

Dropper • See article feedback

This article is about the block that drops projectiles as an item. For the block that can fire projectiles, see [Dispenser](#).

A **dropper** is a low-capacity storage block that can eject its contents [into the world](#) or into other containers when given a [redstone signal](#).

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Dropper	
	View all renders
Renewable	Yes
Stackable	Yes (64)
Tool	
Blast resistance	3.5
Hardness	3.5
Luminous	No
Transparent	No
Flammable	No
Catches fire from lava	No
Map color (JE)	<input type="checkbox"/> 11 STONE

[Java Edition](#)[Bedrock Edition](#)[In other media](#)

See also

References

External links

Navigation

Obtaining

Breaking

A dropper can be mined with a [pickaxe](#), in which case it drops itself and its contents. If mined without a pickaxe, the dropper drops only its contents.

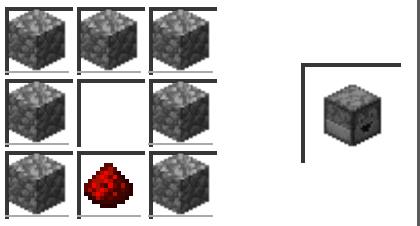
Block	 Dropper
Hardness	3.5
Tool	
<u>Breaking time (sec)^[A]</u>	
Default	17.5
 Wooden	2.65
 Stone	1.35
 Copper	1.05
 Iron	0.9
 Diamond	0.7
 Netherite	0.6
 Golden	0.45

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](#).

Crafting

Ingredients	Crafting recipe	[hide]
Cobblestone + Redstone Dust		

Usage

A dropper can be used as a container or as a [redstone component](#) to move items.

A dropper can be placed so that its output faces in any direction, including up or down. When placed, the dropper's output faces toward the player. With default textures, the droppers output side looks like a face when positioned for horizontal output. Otherwise, the output side has a square hole.

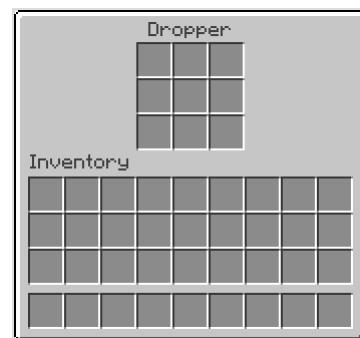
In [Java Edition](#), droppers cannot be moved by [pistons](#).

Container

A dropper has 9 slots of inventory space.

To open the dropper GUI, use the [Use Item control](#). To move items between the dropper inventory and the player inventory or hotbar while the dropper GUI is open, drag or shift-click the items. To exit the dropper GUI, use the [Esc](#) control.

By default, the GUI of a dropper is labeled "Dropper". A dropper's GUI label can be changed by naming the dropper in an [anvil](#) before placing it. In [Java Edition](#), droppers can also be renamed by using the [/data](#) command (for example, to label a dropper at (0,64,0) "Alice's Dropper", use `/data merge block 0 64 0 {CustomName:'Alice's Dropper'}`).



GUI of the dropper.

In [Java Edition](#), a dropper can be "locked" (or subsequently unlocked) by setting the dropper's lock tag with the [/data](#) command. If a dropper's lock tag is not blank, the dropper cannot be accessed except by players holding an item that matches the item predicate in the lock tag. For example, to lock a dropper at (0,64,0) so that only players holding an item named "Alice's Key" can access the dropper, use `/data merge block 0 64 0 {lock:{components:[{"custom_name":"Alice's Key"}]}}`.

Redstone component

See also: [Redstone circuit](#)

A dropper can be used to eject items, or push items into another container.

Activation

A dropper can be activated by:

- an adjacent active **power component** (*exceptions*: a redstone torch does not turn ON a dropper it is attached to)
- an adjacent powered opaque **block** (strongly-powered or weakly-powered)
- a powered **redstone repeater** or **redstone comparator** facing the dropper
- powered **redstone dust** configured to point at the dropper, or on top of it; a dropper is *not* activated by adjacent powered redstone dust that is configured to point in another direction.

In addition to the methods above, droppers in *Java Edition* can also be activated by quasi-connectivity. A dropper activates if one of the methods above *would* activate a mechanism component in the block above the dropper, even if there is no mechanism component there (even if the block above the dropper is air or a transparent block), but only when the dropper receives a block update (including a redstone update within two blocks of the dropper).

A dropper has a delay of 4 game ticks (0.2 seconds) between activation and a response. During this time, additional inputs are ignored.

