

Chapter 24: Flexible Box Layout (Flexbox)

Introduction

The Flexible Box module, or just 'flexbox' for short, is a box model designed for user interfaces, and it allows users to align and distribute space among items in a container such that elements behave predictably when the page layout must accommodate different, unknown screen sizes. A flex container expands items to fill available space and shrinks them to prevent overflow.

Syntax

- `display: flex;`
- `flex-direction: row | row-reverse | column | column-reverse;`
- `flex-wrap: nowrap | wrap | wrap-reverse;`
- `flex-flow: <'flex-direction'> || <'flex-wrap'>`
- `justify-content: flex-start | flex-end | center | space-between | space-around;`
- `align-items: flex-start | flex-end | center | baseline | stretch;`
- `align-content: flex-start | flex-end | center | space-between | space-around | stretch;`
- `order: <integer>;`
- `flex-grow: <number>; /* default 0 */`
- `flex-shrink: <number>; /* default 1 */`
- `flex-basis: <length> | auto; /* default auto */`
- `flex: none | [<'flex-grow'> <'flex-shrink'>? || <'flex-basis'>]`
- `align-self: auto | flex-start | flex-end | center | baseline | stretch;`

block element : " display: block;"

A block element always starts on a new line, and fills up the horizontal space left and right on the web page. You can add margins and padding on all four sides of any block element top, right, left, and bottom.

align-content :

Syntax:

align-content : normal | baseline | center | stretch | flex-start | flex-end | space-between | space-around | space-evenly

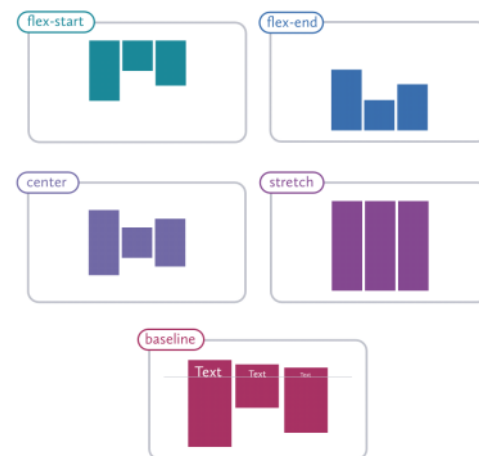
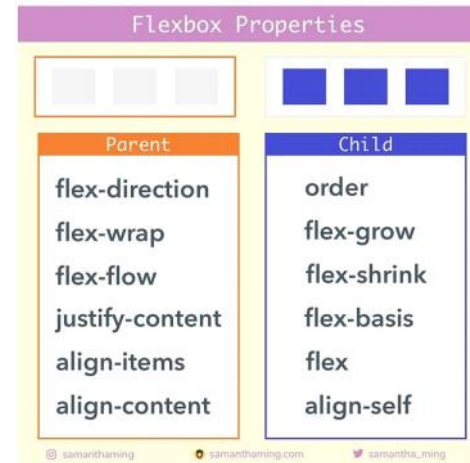
align-items

