

Redstone Torch

For other uses, see [Redstone and Torch \(disambiguation\)](#).

A **redstone torch** is a non-solid [block](#) that produces a full-strength [redstone](#) signal on all sides adjacent to it, except for its attached block, and can power the block directly above it. It deactivates while the block it is attached to is powered.

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Notes

Redstone Torch

Lit Unlit



Java Edition



Bedrock Edition



[View all renders](#)

<u>Renewable</u>	Yes
<u>Stackable</u>	Yes (64)
<u>Tool</u>	Any tool
<u>Blast resistance</u>	0
<u>Hardness</u>	0
<u>Luminous</u>	Yes (7) (when lit)
<u>Transparent</u>	Yes
<u>Flammable</u>	No

References**Navigation****Catches fire from lava**

No

Map color (JE) 0 NONE

Obtaining

In *Java Edition*, the inactive redstone torch cannot be obtained as an item without commands. In *Bedrock Edition*, it can be obtained via inventory editing.^[1]

Breaking

A redstone torch can be broken instantly using any tool, or without a tool, and drops itself as an item.

Block	 Redstone Torch
Hardness	0
Breaking time (secs)	
Default	0.05

Legend

- incorrect tool, drops nothing
- correct tool, drops nothing or something other than the block itself
- correct tool, drops the block itself
- *italicized* can be instant mined

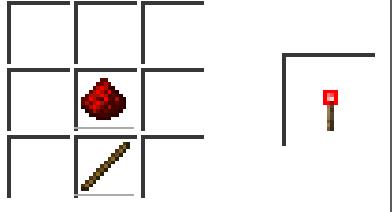
A redstone torch is removed and drops as an item if:

- its attachment block is moved, removed, or destroyed
- water or lava flows into its space
- a piston pushes it or moves a block into its space

Natural generation

A single redstone torch is found inside each igloo. In ancient cities, multiple redstone torches can be found integrated into circuitry.

Crafting

Ingredients	Crafting recipe	[hide]
Redstone Dust + Stick		

Usage

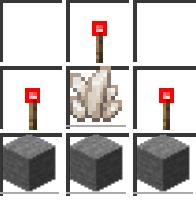
Light

Redstone torches give off a [light level of 7](#).

When the [Render Dragon Features for Creators](#) experiment is enabled in [Minecraft Preview](#), the top part of redstone torches emits colored point lighting with . This causes the bottom part of the torch to render a small square shadow, and the surrounding texture to render diagonal lines of shadow in all directions.

Crafting ingredient

Redstone torches can be used to craft [activator rails](#), [redstone comparators](#), and [redstone repeaters](#).

Name	Ingredients	Crafting recipe	[hide]
Activator Rail	Iron Ingot + Stick + Redstone Torch		
Redstone Comparator	Redstone Torch + Nether Quartz + Stone		
Redstone Repeater	Redstone Torch + Redstone Dust + Stone		

Redstone component

See also: [Redstone circuit](#)

Redstone torches can be used to power blocks and [transmission components](#) such as [redstone dust](#), activate [mechanism components](#) such as [pistons](#), or invert redstone signals like a [NOT Gate](#).

Placement

See also: [Opacity/Placement](#)

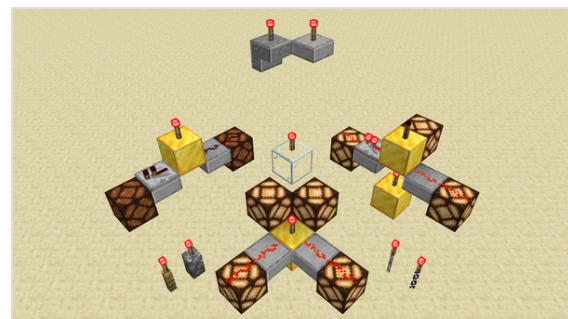
The placement conditions of a redstone torch are identical to the ones of a normal torch, it can be attached to (some exceptions might apply):

- the **top** or **sides** of any [conductive block](#) (examples: stone, soul sand, slime blocks, dispensers, etc.)
- the **top** of a non-conductive block that is at least 16 pixels tall and has a 2x2 pixels surface under where the redstone torch would be positioned (examples: glass panes, vertical chains, fences, etc.)

