

COMM 641

Web Programming Beginning

Thank you Zak Ruvalcaba for this
info

Lecture 5

This week at a glance...

This week at a glance...

❖ Introduction to Grid Systems

- ❖ What is a Grid?
- ❖ History of Grids in Design
- ❖ Why Should I Use Grids?
- ❖ How Grid Systems Work in Web Design
- ❖ Touring the 960 Grid System

❖ How to Layout and Position Elements

- ❖ How to float and clear elements
- ❖ How to use floating in a 2-column, fixed width layout
- ❖ How to use floating in a 3-column, fixed width layout
- ❖ How to use floating to create a sidebar
- ❖ How to use clear to create a footer
- ❖ How to use floating in a 2-column, liquid layout
- ❖ How to use floating in a 3-column, liquid layout
- ❖ How to use CSS3 to create text columns
- ❖ How to position elements using static, relative, absolute, and fixed positioning

Introduction to Grid Systems

Introduction to Grid Systems

What is a grid?

- ❖ In design, a grid is a structure (usually two-dimensional) made up of a series of intersecting straight (vertical or horizontal) or curved guide lines used to structure content.
- ❖ The grid serves as an armature on which a designer can organize graphic elements (images, glyphs, paragraphs) in a rational, easy to absorb manner.
- ❖ A grid can be used to organize graphic elements in relation to a page, in relation to other graphic elements on the page, or in relation to other parts of the same graphic element or shape.
- ❖ Before the invention of movable type a system based on optimal proportions had been used to arrange handwritten text on pages. The [Villard Diagram](#) for instance, was in use at least since medieval times.

Introduction to Grid Systems

History of grids in design

- ❖ After World War II, a number of graphic designers (including Josef Müller-Brockmann) began to question the relevance of the conventional page layout of the time.
- ❖ Graphic designers began to devise a flexible system able to help designers achieve coherency in organizing a page.
- ❖ The result was the modern typographic grid that became associated with the International Typographic Style, also known as the Swiss Style.
- ❖ Style emphasizes cleanliness, readability and objectivity.
- ❖ Hallmarks of the style are asymmetric layouts, **use of a grid**, sans-serif typefaces, etc. Many of the early International Typographic Style works featured typography as a primary design element in addition to its use in text. This is where the name comes from.

Introduction to Grid Systems

History of grids in design

- ❖ Josef Müller-Brockmann is considered the godfather of the modern grid system.
- ❖ He is probably the most well-known Swiss designer and his name is generally mentioned in the same breath as the International Typographic Style or Swiss Style.
- ❖ His more famous works include numerous posters and advertisements for the Zurich Town Hall's theater productions.
- ❖ He published several works including *The Graphic Artist and His Problems* and *Grid Systems in Graphic Design*.



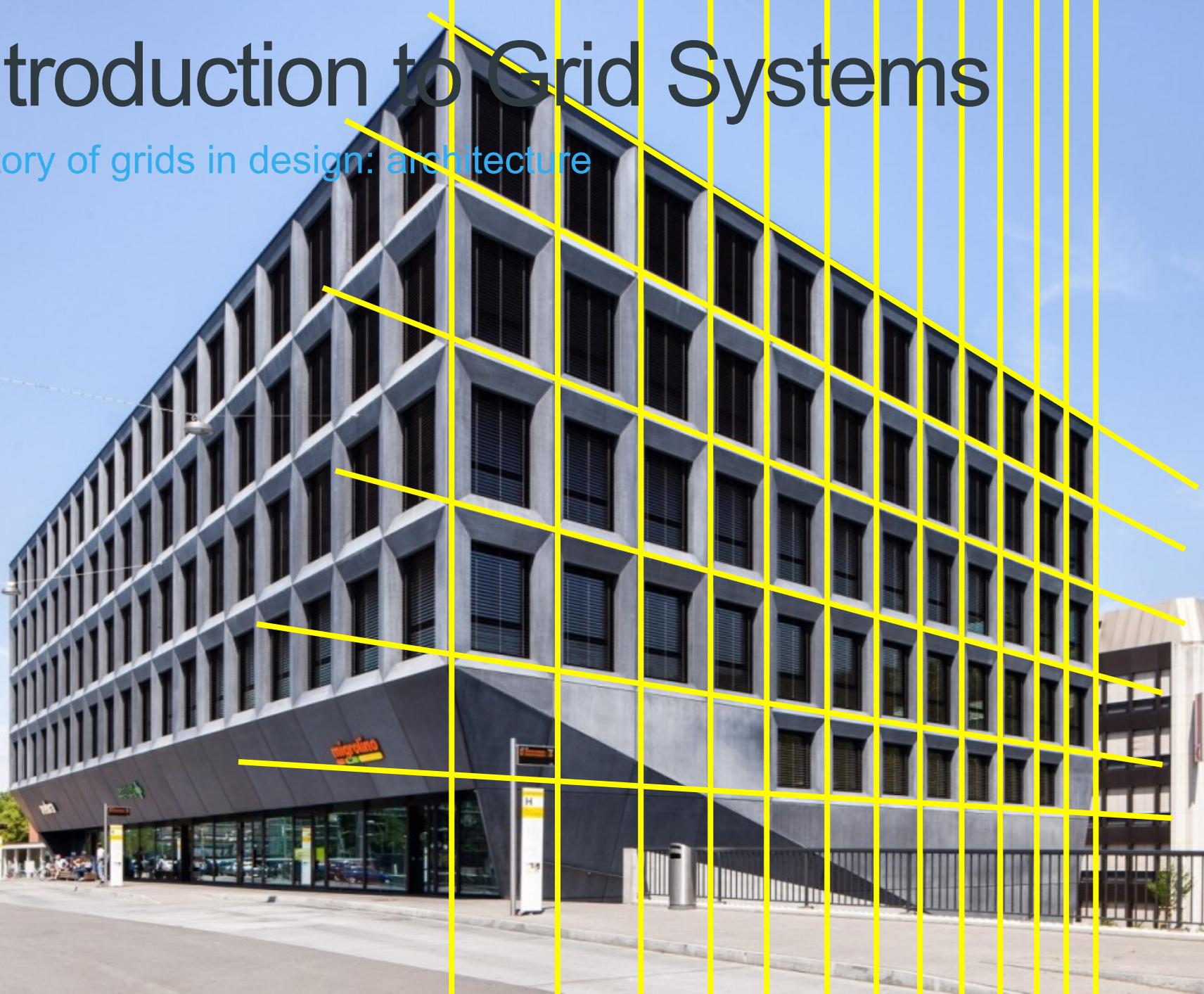
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History of grids in design: architecture



