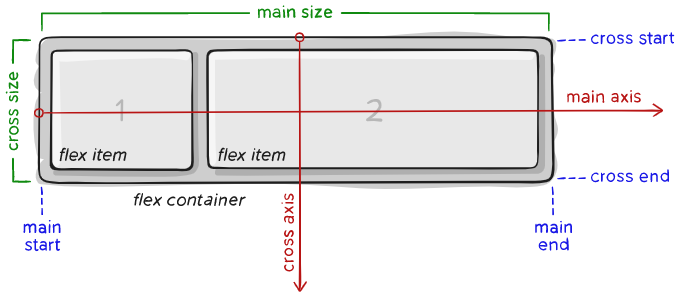
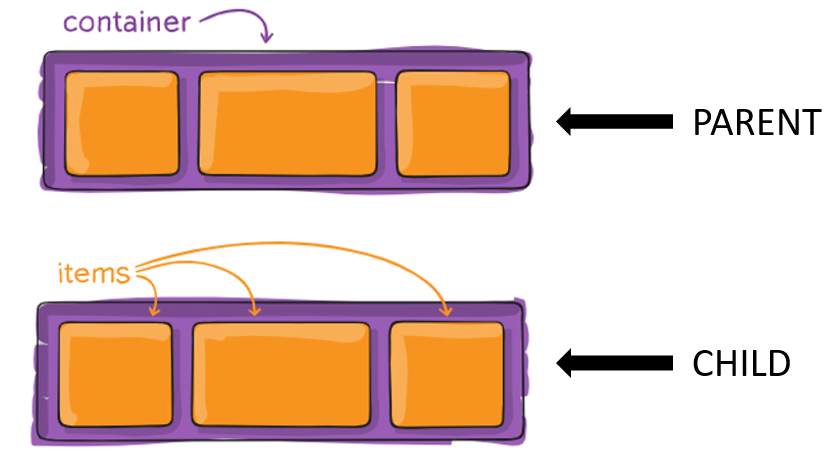
**What is Flexbox?**

* More efficient way to lay out, align and distribute space among items in a container, even when their size is unknown and/or dynamic.
* A flex container expands items and changes their order to fill available free space or shrinks them to prevent overflow.
* Please have a look at this figure from the specification, explaining the main idea behind the flex layout.





**Properties**

**Properties for the Parent**

**Display**

* This defines a flex container. It enables a flex context for all its **direct** **children**.

.container {

display: flex; /\* or inline-flex \*/

}

**Flex-direction**

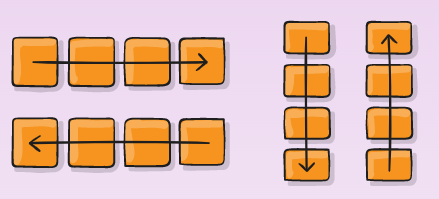
This establishes the main-axis, thus defining the direction flex items are placed in the flex container. Flexbox is (aside from optional wrapping) a single-direction layout concept. Think of flex items as primarily laying out either in horizontal rows or vertical

* **row** (default): left to right in ltr; right to left in rtl
* **row-reverse**: right to left in ltr; left to right in rtl
* **column**: same as row but top to bottom
* **column-reverse**: same as row-reverse but bottom to top

.container {

flex-direction: row | row-reverse | column | column-reverse;

}



**Flex-wrap**

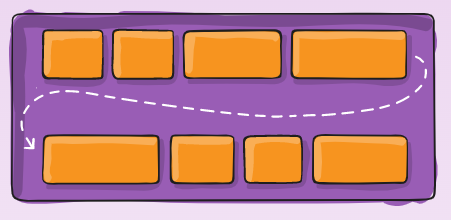
By default, flex items will all try to fit onto one line. You can change that and allow the items to wrap as needed with this property.

* **nowrap** (default): all flex items will be on one line.
* **wrap**: flex items will wrap onto multiple lines, from top to bottom.
* **wrap-reverse**: flex items will wrap onto multiple lines from bottom to top.

.container {

flex-wrap: nowrap | wrap | wrap-reverse;

}



**Flex-flow**

This is a shorthand for the **flex-direction** and **flex-wrap** properties, which together define the flex container’s main and cross axes. The default value is row nowrap.

