{12} = \$45{,}000$.

D **$48,500**
This choice omits the $70,000 residual value and depreciates the full $970,000.

Scanner depreciation for October through December

Healing Hands Hospital, magnetic resonance imaging (MRI) scanner: cost $970,000; residual $70,000; life 5 years; ready October 1, 2026; monthly convention.

Depreciable amount = $970,000 − $70,000 = **$900,000**.

$$\text{Annual depreciation} = \frac{\$900{,}000}{5 \text{ years}} = \$180{,}000$$

$$\text{2026 depreciation} = \$180{,}000 \times \frac{3}{12} = \mathbf{\$45{,}000}.$$

DECEMBER 31, 2026: RECORD SCANNER DEPRECIATION

Depreciation expense	$45,000	
Accumulated depreciation		$45,000

ACTIVITY METHOD

Depreciation based on use



An activity method assigns cost to measured use

- **When it fits:** The company can allocate cost to measured use when use consumes the asset's service.
- **Activity measure:** Estimate lifetime activity in the same units used to record actual activity.

1. Find cost per unit

$$\text{Depreciation per unit} = \frac{\text{Cost} - \text{Residual value}}{\text{Estimated lifetime activity}}$$

Each unit receives part of the asset's depreciable cost.

2. Use period activity

Period depreciation = Actual activity × Depreciation per unit

With unchanged estimates, more activity produces more depreciation.

The scanner allocates cost to each scan

- **Method alternative:** These calculations use an activity method instead of straight-line.
- **Lifetime total, not annual capacity:** Healing Hands estimates 100,000 scans over all 5 years.

Depreciable amount = $970,000 − $70,000 = **$900,000**.

$$\text{Depreciation per scan} = \frac{\$900{,}000}{100{,}000 \text{ scans}} = \$9$$

Rate meaning: Each scan receives $9 of scanner cost.

Full service year 1: October 2026 through September 2027.
24,000 scans × $9 = **$216,000**.

Idle assets: depreciation depends on the method

Does depreciation stop when an asset is idle?

Adrenaline Rush: straight-line gates

- The park closes from January through March.
- The gates' expected retirement date stays unchanged.
- Depreciation continues during the closure.

Healing Hands: scan-based MRI depreciation

- The scan-based alternative allocates cost to actual scans.
- The scanner is idle, with no scans performed.
- Depreciation is zero for the idle period.

iClicker | Question 2 of 5

A company uses operating hours to depreciate a loader. Cost is $168,000, residual value is $24,000, and expected lifetime use is 12,000 hours. Ready October 1, 2026, it operates 900 hours through December 31. What is 2026 depreciation?

A $12,600

B $144,000

C $2,700

D $10,800

iClicker | Answer 2 of 5

Correct answer: D

A company uses operating hours to depreciate a loader. Cost is $168,000, residual value is $24,000, and expected lifetime use is 12,000 hours. Ready October 1, 2026, it operates 900 hours through December 31. What is 2026 depreciation?

A **$12,600**
This choice omits residual value from the hourly rate.

B **$144,000**
This choice expenses the entire depreciable amount instead of allocating it over lifetime use.

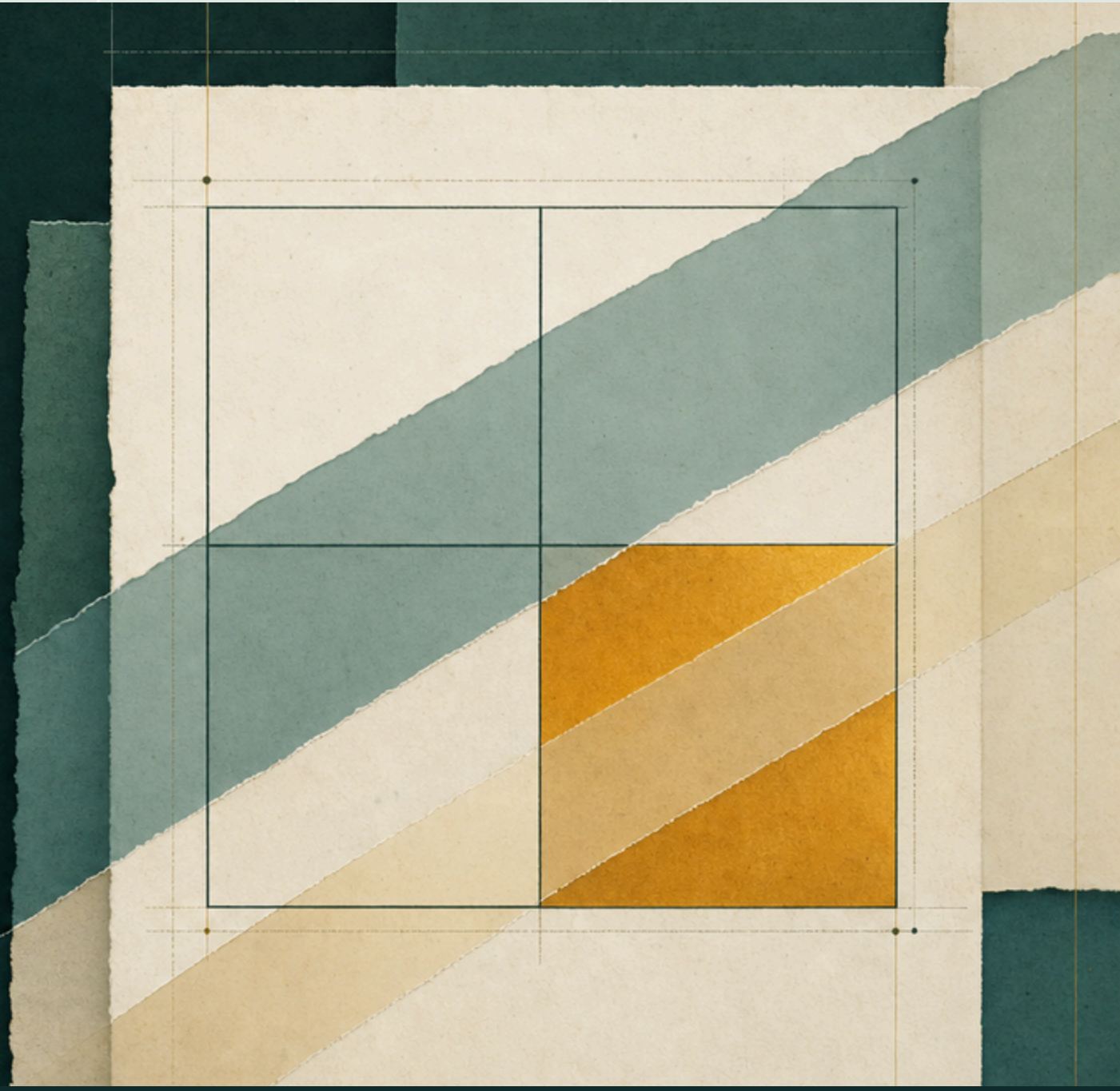
C **$2,700**
The actual hours already cover October through December. Applying a time fraction again understates depreciation.

