

Sessions vs. Unique Page Views



What's the difference and when should I use them?

What we'll cover today

- A common scenario of pulling content engagement data
- Why are we here?
- Metrics overview
- Scope
- Rules of thumb - When should we be using sessions vs. unique pageviews?

What if...

Google Analytics allowed you to customize a report so that you end up with **very misleading data?**

- This can, and often does happen with sessions and unique pageviews!
- Google Analytics won't warn you!
- This is why we're here talking about this today!

A common scenario

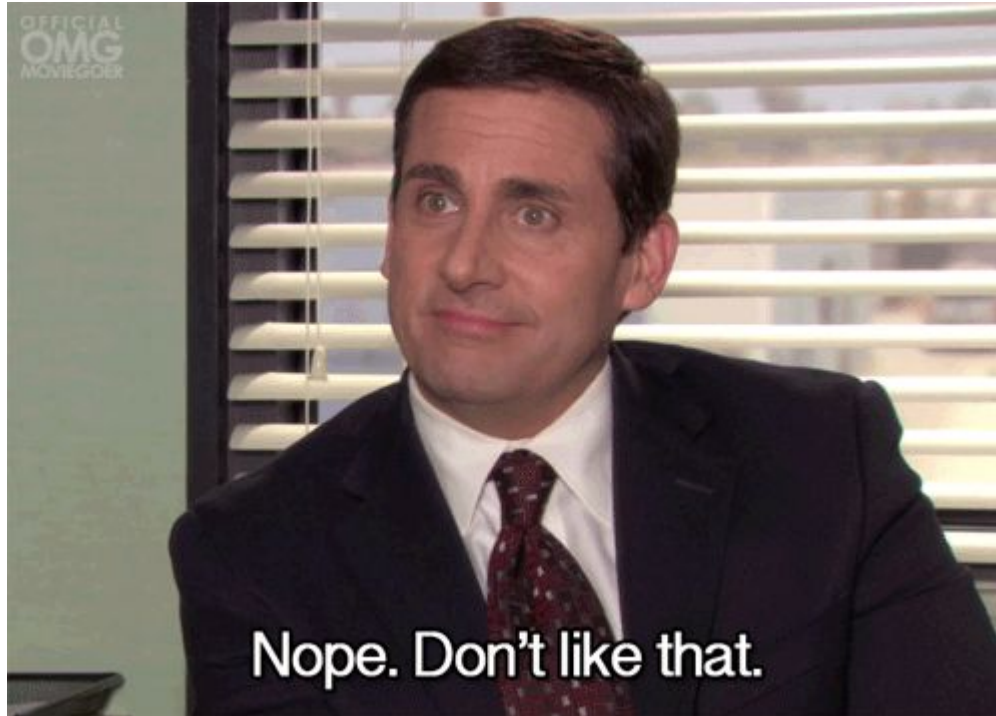
As DAP users, we're all faced with reporting on how our content performs:

- You have a bunch of content on your site
- You're trying to figure out how to analyze your site's content performance
- You pull a bunch of **pageviews** or **sessions** or **unique pageviews**, with either **page** or **landing page** and then you call it a day

The question before us

How and when should I be using sessions or unique pageviews for content performance?

We're here to tell you it's not that simple



Why we're here today

- We'll unpack this for you today with the goal of helping you understand when to use sessions and unique pageviews, so that you can better analyze your content
- Surprisingly common mistake
- Scratching the surface of how to think about reporting on content the right way using sessions and unique pageviews, and the pitfalls
- Combining the wrong dimensions/metrics or using the wrong report in Google Analytics can give you misleading or even completely wrong data about your content engagement.

Let's talk about how DAP users pull content reporting today

Here are the most common ways we see folks simply pull data for content analysis and call it a day. Let's walk through these examples together:

- **Pulling Page dimension with Pageviews or Unique Pageviews** in Behavior → Site Content → All Pages
- **Pulling Landing Pages dimension with Sessions** in Behavior → Site Content → Landing Pages
- **Pulling Page dimension with sessions** in a custom report

So why is this important?