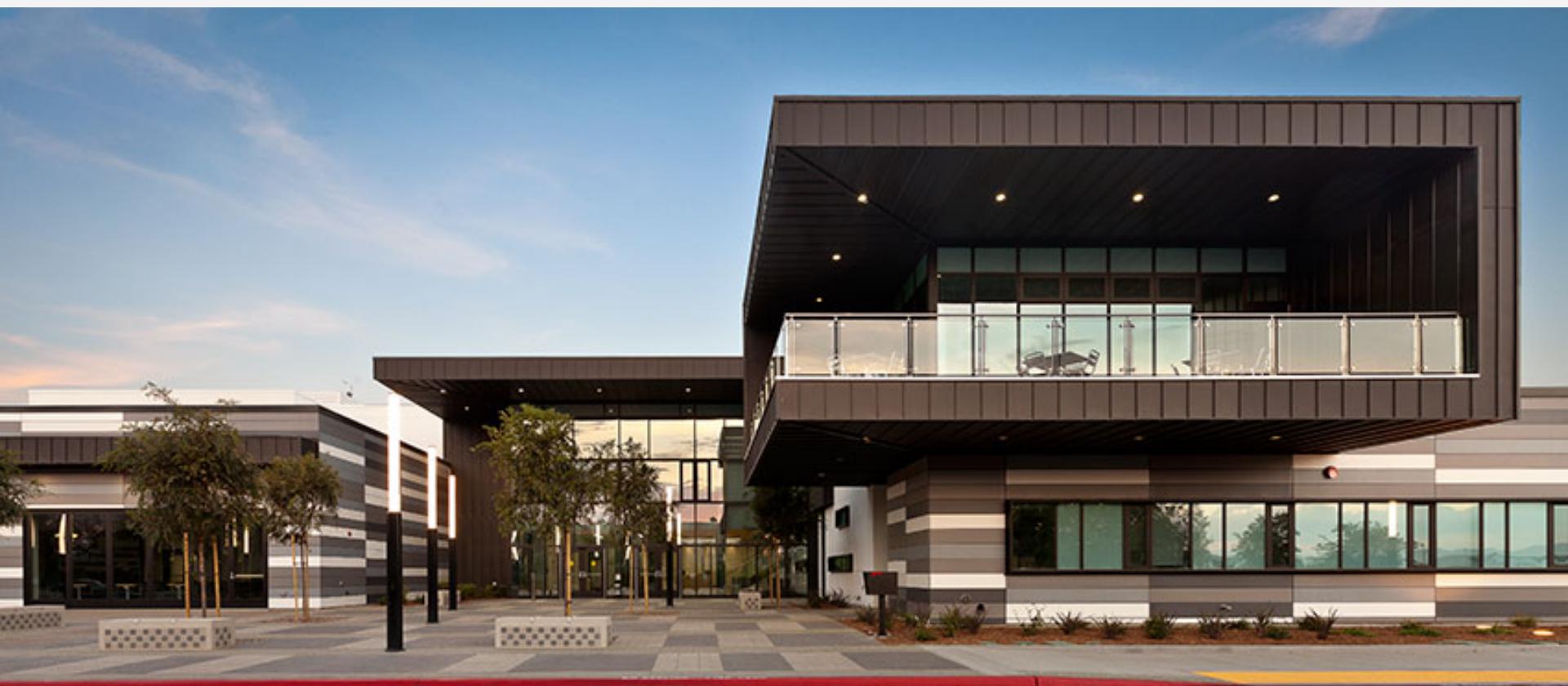
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History of grids in design: architecture



Introduction to Grid Systems

History of grids in design: architecture



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History of grids in design: architecture



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History of grids in design: city planning



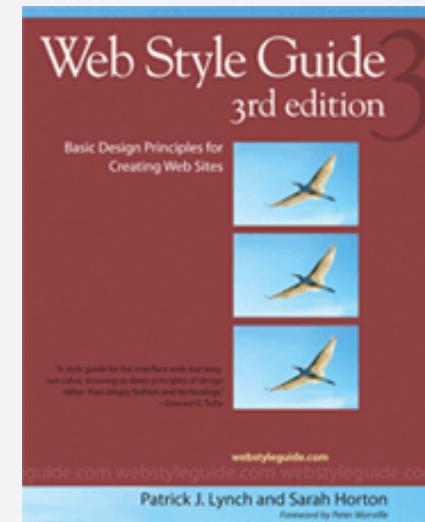
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Why should I use grids?

"Your goal is to establish a consistent, logical screen layout. One that allows you to "plug in" text and graphics without having to stop and rethink your basic design approach on each new page."

Web Style Guide

by Patrick Lynch and Sarah Horton

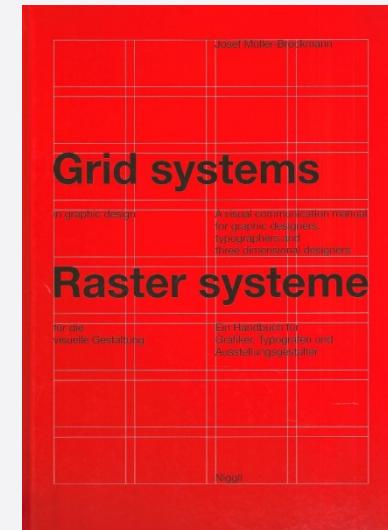


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Why should I use grids?

"The use of a the grid as an ordering system is the expression of a certain mental attitude inasmuch as it shows that the designer conceives his work in terms that constructive and oriented to the future."

Grid Systems in Graphic Design
by Josef Müller-Brockmann



Introduction to Grid Systems

Why should I use grids?

Creates columns that keep things organized

Can help a site feel more organized and reduce visual chaos

Helps a designer visualize proportions

Helps a designer achieve balance with whitespace and margins

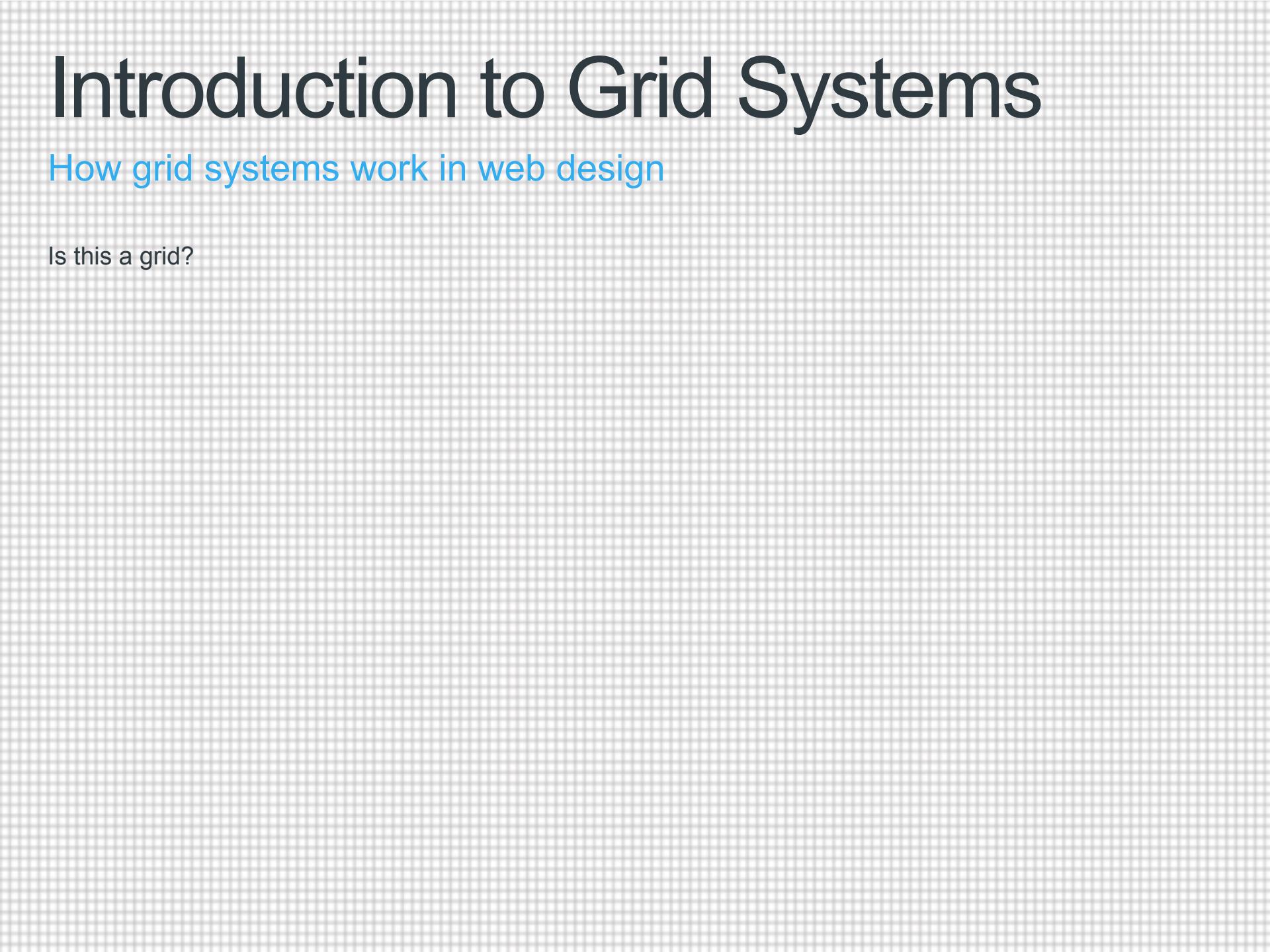
Provides a guideline, making it easier to design a site