D **$10,800**

D is correct. Depreciation per hour = $\frac{\text{Cost} - \text{Residual value}}{\text{Lifetime hours}} = \frac{\$168{,}000 - \$24{,}000}{12{,}000} =$ $12. Period depreciation = Actual hours × Depreciation per hour = 900 × $12 = $10,800.

ACCELERATED METHODS

More depreciation in early years



When does an accelerated pattern fit?

An **accelerated method** assigns more cost to earlier years and less to later years.

Greater early productivity

The asset is expected to provide more service early in its useful life.

Obsolescence

New technology may reduce useful service as equipment ages, even while it still works.

Rising maintenance costs

Increasing repair costs can also justify a declining allocation under ASC 360-10-35-7.

A shorter life alone does not require acceleration. The company must justify its allocation; smoothing expense or tracking resale prices is not the objective.

Source: ASC 360-10-35-4 and 35-7.

DDB uses a fixed rate on carrying amount

The **double-declining-balance method (DDB)** doubles the straight-line percentage.

1. Find the base rate	$\text{Straight-line annual rate} = \dfrac{100\%}{\text{Useful life in years}}$
2. Double it	**DDB annual rate = 2 × Straight-line annual rate**
3. Apply it	**DDB depreciation = Beginning carrying amount × DDB rate**

Keep the rate fixed. As carrying amount falls, the same rate produces less depreciation.

Residual floor: Do not subtract residual value before applying the rate. Limit depreciation so carrying amount never falls below residual value.

Apply DDB to Healing Hands's MRI scanner

Healing Hands Hospital's MRI scanner: cost $970,000; residual value $70,000; useful life 5 years.

- **Comparison period:** Year 1 covers October 2026 through September 2027, a full service year.
- **Scanner rate:** Straight-line rate = $\frac{100\%}{5}$ = 20%; DDB rate = 2 × 20% = 40%.
- **DDB base:** Apply 40% to carrying amount without first subtracting residual value.

Year	Beginning carrying amount	Depreciation = Beginning carrying amount × DDB rate	Ending carrying amount = Beginning carrying amount − Depreciation
1	$970,000	$970,000 × 40% = **$388,000**	$970,000 − $388,000 = **$582,000**

Year 1's ending balance becomes Year 2's beginning balance.

Your turn: calculate Year 2 under DDB

> Take about 2 minutes to work on your own or with your neighbor.

Healing Hands Hospital's MRI scanner: cost $970,000; residual value $70,000; useful life 5 years. Use full service years and DDB.

Year	Beginning carrying amount	Depreciation = Beginning carrying amount × DDB rate	Ending carrying amount = Beginning carrying amount − Depreciation
1	$970,000	$970,000 × 40% = **$388,000**	$970,000 − $388,000 = **$582,000**

Calculate the DDB rate, Year 2 depreciation, and the end-of-Year-2 carrying amount.

DDB: the same rate applies to a smaller balance

Healing Hands Hospital's MRI scanner: cost $970,000; residual value $70,000; useful life 5 years. Use full service years and DDB.

$$\text{DDB rate} = 2 \times \frac{100\%}{5} = 40\%.$$

Year	Beginning carrying amount	Depreciation = Beginning carrying amount × DDB rate	Ending carrying amount = Beginning carrying amount − Depreciation
1	$970,000	$970,000 × 40% = **$388,000**	$970,000 − $388,000 = **$582,000**
2	$582,000	$582,000 × 40% = **$232,800**	$582,000 − $232,800 = **$349,200**

Year 2 starts with Year 1's ending carrying amount. The rate stays fixed.

Reach residual value by the end of useful life

- **Endpoint:** Carrying amount must reach residual value by the end of useful life.
- **Final-year depreciation = Beginning carrying amount – Residual value.**

MRI scanner, Year 5: beginning carrying amount $125,712; residual value $70,000; DDB rate 40%.

Year 5 treatment	Depreciation calculation	Ending carrying amount = Beginning carrying amount – Depreciation
DDB rate alone	$125,712 × 40% = **$50,284.80**	$125,712 − $50,284.80 = **$75,427.20**
Final-year adjustment	$125,712 − $70,000 = **$55,712**	$125,712 − $55,712 = **$70,000**

With only one year left, the final-year adjustment gives the same depreciation as switching to straight-line for that year. An earlier planned switch spreads remaining depreciable cost over several years.

Source: ASC 360-10-35-4 and 250-10-45-20.

Sum-of-the-years'-digits uses declining shares

The **sum-of-the-years'-digits method** assigns a larger share of depreciable cost to earlier years.

- **Fixed base:** Subtract residual value from cost. Use that same depreciable amount each year.
- **Fixed denominator:** Add the year numbers from 1 through the useful life.
- **Declining numerator:** Start with the useful life and reduce it by 1 each year.

$$\text{Annual depreciation} = \text{Depreciable amount} \times \frac{\text{Remaining years at the start of the year}}{\text{Sum of the years' digits}}.$$

The numerator falls, so annual depreciation falls. The fractions sum to 1, allocating the entire depreciable amount over useful life.

