MACRS Depreciation Tables & How to Calculate

MACRS stands for "Modified Accelerated Cost Recovery System." It is the primary depreciation methods for claiming a tax deduction.

Of course, like all things accounting, depreciation can be tricky and it's impossible to remember all the intricate details. Click below to download our free ultimate guide to Macrs depreciation.

Download Our Free Guide

If you'd like to learn about other depreciation methods or want to learn more about how depreciation works in general, read our *What is Depreciation?* article.

How MACRS Depreciation Works

When most people think of depreciation, they think of getting a tax deduction. MACRS is the primary depreciation method used for tax purposes.

When you purchase an asset for business (such as equipment, software, or even buildings), you typically cannot write off the entire cost of the asset in the year of purchase. Rather, the IRS allows you to deduct only a portion of the cost each year over the number of years the asset is expected to last. For example, if you purchase a computer for $1500, you generally can't deduct the entire $1500 in the same year that you purchase the computer. However, you are able to deduct a portion of the cost each year using the MACRS depreciation method.

MACRS stands for Modified Accelerated Cost Recovery System because it allows you to take a larger tax deduction in the early years of an asset and less in later years.

(Note: If you qualify for a Section 179 deduction like most businesses, you can deduct the full cost of assets, up to $500,000, in the year of purchase instead of using MACRS. Learn more about the Section 179 deduction here).

Depreciation can also be reported for accounting purposes. Some businesses keep two sets of books–one for taxes and one for internal and external reporting–and depreciation may be calculated in different ways for taxes and for internal/external financials. While most small businesses aren't required to report depreciation for their books, depreciation can help make sure your books accurately reflect your business income when you purchase expensive assets. For book depreciation, you cannot use MACRS. You must use another method described in our article, *What is Depreciation, and How Does it Work?*

Pro Tip: Whether you use Macrs depreciation, straight line depreciation, or some other method you will need to create and save a depreciation schedule for all fixed assets. Bench makes this easy. You'll have the schedule that you and your CPA or tax accountant need to make tax time a breeze. Get a free trial consultation today.

Depreciation Calculator: How To Calculate MACRS Depreciation

When it comes to calculating depreciation, I recommend that you let your tax software or your tax professional do the calculations for you. However, it is still good for you to understand how the formula works.

The formula to calculate MACRS Depreciation is as follows:

Cost basis of the asset X Depreciation rate

While the formula is simple, what makes calculating MACRS difficult, is that the depreciation rate used varies depending on the type of asset you are depreciating.

In Pub 946 the IRS provides 3 tables to determine the depreciation rate you should use. The three tables are:

1. MACRS Depreciation Methods Table
2. MACRS Percentage Table Guide
3. MACRS Depreciation Rate Tables

Below is a snapshot of each table along with a brief description of how each of them is used in the calculation. Below the tables, we will discuss how to select the information from the tables that you will need to use in order to claim your tax deduction. We also walk you through a hypothetical example.

#1 MACRS Depreciation Calculator Table

Table 4-1. **Depreciation Methods**

Note. The declining balance method is abbreviated as DB and the straight line method is abbreviated as SL.

Method	Type of Property	Benefit
GDS using 200% DB	• Nonfarm 3-, 5-, 7-, and 10-year property	• Provides a greater deduction during the earlier recovery years • Changes to SL when that method provides an equal or greater deduction
GDS using 150% DB	• All farm property (except real property) • All 15- and 20-year property (except qualified leasehold improvement property, qualified restaurant property, and qualified retail improvement property • Nonfarm 3-, 5-, 7-, and 10-year property	• Provides a greater deduction during the earlier recovery years • Changes to SL when that method provides an equal or greater deduction[1]
GDS using SL	• Nonresidential real property • Qualified leasehold improvement property • Qualified restaurant property • Qualified retail improvement • Residential rental property • Trees or vines bearing fruit or nuts • Water utility property • All 3-, 5-, 7-, 10-, 15-, and 20-year property[2] • Property for which you elected section 168(k)(4)	• Provides for equal yearly deductions (except for the first and last years)
ADS using SL	• Listed property used 50% or less for business • Property used predominantly outside the U.S. • Tax-exempt property • Tax-exempt bond-financed property • Farm property used when an election not to apply the uniform capitalization rules is in effect • Imported property[3] • Any property for which you elect to use this method[4]	• Provides for equal yearly deductions (except for the first and last years)

[1]The MACRS percentage tables in Appendix A have the switch to the straight line method built into their rates.
[2]See section 168(b)(5) of the Internal Revenue Code.
[3]See section 168(g)(6) of the Internal Revenue Code.
[4]See section 168(g)(7) of the Internal Revenue Code.