Creates a modern, clean, and trendy layout in most cases

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How grid systems work in web design

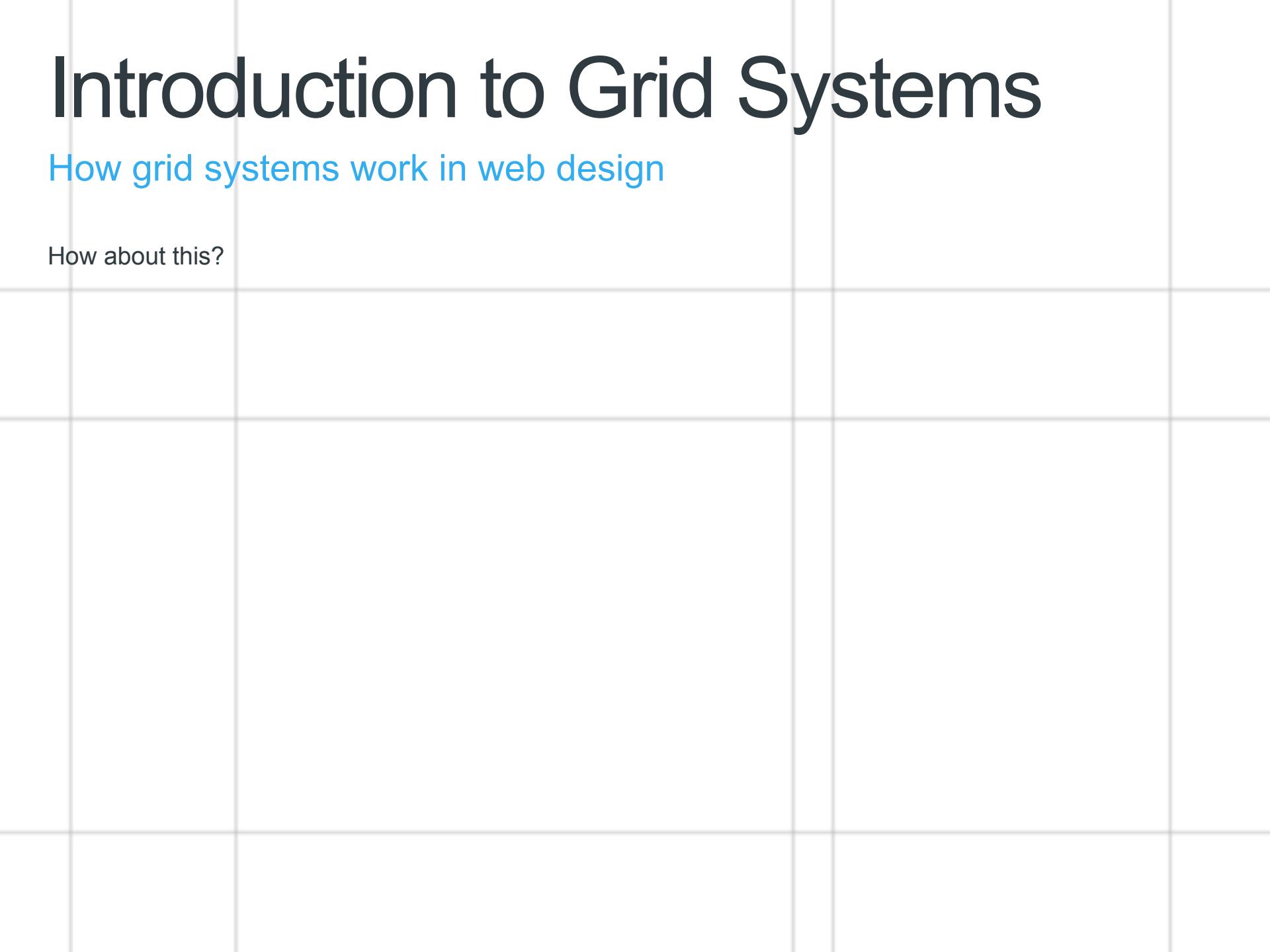
Is this a grid?



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How grid systems work in web design