Apply SOYD to Healing Hands's MRI scanner

Healing Hands Hospital's MRI scanner: cost $970,000; residual value $70,000; useful life 5 years. Use full service years and SOYD.

- **Comparison period:** Year 1 covers October 2026 through September 2027.
- **Denominator:** Sum of the years' digits = 5 + 4 + 3 + 2 + 1 = **15**.
- **Fixed base:** Depreciable amount = Cost − Residual value = $970,000 − $70,000 = **$900,000**.

Year	Depreciation = Depreciable amount × $\frac{\text{Remaining years}}{\text{Sum of digits}}$	Ending carrying amount = Beginning carrying amount − Depreciation
1	$\$900{,}000 \times \frac{5}{15} = \mathbf{\$300{,}000}$	$\$970{,}000 - \$300{,}000 = \mathbf{\$670{,}000}$

Your turn: calculate Year 2 under SOYD

> Take about 2 minutes to work on your own or with your neighbor.

Healing Hands Hospital's MRI scanner: cost $970,000; residual value $70,000; useful life 5 years. Use full service years and SOYD.

Year	Depreciation = Depreciable amount × $\frac{\text{Remaining years}}{\text{Sum of digits}}$	Ending carrying amount = Beginning carrying amount − Depreciation
1	$\$900{,}000 \times \frac{5}{15} = \mathbf{\$300{,}000}$	$\$970{,}000 - \$300{,}000 = \mathbf{\$670{,}000}$

Calculate the Year 2 fraction, depreciation, and ending carrying amount.

SOYD: the fraction falls while the base stays fixed

Healing Hands Hospital's MRI scanner: cost $970,000; residual value $70,000; useful life 5 years. Use full service years and SOYD.

Depreciable amount = $970,000 − $70,000 = $900,000; denominator = 5 + 4 + 3 + 2 + 1 = 15.

Year	Depreciation = Depreciable amount × $\frac{\text{Remaining years}}{\text{Sum of digits}}$	Ending carrying amount = Beginning carrying amount − Depreciation
1	$\$900{,}000 \times \frac{5}{15} = \mathbf{\$300{,}000}$	$970,000 − $300,000 = **$670,000**
2	$\$900{,}000 \times \frac{4}{15} = \mathbf{\$240{,}000}$	$670,000 − $240,000 = **$430,000**

Compare depreciation methods for the MRI scanner

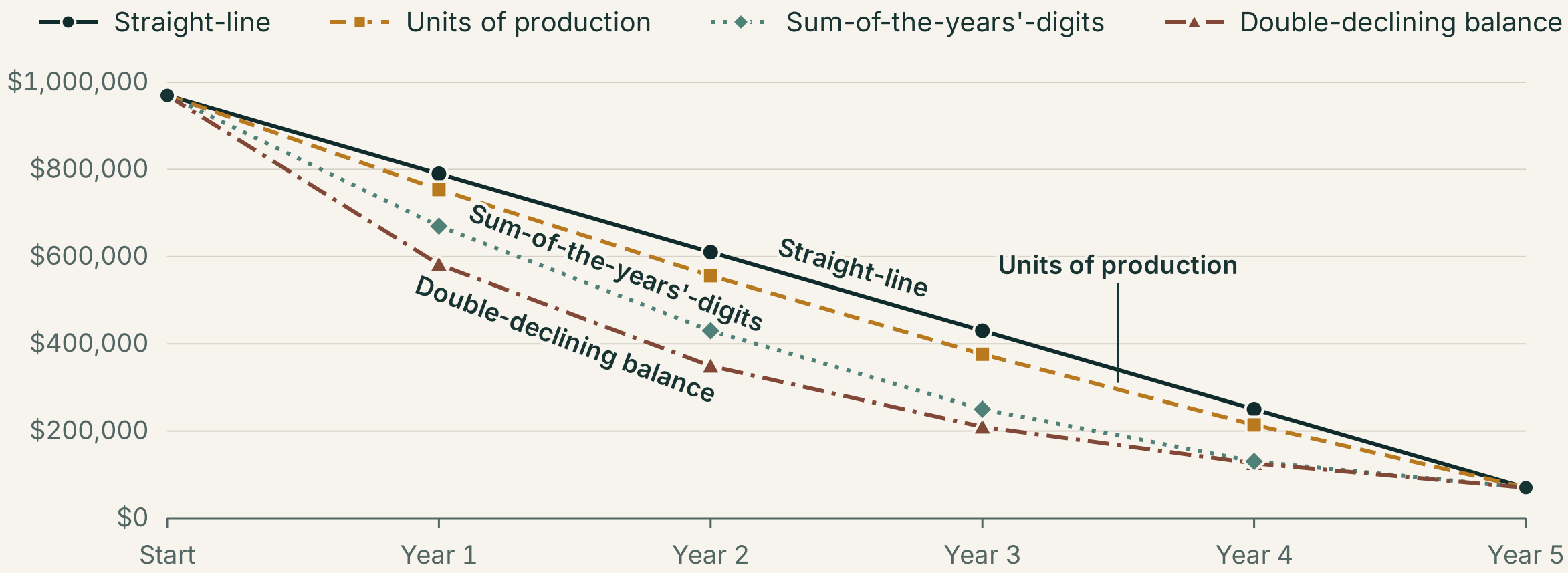
Service year	Straight-line	Units of production	Double-declining balance	Sum-of-the-years'-digits
1	$180,000	$216,000	$388,000	$300,000
2	$180,000	$198,000	$232,800	$240,000
3	$180,000	$180,000	$139,680	$180,000
4	$180,000	$162,000	$83,808	$120,000
5	$180,000	$144,000	$55,712	$60,000
Total	**$900,000**	**$900,000**	**$900,000**	**$900,000**

Period basis: Each row covers a full service year from October 1.

Activity inputs: 24,000, 22,000, 20,000, 18,000, and 16,000 scans at $9 a scan.

The Year 5 DDB column includes the $55,712 completion charge just calculated. It is not another application of the 40% rate.