Which standard reports you pull, and how you combine dimensions and metrics in custom reports, directly impacts whether you:

- 1) Receive accurate reporting
- 2) Whether you misinterpret data
- 3) Whether you make bad content decisions based on misinterpreted or incorrect data

We can all agree:

We want to report on our site performance using the most accurate data, to make data driven decisions about how to improve our site for the public's consumption.




Especially important when comparing groups of content to each other!

Let's illustrate the challenge

Let's say you build a custom report by page with sessions, pageviews & unique pageviews to do monthly reporting.

Here's the problem - the metrics are all different!

Which one should we use? How do we know which one is right?

Page ?	Sessions ?	↓	Pageviews ?	Unique Pageviews ?
	30,724 % of Total: 100.00% (30,724)		118,293 % of Total: 100.00% (118,293)	74,207 % of Total: 100.00% (74,207)
1. pbgc.gov/ 	8,584 (27.94%)		11,499 (9.72%)	9,340 (12.59%)
2. pbgc.gov/search-unclaimed-pensions 	5,054 (16.45%)		28,086 (23.74%)	10,581 (14.26%)
3. pbgc.gov/prac/interest/vls 	687 (2.24%)		1,146 (0.97%)	1,011 (1.36%)

So how do we figure this out?

First, let's review the basics of dimensions and metrics....

The basics are important

Dimension - a descriptor of your data

Metric - a number that measures your data

DIMENSION	DIMENSION	METRIC	METRIC
City	Browser	Sessions	Pages/Session
San Francisco	Chrome	3,000	3.5
San Francisco	Firefox	2,000	4.1
Berlin	Chrome	2,000	5.5
Berlin	Safari	1,000	2.5
Berlin	Firefox	1,000	4.7

Dimensions & Metrics we'll cover in today's webcast

Dimension - a descriptor of your data

→ **Pages** and **Landing Pages**

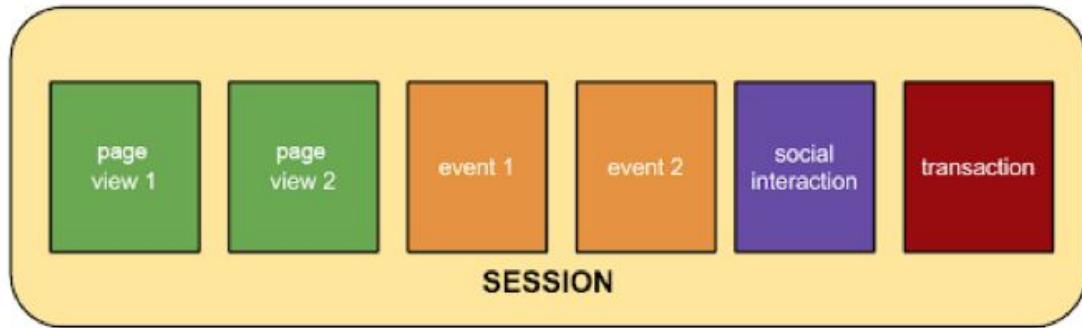
Metric - a number that measures your data

→ **Sessions**, **Pageviews** and **Unique Pageviews**

Metrics review

Sessions

- Definition of a Session: The entire time someone browses a website until they leave or close their browser window.
- Encapsulates all activity a user does on your site
- Google categorizes the first page viewed in a session as a “landing page”
- A session always begins on this first page viewed, or the landing page → only occurs once, until you leave the site or close your browser
- **Use sessions with the “Landing page” dimension. Never use with the “Page” dimension**