The Depreciation methods table (above) shows the 4 methods of depreciation available using MACRS based on the type of asset (property) you are depreciating. Below is a brief description of each one:

- GDS using 200% DB – An accelerated depreciation method that will give you a larger tax deduction in the early years of an asset (property). Refer to the above table for the types of property this method is primarily used for.
- GDS using 150% DB – An accelerated method of depreciation that will result in a larger tax deduction in the early years than in the later years of an asset. See the table above for the complete list of properties you would generally use this method for.
- GDS using SL – A depreciation method that provides for equal yearly deductions for nonresidential real property, residential rental property and several other property types listed in the table above.
- ADS using SL – A depreciation method that provides for equal annual deductions(except in the first and last years). Used primarily for tax-exempt property and property used outside of the U.S. Refer to the table (above) for the complete list.

#2 MACRS Percentage Table Guide

Appendix A
MACRS Percentage Table Guide
General Depreciation System (GDS)
Alternative Depreciation System (ADS)

Chart 1. *Use this chart to find the correct percentage table to use for any property other than residential rental and nonresidential real property. Use Chart 2 for residential rental and nonresidential real property.*

MACRS System	Depreciation Method	Recovery Period	Convention	Class	Month or Quarter Placed in Service	Table
GDS	200%	GDS/3, 5, 7, 10 (Nonfarm)	Half-Year	3, 5, 7, 10	Any	A-1
GDS	200%	GDS/3, 5, 7, 10 (Nonfarm)	Mid-Quarter	3, 5, 7, 10	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-2 A-3 A-4 A-5
GDS	150%	GDS/3, 5, 7, 10	Half-Year	3, 5, 7, 10	Any	A-14
GDS	150%	GDS/3, 5, 7, 10	Mid-Quarter	3, 5, 7, 10	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-15 A-16 A-17 A-18
GDS	150%	GDS/15, 20	Half-Year	15 & 20	Any	A-1
GDS	150%	GDS/15, 20	Mid-Quarter	15 & 20	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-2 A-3 A-4 A-5
GDS ADS	SL	GDS ADS	Half-Year	Any	Any	A-8
GDS ADS	SL	GDS ADS	Mid-Quarter	Any	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-9 A-10 A-11 A-12
ADS	150%	ADS	Half-Year	Any	Any	A-14
ADS	150%	ADS	Mid-Quarter	Any	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-15 A-16 A-17 A-18

Chart 2. *Use this chart to find the correct percentage table to use for residential rental and nonresidential real property. Use Chart 1 for all other property.*

MACRS System	Depreciation Method	Recovery Period	Convention	Class	Month or Quarter Placed in Service	Table
GDS	SL	GDS/27.5	Mid-Month	Residential Rental	Any	A-6
GDS	SL SL	GDS/31.5 GDS/39	Mid-Month	Nonresidential Real	Any	A-7 A-7a
ADS	SL	ADS/40	Mid-Month	Residential Rental and Nonresidential Real	Any	A-13

Using the MACRS Percentage Table Guide (above), you can determine which depreciation rate table (below) you will need to use. There are about 18 depreciation rate tables provided by the IRS. Below is a snapshot of just two of the tables. You can find a full list of the tables in IRS Pub 946, Appendix A. From this table you can get the depreciation rate allowed for each year of the asset's useful life or recovery period.