Compare the MRI scanner's carrying amount



All methods start at $970,000 and end at $70,000. Activity-method charges decline here because scans decline; higher later use could instead raise the charge.

iClicker | Question 3 of 5

A company uses sum-of-the-years'-digits depreciation for a packaging machine. Cost is $60,000, residual value is $6,000, and useful life is 4 years. The machine is ready January 1, 2026. What is 2026 depreciation?

A $21,600

B $16,200

C $24,000

D $13,500

iClicker | Answer 3 of 5

Correct answer: A

A company uses sum-of-the-years'-digits depreciation for a packaging machine. Cost is $60,000, residual value is $6,000, and useful life is 4 years. The machine is ready January 1, 2026. What is 2026 depreciation?

A **$21,600**

A is correct. Denominator = 4 + 3 + 2 + 1 = 10. Depreciable amount = Cost − Residual value = $60,000 − $6,000 = $54,000. Year 1 depreciation = Depreciable amount × $\frac{\text{Remaining years}}{\text{Sum of digits}} = \$54{,}000 \times \frac{4}{10} = \$21{,}600.$

B **$16,200**

This choice uses the Year 2 numerator instead of the Year 1 numerator.

C **$24,000**

This choice omits residual value from the depreciable amount.

D **$13,500**

This choice allocates the same amount each year using straight-line.

Operating facts guide the allocation

Expected pattern of service	Method that may fit
Relatively even service over time	Straight-line
Service consumed mainly through measured production or use	Units of production
Greater productive service in earlier years	Accelerated: DDB or SOYD

These do not justify the depreciation method:

- A preferred income amount does not describe service.
- Easier budgeting does not establish useful life or use.
- A falling resale price alone measures value rather than service consumed.

COMPONENTS

Parts with different useful lives



Use each component's own life and residual value

Component depreciation allocates each separately recorded part's depreciable cost over its own useful life.

- **Why separate lives matter:** A shorter-lived part may need replacement while the rest of the asset remains in use.
- **Allocation:** Using the whole asset's longer life would leave some of that part's depreciable cost unallocated when it is replaced.

$$\text{Annual straight-line component depreciation} = \frac{\text{Component cost} - \text{Component residual value}}{\text{Component useful life}}$$

Component depreciation under US GAAP and IFRS

A single asset can contain significant parts with different useful lives.

US GAAP

- Separate component depreciation is **optional**.
- The company may depreciate the asset as a whole or use separate component schedules.

IFRS

- Separate depreciation is **required for significant parts**.
- Significant parts with the same useful life and method may be grouped.

Source: IAS 16, paragraphs 43 and 45 (IFRS).

Depreciate the log flume's structure and motor separately

Adrenaline Rush's log flume has operated since January 1, 2018. Both components have zero residual value.

Component	Cost	Useful life	Annual straight-line depreciation
Structure	$1,920,000	24 years	$\frac{\$1{,}920{,}000}{24} = \$80{,}000$
Motor	$80,000	12 years	$\frac{\$80{,}000}{12} = \$6{,}666.67$

Retain full precision before rounding accumulated depreciation.

Retire the motor and continue depreciating the structure

Retiring one component does not retire the other components.

Adrenaline Rush, January 1, 2027: The park retires the log flume motor after 9 years, with no proceeds. Motor cost is $80,000 and accumulated depreciation is $60,000.

Component	Treatment after the motor retires	Calculation
Old motor	Remove the motor's cost and accumulated depreciation. Record its remaining carrying amount as a loss.	Loss = $80,000 − $60,000 = **$20,000**
Structure	Keep its balances and continue depreciation over its unchanged 24-year life. Residual value remains zero.	Annual depreciation = $\frac{\$1{,}920{,}000}{24 \text{ years}}$ = **$80,000**

Retiring the motor does not reset the structure's balances or useful life.

Ordinary pooled retirements use pooled accumulated depreciation

Group depreciation combines similar assets. **Composite depreciation** combines dissimilar assets.

Individually tracked asset

- Remove the asset's cost and accumulated depreciation.
- Compare proceeds with carrying amount and record any gain or loss.

Ordinary retirement from a continuing pool

- Remove item cost and record proceeds.
- Debit pooled accumulated depreciation for cost less proceeds.
- Record no separate gain or loss.

Longer-lived and shorter-lived items can offset across the pool's expected retirement pattern. This treatment does not cover unusual losses or disposal of the entire pool.

Source: ASC 360-10-35-4 and 360-10-S99-1.

Adrenaline Rush: a hypothetical pooled motor retirement

Suppose Adrenaline Rush's log flume motor retires from a continuing pool within its expected retirement pattern. Motor cost is $80,000, with no proceeds.

Pooled accumulated depreciation removed = Item cost − Proceeds.

$80,000 − $0 = **$80,000**.