In *Bedrock Edition*, the dropper can only activate on the input/consumer redstone tick (C-tick).

Behavior

See also: [Tutorial:Item transportation § Dropper elevator](#)

When activated, a dropper waits 4 game ticks (0.2 seconds) and then ejects one item from its inventory. The dropper does not continue to eject items while activated — ejection occurs only on the initial activation (the rising edge of an input signal). To eject multiple items, repeatedly activate the dropper with a clock circuit.

If multiple slots are occupied by items, a random occupied slot is chosen for ejection. The slot is chosen when an item is ejected, not when the dropper is initially activated, thus it is possible to move items into or out of a dropper between its activation and item dispensing.

If the dropper is facing a container, the ejected item is transferred into the container. If the container it is facing is full, or the item cannot be inserted into the container, the dropper does not activate. Examples of containers that items cannot be inserted into include chests that cannot be opened because of a solid block above them, and droppers that are already in an activated state.

Otherwise, the item is ejected in the direction the dropper is facing, as if a player had used the drop control. Even items that would be treated differently by a dispenser (such as arrows) are simply ejected by a dropper.

A dropper makes a clicking noise (the random.click sound event) when activated empty or when ejecting items into air. It is silent when it successfully transfers an item into any kind of chest or barrel, or another dropper.

A dropper is an opaque block, so powering it directly can cause adjacent mechanism components (including other droppers) to activate as well.

A line of droppers, each pushing items into the next dropper, is known as a **dropper pipe**. A dropper pipe must be clocked to move items, but can be clocked to move items faster than a hopper pipe's transfer rate. When a dropper pipe pushes items upward, it is known as a **droppervator** (short for "dropper elevator").

A dropper that is directly powered by redstone will activate before any adjacent droppers activated during the same game tick. In a droppervator or dropper pipe, this has the effect of moving the item in the directly-powered dropper 2 blocks in one game tick. First, the item is ejected from the directly powered dropper. Then, during the same game tick, this item is ejected from the adjacent dropper.

Container interactions

Some containers interact with droppers in specific ways:

Barrel, **boat with chest**, **dispenser**, **dropper**

Droppers interact normally with barrels, boats with chests, dispensers, and other droppers.

Brewing stand

A dropper facing toward a brewing stand from above deposits only into the ingredient slot and it can insert only valid brewing ingredients. A dropper facing toward a brewing stand from the sides or from below can deposit only blaze powder in the fuel slot, or filled bottles into the three brew slots.

Chest, **trapped chest**

Large chests and large trapped chests are treated as a single container: a dropper depositing into a large chest fills up the entire chest. Trapped chests being accessed by a player trigger any adjacent droppers, depositing items into the chest if they are facing toward it.

Chiseled bookshelf

A dropper facing toward a chiseled bookshelf from any direction can insert books, books and quills, written books, enchanted books, and knowledge books.

Crafter

Droppers can insert ingredients in the crafting grid. Items are distributed in enabled slots, going left to right starting from the first row; if the crafter has all item slots filled then items are added to the lowest count item stack of the same type.

Composter

A dropper facing toward a composter from above can push compostable items into the composter, with a chance of increasing the compost level as if the player used the item on the composter.

Decorated pot

Droppers can deposit up to a stack of a single type of item into a decorated pot.

Items are not inserted if the decorated pot is full or the pot contains a different item.

Ender chest

Droppers cannot interact with ender chests in any way.

Furnace, blast furnace, smoker

A dropper facing toward a furnace from above deposits only into the ingredient slot. It can insert any item, including items that can't be smelted by the furnace. A dropper facing toward a furnace from the sides or from below deposits only into the fuel slot, and only items that are usable as fuel.

Hopper

A dropper facing toward a hopper can insert items even if the hopper is locked by an active redstone signal.

Shelf

A dropper facing towards a shelf can insert items into available slots. It will try to add to a stack of the same type, inserting into the first empty slot if it can't, doing so from left to right. The dropper does not activate if the item cannot fit in the shelf.

Jukebox

A dropper can insert music discs into a jukebox from any direction. The dropper does not activate if the jukebox is already playing a disc.

Lectern

Droppers cannot interact with lecterns in any way.

Minecart with chest, minecart with hopper

A dropper can insert items into minecarts with chests and minecarts with hoppers if any part of the entity's hitbox is within the dropper's target block-space. A dropper can fill a minecart with hopper even if the latter has been locked by an activator rail.

Shulker box

Droppers cannot put shulker boxes into other shulker boxes. Otherwise, droppers interact with shulker boxes normally.