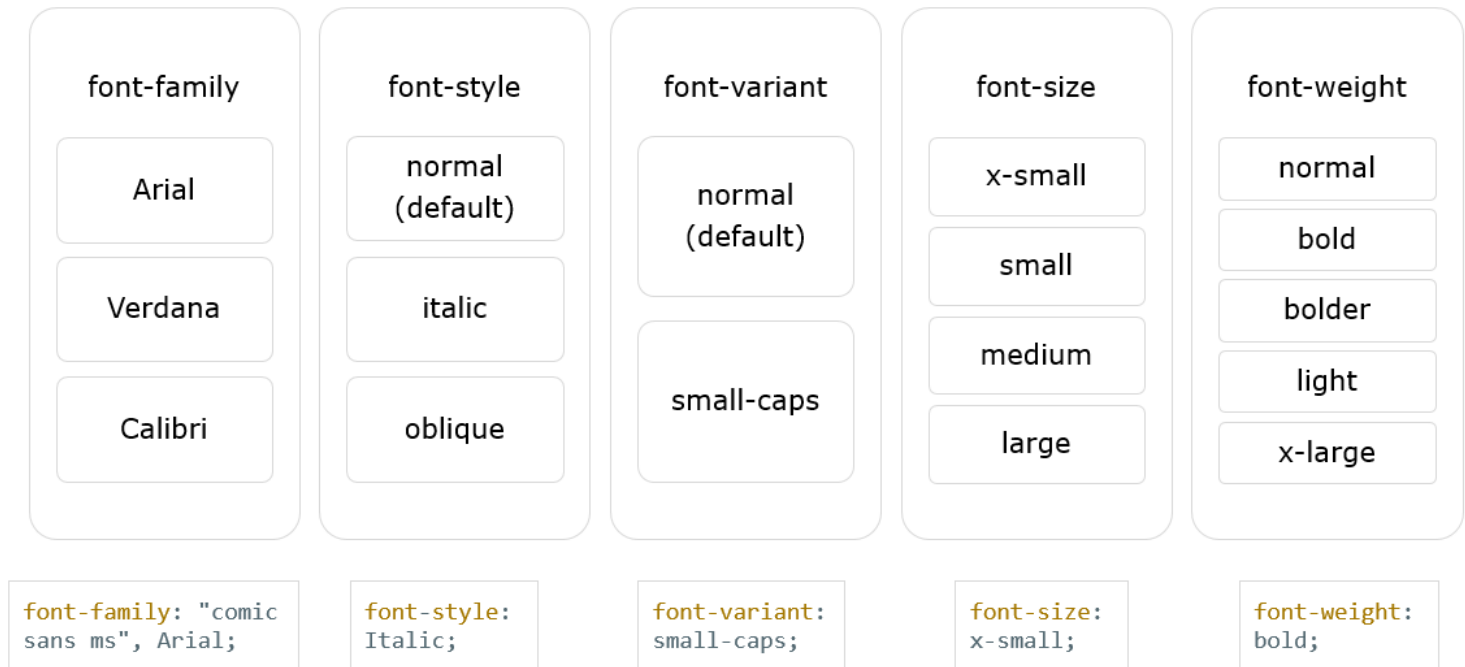
Syntax

align-items : normal | baseline | center | stretch | flex-start | flex-end

FONT:

Flex :



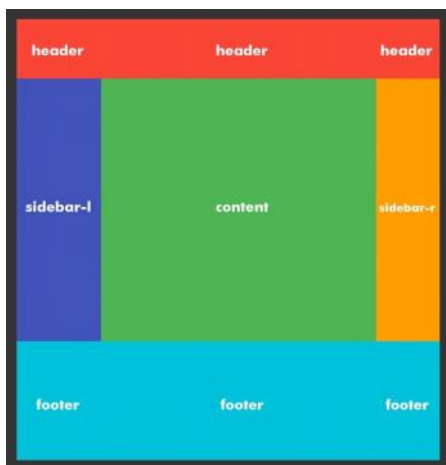


There are seven font sub-properties, including:

- [font-stretch](#): this property sets the font width, such as condensed or expanded.
 - normal
 - ultra-condensed
 - extra-condensed
 - condensed
 - semi-condensed
 - semi-expanded
 - expanded
 - extra-expanded
 - ultra-expanded
- [font-style](#): makes the text appear italicised or oblique.
 - normal
 - italic
 - oblique
 - inherit
- [font-variant](#): changes target text to small caps.
 - normal
 - small-caps
 - inherit
- [font-weight](#): sets the weight or the thickness of the font.
 - normal
 - bold
 - bolder
 - lighter
 - 100, 200, 300, 400, 500, 600, 700, 800, 900
 - inherit
- [font-size](#): sets the height of the font.
 - xx-small
 - x-small

- small
- medium
- large
- x-large
- xx-large
- smaller, larger
- percentage
- inherit
- [line-height](#): defines the amount of space above and below inline elements.
 - normal
 - number (font-size multiplier)
 - percentage
- [font-family](#): defines the font that is applied to the element.
 - sans-serif
 - serif
 - monospace
 - cursive
 - fantasy
 - caption
 - icon
 - menu
 - message-box
 - small-caption
 - status-bar
 - "string"