Metrics review

Page Views

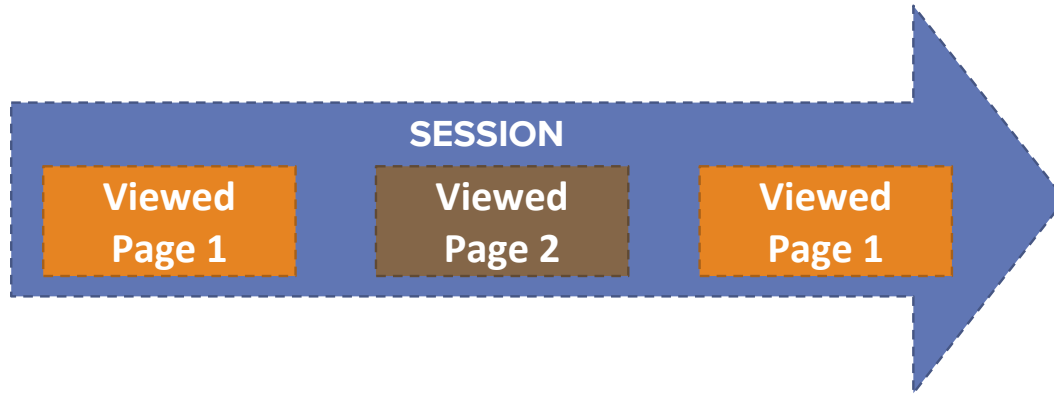
- Definition - Any time a page loads, it is a pageview. This includes hitting the back button. **Let's illustrate this!**
- A view of a page on your site that is being tracked by the Analytics tracking code
- If a user clicks reload after reaching the page, this is counted as an additional pageview. If a user navigates to a different page and then returns to the original page, a second pageview is recorded as well. → Lots of noise that doesn't tell you much!
- **Use Pageviews with the "Page" dimension**
- To cut through the noise, use Unique Pageviews!

Metrics review

Unique pageviews

- A metric that aggregates pageviews during a user's session, and gives credit only once to each page viewed.
- Only counted for the first time a user browses each page
- In other words, represents the number of sessions in which a page was viewed one or more times
- After a session begins, every other page is categorized with page views and unique pageviews. For each unique page, unique pageviews are only counted once
- Don't confuse the unique pageview metric with the total number of sessions.
- **Use Unique Pageviews with the "Page" dimension**

Let's review



	Pageviews	Unique Pageviews	Entrances	Pages/Session
Page 1	2	1	1	
Page 2	1	1	0	
Session	3	2	n/a	3

So let's talk about scope

Scope is how Google Analytics collects and formats your Google Analytics data for dimensions and metrics.

Each dimension and metric dimension/metric has scope. **This will determine how you can use sessions and unique pageviews in reporting**

There are 4 scope types Google uses to categorize your data - today we'll be addressing

- User level scope
- **Session level scope**
- **Hit level scope**
- Product level scope

Examples of Scope Dimensions/Metrics

User level data - dimension/metric that describes a user

Dimensions: City, Gender

Metrics: Users, New Users

Session level data - dimensions/metrics that describe attributes of a single session. Classifies once per session.

Dimensions: Landing Page, Source/Medium

Metrics: Sessions, Bounce Rate

Hit level data - any individual action on a website such as a pageview or an event from downloading a PDF. Classifies each hit on a page.