.container {

flex-flow: column wrap;

}

**Justify-content**

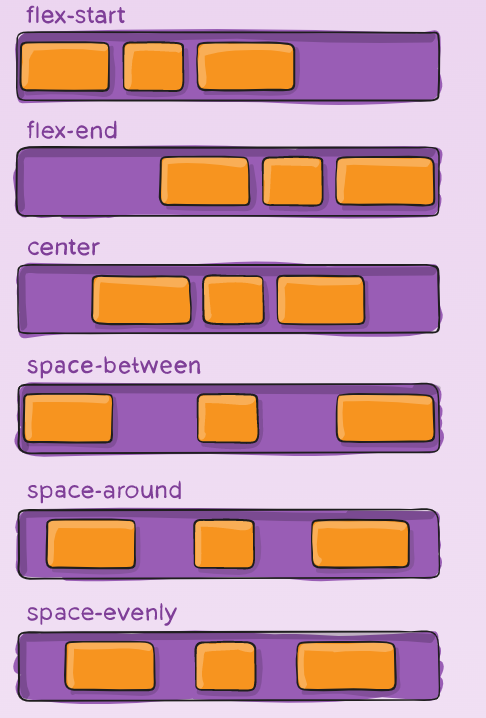
This defines the **alignment along the main axis**. It helps distribute extra free space leftover when either all the flex items on a line are inflexible, or are flexible but have reached their maximum size. It also exerts some control over the alignment of items when they overflow the line.

.container {

justify-content: flex-start | flex-end | center | space-between | space-around | space-evenly | start | end | left | right ... + safe | unsafe;

}

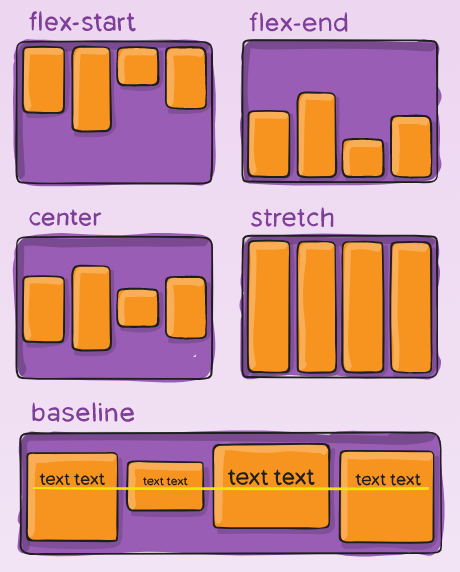
* **flex-start (default)**: items are packed toward the start of the flex-direction.
* **flex-end**: items are packed toward the end of the flex-direction.
* **center**: items are centered along the line.
* **space-between**: items are evenly distributed in the line; first item is on the start line, last item on the end line
* **space-around**: items are evenly distributed in the line with equal space around them. Note that visually the spaces aren’t equal, since all the items have equal space on both sides. The first item will have one unit of space against the container edge, but two units of space between the next item because that next item has its own spacing that applies.
* **space-evenly**: items are distributed so that the spacing between any two items (and the space to the edges) is equal.



**align-items**

This defines the default behavior for how flex items are **laid out along the cross axis** on the current line. Think of it as the justify-content version for the cross-axis (perpendicular to the main-axis).

* **stretch (default)**: stretch to fill the container (still respect min-width/max-width)
* **flex-start**: items are placed at the start of the cross axis.
* **flex-end**: items are placed at the end of the cross axis.
* **center**: items are centered in the cross-axis
* **baseline**: items are aligned such as their baselines align



**align-content**

This aligns a flex container’s lines within when there is extra space in the cross-axis, similar to how *justify-content* aligns individual items within the main-axis.

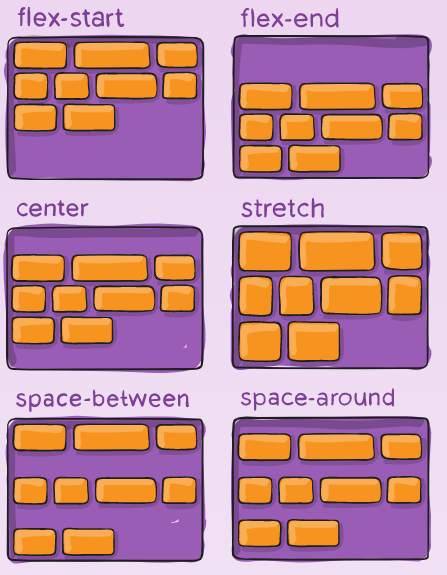
**Note:** This property only takes effect on multi-line flexible containers, where flex-wrap is set to either wrap or wrap-reverse). A single-line flexible container (i.e. where flex-wrap is set to its default value, no-wrap) will not reflect align-content.

.container {

align-content: flex-start | flex-end | center | space-between | space-around | space-evenly | stretch | start | end | baseline | first baseline | last baseline + ... safe | unsafe;

}

* **normal (default)**: items are packed in their default position as if no value was set.
* **flex-start**: items packed to the start of the container. The flex-start honors the flex-direction while start honors the writing-mode direction.
* **flex-end**: items packed to the end of the container. The flex-end honors the flex-direction while end honors the writing-mode direction.
* **center**: items centered in the container
* **space-between**: items evenly distributed; the first line is at the start of the container while the last one is at the end
* **space-around**: items evenly distributed with equal space around each line
* **space-evenly**: items are evenly distributed with equal space around them
* **stretch**: lines stretch to take up the remaining space



**gap, row-gap, column-gap**

* The gap property explicitly controls the space between flex items. It applies that spacing only between items not on the outer edges.