GRID:



Formal definition

Initial value

as each of the properties of the shorthand:

- [grid-template-rows](#): none
- [grid-template-columns](#): none
- [grid-template-areas](#): none

	<ul style="list-style-type: none"> • grid-auto-rows: auto • grid-auto-columns: auto • grid-auto-flow: row • grid-column-gap: 0 • grid-row-gap: 0 • column-gap: normal • row-gap: normal
Applies to	grid containers
Inherited	no
Percentages	as each of the properties of the shorthand: <ul style="list-style-type: none"> • grid-template-rows: refer to corresponding dimension of the content area • grid-template-columns: refer to corresponding dimension of the content area • grid-auto-rows: refer to corresponding dimension of the content area • grid-auto-columns: refer to corresponding dimension of the content area
Computed value	as each of the properties of the shorthand: <ul style="list-style-type: none"> • grid-template-rows: as specified, but with relative lengths converted into absolute lengths • grid-template-columns: as specified, but with relative lengths converted into absolute lengths • grid-template-areas: as specified • grid-auto-rows: the percentage as specified or the absolute length • grid-auto-columns: the percentage as specified or the absolute length • grid-auto-flow: as specified • grid-column-gap: the percentage as specified or the absolute length • grid-row-gap: the percentage as specified or the absolute length • column-gap: as specified, with <length>s made absolute, and normal computing to zero except on multi-column elements • row-gap: as specified, with <length>s made absolute, and normal computing to zero except on multi-column elements

CSS list-style property:

Syntax

list-style : *list-style-type* *list-style-position* *list-style-image*

Property values

list-style-type

*disc*Default

disc as item markers.

```
list-style-type: disc;
```

circle

circle as item markers.

```
list-style-type: circle;
```

decimal

decimal number as item markers

```
list-style-type: decimal;
```

decimal-leading-zero

decimal number as item markers with leading zero.

```
list-style-type: decimal-leading-zero;
```

lower-roman

lower roman numbers as item markers

```
list-style-type: lower-roman;
```

upper-roman

upper roman numbers as item markers.

```
list-style-type: upper-roman;
```

lower-greek

lower greek letters as item markers

```
list-style-type: lower-greek;
```

lower-latin

lower case latin letters as item markers

```
list-style-type: lower-latin;
```

upper-latin

upper case latin letters as item markers

```
list-style-type: upper-latin;
```

lower-alpha

lower alphabets as item markers.

```
list-style-type: lower-alpha;
```

upper-alpha

upper alphabets as item markers

```
list-style-type: upper-alpha;
```

armenian

armenian letters as item markers

```
list-style-type: armenian;
```

georgian

georgian letters as item markers

```
list-style-type: georgian;
```

list-style-position

*outside*Default

In this case, the markers don't merge themselves with the list item content.

```
list-style-position: outside;
```

inside

In this case, the markers become a part of the list item content.

```
list-style-position: inside;
```

list-style-image

*none*Default

no image is used as the content of list item markers. In this case, **list-style-type** defines the type of list item markers.

```
list-style-image: none;
```

[url\(image-address\)](#)

It defines the address of the image that is used as the content of list item markers.

```
list-style-image: url('img/web4college.png');
```

Text-emphasis :

Syntax:

`text-emphasis : text-emphasis-style text-emphasis-color`

Syntax

`text-emphasis-position : over | under`

Length:

10px value moves the first line of inline content to the right side by **10px** absolute value.

```
text-indent: 10px;
```

Syntax

`text-overflow : clip | ellipsis`

Syntax

`text-transform : none | capitalize | uppercase | lowercase`

Transform:

Syntax :