JANUARY 1, 2027: ORDINARY MOTOR RETIREMENT FROM THE HYPOTHETICAL POOL

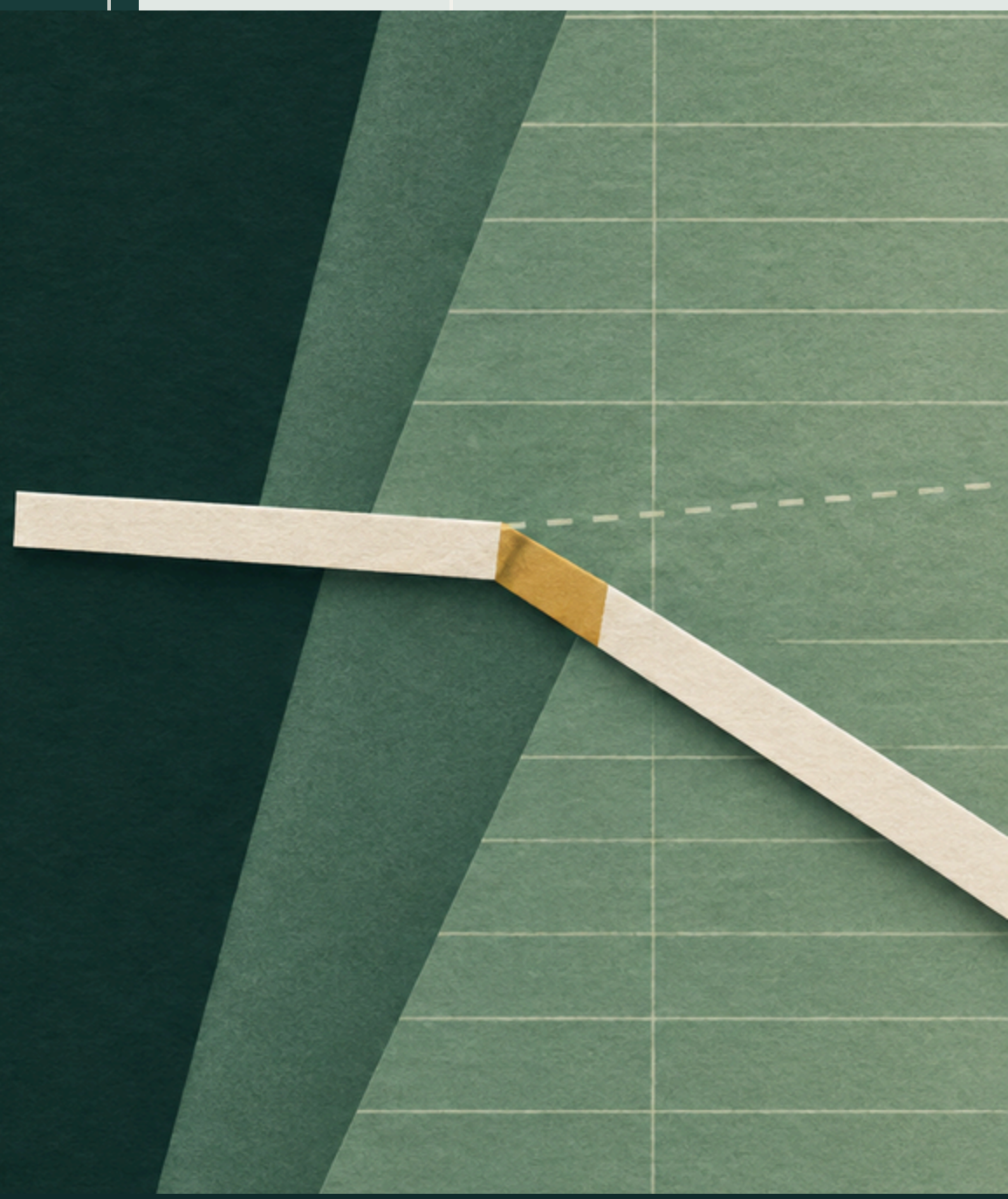
Accumulated depreciation, motor pool	$80,000	
Motors		$80,000

The debit adjusts accumulated depreciation for the whole pool. The company does not calculate this item's separate carrying amount or retirement loss.

In the actual case, Adrenaline Rush tracks the motor individually. The park removes $60,000 of accumulated depreciation and records a $20,000 loss.

ESTIMATE CHANGES

Revising depreciation estimates



New information changes the remaining allocation

A reasonable earlier estimate can become outdated without making the earlier accounting wrong. A **change in accounting estimate** therefore applies **prospectively**.

For straight-line depreciation:

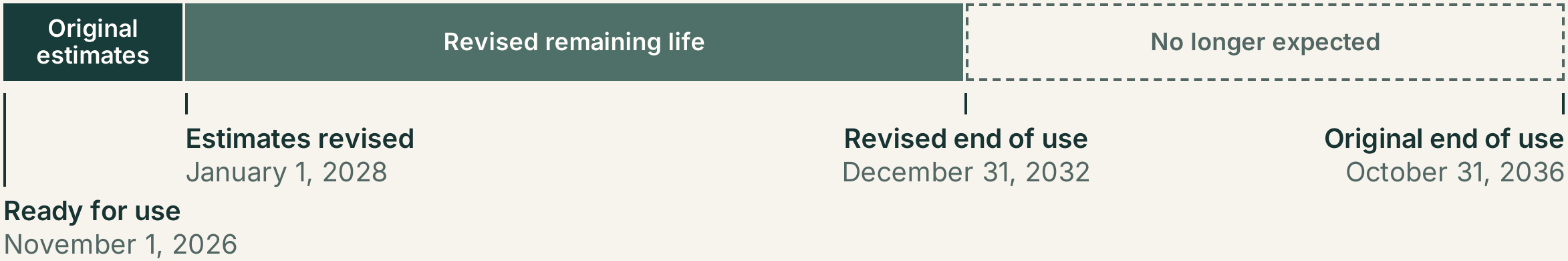
Earlier periods	Retain depreciation based on the information available then.
Date of change	Find carrying amount: Cost − Accumulated depreciation.
Current and later periods	Deduct revised residual value and allocate the remainder over revised remaining service.

Starting from original cost would allocate some cost again. Use revised remaining service rather than the original total life.

Source: ASC 250-10-45-17.

Adrenaline Rush revises the gates' useful life and residual value

New information, January 1, 2028: The park's engineers find faster wear in the gate mechanisms.
Effect: A shorter life and lower residual value increase future annual depreciation.



Estimate	Remaining useful life	Residual value
Original	8 years, 10 months	$5,000
Revised	5 years	$2,500

Step 1: find the carrying amount on the date of change

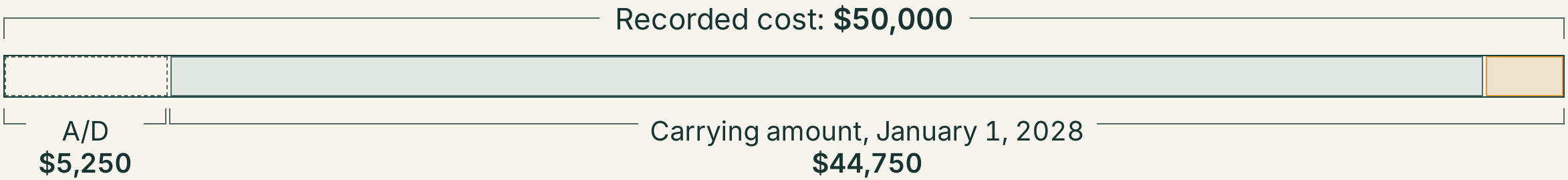
Adrenaline Rush's gates · Estimate change on January 1, 2028

Carrying amount = Cost – Accumulated depreciation.