- the **full side surfaces** of a non-conductive block (examples: glass, stairs, open trapdoors, etc.)

Redstone torches cannot be attached to the bottoms of any blocks.

Attempting to attach a redstone torch to an invalid surface can cause it to "snap" to a valid surface adjacent to the same space. For example, if a fence is on the ground, attempting to attach a redstone torch to the *side* of the fence causes the redstone torch to be attached to the *top* of the ground next to the fence instead.



Examples of redstone torch placement and behavior

Activation

A redstone torch is active unless the block it is attached to is powered. However, the type of power required to deactivate it differs between editions:

In *Java Edition*: A redstone torch deactivates if the block it is attached to is either weakly or strongly powered.

In *Bedrock Edition*: A redstone torch deactivates only if the block it is attached to is strongly powered. An exception is a redstone torch placed on a (sticky) piston, which will turn off when the piston is extended and turn on when the piston is retracted: this mechanic is known by the community as "soft inversion".^[2]

Effectively, a redstone torch inverts the signal applied to its attachment block: power level 0 is changed to 15 and power levels 1 to 15 are changed to 0 (for an alternative that produces a greater range of output power levels, consider a redstone comparator in subtraction mode).

Walls, fences, glass, slabs, hoppers,^[note 1] and stairs are non-conductive, so redstone torches attached to them cannot be deactivated.

A redstone torch takes 2 game ticks (0.1 seconds barring lag) to change state. In *Java Edition*, redstone torches do not respond to all 2 game tick pulses.

Behavior

A lit redstone torch strongly powers the block above itself and weakly powers its other direct neighbor blocks, excluding the one it is attached to. It also produces the same particles as redstone dust.

A redstone torch experiences "burn-out" when it is forced to turn off (by powering and de-powering the block it is attached to) more than eight times in 60 game ticks (3 seconds). After burning out, a redstone torch produces a "smoke" particle and a hiss similar to an extinguished fire, deactivates, and then ignores attempts to change its state until the number of state changes in the last 60 game ticks drops to fewer than eight.

In *Java Edition*, a redstone torch might or might not attempt to turn itself back on after 160 ticks (8 seconds) depending on the update chain that caused it to burn out.^[3] The torch will be unresponsive to neighbor updates during this time frame.

In *Bedrock Edition*, each redstone torch can only burn itself out; the redstone torch needs to be in a circuit that causes it to power itself with no delay, otherwise it will not burn out.

A burnt-out redstone torch will turn back on after receiving a block update. There is no limit on how often a single redstone torch can burn out.

Sounds

Generic

Java Edition:

Wood sound type [hide]								
Sound	Closed captions	Source	Description	Identifier	Translation key	Volume	Pitch	Attenuation distance
	Block broken	Blocks	Once the block has broken	block.wood.break	subtitles.block.generic.break	1.0	0.8	16
	Block placed	Blocks	When the block is placed	block.wood.place	subtitles.block.generic.place	1.0	0.8	16
	Block breaking	Blocks	While the block is in the process of being broken	block.wood.hit	subtitles.block.generic.hit	0.25	0.5	16
	Something falls on a block	<i>Entity-Dependent</i>	Falling on the block with fall damage	block.wood.fall	subtitles.block.generic.fall	0.5	0.75	16
	Footsteps	<i>Entity-Dependent</i>	Walking on the block	block.wood.step	subtitles.block.generic.footsteps	0.15	1.0	16

Bedrock Edition:

Wood sound type							
Sound	Closed captions [upcoming: BE 26.0]	Source	Description	Identifier	Translation key [upcoming: BE 26.0]	Volume	Pitch
	Block broken	Blocks	Once the block has broken	dig.wood	subtitles.block.generic.break	1.0	0.8-1.0
	Block broken	Blocks	When the block is placed	dig.wood	subtitles.block.generic.break	1.0	0.8
	Block breaking	Blocks	While the block is in the process of being broken	hit.wood	subtitles.block.generic.hit	0.23	0.5
	Footsteps	Players	Falling on the block with fall damage	fall.wood	subtitles.block.generic.footsteps	0.4	1.0
	Footsteps	Players	Walking on the block	step.wood	subtitles.block.generic.footsteps	0.3	1.0
	Footsteps	Blocks	Jumping from the block	jump.wood	subtitles.block.generic.footsteps	0.12	1.0
	Footsteps	Blocks	Falling on the block without fall damage	land.wood	subtitles.block.generic.footsteps	0.18	1.0