Dimensions: Hostname, Page, Event Category

Metrics: Pageview, Unique Pageview, Time on Page, Total Events

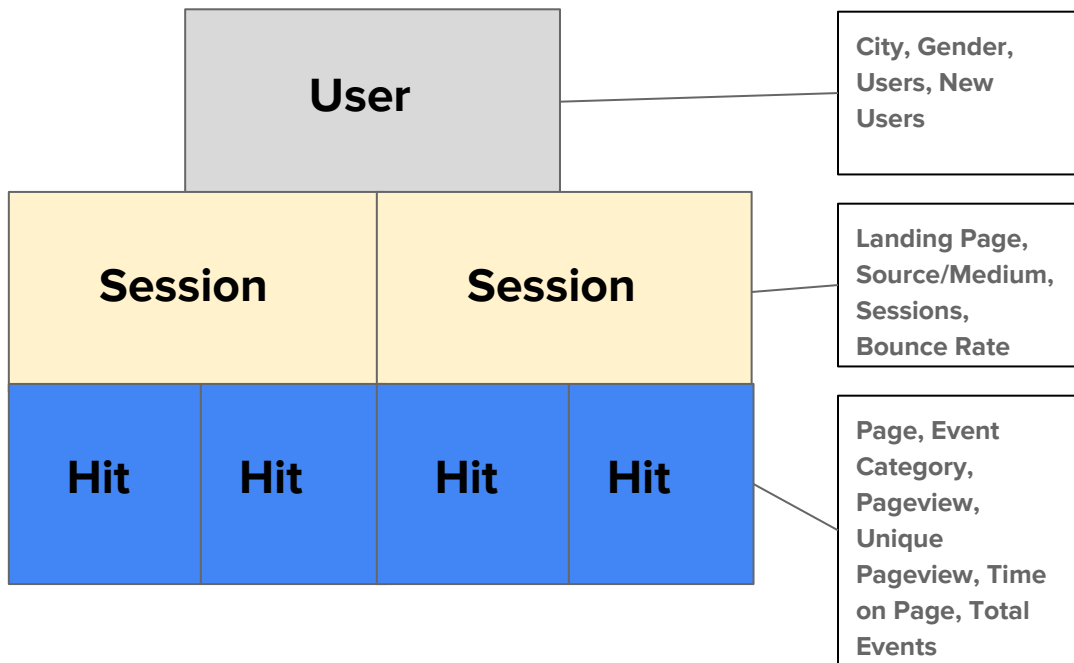
The idea here is...

Some dimensions/metrics are session level -- they relate to entire session.

Some dimensions/metrics are hit (or page) level dimensions and relate to a specific page.

You shouldn't combine these!

Let's visualize Scope hierarchy



How Google Analytics collects and process data:

- User is made up of one or more sessions,
- Sessions are made up of one or more hits
- Hits are multiple and occur on each pageload or event

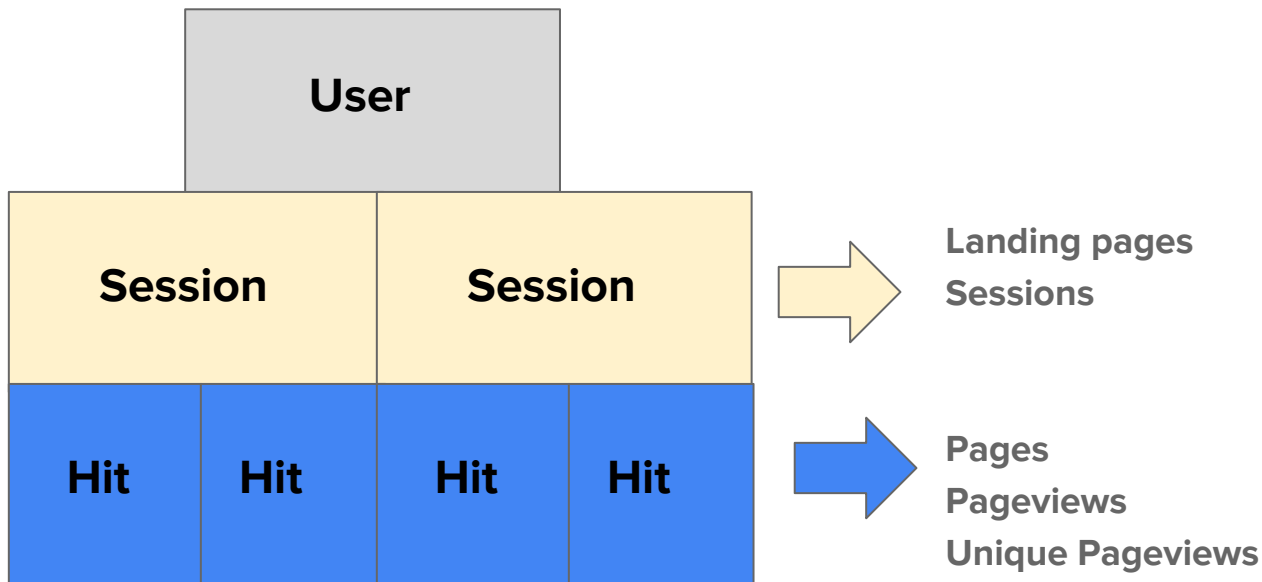
Hits are the building-blocks of Google Analytics - they contain a bunch of site info and are sent to Google Analytics server