MACRS Depreciation Rate Table A-1 & A-2

Table A-1. **3-, 5-, 7-, 10-, 15-, and 20-Year Property**
Half-Year Convention

Year	Depreciation rate for recovery period					
	3-year	5-year	7-year	10-year	15-year	20-year
1	33.33%	20.00%	14.29%	10.00%	5.00%	3.750%
2	44.45	32.00	24.49	18.00	9.50	7.219
3	14.81	19.20	17.49	14.40	8.55	6.677
4	7.41	11.52	12.49	11.52	7.70	6.177
5		11.52	8.93	9.22	6.93	5.713
6		5.76	8.92	7.37	6.23	5.285
7			8.93	6.55	5.90	4.888
8			4.46	6.55	5.90	4.522
9				6.56	5.91	4.462
10				6.55	5.90	4.461
11				3.28	5.91	4.462
12					5.90	4.461
13					5.91	4.462
14					5.90	4.461
15					5.91	4.462
16					2.95	4.461
17						4.462
18						4.461
19						4.462
20						4.461
21						2.231

Table A-2. **3-, 5-, 7-, 10-, 15-, and 20-Year Property**
Mid-Quarter Convention
Placed in Service in First Quarter

Year	Depreciation rate for recovery period					
	3-year	5-year	7-year	10-year	15-year	20-year
1	58.33%	35.00%	25.00%	17.50%	8.75%	6.563%
2	27.78	26.00	21.43	16.50	9.13	7.000
3	12.35	15.60	15.31	13.20	8.21	6.482
4	1.54	11.01	10.93	10.56	7.39	5.996
5		11.01	8.75	8.45	6.65	5.546
6		1.38	8.74	6.76	5.99	5.130
7			8.75	6.55	5.90	4.746
8			1.09	6.55	5.91	4.459
9				6.56	5.90	4.459
10				6.55	5.91	4.459
11				0.82	5.90	4.459
12					5.91	4.460
13					5.90	4.459
14					5.91	4.460
15					5.90	4.459
16					0.74	4.460
17						4.459
18						4.460
19						4.459
20						4.460
21						0.565

In order to select the correct depreciation rate table, you will need to have the following info handy:

1. The type of property you are depreciating: residential rental, nonresidential rental, all other property
2. The depreciation method selected from the depreciation methods table
3. The month or quarter the asset was placed into service

To calculate depreciation using MACRS, you'll need the following info:

1. The depreciation system you need to use – GDS or ADS
2. The property classification of your asset
3. The cost basis of the asset
4. The convention
5. The depreciation method

As I said before, we recommend that you let your tax software or your tax professional handle these depreciation calculations for you. A tax software, like TurboTax, will automatically calculate depreciation of fixed assets and will check for other deductions your business may be eligible for. You can get started for free and you only pay when you file.

Depreciation System

There are two types of depreciation systems that fall within the MACRS depreciation method: the General Depreciation System (GDS) and the Alternative Depreciation System (ADS). In general, most small businesses must use GDS unless you are required by law to use ADS.

You must use ADS if your property falls into one of the following groups:

- Listed property used 50% or less in a qualified business use.
- Any tangible property used predominantly outside the United States during the year. Any tax-exempt use property.
- Any tax-exempt bond-financed property.

- All property used predominantly in a farming business and placed in service in any tax year during which an election not to apply the uniform capitalization rules to certain farming costs is in effect.
- Any property imported from a foreign country for which an Executive Order is in effect because the country maintains trade restrictions or engages in other discriminatory acts.

Although your property may qualify for GDS, you can elect to use ADS. You can learn more about the requirements to make the ADS election in Pub 946.

Property Classifications

There are nine property classifications for MACRS GDS and ADS. Below is a summary table of 3, 5, and 7 year property classes. You can find the full list in IRS Pub 946.

Depreciation Recovery Periods (Useful Life) for Business Equipment

Recovery period (useful life)	Types of business equipment
3-year property	Tractor units and horses over 2 years old
5-year property	Cars, taxis, buses, trucks, computers, office equipment (computers, monitor, calculators, copiers), research equipment, cattle
7-year property	Office furniture and fixtures such as desks, files and safes

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Cost Basis of the Asset

The cost basis for an asset is any costs incurred so that you can start using it in your business. This includes but is not limited to sales tax, installation charges, delivery charges, and any other related costs.

Use the formula below to calculate the cost basis of an asset:

Cost basis of an asset = Purchase price of the asset + Sales tax + Shipping and delivery costs + Installation charges + Other costs

- Purchase price of the asset – The amount you paid for the equipment, vehicle or other asset purchased.
- Sales tax – This is the amount you paid in sales tax (if any) for the asset.
- Shipping and delivery costs – Include shipping or delivery charges you paid to get the asset to your place of business.
- Installation charges – Any amount paid to install the equipment or furniture at your place of business.
- Other costs – Be sure to include any other expenses that you had to pay to make the asset usable for your business. For example, if you purchased a new machine and you had to have a technician come out and calibrate it before you could use it, the amount paid to the technician should be included in the cost basis of the machine.