Unique

Java Edition

Sounds							
Sound	Closed captions	Source	Description	Identifier	Translation key	Volume	Pitch
	Torch fizzes	Blocks	When a redstone torch burns out	block.redstone_torch.burnout	subtitles.block.redstone_torch.burnout	0.5	1.8-3.4

Bedrock Edition:

Sounds							
Sound	Closed captions [upcoming: BE 26.0]	Source	Description	Identifier	Translation key [upcoming: BE 26.0]	Volume	Pitch
	?	Blocks	When a redstone torch burns out	random.fizz	?	1.0 [verify]	2.0 [verify]

Data values

ID

Java Edition:

Name	Identifier	Form	Block tags	Translation key	[hide]
Redstone Torch	redstone_torch	Block & Item	wall_post_override	block.minecraft.redstone_torch	
Redstone Wall Torch	redstone_wall_torch	Block	None	block.minecraft.redstone_wall_torch	

Bedrock Edition:

Name	Identifier	Numeric ID	Form	Item ID ^[i 1]	Translation key	[hide]
Redstone Torch	redstone_torch	76	Block & Giveable Item ^[i 2]	Identical ^[i 3]	tile.redstone_torch.name	
Unlit Redstone Torch	unlit_redstone_torch	75	Block & Ungiveable Item ^[i 4]	Identical ^[i 3]	tile.unlit_redstone_torch.name	

1. ID of block's direct item form, which is used in savegame files and addons.
2. Available with `/give` command.
3. The block's direct item form has the same ID as the block.
4. Unavailable with `/give` command

Block states

See also: [Block states](#)

Java Edition:

Floor:

Name	Default value	Allowed values	Description	[hide]
lit	true	false true	If the torch is lit.	

Wall:

Name	Default value	Allowed values	Description	[hide]
facing	north	east north south west	The direction the top of the torch is facing.	
lit	true	false true	If the torch is lit.	

Bedrock Edition:

Name	Metadata Bits	Default value	Allowed values	Values for Metadata Bits	Description	[hide]
torch_facing_direction	0x1 0x2 0x4	west	west east north south top	1 2 3 4 5	The face of the block that the torch is attached to. If the torch is a wall torch, the top of the torch faces opposite to this direction. ^[4]	
			unknown	0	Unused	

Videos

History

There is an associated [technical blocks](#) page for the internal item form of this block; see [Technical blocks/Unlit Redstone Torch](#).

Java Edition

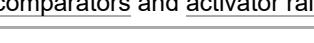
Java Edition Alpha		
[hide]		
v1.0.1		  Added redstone torches.
Redstone torches currently emit flame particles when lit.		
v1.0.2_01		Redstone torches now strongly power only the <u>block</u> above them. ^[5] Redstone torches now emit redstone dust particles when lit.
v1.1.0		Redstone torches can no longer be placed on <u>leaves</u> when the <u>graphics</u> are set to <i>Fancy</i> .
v1.2.0_02		Redstone torches no longer duplicate in <u>multiplayer</u> .
Java Edition Beta		
[hide]		
1.3		Redstone torches are now used to craft <u>redstone repeaters</u> .
1.6	Test Build 3	Torches can no longer be placed on <u>leaves</u> in fast graphics.
1.6.6		Redstone torches can now be placed on <u>glowstone</u> .
1.7		Redstone torches can now be placed on the top of <u>fences</u> .
1.7.3		A redstone torch duplication bug when using <u>pistons</u> has now been corrected. Redstone torches no longer produce both redstone torch particles and uncolorized (white) redstone dust particles when broken.
Java Edition		
[hide]		
1.2.1	1.2	The requirement for redstone torches to burn out has been changed from being turned off 8 times in the span of 100 game ticks to being turned off 8 times in the span of 60 game ticks. Because of this change, <u>clocks</u> that include three redstone torches powering each other in a loop can now be used reliably.
	12w07a	Redstone torches can now be placed on the top of <u>glass</u> .
1.3.1	12w18a	As a result of singleplayer being changed to an internal server, redstone torches no longer produce <u>smoke particles</u> when burning out.
	12w25a	Redstone torches can now be placed on upside-down <u>slabs</u> and <u>stairs</u> .
1.4.4	1.4.3	Redstone torches now have a bottom texture, visible on wall torches or torches placed on top of <u>glass</u> . ^[6]
1.5	13w01a	The way redstone torches update has been changed. As a result, burn-out <u>clocks</u> that use only two redstone torches are now reliable. Redstone torches can now be used to craft <u>redstone comparators</u> and <u>activator rails</u> .
1.8	14w07a	  Redstone torches placed on walls are now rotated cuboids rather than a parallelepiped. Their top texture now also rotates accordingly.
	14w25a	Burnt-out redstone torches no longer randomly fix themselves.   Redstone torches are now incorrectly affected by directional shading.
	14w33c	