Period	Depreciation recorded
November to December 2026	$750
2027	$4,500
Accumulated depreciation, January 1, 2028	**$5,250**

Carrying amount = $50,000 – $5,250 = $44,750.

Revise depreciation for Adrenaline Rush's gates



$5,250
Allocated to 2026 and 2027

$42,250
Remaining depreciable amount

$2,500
Revised residual value

Remaining depreciable amount = Carrying amount − Revised residual value
= $44,750 − $2,500 = **$42,250**.

$$\textbf{Revised annual depreciation} = \frac{\textbf{Remaining depreciable amount}}{\textbf{Revised remaining useful life}} = \frac{\$42{,}250}{5 \text{ years}} = \$8{,}450.$$

DECEMBER 31, 2028: RECORD REVISED GATES DEPRECIATION

Depreciation expense	$8,450	
Accumulated depreciation		$8,450

Change in accounting estimate or error?

- **Estimate change:** The company revises a reasonable earlier estimate using new information.
- **Error:** The company miscalculated or misused facts available when preparing its statements.

Situation	Classification	Treatment
In 2028, the park's engineers find faster wear in the gate mechanisms.	Change in accounting estimate	Revise depreciation prospectively.
Suppose in 2026, engineers reported the shorter life, and the park ignored the report.	Error	Correct the error under ASC 250. Do not spread it over later years.
Suppose a clerk recorded $450 of 2027 depreciation in place of $4,500.	Error	Correct the error under ASC 250. Do not spread it over later years.

Source: ASC 250-10-20 (definitions), 250-10-45-17, and 45-23.

A preferable depreciation method applies prospectively

- **Required justification:** The new method must represent expected service better.
- **Insufficient justification:** Higher reported income alone does not justify a change.

Change in useful life or residual value

- Revise expected remaining service or expected recovery at disposal.
- Keep the existing depreciation method.

Change in depreciation method

- Change the pattern used to allocate remaining depreciable cost.
- The new method may measure activity rather than time.

Treatment: Both changes apply prospectively from carrying amount at the change date.

Financial-statement notes for a method change: Disclose the change, why the new method is preferable, and its financial effects.

Source: ASC 250-10-45-18, 45-19, 50-1, and 50-4.

Your turn: revise the scanner's depreciation

> Take about 4 minutes to work through this problem on your own or with your neighbor.

Healing Hands uses straight-line depreciation for the MRI scanner.

Fact	Detail	Fact	Detail
Cost	$970,000	Ready for use	October 1, 2026
Original residual value	$70,000	Original useful life	5 years
2026 depreciation recorded	$45,000	2027 depreciation recorded	$180,000

On January 1, 2028, the manufacturer announces that software support will end December 31, 2030. Healing Hands plans to replace the scanner then. It now estimates a remaining useful life of 3 years and a residual value of $25,000.

Find the January 1, 2028 carrying amount and the revised annual depreciation. Prepare the December 31, 2028 entry.

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The MRI scanner cost $970,000, with a $70,000 residual value and a 5-year life. It was ready October 1, 2026. Healing Hands uses straight-line depreciation and a monthly convention. On January 1, 2028, the hospital estimates a remaining useful life of 3 years and a residual value of $25,000. What is 2028 depreciation?

A $192,000

B $240,000

C $225,000

D $315,000

iClicker | Answer 4 of 5

Correct answer: B

The MRI scanner cost $970,000, with a $70,000 residual value and a 5-year life. It was ready October 1, 2026. Healing Hands uses straight-line depreciation and a monthly convention. On January 1, 2028, the hospital estimates a remaining useful life of 3 years and a residual value of $25,000. What is 2028 depreciation?

A **$192,000**
This choice uses the original remaining life, 3 years, 9 months, in place of 3 years.

B **$240,000**
B is correct. Allocate carrying amount less revised residual value over the 3 remaining years. Keep earlier depreciation unchanged; the next slide works each balance and the entry.

C **$225,000**
This choice keeps the old $70,000 residual value instead of the revised $25,000.

D **$315,000**
This choice restarts from the $970,000 cost and ignores recorded depreciation.

Revise from the scanner's remaining cost

Scanner revision: remaining useful life 3 years; revised residual value $25,000.

Accumulated depreciation = 2026 depreciation + 2027 depreciation
= $45,000 + $180,000 = **$225,000**.

Carrying amount = Cost − Accumulated depreciation
= $970,000 − $225,000 = **$745,000**.

Remaining depreciable amount = Carrying amount − Revised residual value
= $745,000 − $25,000 = **$720,000**.

$$\textbf{Revised annual depreciation} = \frac{\textbf{Remaining depreciable amount}}{\textbf{Revised remaining useful life}} = \frac{\$720{,}000}{3 \text{ years}} = \$240{,}000.$$