`transform : none | translate() | rotate() | scale() | skew()`

Syntax

`transform-style : flat | preserve-3d`

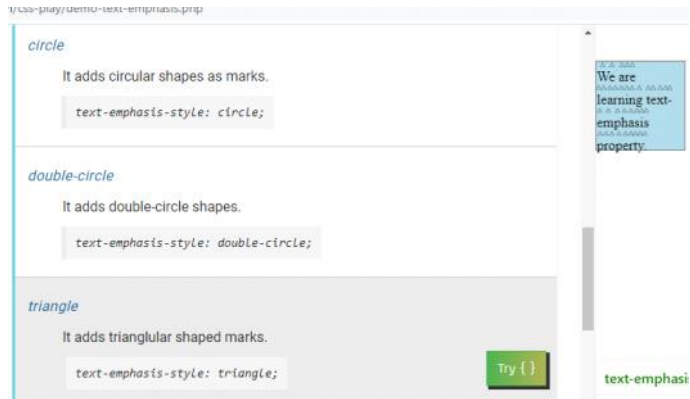
link:

<https://www.web4college.com/css-play/demo-transform-style.php>

Transition:

Syntax

`transition : none | [transition-property transition-duration transition-timing-function transition-`



delay]

From <<https://www.web4college.com/css-play/demo-transition.php>>

Syntax

vertical-align : *baseline* | *text-bottom* | *middle* | *text-top* | *top* | *bottom* | *sub* | *super* | *length* | *percentage*

From <<https://www.web4college.com/css-play/demo-vertical-align.php>>

Syntax

animation-delay : *normal* | *pre* | *nowrap* | *pre-wrap* | *break-spaces* | *pre-line*

From <<https://www.web4college.com/css-play/demo-white-space.php>>

block element : " display: block;"

A block element always starts on a new line, and fills up the horizontal space left and right on the web page. You can add margins and padding on all four sides of any block element top, right, left, and bottom.

align-content :

Syntax:

align-content : *normal* | *baseline* | *center* | *stretch* | *flex-start* | *flex-end* | *space-between* | *space-around* | *space-evenly*

align-items :

Syntax

align-items : *normal* | *baseline* | *center* | *stretch* | *flex-start* | *flex-end*

Animation:

Syntax

animation : *animation-name* *animation-duration* *animation-delay* *animation-direction* *animation-iteration-count*
animation-play-state, *animation-fill-mode* *animation-timing-function*

"Animation-direction"

property represents the direction of all or some animation cycles in the same or reverse direction. We take an example with 2 animation cycles but with different values of animation-direction.

In this case, all the animation timing functions such as ease-in, ease-out, ease-in-out are also reversed. For example, ease-in in normal direction becomes ease-out in the reverse direction.

Animation-direction :

Syntax

animation-direction : *normal* | *reverse* | *alternate* | *alternate-reverse*

Syntax

animation-duration : +ve value (seconds or milliseconds)

Syntax

animation-fill-mode : none | forwards | backwards | both

Syntax

animation-iteration-count : +ve value | infinite

Syntax

animation-play-state : running | paused

Syntax

animation-delay : ease | ease-in | ease-out | ease-in-out

Animation:

```
@keyframes rotate{
  0%{
    transform:rotateZ(0deg);
  }
  100%{
    transform:rotateZ(360deg);
    background-color:yellow;
  }
}
```

```
@keyframes moveTo{
  0%{
    left:0%;
  }
  100%{
    left:80%;
    background-color:yellow;
  }
}
```

background

Syntax

background : background-color background-image background-position / background-size background-repeat background-attachment background-origin background-clip

Syntax

background-clip : border-box | padding-box | content-box

Syntax

background-blend-mode : normal | multiply | screen | overlay | darken | lighten | color-dodge | color-burn | hard-light | soft-light | difference | exclusion | hue | saturation | color | luminosity

Syntax

background-origin : border-box | padding-box | content-box

Syntax

background-position : [percentage | length | left | center | right] [percentage | length | top | center | bottom]

Syntax

background-repeat : no-repeat | repeat | repeat-x | repeat-y | space | round

Syntax

background-size : contain | cover | auto | length | percentage

writing-mode :

Syntax

writing-mode : horizontal-tb | vertical-rl | vertical-lr

Border :

Syntax

border : border-width border-style border-color;

box-shadow :

Syntax

box-shadow : none | X-offset Y-offset blur-radius spread-distance shadow-color [inset]

bottom :

Syntax

bottom : auto | length | percentage

box-sizing

Syntax

box-sizing : content-box | border-box

caption-side:

Syntax

caption-side : top | bottom

Syntax

caption-side : top | bottom

caret-color

Syntax

caret-color : color-name | rgb value | hexadecimal value

CLEAR:

CSS clear property decides whether the elements should be floated on either side of the floated element or not.