Note blocks

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

Crafting ingredient

Name	Ingredients	Crafting recipe	[hide]
Crafter	Iron Ingot + Crafting Table + Redstone Dust + Dropper		

Sounds

Generic

[Java Edition](#):

stone sound type									[hide]
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		When the block is placed	block .stone .place	subtitles .block .generic .place				
	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							
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 .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									[hide]
Sound	Closed captions	Source	Description	Identifier	Translation key	Volume	Pitch	Attenuation distance	
	Dispensed item [sound 1]	Blocks	When a dropper drops an item	block .dispenser .dispense [sound 1]	subtitles .block .dispenser .dispense [sound 1]	1.0	1.0	16	
	Dispenser fails [sound 1]		When a dropper fails to activate	block .dispenser .fail [sound 1]	subtitles .block .dispenser .fail [sound 1]		1.2	16	
	Chest locked[sound 1]	Blocks	When a player attempts to open a dropper locked using the lock tag	block .chest .locked [sound 1]	subtitles .block .chest .locked [sound 1]	1.0	1.0	16	

1. The dropper reuses other containers' sound events instead of having its own, see [MC-98316](#).

Bedrock Edition:

Sounds								[hide]
Sound	Closed captions [upcoming: BE 26.0]	Source	Description	Identifier	Translation key [upcoming: BE 26.0]	Volume	Pitch	
	?	Blocks	When a dropper drops an item	block .click	?	1.0	1.0	
	?		When a dropper fails to activate	block .click				1.2

Data values

ID

Java Edition:

Name	Identifier	Form	Translation key	[hide]
 Dropper	dropper	Block & Item	block.minecraft.dropper	
Name		Identifier [hide]		
 Block entity		dropper		

Bedrock Edition:

Name	Identifier	Numeric ID	Form	Item ID ^[i 1]	Translation key	[hide]
 Dropper	dropper	125	Block & Giveable Item ^[i 2]	Identical ^[i 3]	tile.dropper.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.

Name	Savegame ID	[hide]
 Block entity	Dropper	

Block states

See also: [Block states](#)

Java Edition:

Name	Default value	Allowed values	Description	[hide]
facing	north	down east north south up west	The direction in which contents are shot or dropped. The opposite from the direction the player faces while placing the block.	
triggered	false	false true	True if this block is activated.	

Bedrock Edition:

Name	Metadata Bits	Default value	Allowed values	Values for Metadata Bits	Description	[hide]
facing_direction	0x1 0x2 0x4	0	0 1 2 3 4 5 6 7	0 1 2 3 4 5 6 7	The direction in which contents are shot or dropped. <ul style="list-style-type: none">▪ 0: facing down▪ 1: facing up▪ 2: facing north▪ 3: facing south▪ 4: facing west▪ 5: facing east	
triggered_bit	0x8	false	false true	0 1	True if this block is activated.	

Block data

A dropper 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

Tags common to all objects that can be renamed

Items: List of items in this container.

└ : An item, including the slot tag. Dropper slots are numbered 0-8 with 0 in the top left corner.

An item

Tags common to all containers that can be locked

Tags common to all objects that use loot tables to produce items

Lunar: Exists only in the april fools snapshot [23w13a_or_b](#). Optional. When set to any full number from -128 to 127, turns it to a lunar base dropper, and placing light or heavy pressure plate on top of it creates the [lunar base](#) structure.

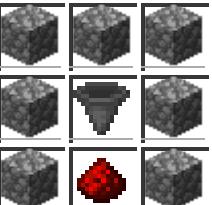
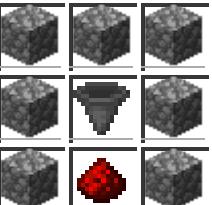
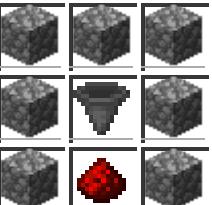
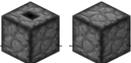
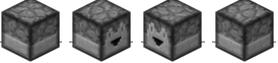
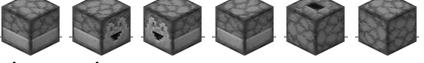
Bedrock Edition:

See [Bedrock Edition level format/Block entity format](#).