Convention

The convention establishes when the recovery period (useful life) of an asset begins and ends. The convention you use will determine the number of months you can claim a tax deduction in the year that you start using the property and in the year you stop using it.

There are 3 types of conventions:

- Mid-month – The mid-month convention assumes that you placed the property in service or stopped using it for your business in the middle of the month. This means that your tax deduction is limited to a half month of depreciation in the month the property was placed in service and in the month you stopped using the property for your business. This convention applies to nonresidential real property, residential real property, and any railroad grading or tunnel bore. If your property does not fall into one of these categories, then the mid-month convention does not apply.
- Mid-quarter – The mid-quarter convention assumes that you placed property into service or disposed of the property at the midpoint of that quarter. This means that your tax deduction is limited to 1 ½ months of depreciation for the property in the quarter that it was placed into service and in the quarter it is disposed of.
    - The mid-quarter convention should only be used if the mid-month convention does *not* apply and the total depreciable bases of MACRS property placed in service or disposed during the last 3 months of the tax year are more than 40% of the total depreciable bases of all MACRS property you place in service during the entire year. This *does not* include nonresidential real property, real property, railroad grading or tunnel bore and property that is being depreciated under another depreciation method. If the mid-quarter convention does not apply, then you must use the half-year convention.
- Half-year – Use this convention if neither the mid-month convention nor the mid-quarter convention apply. The half-year convention treats all property as if it were placed in service or disposed of at the midpoint of the year. This means that your tax deduction is limited to 6 months in the year that you placed the property in service and the year that it is disposed of.

Depreciation Method

There are 4 MACRS depreciation methods. Three of them fall under the GDS system, and the fourth method falls under the ADS system. If your property falls into any of the groups described above, you must use the ADS system.

Here are the four MACRS depreciation calculator methods and a brief description of the benefits of each:

- 200% declining balance method over a GDS recovery period – This method provides a larger deduction in the early years of an asset's useful life and less in the later years. Refer to the MACRS Depreciation Methods table for the type of property to use this method for.
- 150% declining balance method over a GDS recovery period – Similar to the 200% declining balance method, it provides a larger deduction in the early years rather than the later years of an asset's useful life. Refer to the MACRS Depreciation Methods table for the type of property this method applies to.
- Straight line method over a GDS recovery period – This method allows you to deduct the same amount of depreciation every year except the first and last year of service. See the MACRS Depreciation Methods Table for a list of the property types that would use this method.
- Straight line method over an ADS recovery period – Similar to the straight line method over a GDS recovery period, it allows you to deduct the same amount each year except for the year you place the asset in service and the year you dispose of it. In the MACRS Depreciation Methods table you can see what type of property would use this method.

No matter which depreciation method is right for your business, you'll be able to record and track depreciation schedules using QuickBooks Online. New customers can sign up for a free trial or get up to 50% off the purchase of QuickBooks Online.

Putting it All Together

Now that you have a better understanding of how to determine the depreciation system, property classification, recovery period (useful life), depreciation method, and convention, let's take a look at a few examples on how to calculate depreciation for fixed assets using the MACRS method.

Let's say you purchased a machine, some furniture, and a computer.

Property	Cost Basis	Recovery period (Useful life)	Placed in service
Machine	$4000	7	January 1
Furniture	$1000	7	April 30
Computer	$5000	5	September 15

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Based on the Depreciation Recovery Period table, the machines and furniture have a recovery period of 7 years, and the computer has a 5 year recovery period.

To determine the depreciation method to use, refer to the Depreciation Methods table. All 3 assets are considered to be “nonfarm” 5 and 7 year properties, so we will use the GDS using 200% DB method.

To determine the depreciation rate table to use for each asset, refer to the MACRS Percentage Table Guide. All 3 assets will use Table A-1.

Machine Annual Depreciation Expense Calculation: Year 1

The machine is a 7 year property that was placed into service in the first quarter of the year (Jan). It does not qualify for the mid-month convention because it is not nonresidential real property, residential real property, or a railroad grading or tunnel bore.