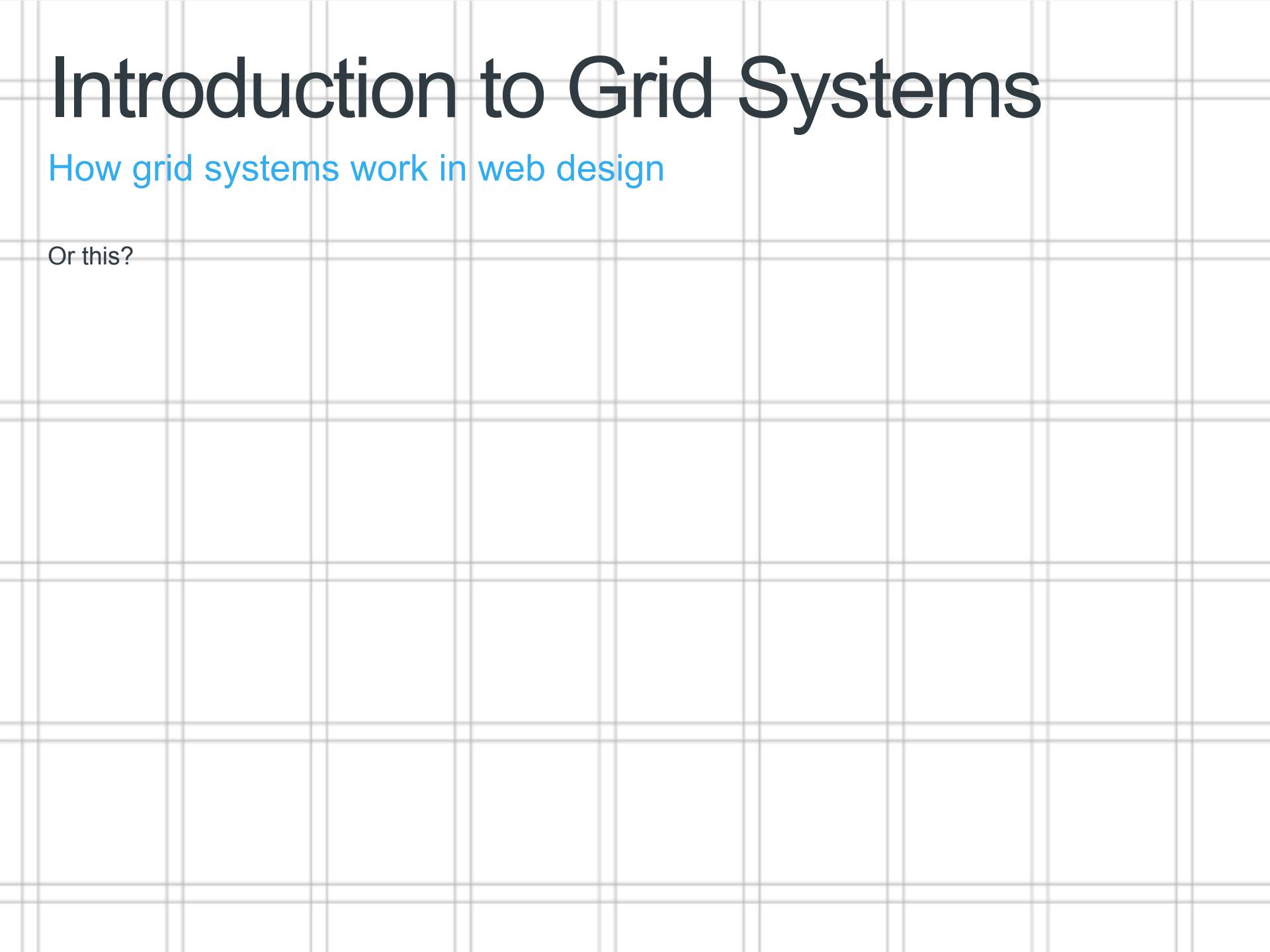
How about this?



Introduction to Grid Systems

How grid systems work in web design

Or this?



Introduction to Grid Systems

How grid systems work in web design

This?

Introduction to Grid Systems

How grid systems work in web design

A grid isn't just a bunch of lines...
The lines are just guides

What we need are units...
Units are the building blocks of the grid
Units are defined by the lines (guides) in order to form squares or rectangles

Introduction to Grid Systems

How grid systems work in web design

The space between two columns,
or row is called a gutter

Do we really need gutters?

Introduction to Grid Systems

How grid systems work in web design



Do you know who this guy is?
He wears checkered Vans and you should too



BUY NOW



Introduction to Grid Systems

How grid systems work in web design



Do you know who this guy is?
He wears checkered Vans and you should too



BUY NOW

Introduction to Grid Systems

How grid systems work in web design

Columns and rows are the groupings of units that create the visual structure of the page

