

# Blast Furnace   re article feedback

A **blast furnace** is a block that smelts ores, raw metals, and metal armor and tools twice as quickly as a [furnace](#), but cannot use smelting recipes or cook food. It also serves as an armorer's job site block.

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## Obtaining

### Breaking

A blast furnace can be picked up using any [pickaxe](#). If mined without a pickaxe, it does not drop itself.

Blast furnaces drop their contents when broken.

Block	<span></span> <b>Blast Furnace</b>
Hardness	3.5
Tool	<span></span>
Breaking time (sec) <sup>[A]</sup>	
Default	17.5
<span></span> Wooden	2.65
<span></span> Stone	1.35
<span></span> Copper	1.05
<span></span> Iron	0.9
<span></span> Diamond	0.7
<span></span> Netherite	0.6
<span></span> Golden	0.45

#### 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

1. These durations ignore other influential factors (e.g., [Mining Fatigue](#)) and are measured in seconds. For more information, see [Breaking § Speed](#).

Blast Furnace	
Inactive Lit	
<div></div>	
<div></div> <div>View all renders</div>	
Renewable	Yes
Stackable	Yes (64)
Tool	<span></span>
Blast resistance	3.5
Hardness	3.5
Luminous	Yes (13) (when active)
Transparent	Partial (when active)
Flammable	No
Catches fire from lava	No
Map color <i>(JE)</i>	<span></span> 11 STONE

## Natural generation

Blast furnaces can generate in any armorer house; these can be found in a village. Blast furnaces can also generate in trail ruins.

## Crafting

Ingredients	Crafting recipe <span>[hide]</span>
Iron Ingot + Furnace + Smooth Stone	

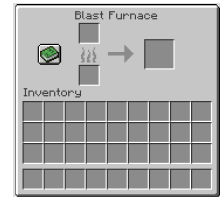
## Usage

Blast furnaces can be pushed by pistons.<sup>[*Bedrock Edition only*]</sup>

## Smelting

*Main article: Smelting*

Blast furnaces are similar to furnaces, but can smelt only raw metal, ore blocks and tools/armor made of iron, gold, chainmail, or copper. Blast furnaces serve as the counterpart to smokers, which are used mainly to cook food faster. Smelting equipment yields one iron or gold nugget from their respective materials. Once an item and a fuel are placed into the blast furnace, the block state changes to lit and the item is smelted twice as fast as a regular furnace. Fuel is also used at double the rate of regular furnaces, so the number of items smelted per fuel stays the same. The product can then be collected by using the output. Like normal furnaces, a hopper can be used to feed items into or collect items from a blast furnace.



The GUI for the blast furnace, same as the ordinary furnace's.

## Profession

*Main article: Job site block*

If a blast furnace has not been claimed by a villager, any nearby unemployed villager has a chance to change their profession to armorer and claim the blast furnace as their job site block.

## Light source

Blast furnaces emit a light level of 13 when active, similar to normal furnaces.

## Custom name

By default, the interface of a blast furnace is labeled "Blast Furnace", but this name can be customized by naming it in an anvil before placing it, or by changing the CustomName tag using the /data command.<sup>[*Java Edition only*]</sup>

## Lock

In *Java Edition*, a blast furnace can be "locked" by setting its lock tag using the /data command. If a blast furnace's lock tag is not blank, the blast furnace cannot be opened unless the player is holding an item with the same name as the lock tag's text. For example, to lock a blast furnace at (0,64,0) so that the blast furnace cannot be opened unless the player is holding an item named "Blast Furnace Key", use /data merge block 0 64 0 {lock:{components:{"custom\_name":"Blast Furnace Key"}}}.

## Note blocks

Blast furnace can be placed under note blocks to produce "bass drum" sounds.