.container {

display: flex;

...

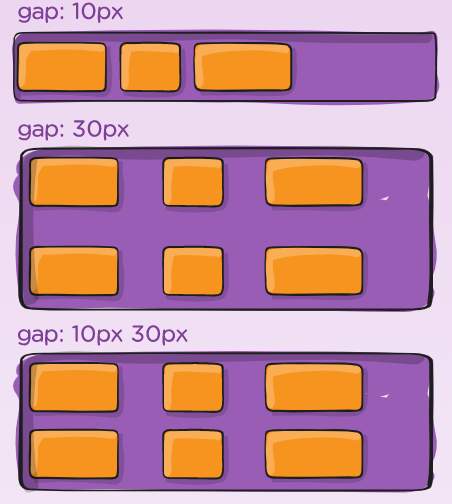
gap: 10px;

gap: 10px 20px; /\* row-gap column gap \*/

row-gap: 10px;

column-gap: 20px;

}



**Properties for the Children (flex items)**

**Order**

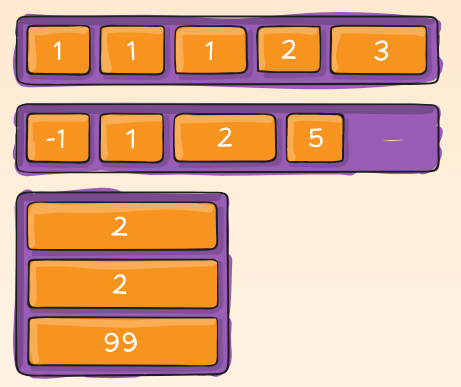
By default, flex items are laid out in the source order. However, the order property controls the order in which they appear in the flex container.

Items with the same order revert to source order.

.item {

order: 5; /\* default is 0 \*/

}



**Flex-grow**

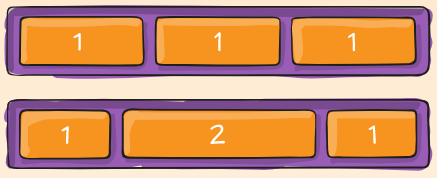
This defines the ability for a flex item to grow if necessary. It accepts a unitless value that serves as a proportion. It dictates what amount of the available space inside the flex container the item should take up.

If all items have flex-grow set to 1, the remaining space in the container will be distributed equally to all children. If one of the children has a value of 2, that child would take up twice as much of the space either one of the others (or it will try, at least).

.item {

flex-grow: 4; /\* default 0 \*/

}



**Flex-shrink**

This defines the ability for a flex item to shrink if necessary.

.item {

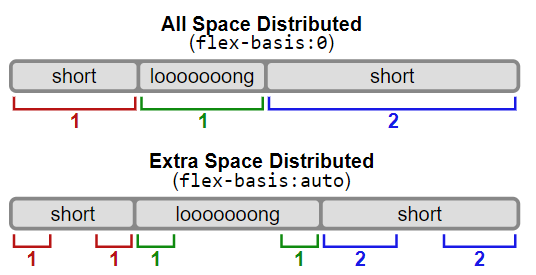
flex-shrink: 3; /\* default 1 \*/

}

**Flex-basis**

This **defines the default size of a flex item** before the remaining space is distributed. It can be a length (e.g. 20%, 5rem, etc.) or a keyword. The *auto* keyword means “look at my width or height property” (which was temporarily done by the main-size keyword until deprecated). The *content* keyword means “size it based on the item’s content” – this keyword isn’t well supported yet, so it’s hard to test and harder to know what its brethren **max-content**, **min-content**, and **fit-content** do.

If set to 0, the extra space around content isn’t factored in. If set to auto, the extra space is distributed based on its flex-grow value.



**Flex**

This is the shorthand for flex-grow, flex-shrink and flex-basis combined. The second and third parameters (flex-shrink and flex-basis) are optional. The default is 0 1 auto, but if you set it with a single number value, like flex: 5;, that changes the flex-basis to 0%, so it’s like setting flex-grow: 5; flex-shrink: 1; flex-basis: 0%;.

.item {

flex: none | [ <'flex-grow'> <'flex-shrink'>? || <'flex-basis'> ]

}

**align-self**

This allows the default alignment (or the one specified by align-items) to be overridden for individual flex items.

* **stretch (default)**: stretch to fill the container (still respect min-width/max-width)
* **flex-start**: items are placed at the start of the cross axis.
* **flex-end**: items are placed at the end of the cross axis.
* **center**: items are centered in the cross-axis
* **baseline**: items are aligned such as their baselines align

.item {

align-self: auto | flex-start | flex-end | center | baseline | stretch;

}