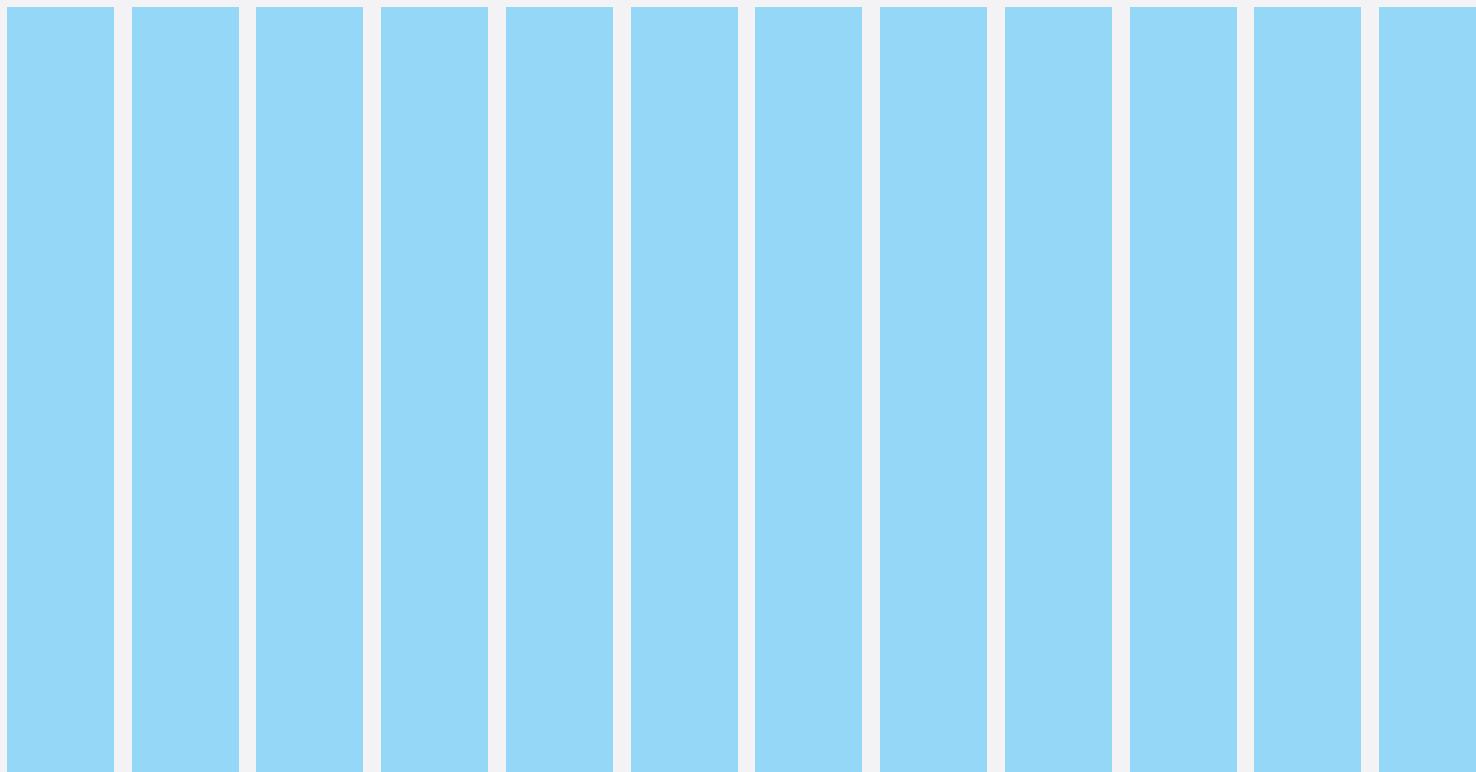
Columns for vertical structure

Rows for horizontal structure

Introduction to Grid Systems

How grid systems work in web design – the magic number 12

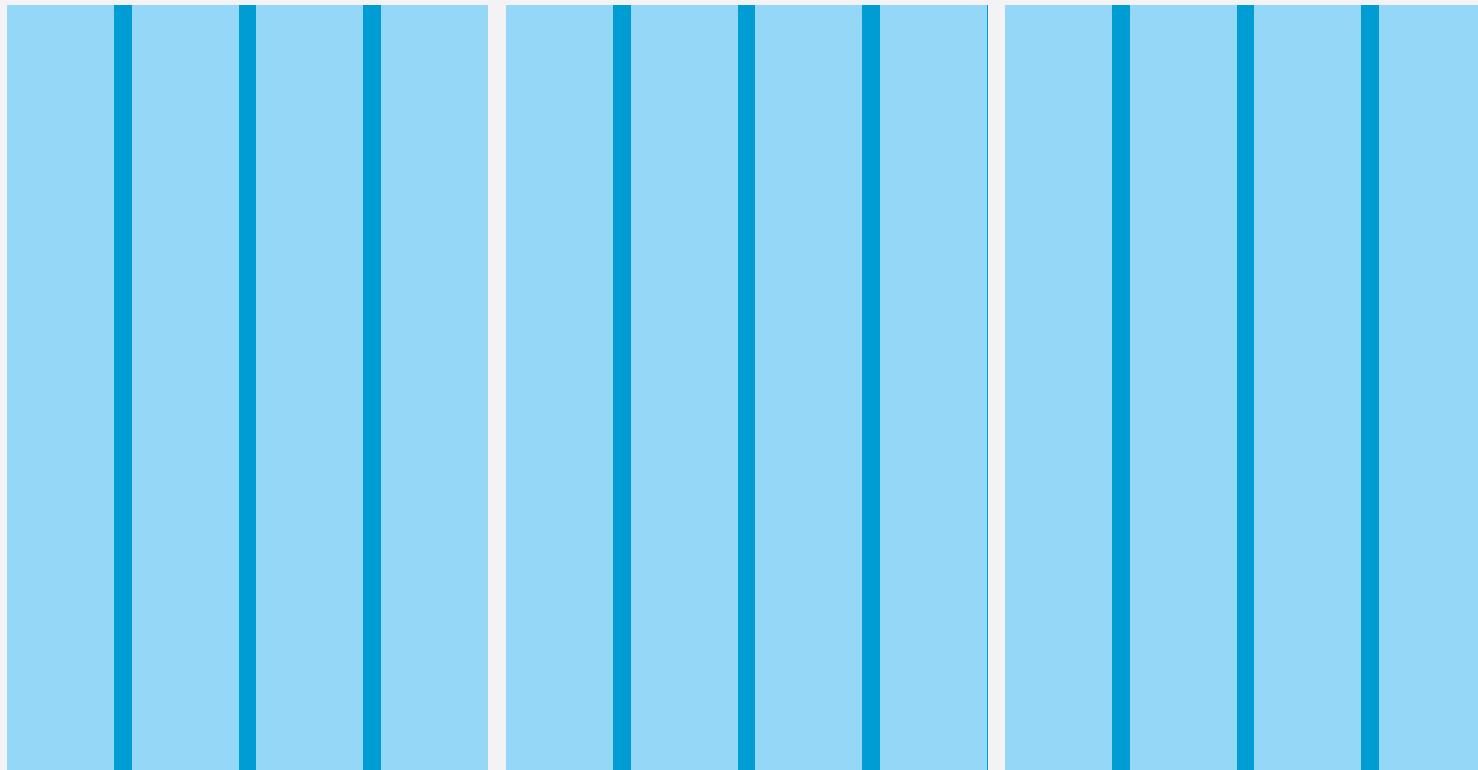
In general, we want to create units in multiples of three or four. Twelve is ideal, because it's a multiple of three and four.



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How grid systems work in web design – the magic number 12

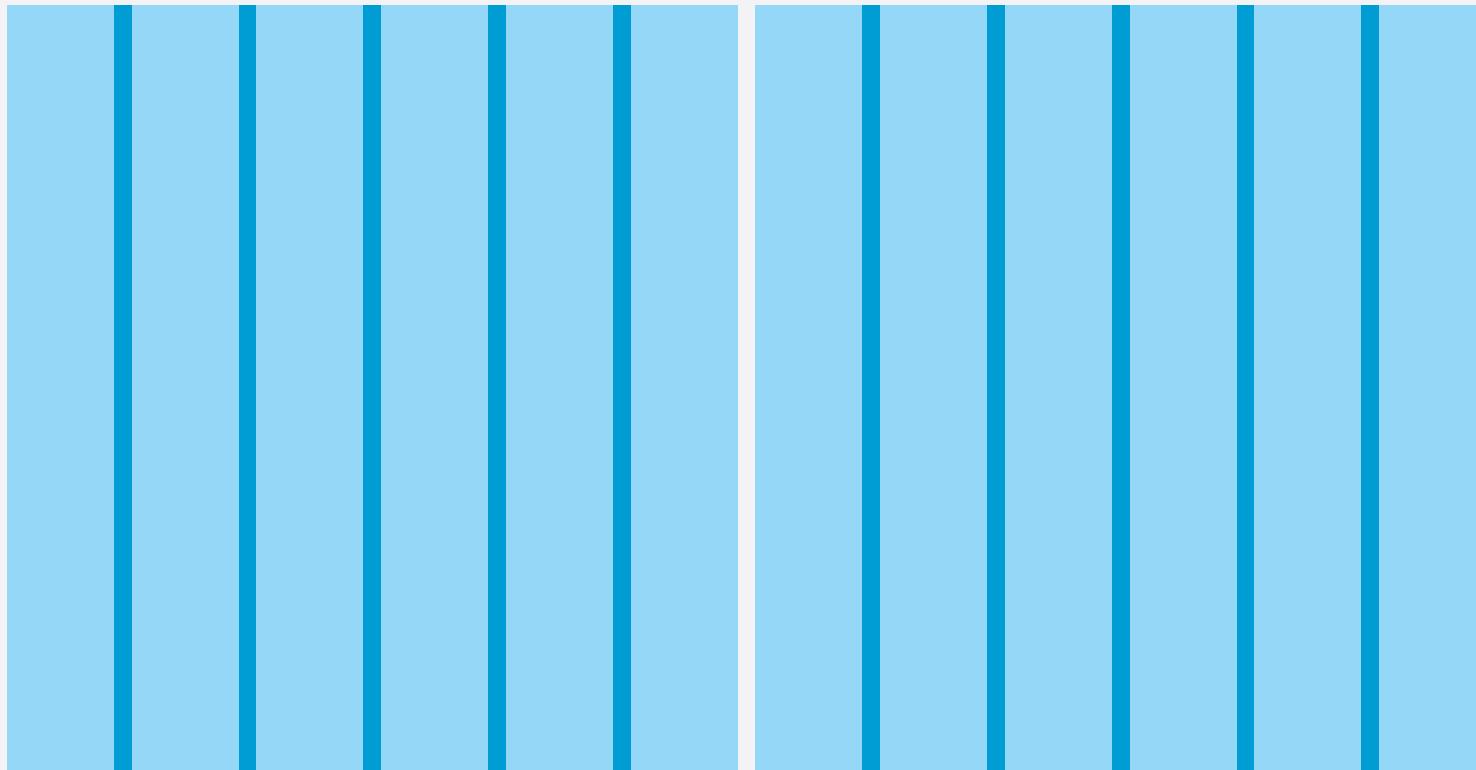
Three columns of four units: 3 x 4



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How grid systems work in web design – the magic number 12