Pitfalls of Scope

- Don't cross the streams!
- Do not combine dimensions and metrics from different scopes → This gives you misleading data




So what does this mean for sessions & unique pageviews?



You shouldn't mix different types of scoped dimensions/metrics in reporting!

If you do mix differently scoped dimensions and metrics...what happens?

PAGE DIMENSION + SESSIONS






Scope examples

Let's look at some examples in Standard Reports on the next few slides

- All Pages report - based on hit scoped dimensions and metrics
- Landing Pages report - based on session scoped dimensions and metrics
- Custom Report - Google allows you to combine all sorts of dimensions/metrics with different scopes, even though they're misleading!




All Pages report - based on hit scoped dimensions and metrics

- Ever wonder why certain metrics are seemingly missing from certain reports?
- You can't combine dimensions and metrics of different scopes
- Which metric is missing from this report?
- Seems like a limitation of standard reports, but excluding sessions from this report is deliberate

Page ?	Pageviews ? ↓	Unique Pageviews ?	Avg. Time on Page ?	Entrances ?	Bounce Rate ?	% Exit ?
	118,652 % of Total: 100.00% (118,652)	74,423 % of Total: 100.00% (74,423)	00:01:16 Avg for View: 00:01:16 (0.00%)	30,649 % of Total: 100.00% (30,649)	37.55% Avg for View: 37.55% (0.00%)	25.83% Avg for View: 25.83% (0.00%)
1. pbgc.gov/search-unclaimed-pensions 	28,514 (24.03%)	10,756 (14.45%)	00:00:36	5,121 (16.71%)	21.28%	15.50%
2. pbgc.gov/search-all 	12,581 (10.60%)	5,546 (7.45%)	00:00:53	669 (2.18%)	34.46%	12.65%
3. pbgc.gov/ 	11,645 (9.81%)	9,478 (12.74%)	00:01:59	8,694 (28.37%)	22.61%	39.28%




Landing Pages report - based on session scoped dimensions and metrics

- Unique Pageviews and Pageviews are missing from this report
- Seems like a limitation of standard reports, but excluding these metrics from this report is deliberate





Landing Page ?	Acquisition			Behavior		
	Sessions ? ↓	% New Sessions ?	New Users ?	Bounce Rate ?	Pages / Session ?	Avg. Session Duration ?
	30,724 % of Total: 100.00% (30,724)	64.36% Avg for View: 64.28% (0.12%)	19,774 % of Total: 100.12% (19,750)	37.91% Avg for View: 37.91% (0.00%)	3.85 Avg for View: 3.85 (0.00%)	00:03:39 Avg for View: 00:03:39 (0.00%)
1. pbgc.gov/ 	8,574 (27.91%)	62.48%	5,357 (27.09%)	22.60%	3.88	00:04:03
2. pbgc.gov/search-unclaimed-pensions 	5,053 (16.45%)	89.59%	4,527 (22.89%)	21.57%	6.56	00:03:29
3. pbgc.gov/prac/interest/vls 	687 (2.24%)	28.82%	198 (1.00%)	86.75%	1.30	00:00:59

Custom Report - Google allows you to combine dimensions and metrics even though they're misleading!

