

Dropper

re 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.

Contents

Obtaining

- Breaking
- Crafting

Usage

- Container
- Redstone component
 - Container interactions
- Note blocks
- Crafting ingredient

Sounds

- Generic
- Unique

Data values

- ID
- Block states
- Block data

Videos

History

- Java Edition*
- Bedrock Edition*
- Legacy Console Edition
- New Nintendo 3DS Edition*
- Data history

Issues

Trivia

Gallery

- Renders

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 <i>(JE)</i>	<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.

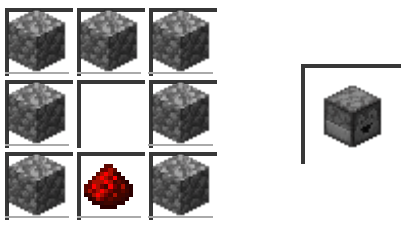
Block	 <u>Dropper</u>
Hardness	3.5
Tool	
<u>Breaking time (sec)</u> ^[A]	
Default	17.5
 Wooden	2.65
 Stone	1.35
 Copper	1.05
 Iron	0.9
 Diamond	0.7
 Netherite	0.6
 Golden	0.45

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.

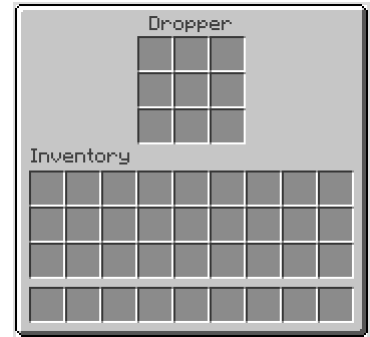
In *Java Edition*, droppers cannot be moved by pistons.

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]
<u>Crafter</u>	Iron Ingot + Crafting Table + Redstone Dust + <u>Dropper</u>	

Sounds

Generic

Java Edition:

<div><div></div>stone sound type</div> <div>[hide]</div>								
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	<u>Entity-Dependent</u>	Falling on the block with fall damage	block.stone.fall	subtitles.block.generic.fall	0.5	0.75	16
	Footsteps	<u>Entity-Dependent</u>	Walking on the block	block.stone.step	subtitles.block.generic footsteps	0.15	1.0	16

Bedrock Edition:

<div><div></div>stone sound type</div> <div>[hide]</div>							
Sound	Closed captions <i>[upcoming: BE 26.0]</i>	Source	Description	Identifier	Translation key <i>[upcoming: BE 26.0]</i>	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]	Blocks	When a dropper fails to activate	block .dispenser .fail [sound 1]	subtitles .block .dispenser .fail [sound 1]	1.0	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
	?	Blocks	When a dropper fails to activate	block .click	?	1.0	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

- 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.

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
<div><div><div><div></div></div><div><div></div></div></div><div><div><div></div></div><div><div></div></div></div></div> <div>Items: List of items in this container.<div><div><div></div></div><div><div></div></div></div><div>: An item, including the slot tag. Dropper slots are numbered 0-8 with 0 in the top left corner.</div></div>


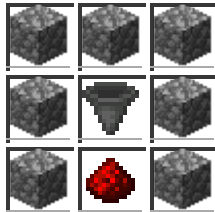

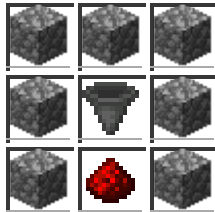
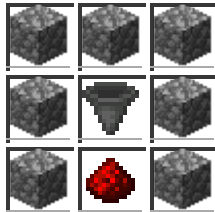

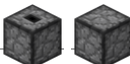

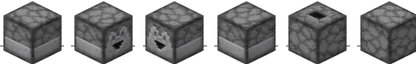
Bedrock Edition:

See Bedrock Edition level format/Block entity format.

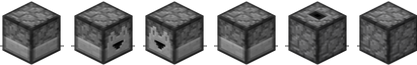
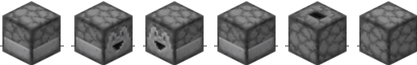
Videos

History


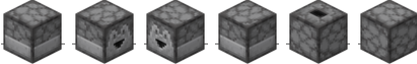
Java Edition

Java Edition		[hide]					
1.5	13w03a	 Added droppers.					
		Droppers are crafted using 7 cobblestone, one hopper, and one piece of redstone:					
		<table><tr><th>Ingredients</th><th>Crafting recipe</th><th>[hide]</th></tr><tr><td>Cobblestone + Hopper + Redstone</td><td></td><td></td></tr></table>	Ingredients	Crafting recipe	[hide]	Cobblestone + Hopper + Redstone	
	Ingredients	Crafting recipe	[hide]				
	Cobblestone + Hopper + Redstone						
The top and bottom textures of droppers currently remain fixed regardless of the facing direction.							
13w04a	 Droppers can now face all six directions.						
	13w10b	The crafting recipe of droppers has now been changed, removing the hopper from the middle.					
	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

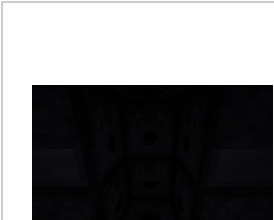
Pocket Edition Alpha [hide]		
<u>v0.14.0</u>	<u>build 1</u>	 Added droppers.
<u>v0.15.0</u>	<u>build 1</u>	Droppers can now be moved by <u>pistons</u> .
Bedrock Edition [hide]		
<u>1.10.0</u>	<u>beta 1.10.0.3</u>	 The textures of droppers have now been changed.
<u>1.20.50</u> — Experiment — Update 1.21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

Legacy Console Edition

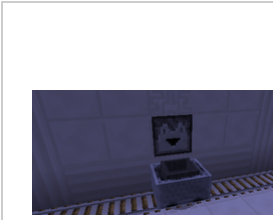
Legacy Console Edition [hide]						
<u>Xbox 360</u>	<u>Xbox One</u>	<u>PS3</u>	<u>PS4</u>	<u>PS Vita</u>	<u>Wii U</u>	<u>Switch</u>
<u>TU19</u>	<u>CU7</u>	<u>1.12</u>	<u>1.12</u>	<u>1.12</u>	<u>Patch 1</u>	 Added droppers.  The textures of droppers have now been changed.
			<u>1.90</u>			

New Nintendo 3DS Edition

New Nintendo 3DS Edition [hide]	
<u>0.1.0</u>	 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/?jql=project%20in%20%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



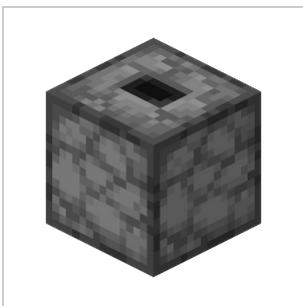
Facing west



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

Comparator-readable

Observer-related

Pistons/related

Sculk sensor-related

Mechanisms/misc.

Creative or commands only

Hopper Minecart (with Chest) Minecart with Furnace Minecart with Hopper) Rail (Activator Powered)

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

Redstone Ore (Deepslate) Scaffolding

Sculk Catalyst Sculk Shrieker Wall

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

[\[hide\]](#)

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

Utilizable

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)

Redstone/Mechanical

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](#)

BE & edu only

- [Creative or commands only](#)** [\[show\]](#)
- [Removed](#)** [\[show\]](#)
- [Unused](#)** [\[show\]](#)
- [Unimplemented](#)** [\[show\]](#)
- [Joke](#)** [\[show\]](#)
- [Extreme metadata variants](#)** [\[show\]](#)

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