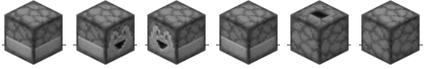
Videos

History

Java Edition

<i>Java Edition</i>								
		[hide]						
1.5	13w03a	 Added droppers. <p>Droppers are crafted using 7 cobblestone, one hopper, and one piece of redstone:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Ingredients</th><th style="text-align: center;">Crafting recipe</th><th style="text-align: center;">[hide]</th></tr> </thead> <tbody> <tr> <td>Cobblestone + Hopper + Redstone</td><td style="text-align: center;">  </td><td style="text-align: center;">  </td></tr> </tbody> </table> <p>The top and bottom textures of droppers currently remain fixed regardless of the facing direction.</p>	Ingredients	Crafting recipe	[hide]	Cobblestone + Hopper + Redstone		
	Ingredients	Crafting recipe	[hide]					
	Cobblestone + Hopper + Redstone							
	13w04a	 Droppers can now face all six directions. <p>The crafting recipe of droppers has now been changed, removing the hopper from the middle.</p>						
		13w10b	Activated droppers now do not fire if they receive a <u>block</u> update.					
	1.8	14w25a	 The models of dropper have been changed.					
	1.9.1	pre1	Droppers can now use <u>loot tables</u> .					
	1.14	18w43a	 The textures of droppers have now been changed.					
	1.19.3 — Experiment — Update 1.20	22w44a	Droppers can now interact with <u>chiseled bookshelves</u> .					
	1.19.4	23w07a	Droppers can now interact with <u>jukeboxes</u> .					
1.20.3 — Experiment — Update 1.21	23w42a	Droppers can now be used to craft <u>crafters</u> .						

Bedrock Edition

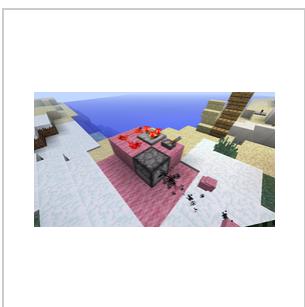
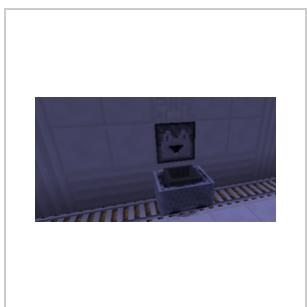
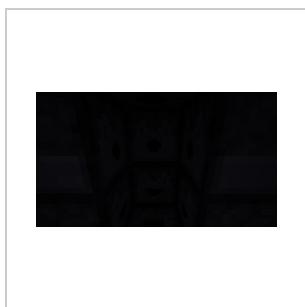
Pocket Edition Alpha							[hide]
v0.14.0	build 1						
v0.15.0	build 1	Droppers can now be moved by pistons .					
Bedrock Edition							[hide]
1.10.0	beta 1.10.0.3						
1.20.50 Experiment Update 1.21	Preview 1.20.50.21	The textures of droppers have now been changed.					
1.21.50	Preview 1.21.50.24	Droppers can now be used to craft crafters .					
Droppers drop themselves only if mined using a pickaxe, matching Java Edition .							

Legacy Console Edition

Legacy Console Edition							[hide]	
Xbox 360	Xbox One	PS3	PS4	PS Vita	Wii U	Switch		
TU19	CU7	1.12	1.12	1.12	Patch 1			
			1.90					
Added droppers.								
The textures of droppers have now been changed.								

New Nintendo 3DS Edition

New Nintendo 3DS Edition							[hide]
0.1.0		Added droppers.					



The first image of droppers (bottom) released by Mojang.

The 13w03a banner featuring a dropper and a [minecart with hopper](#).

A dropper in action.

Data history

<i>Java Edition</i>		[hide]
1.13	17w47a	Prior to <i>The Flattening</i> , this block's numeral ID was 158.

Issues

Issues relating to "Dropper" are maintained on the [bug tracker](#). Issues should be reported and viewed there (<https://bugs.mojang.com/issues/?jqI=project%20in%28MC%2C%20MCPE%29%20AND%20%28resolution%20is%20EMPTY%20OR%20resolution%20in%20%281%2C%202%2C%206%29%29%20AND%20%28summary%20~%20%22Dropper%22%29%20ORDER%20BY%20resolution%20DESC>).