We'll take an example of three boxes. We will apply float property to all of the three boxes. And then we will check the behavior of clear property for the green box only.

Syntax

clear : none | left | right

column-count:

syntax

column-count : auto | integer

Syntax

columns : column-width column-count

Syntax

column-fill : balance | auto

Syntax

column-gap : normal | +ve length

Syntax

column-rule : column-rule-width column-rule-style column-rule-color

cursor :

Syntax

cursor : auto | default | none | context-menu | help | pointer | progress | wait | cell | crosshair | text | vertical-text | alias | copy | move | no-drop | not-allowed | grab | *-resize | zoom-in | zoom-out

direction:

Syntax

direction : ltr | rtl

display :

Syntax

display : block | inline | table | flex | grid | table-row-group | table-header-group | table-footer-group | table-row | table-cell | table-column-group | table-column | table-caption | none | inline-block | inline-table | inline-flex | inline-grid

empty-cells:

Syntax:

empty-cells : separate | collapse

ex:

empty-cells: show;

empty-cells: hide;

fill :

Syntax

fill : currentColor | color-name | rgb value | hexadecimal value

fill: skyblue;

Syntax

opacity : value between 0 and 1

fill-opacity: 1;

Filter:

Syntax

filter : none | blur() | brightness() | contrast() | drop-shadow() | grayscale() | hue-rotate() | invert() | opacity() | sepia()

Syntax

float : none | left | right

Flex:

Syntax

flex : none | [flex-grow | flex-shrink] flex-basis

gap :

Syntax

gap : row-gap column-gap

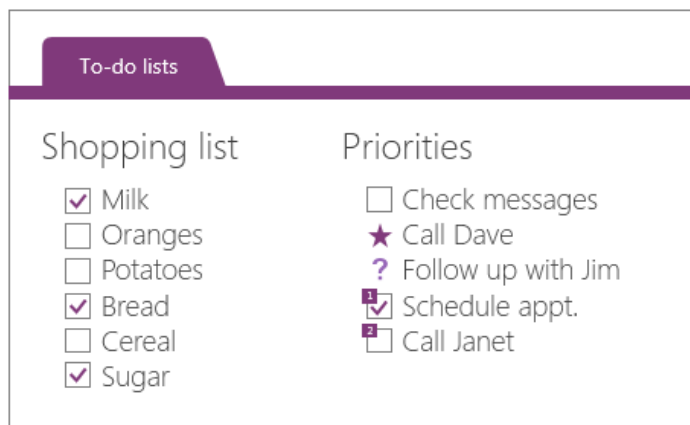
Note : JUSTIFY CONTENT VS ALIGN-ITEMS VS ALIGN-CONTENT :

justify-content and *align-items* are similar in their behaviour, the difference being that *justify-content* works on the the main axis while *align-items* works on the cross axis. *align-content* works only on multi-line containers and has no effect on single line containers.

VISIT THIS FOR NOTE EXAMPLE:

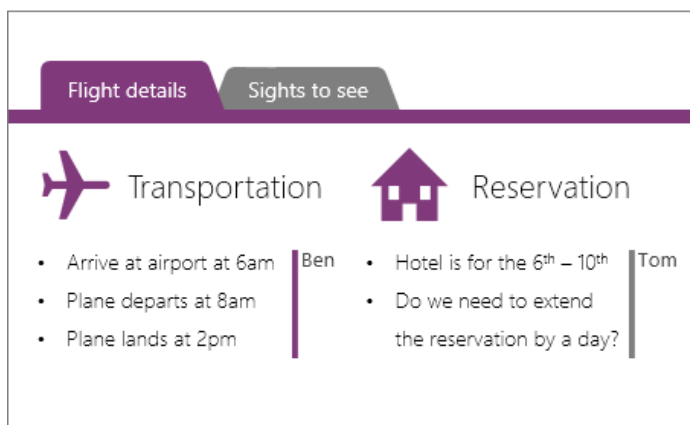
<https://www.web4college.com/css-play/demo-place-content.php>