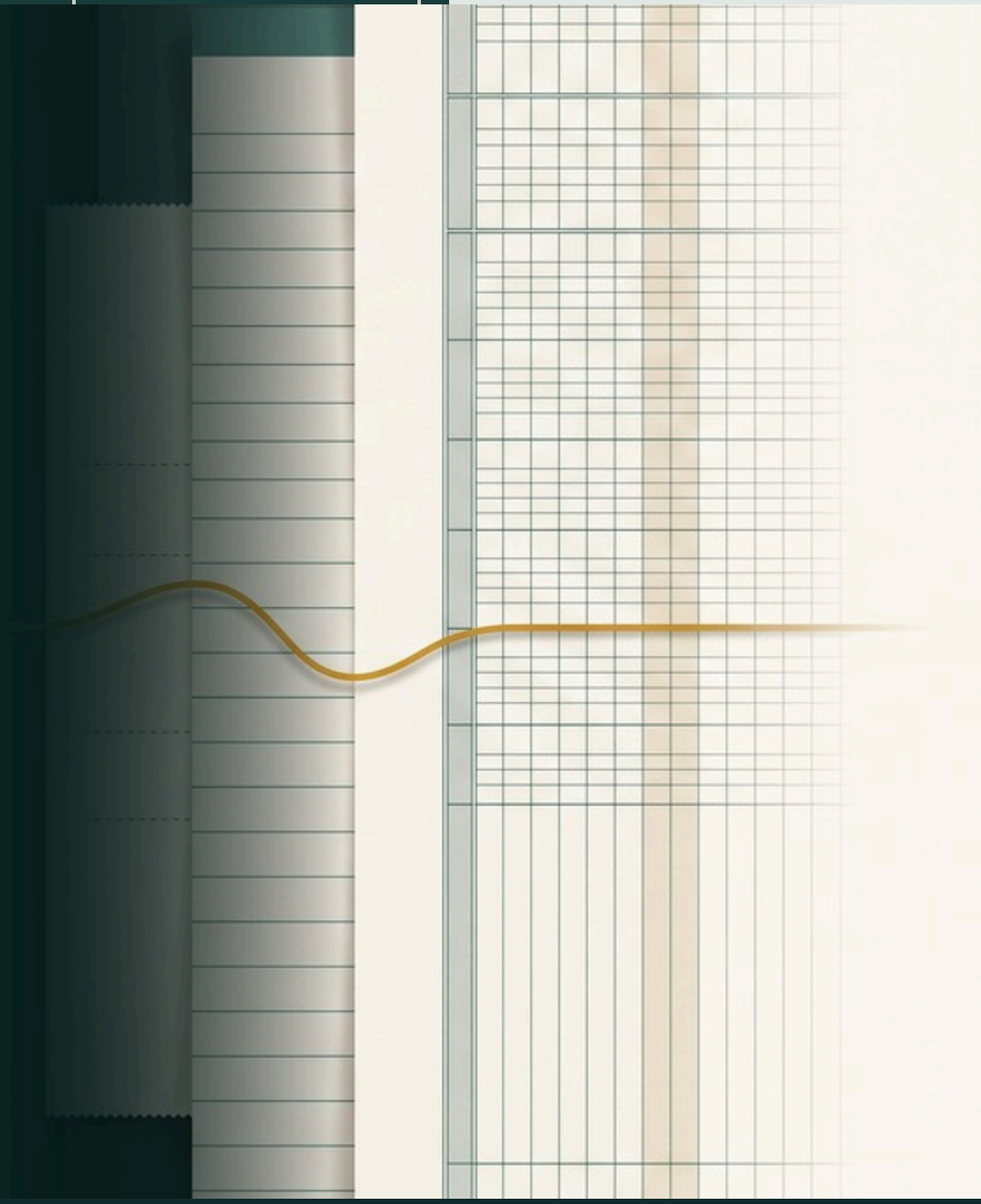
DECEMBER 31, 2028: RECORD REVISED SCANNER DEPRECIATION

Depreciation expense	$240,000	
Accumulated depreciation		$240,000

The revised charges leave the $25,000 residual value at the end of 2030.

DISPOSAL

Selling and retiring assets



The sale removes cost and accumulated depreciation

Update depreciation	Record the allocation through the appropriate date. An earlier held-for-sale classification would stop depreciation then.
Find carrying amount	Cost – Accumulated depreciation at disposal.
Calculate the result	Net proceeds – Carrying amount. A positive result is a gain; a negative result is a loss.
Record the sale	Record the proceeds, remove both asset balances, and recognize the gain or loss.

Net proceeds: Subtract direct selling costs from the amount received.
Scope: Individually tracked depreciable assets held for use until sale.

Source: ASC 610-20-32-2, 360-10-40-5, and 360-10-35-43.

Adrenaline Rush sells the gates on July 1, 2029

- **Transaction:** The buyer pays $33,000 cash and takes control on July 1, 2029.
- **Use through disposal:** The park used the gates through June 30.
- **Assumptions:** There are no selling costs, prior impairment, or earlier held-for-sale classification.
- **Earlier estimate revision:** Engineers found faster wear in the gate mechanisms on January 1, 2028. We calculated revised annual depreciation of $8,450.

Gate depreciation by period

Bars show months in service; amounts below show depreciation.



Nov. to Dec. 2026	2027	2028	Jan. to Jun. 2029
$750	$4,500	$8,450	?
Original estimates	Original estimates	Revised estimates	Not yet recorded

Step 1: record depreciation through June 30, 2029

The revised annual amount, $8,450, also applies to January through June 2029.

$$\text{Partial-year depreciation} = \text{Revised annual depreciation} \times \frac{\text{Months in use}}{12}.$$

$$\text{January to June 2029 depreciation} = \$8{,}450 \times \frac{6}{12} = \$4{,}225.$$

JULY 1, 2029: RECORD DEPRECIATION THROUGH JUNE 30

Depreciation expense	$4,225	
Accumulated depreciation		$4,225

Step 2: find the carrying amount on July 1, 2029

Gate depreciation by period

Bars show months in service; amounts below show depreciation.



Nov. to Dec. 2026	2027	2028	Jan. to Jun. 2029
$750	$4,500	$8,450	$4,225
Original estimates	Original estimates	Revised estimates	Revised estimates

Accumulated depreciation at sale	**$17,925**

Carrying amount = Cost – Accumulated depreciation
= $50,000 – $17,925 = $32,075.

The estimate change affects 2028 and 2029. The 2026 and 2027 amounts stay at the original estimates.

Steps 3 and 4: calculate the gain and record the sale

Gain or loss = Net proceeds – Carrying amount
= $33,000 – $32,075 = $925 gain.

JULY 1, 2029: SELL THE GATES

Cash	$33,000	
Accumulated depreciation	$17,925	
Entrance gates		$50,000
Gain on disposal		$925



Changed fact: the buyer pays $31,000

- **Carrying amount:** Remains $32,075 on July 1, 2029.
- **Sale proceeds:** Fall from $33,000 to $31,000.

Loss on disposal = Carrying amount – Net proceeds.

Loss on disposal = $32,075 – $31,000 = $1,075.