- Unique Pageviews, Pageviews & Sessions by Page are all allowed, even though Sessions should not be used because of scope.
- Beware using sessions with Page in custom reports! This gives you misleading data

Page ?	Sessions ?	Pageviews ?	Unique Pageviews ?
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Metrics logic and pitfalls

- Using page dimension with page views
 - This tells me how many times each page loaded
 - This gives you an accurate count
- Using page dimension with unique pageviews
 - This tells me how many times I uniquely viewed a piece of content.
 - If I viewed the same page 3 times in a session I'd still only have 1 unique pageview
 - If you use Unique Pageviews instead of pageviews, this gives you a more accurate count of engagement and removes the noise -- Gives you a more realistic count of engagement because it filters out the refreshes, or back button clicks, etc.
- Using page dimension with sessions
 - **You're forcing sessions to act like entrances for landing pages!**
 - If you use sessions with page it's not giving a realistic count
- Using landing page dimension with pageviews
 - **You're forcing Google to show the total number of pageviews in all sessions** where a specific page was a landing page

Page and landing page example

Why are pageviews by the “landing page” dimension so much higher than the “page” dimension?

March 12-18, 2019 PBGC Homepage	
Landing page	Pageviews
pbgc.gov	32,499
Page	Pageviews
pbgc.gov	11,499

In effect, what pulling Landing Page with Pageviews tells you is the **total number of pageviews** in **all sessions** where the homepage was a landing page! **This is not accurate reporting!**

Takeaway: Some dimensions are session level dimensions- they relate to entire sessions, and some dimensions are page level dimensions and relate to a specific page

Rules of Thumb for Sessions & Unique Pageview logic

- **Landing Page & Sessions**

- These are **session level scoped** metrics
- Never use Unique Pageviews or Pageviews here with session level scoped dimensions/metrics
- A session always begins on a landing page

- **Page & Pageviews; Page & Unique Pageviews**

- These are **hit level scoped** metrics
- Never use Sessions here with hit level scoped dimensions/metrics

- Google tracks session level differently than page level because of scope. Use Unique Pageviews as your surrogate for sessions when using the page level dimension

Let's put this into practice

- Using sessions & unique pageviews is situational

It depends on how you're trying to measure how your users engage with your content:

1. Where did users from external traffic land on my site?
2. What did users do on my site?

The 2 ways users engage with your content determines whether you'll need to use sessions or unique pageviews.

How do we put this into practice?

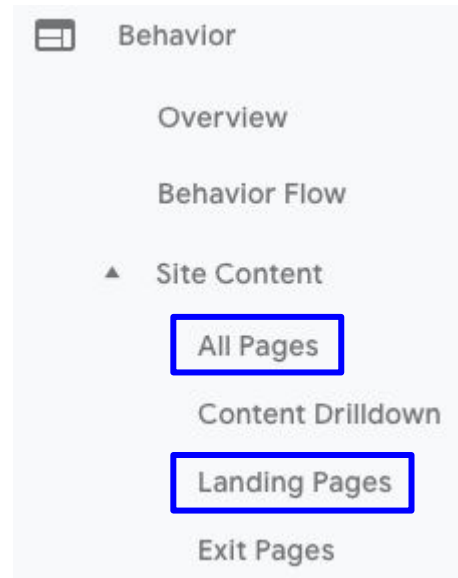
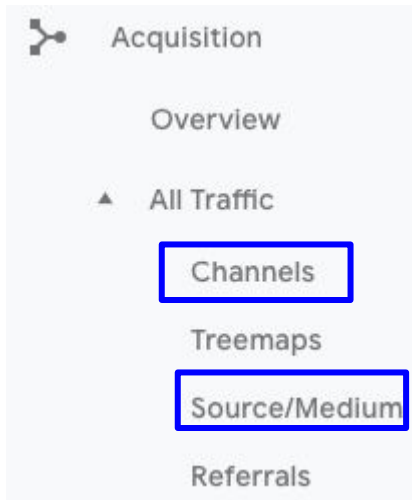
- Google Analytics chops up the journey of a user into digestible chunks so you can analyze this data more easily.