		Redstone torches are no longer affected by ambient occlusion.
<u>1.9</u>	<u>15w43a</u>	A redstone torch now generates as part of igloos.
	<u>15w46a</u>	Mobs no longer spawn on redstone torches.
<u>1.12</u>	<u>pre4</u>	Torches can no longer be placed on top of jack o'lanterns. ^[7]
<u>1.13</u>	<u>17w48a</u>	Redstone torches can now be placed on the top of jack o'lanterns once again.
<u>1.14</u>	<u>18w43a</u>	The texture of redstone torches has now been changed.
	<u>19w12b</u>	Redstone torches can now be placed on ice, glowstone and sea lanterns.
	<u>19w14a</u>	Redstone torches once again produce smoke particles when burning out.
<u>1.19</u>	<u>22w13a</u>	Redstone torches now generate in ancient cities.
<u>1.21.2</u>	<u>24w33a</u>	The item texture and models for redstone torches have changed.

Bedrock Edition

Pocket Edition Alpha			[hide]
v0.13.0	build 1	Added redstone torches.	
Pocket Edition			[hide]
<u>1.0.0</u>	<u>alpha 0.17.0.1</u>	A redstone torch now generates as part of igloos.	
Bedrock Edition			[hide]
<u>1.2.13</u>	<u>beta 1.2.13.5</u>	The back faces of redstone torches now render.	
<u>1.10.0</u>	<u>beta 1.10.0.3</u>	The texture of redstone torches has now been changed.	
<u>1.21.123</u>	<u>release</u>	The back faces of redstone torches no longer render.	

Legacy Console Edition

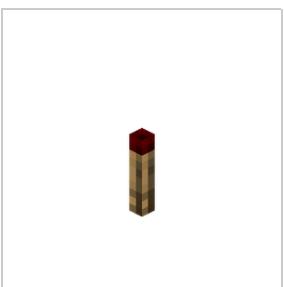
Legacy Console Edition							[hide]
Xbox 360	Xbox One	PS3	PS4	PS Vita	Wii U	Switch	
TU1	CU1	1.00	1.00	1.00	Patch 1	1.0.1	                                   <img alt="A single redstone torch with a red glow at the top." data-bbox="761 8265 781

Renders

Java Edition



Redstone torch



Unlit redstone torch



Redstone wall torch

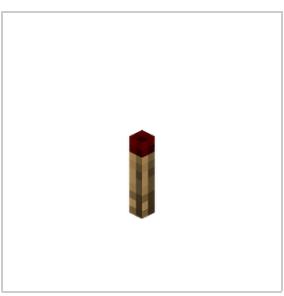


Unlit redstone wall torch

Bedrock Edition



Redstone torch



Unlit redstone torch

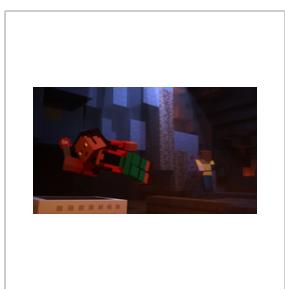


Redstone wall torch



Unlit redstone wall torch

In other media



Noor catching a redstone torch

Several characters carrying redstone torches in [Introducing New Default Skins!](#)

Action figure of Steve holding a redstone torch





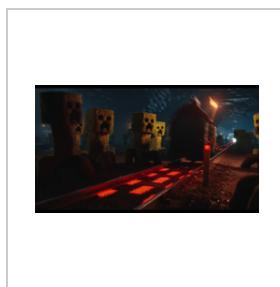
Official replica of a redstone torch.