JULY 1, 2029: SELL THE GATES FOR $31,000

Cash	$31,000	
Accumulated depreciation	$17,925	
Loss on disposal	$1,075	
Entrance gates		$50,000

Asset disposals: income statement and statement of cash flows

Income statement

- Depreciation expense allocates cost to the final period of use.
- A gain or loss compares net proceeds with carrying amount.
- Include the gain or loss in continuing operations before tax and in operating income if that subtotal is presented.

Statement of cash flows

- Cash proceeds from selling the asset are an investing inflow.
- Under the indirect method, subtract a gain from net income; add back a loss.
- Add back depreciation because it reduced net income without a current cash payment.

Source: ASC 360-10-45-5, 230-10-45-12, and 230-10-45-28.

Your turn: record the ultrasound equipment sale

> Take about 5 minutes to work through this problem on your own or with your neighbor.

Healing Hands Hospital's ultrasound equipment cost $200,000 and was ready for use January 1, 2026.

Fact	Detail	Fact	Detail
Cost	$200,000	Method	Straight-line
Residual value	$20,000	Convention	Monthly
Useful life	6 years	Depreciation recorded	Through December 31, 2027
Sale date	October 1, 2028	Cash proceeds, no selling costs	$110,000

Record the 2028 depreciation update, find the gain or loss, and record the sale.

iClicker | Question 5 of 5

Ultrasound equipment cost $200,000 and was ready for use on January 1, 2026. It has a 6-year life, a $20,000 residual value, and straight-line depreciation recorded through December 31, 2027. Healing Hands uses a monthly convention. On October 1, 2028, the hospital sells it for $110,000 cash. What gain or loss does the sale produce?

A Loss of $30,000

B No gain or loss

C Loss of $7,500

D Loss of $90,000

iClicker | Answer 5 of 5

Correct answer: C

Ultrasound equipment cost $200,000 and was ready for use on January 1, 2026. It has a 6-year life, a $20,000 residual value, and straight-line depreciation recorded through December 31, 2027. Healing Hands uses a monthly convention. On October 1, 2028, the hospital sells it for $110,000 cash. What gain or loss does the sale produce?

A **Loss of $30,000**
This choice skips the 9-month update, so the carrying amount stays at $140,000.

B **No gain or loss**
This choice records a full year of 2028 depreciation. The hospital used the equipment for only 9 months of 2028.

C **Loss of $7,500**
C is correct. First record January to September depreciation of $22,500. The carrying amount is $200,000 − $82,500 = $117,500, so the loss is $117,500 − $110,000 = $7,500.

D **Loss of $90,000**
This choice compares the proceeds with original cost. Depreciation has already allocated $82,500 of the cost.

Ultrasound depreciation and disposal loss

Sold October 1, 2028; depreciation was current through 2027.

Depreciable amount = Cost − Residual value = $200,000 − $20,000 = **$180,000**.

$$\textbf{Annual depreciation} = \frac{\textbf{Depreciable amount}}{\textbf{Useful life}} = \frac{\textbf{\$180,000}}{\textbf{6 years}} = \textbf{\$30,000.}$$

Period	Depreciation recorded
2026	$30,000
2027	$30,000
January through September 2028: $30,000 × $\frac{9}{12}$	$22,500
Accumulated depreciation at sale	**$82,500**

Carrying amount = Cost − Accumulated depreciation = $200,000 − $82,500 = **$117,500**.

Loss = Carrying amount − Net proceeds = $117,500 − $110,000 = **$7,500**.

Record the update and the sale

OCTOBER 1, 2028: RECORD DEPRECIATION THROUGH SEPTEMBER 30

Depreciation expense	$22,500	
Accumulated depreciation		$22,500

OCTOBER 1, 2028: SELL THE ULTRASOUND EQUIPMENT

Cash	$110,000	
Accumulated depreciation	$82,500	
Loss on disposal	$7,500	
Ultrasound equipment		$200,000

Asset retirement and involuntary conversion

Retirement without proceeds

- At permanent retirement, remove the separately tracked asset's cost and accumulated depreciation.
- Without proceeds, the entire remaining carrying amount becomes a loss.

Involuntary conversion with compensation

- When an insurer or government compensates for a destroyed or taken asset, compare compensation with carrying amount.
- Recognize the gain or loss separately from buying a replacement.
- Record the replacement at its own acquisition cost.

Source: ASC 610-30-25-2, 25-3, and 30-1.

Record insurance recovery for a destroyed delivery van

A company's delivery van is destroyed in a flood on March 31, 2029.

- **Van balances:** Cost $90,000; accumulated depreciation $54,000, updated through the destruction date.
- **Insurance recovery:** The insurer pays an unconditional $42,000 cash settlement that day.

Carrying amount = Cost − Accumulated depreciation
= $90,000 − $54,000 = **$36,000**.

Gain or loss = Insurance recovery − Carrying amount
= $42,000 − $36,000 = **$6,000 gain**.

MARCH 31, 2029: REMOVE THE DESTROYED VAN AND RECORD THE SETTLED RECOVERY

Cash	$42,000	
Accumulated depreciation	$54,000	
Delivery van		$90,000
Gain on conversion		$6,000

Does buying a replacement change the conversion gain?

> The company received $42,000 for its destroyed delivery van, which had a $36,000 carrying amount. It recognized a $6,000 gain.

On April 1, 2029, it pays $105,000 cash for a replacement van.

What cost should the company record for the new van?

Does buying the replacement reverse the gain?

Where does the insurance receipt belong on the statement of cash flows?

Record the replacement van at its acquisition cost

Delivery van case continued: replacement purchase $105,000; insurance recovery $42,000; conversion gain $6,000.

APRIL 1, 2029: ACQUIRE THE REPLACEMENT VAN IN A SEPARATE PURCHASE

Delivery van	$105,000	
Cash		$105,000

The new van costs $105,000. The company retains the $6,000 gain on the destroyed van; buying a replacement does not erase it.

The $42,000 insurance receipt is an investing inflow. The $105,000 replacement payment is a separate investing outflow.

Source: ASC 610-30-25-2, 25-3, 30-1, and 230-10-45-12.

NEXT MEETING

Next class: Measure impairment and analyze asset returns

Thursday, November 19, 2026