## Sounds

### Generic

*Java Edition:*

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

*Bedrock Edition:*

stone sound type <span>[hide]</span>							
Sound	Closed captions <small><span>[</span>upcoming: BE 26.0<span>]</span></small>	Source	Description	Identifier	Translation key <small><span>[</span>upcoming: BE 26.0<span>]</span></small>	Volume	Pitch
	Block broken	Blocks	Once the block has broken	dig.stone	subtitles.block.generic.break	1.0	0.8-1.0
	Block broken	Blocks	When the block is placed	dig.stone	subtitles.block.generic.break	1.0	0.8-1.0
	Block breaking	Blocks	While the block is in the process of being broken	hit.stone	subtitles.block.generic.hit	0.37	0.5
	Footsteps	Players	Falling on the block with fall damage	fall.stone	subtitles.block.generic footsteps	0.4	1.0
	Footsteps	Players	Walking on the block	step.stone	subtitles.block.generic footsteps	0.3	1.0
	Footsteps	Blocks	Jumping from the block	jump.stone	subtitles.block.generic footsteps	0.12	1.0
	Footsteps	Blocks	Falling on the block without fall damage	land.stone	subtitles.block.generic footsteps	0.22	1.0

## Unique

*Java Edition*

Sounds <span>[hide]</span>								
Sound	Closed captions	Source	Description	Identifier	Translation key	Volume	Pitch	Attenuation distance
	Blast furnace crackles	Blocks	Randomly while lit	block.blastfurnace.fire_crackle <span>[</span> sound 1 <span>]</span>	subtitles.block.blastfurnace.fire_crackle <span>[</span> sound 1 <span>]</span>	1.0	1.0	16
	Armorer works	Friendly Mobs	Randomly while an armorer is working	entity.villager.work_armorer	subtitles.entity.villager.work_armorer	1.0	0.8-1.2	16
	Chest locked <span>[</span> sound 2 <span>]</span>	Blocks	When a player attempts to open a blast furnace locked using the <b>lock</b> tag	block.chest.locked <span>[</span> sound 2 <span>]</span>	subtitles.block.chest.locked <span>[</span> sound 2 <span>]</span>	1.0	1.0	16

- MC-179832
- MC-98316 — Wrong subtitles caused by missing distinction


*Bedrock Edition:*


Sounds <span>[hide]</span>							
Sound	Closed captions <small><span>[</span>upcoming: BE 26.0<span>]</span></small>	Source	Description	Identifier	Translation key <small><span>[</span>upcoming: BE 26.0<span>]</span></small>	Volume	Pitch
	?	Blocks	Randomly while lit	block.blastfurnace.fire_crackle	?	3.0	0.6
	?	Blocks	Randomly while an armorer is working	block.blastfurnace.fire_crackle	?	3.0	0.6

## Data values



### ID

*Java Edition:*

Name	Identifier	Form	Translation key <span>[hide]</span>
 Blast Furnace	blast_furnace	Block & Item	block.minecraft.blast_furnace

Name	Identifier <span>[hide]</span>
 Block entity	blast_furnace

*Bedrock Edition:*

Name	Identifier	Numeric ID	Form	Item ID <sup>[1]</sup>	Translation key <span>[hide]</span>
 Unlit block	blast_furnace	451	Block & Giveable Item <sup>[2]</sup>	Identical <sup>[3]</sup> (Numeric: -196)	tile.blast_furnace.name
 Lit block	lit_blast_furnace	469	Block & Ungiveable Item <sup>[4]</sup>	Identical <sup>[3]</sup> (Numeric: -214)	—

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

Name	Savegame ID <span>[hide]</span>
 Block entity	BlastFurnace

### Block states

*See also: Block states*

*Java Edition:*

Name	Default value	Allowed values	Description <span>[hide]</span>
facing	north	east north south west	The direction the blast furnace's opening faces. The opposite from the direction the player faces while placing the blast furnace.
lit	false	false true	If the blast furnace is lit.

*Bedrock Edition:*

Name	Metadata Bits	Default value	Allowed values	Values for Metadata Bits	Description <span>[hide]</span>
minecraft:cardinal_direction	Not Supported	south	east north south west	Unsupported	The direction the blast furnace's opening faces. The opposite from the direction the player faces while placing the blast furnace.

## Block data

A blast furnace has a block entity associated with it that holds additional data about the block.