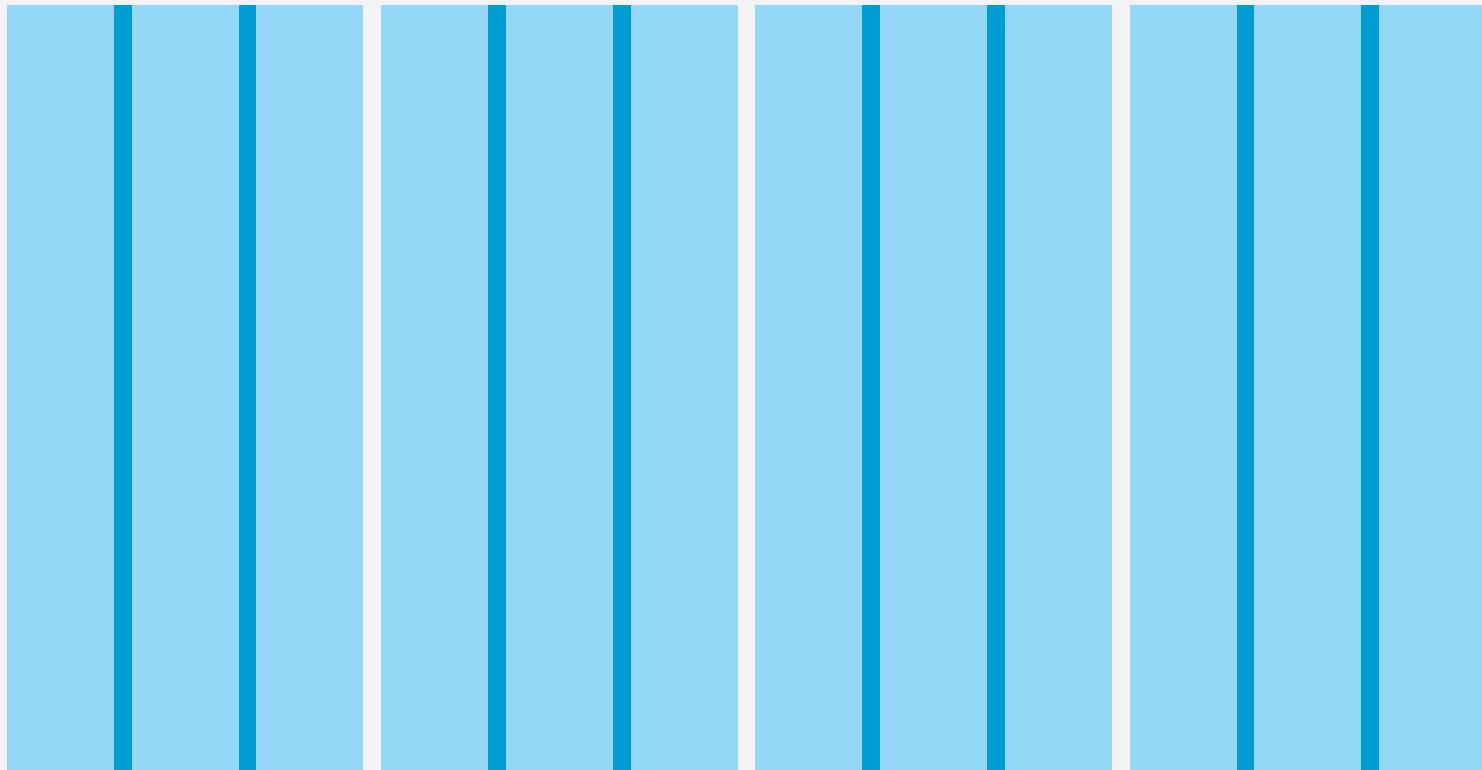
Two columns of six units: 2 x 6



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How grid systems work in web design – the magic number 12

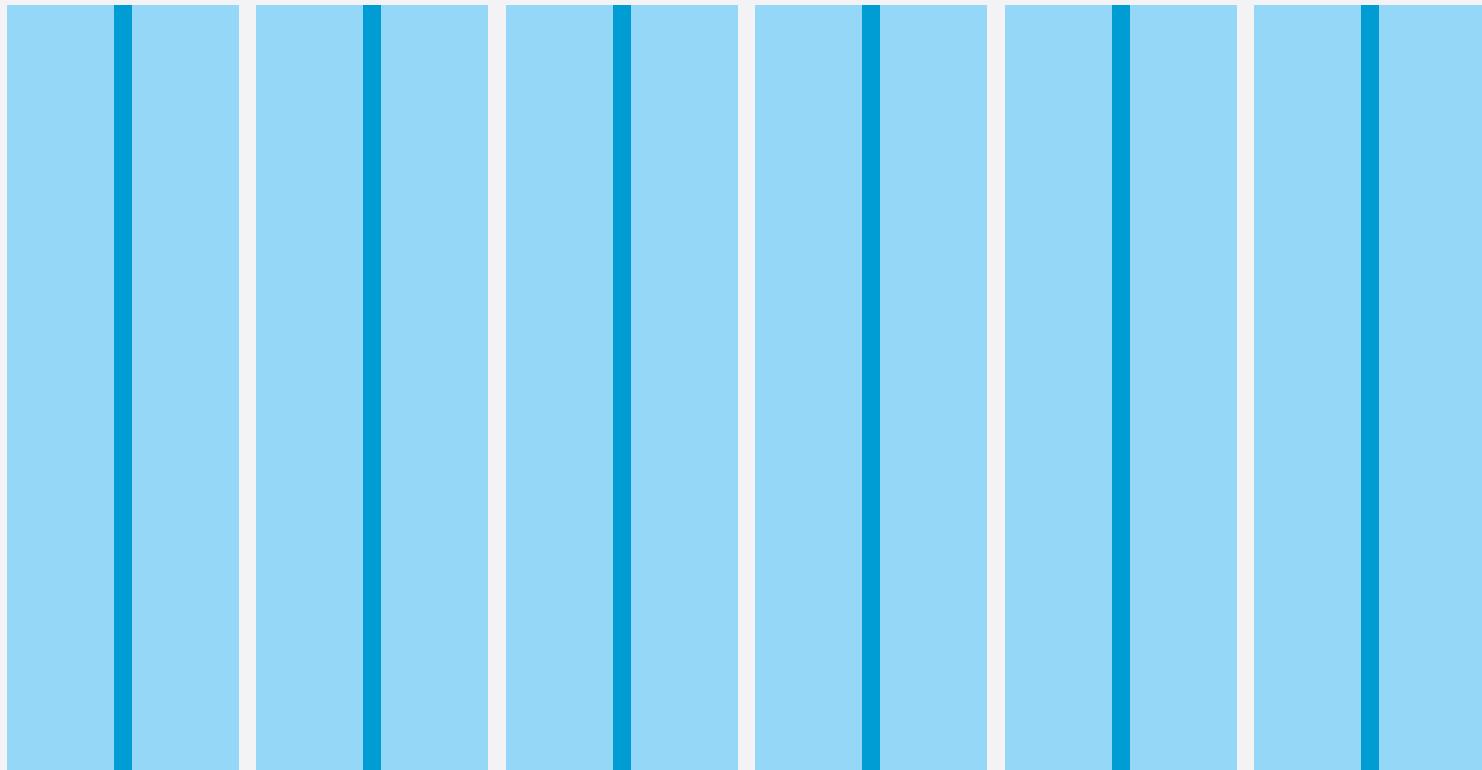
Four columns of three units: 4 x 3



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How grid systems work in web design – the magic number 12