It does not qualify for the mid-quarter convention because there was no property purchased in the last quarter of the year. Therefore, we will use the half-year convention which means that depreciation expense for the first year and the year the machine is disposed of will be calculated at 6 months regardless when the machine was placed into service. Using the rates from Table A-1 for 7 year property gives us a depreciation rate of 14.29% for year 1 for the machine.

$4000 X 14.29% = $571.60

Furniture Annual Depreciation Expense Calculation: Year 1

The furniture is 7 year property that was placed into service in the second quarter of the year (April). It does not qualify for the mid-month convention because it is not nonresidential real property, residential real property or a railroad grading or tunnel bore.

It does not qualify for the mid-quarter convention because there was no property purchased in the last quarter of the year. Therefore, we will use the half-year convention which means that depreciation expense for the first year and the year the furniture is disposed of will be calculated at 6 months regardless when the furniture was placed into service. Using the rates from Table A-1 for 7 year property gives us a depreciation rate of 14.29% for year 1 for the furniture.

$1000 X 14.29% = $142.90

Computer Annual Depreciation Expense Calculation: Year 1

The computer is 5 year property that was placed into service in the third quarter of the year (Sept). It does not qualify for the mid-month convention because it is not nonresidential real property, residential real property or a railroad grading or tunnel bore.

It does not qualify for the mid-quarter convention because there was no property purchased in the last quarter of the year. Therefore, we will use the half-year convention which means that depreciation expense for the first year and the year the computer is disposed of will be calculated at 6 months regardless when the computer was placed into service. Using the rates from Table A-1 for 5 year property gives us a depreciation rate of 20.00% for year 1 for the furniture.

$5000 x 20.00% = $1000

How to Report MACRS Depreciation for Tax Purposes

For tax purposes, you must complete Form 4562 to calculate your allowable depreciation deduction. The IRS has provided a MACRS Worksheet on page 40 of Pub 946 to help you calculate this deduction so that you can easily transfer the info to Form 4562.

MACRS Worksheet

Keep for Your Records

Part I

1. MACRS system (GDS or ADS)	______
2. Property class	______
3. Date placed in service	______
4. Recovery period	______
5. Method and convention	______
6. Depreciation rate (from tables)	______

Part II

7. Cost or other basis*	$ ______	
8. Business/investment use	______ %	
9. Multiply line 7 by line 8		$ ______
10. Total claimed for section 179 deduction and other items		$ ______
11. Subtract line 10 from line 9. This is your tentative basis for depreciation		$ ______
12. Multiply line 11 by .50 if the 50% special depreciation allowance applies. This is your special depreciation allowance. Enter -0- if this is not the year you placed the property in service, the property is not qualified property, or you elected not to claim a special allowance		$ ______
13. Subtract line 12 from line 11. This is your basis for depreciation		______
14. Depreciation rate (from line 6)		______
15. Multiply line 13 by line 14. This is your MACRS depreciation deduction		$ ______

If you're using a tax software like TurboTax, filling out this form will be a normal part of this process and you don't need to worry about filling out additional forms.

What Records Should I Keep for Tax Purposes?

As with all tax deductions, you need to keep good accurate records that support your tax deductions. This includes any contracts, title documents and all receipts. You will also need to create and save a depreciation schedule for all fixed assets.

Accounting software like QuickBooks Online makes it easy to create depreciation schedules. However, if you don't have QuickBooks, use a spreadsheet program to create your depreciation schedules. It should look similar to the sample schedule I have provided below:

Depreciation Schedule: 5-Year Property

Date Put in Service	Description	Cost	Recovery Period (yrs.)	Year 1 Depreciation (Books)	Year 1 Depreciation (Tax)
1/1/2016	Computer	$5000	5	$480	$295

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The Bottom Line

Calculating depreciation can be a tricky business. For some business owners, depreciation calculations will come naturally. But if you still feel a little lost, you're not alone. For many business owners, it makes sense to just trust a professional accountant to take care of depreciation and other small business bookkeeping needs.

If you need a bookkeeper to help with depreciation schedules and other bookkeeping needs, we recommend Bench. The experts at Bench will keep track of your books and coordinate directly with your CPA/Tax accountant to provide them with the info they need to file your tax return without bothering you. Plans start at $95 per month and you can get a free trial consultation (and a free set of financial statements for your business).