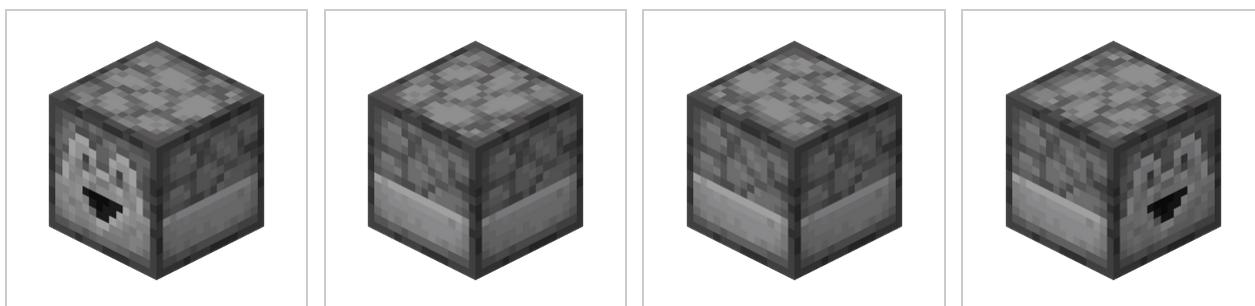
Trivia

- The dropper is similar in appearance with the [dispenser](#) in the fact that they both resemble a face when not facing up or down.
 - This similarity is pushed further by the fact that the dropper's crafting recipe is the same as the dispenser but without a bow.

Gallery

Renders

Java Edition

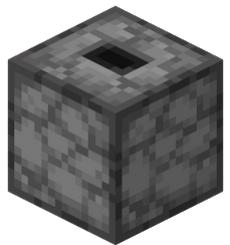


Facing south

Facing west

Facing north

Facing east



Facing up



Facing down

Bedrock Edition

Facing south



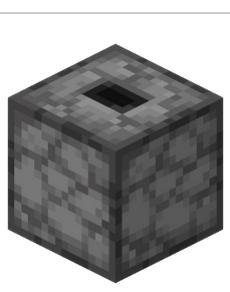
Facing west



Facing north



Facing east

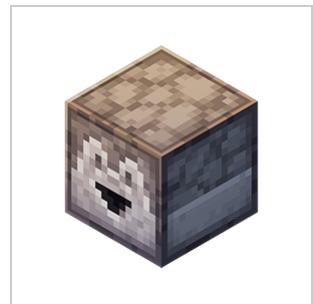


Facing up



Facing down

In other media



A dropper as it appeared in *Minecraft Earth*.



A dropper as it appeared in *MCC x Minecraft 15th Anniversary Party*.

See also

- [Dispenser](#)
- [Hopper](#)

References

External links

- "Block of the Week: Dropper" (<https://www.minecraft.net/en-us/article/block-week--dropper>) by Duncan Geere – *Minecraft.net*, October 8, 2020.

Navigation

Redstone Redstone circuits & tutorials Redstone components

[\[hide\]](#)

[\[show\]](#)

[\[hide\]](#)

Power emission

	Block of Redstone		Buttons (Wooden		Stone
	Polished Blackstone)		Daylight Detector				
	Detector Rail		Jukebox		Lectern		Lever
	Lightning Rod		Observer		Pressure Plates		
	Wooden		Stone		Polished Blackstone		
	Light Weighted		Heavy Weighted)				
	Redstone Comparator		Redstone Torch				
	Sculk Sensor (Calibrated)		Target		
	Trapped Chest		Tripwire Hook (Tripwire)		
	Redstone Wire		Redstone Repeater				
	Conductive and non-conductive blocks						

Signal transmission

	Allay		Boat with Chest (Bamboo Raft)		
	Copper Golem		Crafter		Dispenser		Dropper

Comparator-readable	Hopper Minecart (with Chest) Minecart (with Furnace) Minecart (with Hopper) Rail (Activator) Powered Rail Water (Bubble Column) Barrel Bee Nest (Hive) Brewing Stand Cake Cauldron Chest (Copper) Chiseled Bookshelf Composter Copper Golem Statue Decorated Pot End Portal Frame Furnace (Blast) Smoker Item Frame (Glow) Respawn Anchor Shulker Box
Observer-related	Redstone Ore (Deepslate) Scaffolding Sculk Catalyst Sculk Shrieker Wall Piston (Sticky) Honey Block Slime Block Movable and immovable blocks
Pistons/related	Block of Amethyst Wool (Carpet) Armor Stand Bell Big Dripelaf 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)
Sculk sensor-related	Minecart with Monster Spawner Structure Block Test Block
Mechanisms/misc.	
Creative or commands only	

	Blocks	[hide]
	Structural	[show]
	Ornamental	[show]
	Natural	[show]
	Utility	[hide]
Interactable	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)	
Utilizable	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	
Redstone/ Mechanical		

BE & edu only

	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	
	Element Constructor		Heat Block		Item Frame	(Glow)	Deny	
	Lab Table		Material Reducer		Underwater TNT			
	Underwater Torch							

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