OneNote Basics



Remember everything

- Add Tags to any notes
- Make checklists and to-do lists
- Create your own custom tags



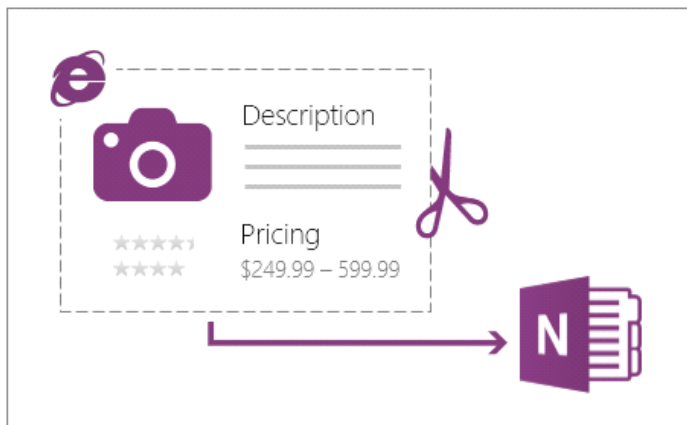
Collaborate with others

- Keep your notebooks on OneDrive
- Share with friends and family
- Anyone can edit in a browser




Keep everything in sync

- People can edit pages at the same time
- Real-Time Sync on the same page
- Everything stored in the cloud
- Accessible from any device



Clip from the web

- Quickly clip anything on your screen
- Take screenshots of products online
- Save important news articles

 in your taskbar
OR
 + S on your keyboard

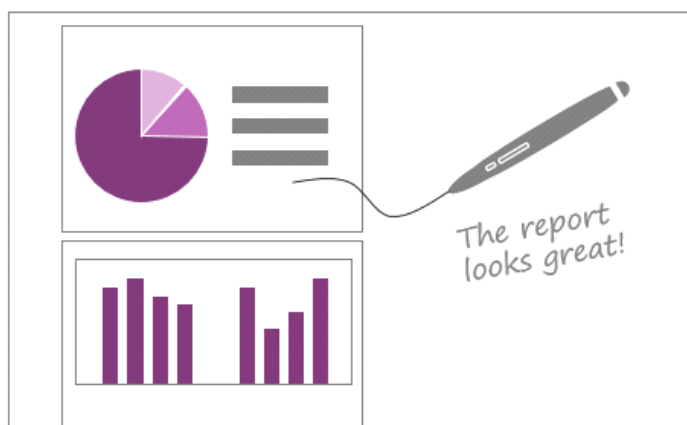
Sunday retreat

	Attending?	Overnight?	Vegetarian?
Chris	Yes	Yes	No
Molly	No	No	No
Peter	Yes	No	Yes
Samuel	Yes	Yes	Yes
Stacy	Yes	No	No

A ↓
Z ↓

Organize with tables

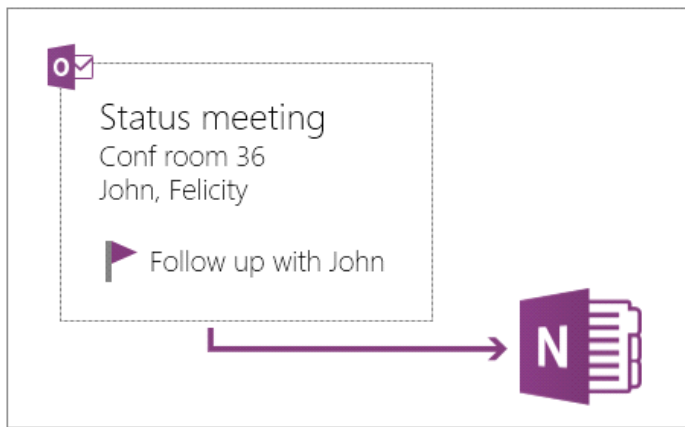
- Type, then press TAB to create a table
- Quickly sort and shade tables
- Convert tables to Excel spreadsheets