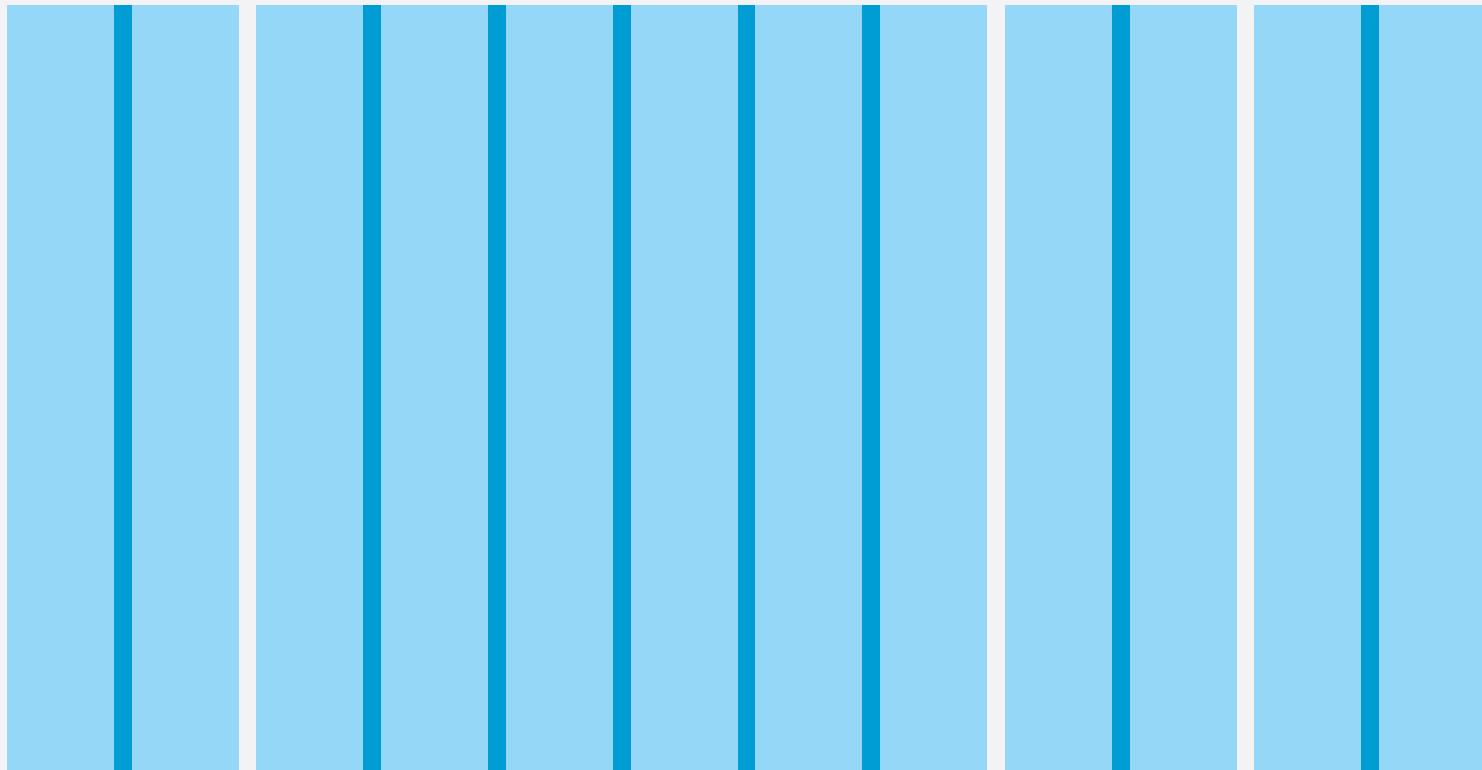
Six columns of two units: 6×2



Introduction to Grid Systems

How grid systems work in web design – the magic number 12

Nearly infinite possibilities...



Introduction to Grid Systems

How grid systems work in web design – grid size

What should the size of the columns be?

Think of numbers that you can divide by 2 or 3:

72 divided by 2 is 36

72 divided by 3 is 24

72 divided by 4 is 18

50 divided by 2 is 25

50 divided by 3 is...not going to work

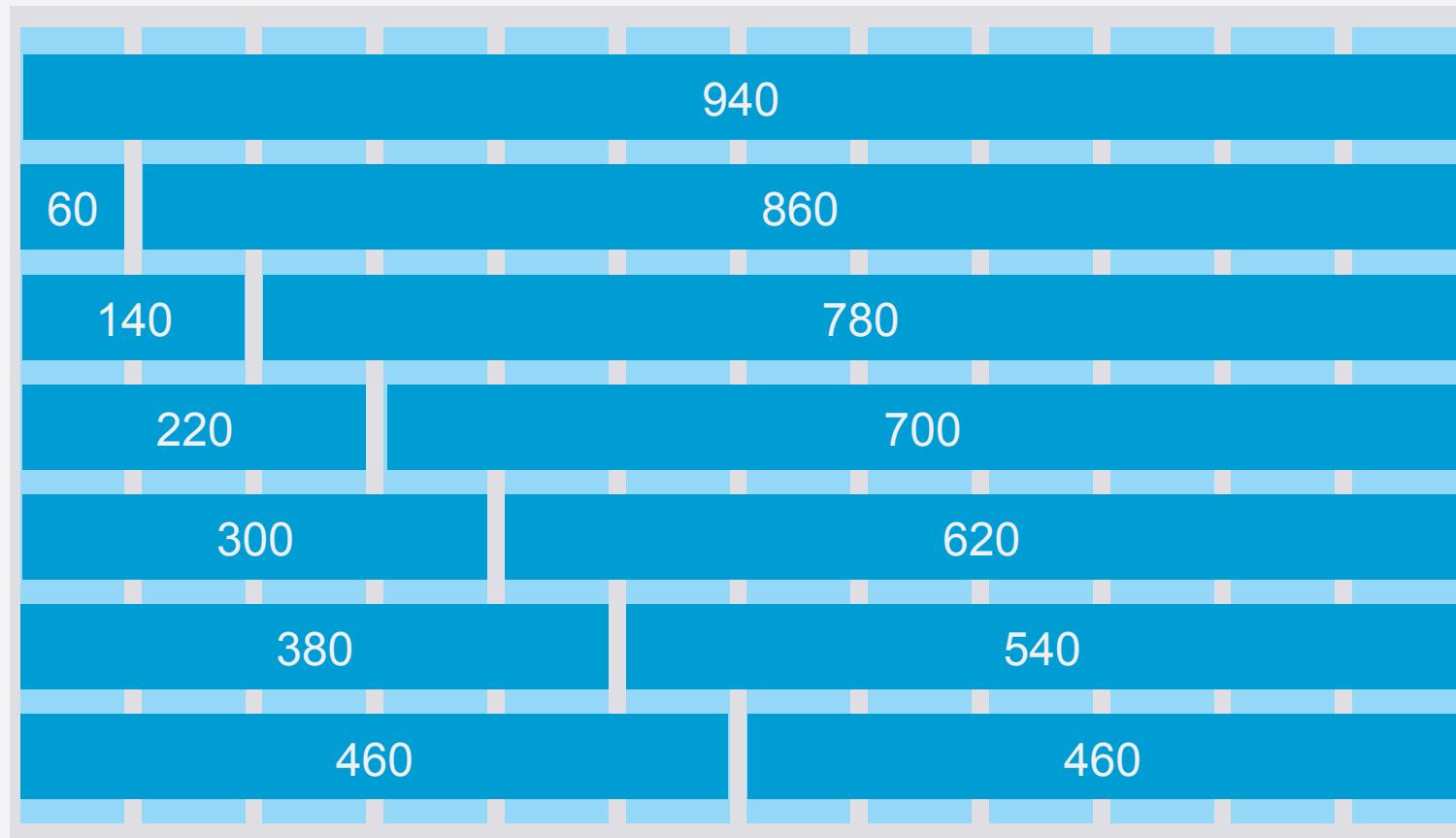
50 divided by 4 is...not going to work

This model doesn't factor in the gutters though!

Introduction to Grid Systems

How grid systems work in web design – grid size

The standard has become 960 (gutters are 20 and margins are 10 on each side)



Introduction to Grid Systems

How grid systems work in web design – grid size

Applying the grid system to Josef Müller-Brockmann's designs



Introduction to Grid Systems

How grid systems work in web design – grid size

Applying the 960 grid system to existing web designs

The Guardian Football website demonstrates a 960 grid layout. The main navigation bar at the top spans the width of the grid. Below it, the main content area is organized into several columns: a sidebar on the left containing news items like 'Moggi gets jail sentence over match-fixing - Reuters' and 'Fans face travel chaos as Euro 2012 slips behind schedule'; a central column featuring a large image of Owen Gibson on St George's Park with the caption 'The centre to change English football?'; and a right-hand column with various articles and links such as 'Fixtures and match reports', 'Competitions', and 'Also on the site'. A footer at the bottom includes sections for 'Editors' picks', 'Video', and 'In pictures'.

The 5by5 website uses a 960 grid system. The header features a navigation menu with links for Home, Live, Shows, About, Search, Advertise, Donate, Contact, RSS & iTunes, Blog, and Twitter. Below the header, a 'BROADCASTS' section displays a grid of thumbnail images for various shows like 'The BIG SHOW', 'BUILD & ANALYZE', 'TALK SHOW', 'PIPELINE', 'HYPNOTHERAPY', and 'BACK TO WORK'. The 'LATEST EPISODES' section below shows cards for episodes of 'TALK SHOW', 'BUILD & ANALYZE', and 'The Daily Edition with DAN BENJAMIN'. Each card includes a thumbnail, episode title, date, and a brief description.

Introduction to Grid Systems

How grid systems work in web design

Common grid systems in web design

**The 960 Grid System
Skeleton**

www.960.gs ← Let's take a look
www.getskeleton.com

Responsive Grid System

www.responsivegridsystem.com

Golden Grid System

www.goldengridsystem.com

The Semantic Grid System

www.semantic.gs

Mueller Grid System

www.muellergridsystem.com

Pure Grids

www.purecss.io/grids

Flexible Grid System

www.flexible.gs

Lemonade

www.lemonade.im

Cute Grids

www.cutegrids.com

Frameless Grid

www.framelessgrid.com

How to Layout and Position Elements

Layout and Position Elements

How to layout and position elements: float and clear

Properties for creating columns and stackable boxes

Property	Description	Values
float	Specifies how a box should float in relation to other elements.	left, right, none
clear	Specifies the sides of a box that may not be adjacent to an earlier floated box.	none, left, right, both

Layout and Position Elements

How to layout and position elements: float and clear

Examples

- ❖ **01 – Float 2 Column**
Shows a simple 2 column design where both columns are floated left
- ❖ **02 – Float 3 Column**
Shows a simple 3 column design where all three columns are floated left
- ❖ **03 – Float 1 Column Right**
Shows a slightly more complex design where 1 column is floated to right side of parent
- ❖ **04 – Float 1 Column Right with Footer**
Shows a more complex design that also contains a cleared footer
- ❖ **05 – Float 2 Column Liquid**
Shows a more complex design where the 2 columns are responsive to the viewport size
- ❖ **06 – Float 3 Column Liquid**
Shows a more complex design where the 3 columns are responsive to the viewport size

Layout and Position Elements

How to layout and position elements: CSS3 text columns

Properties for creating CSS3 text columns

Property	Description	Value(s)
<code>column-count</code>	The number of columns to create in the box.	numeric value
<code>column-width</code>	The width of each column.	length
<code>column-gap</code>	The amount of space to add in between columns.	length
<code>column-rule</code>	A shorthand property for setting a vertical border on the side of each column.	width style color
<code>column-span</code>	Specifies how many columns an element should span across.	1 (default), all

Layout and Position Elements

How to layout and position elements: CSS3 text columns

Example

- ❖ **07 – CSS3 Columns**

Shows text in a web page organized into 3 columns using CSS3

Layout and Position Elements

How to layout and position elements: positioning elements

Properties for positioning elements

Property	Description	Values
position	Sets the type of positioning to apply to an element.	Static (default), relative, absolute, fixed
z-index	Specifies the "stacking level" of an absolutely positioned element.	auto, numeric value
left, right, top, bottom	Specifies how far a box's margin edge is offset from the element's containing block. Only applies when position property is set to absolute or fixed.	length, percentage, auto
overflow	Specifies whether content of a box is clipped when content within it overflows the box's dimensions.	visible, hidden, scroll, auto
clip	Applies to elements that are absolutely positioned. Allows you to "clip off" or remove a portion of an element.	rect(top, right, bottom, left)

Layout and Position Elements

How to layout and position elements: positioning elements

Example

- ❖ **08 – Static vs Relative Positioning**
Shows the difference between the default static positioning and relative positioning
- ❖ **09 – Absolute Positioning**
Shows how to precisely position an element using absolute positioning (scrolls with content)
- ❖ **10 – Fixed Positioning**
Shows how to precisely position an element using fixed positioning (doesn't scroll with content)
- ❖ **11 – Overflow**
Shows some of the different options for several boxes that have the overflow property set
- ❖ **12 – Clip**
Shows how to clip content within a box