ThinkGeek produced redstone torch



Charger shaped like a redstone torch.



Redstone torches in *A Minecraft Movie*.

Notes

1. Redstone torches can be placed on hoppers only in *Bedrock Edition*

References

1. In Java it is a block state and in Bedrock it is an entirely separate block.
2. [MCPE-17909](#) — resolved as "Won't fix"
3. [MC-120938](#)
4. [MCPE-152036](#)
5. [I'm considering making the not torches less annoying](#) – The Word of Notch, July 6, 2010
6. [MC-1153](#) — resolved as "Fixed".
7. [MC-118408](#) — Torches and redstone torches cannot be placed on top of a Jack o'Lantern but can be placed on pumpkin — resolved as "Fixed".

Navigation

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Redstone components			[hide]																																																																																																																																																								
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Comparator-readable			[hide]																																																																																																																																																								

<u>Observer-related</u>	Item Frame (Glow) Respawn Anchor Shulker Box
<u>Pistons/related</u>	Redstone Ore (Deepslate) Scaffolding Sculk Catalyst
<u>Sculk sensor-related</u>	Sculk Shrieker Wall
<u>Mechanisms/misc.</u>	Piston (Sticky) Honey Block Slime Block
	Movable and immovable blocks
	Block of Amethyst Wool (Carpet)
	Armor Stand Bell Big Dripleaf Copper Bulb
	Creaking Heart Doors (Copper) Iron Wooden)
	Fence Gate Head Note Block Redstone Lamp
	Shelf TNT (Minecart) Trapdoors (Copper) Iron
	Wooden)
	Command Block (Minecart)
	Minecart with Monster Spawner Structure Block
	Test Block

	Blocks	[hide]
	Structural	[show]
	Ornamental	[show]
	Natural	[show]
	Utility	[hide]
<u>Interactable</u>	Anvil (Chipped) Damaged) Barrel Beacon Brewing Stand	
	Cartography Table Chest (Ender) Copper) Crafting Table	
	Enchanting Table Furnace (Blast) Smoker) Grindstone Lectern	
	Loom Shulker Box (Dyed) Sign (Hanging) Smithing Table	
	Stonecutter	
	Banners (Ominous) Beehive Beds Bell Bookshelf Cake	
	(with Candle) Campfire (Soul) Cauldron Chiseled Bookshelf	
	Composter Conduit Copper Golem Statue Decorated Pot	
	End Gateway End Portal End Portal Frame Farmland	
	Fletching Table Flower Pot Frosted Ice Heads (Skeleton)	
	Wither Skeleton Zombie Creeper Piglin Dragon) Heavy Core	
	Jukebox Ladder Lodestone Monster Spawner Nether Portal	
	Respawn Anchor Scaffolding Shelf Sponge (Wet)	
	Suspicious Gravel Suspicious Sand TNT Trial Spawner	
	(Ominous) Vault (Ominous)	
	Buttons (Wooden) Stone Polished Blackstone) Copper Bulb	
	Crafter Daylight Detector Dispenser Dropper Doors (Copper)	
	Iron Wooden) Honey Block Hopper Lever Lightning Rod	
	Note Block Observer Piston (Sticky) Pressure Plates (Wooden)	
	Stone Polished Blackstone Heavy Weighted Light Weighted)	
	Rail (Activator) Detector Powered) Redstone Lamp	
	Redstone Wire (Comparator) Repeater Torch) Slime Block	
	Target Trapped Chest Trapdoors (Copper) Iron Wooden)	
	Fence Gates Tripwire Hook (Tripwire)	
	Allow Border Chalkboard Compound Creator Deny	
	Element Constructor Heat Block Item Frame (Glow) Lab Table	
	Material Reducer Underwater TNT Underwater Torch	
<u>BE & edu only</u>	Creative or commands only	[show]
	Removed	[show]
	Unused	[show]
	Unimplemented	[show]
	Joke	[show]

 **Extreme metadata variants**[\[show\]](#)

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