*Java Edition:*

See also: *Block entity format*

Block entity data

### Tags common to all block entities

- lit\_time\_remaining**: Number of ticks left before the current fuel runs out.
- cooking\_time\_spent**: Number of ticks the item has been smelting for. The item finishes smelting when this value reaches 200 (10 seconds). Is reset to 0 if lit\_time\_remaining reaches 0.
- cooking\_total\_time**: Number of ticks it takes for the item to be smelted.
- lit\_total\_time**: Represent the total time the furnace should be lit.

### Tags common to all objects that can be renamed

- Items**: List of items in this container.
  - : An item in the blast furnace, including the slot tag:
    - Slot 0: The item(s) being smelted.
    - Slot 1: The item(s) to use as the next fuel source.
    - Slot 2: The item(s) in the result slot.

#### An item

### Tags common to all containers that can be locked

- RecipesUsed**: Recipes that have been used since the last time a recipe result item was manually removed from the GUI. Used to calculate experience given to the player when taking out the resulting item. Is not preserved when removed.
  - recipe ID**: How many times this specific recipe has been used. The *recipe ID* is the identifier of the smelting *recipe*, as a *resource location*, as used in the / recipe  command.

*Bedrock Edition:*









See Bedrock Edition level format/Block entity format.

## Videos









## History

*There is an associated *technical blocks* page for the internal item form of this block; see *Technical blocks/Lit Blast Furnace*.*









*Java Edition*

Java Edition			<span>[hide]</span>
1.14	18w44a	<div></div> Added blast furnaces.	
		Blast furnaces are currently obtainable only through the Creative inventory and the GUI can be accessed only through Spectator mode.	
	18w48a	Blast furnaces now generate in the updated villages in plains.	
	18w49a	Blast furnaces now generate in the updated villages in savannas and the new villages in snowy tundras.	
	18w50a	Blast furnaces now generate in the updated villages in deserts and taigas.	
		Blast furnaces are now functional and craftable.	
	19w03a	Sounds have been added for blast furnaces.	
	19w11a	Blast furnaces now serve as armorer villagers' job site block.	
1.16	20w06a	Added ancient debris, which can be smelted in blast furnaces.	
1.17	21w14a	Added raw metals, which can be smelted in blast furnaces.	
1.20	23w12a	Blast furnaces now generate in trail ruins.	

Bedrock Edition

Bedrock Edition			<span>[hide]</span>
1.9.0 Experiment Experimental Gameplay	beta 1.9.0.2	<div></div> Added blast furnaces as part of Experimental Gameplay.	
1.10.0 Experiment Experimental Gameplay	beta 1.10.0.3	A crafting recipe has been added for the blast furnace.	
		Blast furnaces now generate in the new village armorer houses.	
1.11.0	beta 1.11.0.1	<div></div> Blast furnaces are now functional.	
		They are no longer available only behind Experimental Gameplay.	
1.21.50	Preview 1.21.50.24	Blast furnaces drop themselves only if mined using a pickaxe, matching Java Edition.	

PlayStation 4 Edition

PlayStation 4 Edition			<span>[hide]</span>
1.91		<div></div> Added blast furnaces.	
		Blast furnaces can smelt sand and red sand.	

Data history

Bedrock Edition			<span>[hide]</span>
1.20.30	Preview 1.20.30.20	Blast furnaces now use the minecraft:cardinal_direction block state instead of facing_direction.	

Gallery

Renders

Java Edition



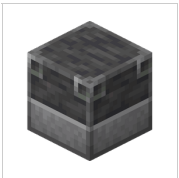
Facing south



Facing south, lit



Facing west



Facing north



Facing east



Facing east, lit

Bedrock Edition



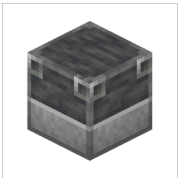
Facing south



Facing south, lit



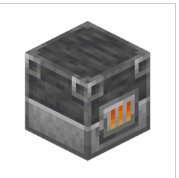
Facing west or north



Facing west or north,  
lit



Facing east



Facing east, lit

## In other media



## Issues

## See also

- ## External links

- ## Navigation

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