Write notes on slides

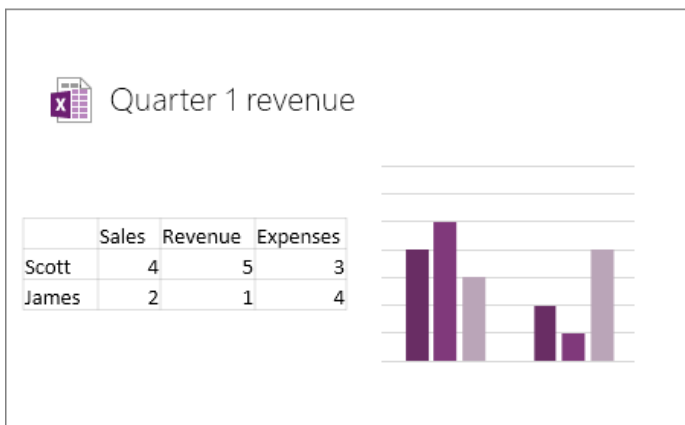
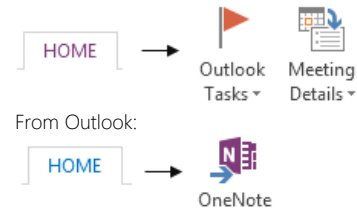
- Send PowerPoint or Word docs to OneNote
- Annotate with a stylus on your tablet
- Highlight and finger-paint

 in your taskbar
OR
 + N on your keyboard



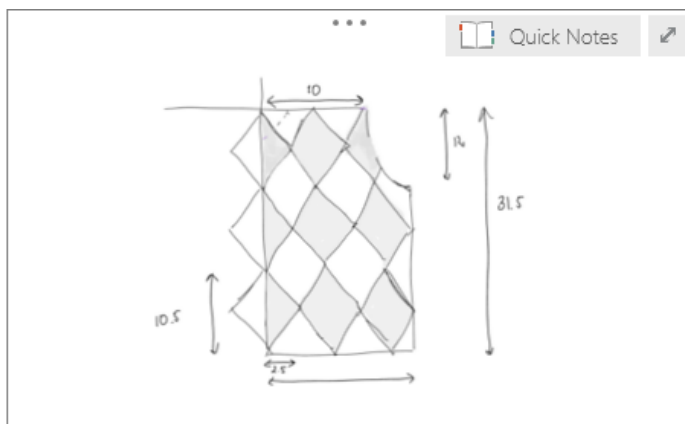
Integrate with Outlook

- Take notes on Outlook or Lync meetings
- Insert meeting details
- Add Outlook tasks from OneNote



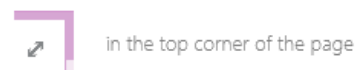
Add Excel spreadsheets

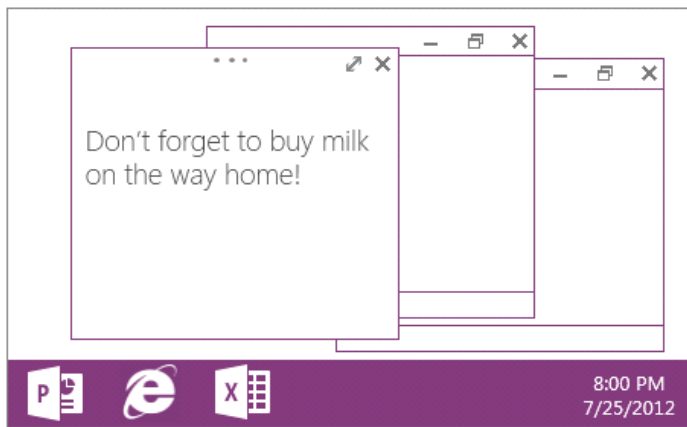
- Track finances, budgets, & more
- Preview updates on the page



Brainstorm without clutter

- Hide everything but the essentials
- Extra space to focus on your notes





Take quick notes

- Quickly jot down thoughts and ideas
- They go into your Quick Notes section



in your taskbar

OR



+ N on your keyboard