Let's think about this journey:

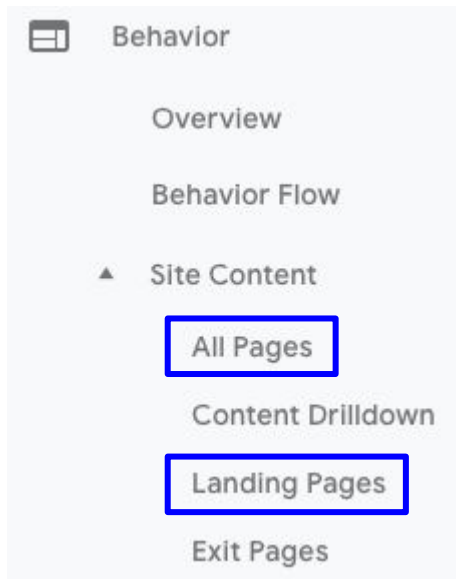
1. A user somehow finds your site, through social media, emails, etc.
2. A user lands on your site somewhere - this can be anywhere, and because of organic search, users can land on your homepage and sideways
3. After landing on your site, a user then browses other pages

Google Analytics is like a puzzle

Google Analytics gives you a bunch of puzzle pieces but doesn't tell you how to put the puzzle together



Which content reports use Sessions & Unique pageviews?



Unique Pageviews



Sessions

The goal...

You need to understand when to use sessions and unique pageviews in the context that these metrics occur to glean insights about your content



Think about the full user journey scenario

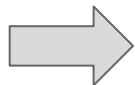
Google categorizes content engagement differently

External Traffic

A user finds you through external channels:

- Marketing campaigns such as email, social, etc.
- Brand awareness (Direct traffic)

Use Channels Report

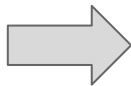


Landing Pages

This user lands anywhere on your site

- Session begins on this landing page
- This session can only begin on a landing page
- All activity that happens after this page is included in this session

Use Landing Pages Report



All other pages viewed

This user continues browsing content

- GA collects "unique pageviews" for all of the pages after session began
- Unique Pageviews for every page are collected in this 1 session

Use All Pages Report

Standard Report Live Demo

How to analyze content - live demo

Business questions

1. What was the most engaging content in organic search on pbgc.gov?
 - a. We need to know the marketing channel
 - b. We need to be able to look at landing page
 - c. We need to look at sessions
2. What was the most engaging content once users landed on pbgc.gov?
 - a. We need to be able to look at page
 - b. We need to look at unique pageviews

Caveats...

This wouldn't be a true Google Analytics training unless we talked about caveats...

Combining a hit level dimension with sessions

As DAP users, we typically use the hostname dimension in our reporting with sessions.

Let's unpack this:

- Hostname is a hit level dimension
- Sessions is a session level metric
- This is still correct!

You can use hostname and sessions in this unique circumstance because Google Analytics is looking at landing page when the hostname data is recorded.

Let's look at 2 reports to show how they compare

Combining a hit level dimensions with user level metrics

You may be wondering how scope impacts users!

Do not combine a Page dimension with a Users metric.

These two will not work together because they're different scopes

Takeaway #1

Google Analytics does a really good job in allowing you to manipulate data in whichever way you need to uncover insights about your content performance, but doesn't do a great job helping you understand scope

Takeaway #2

Google tracks session level dimensions/metrics differently than hit (page) level dimensions/metrics because of scope.

Be aware of scope!

Use session level scope dimensions & metrics together: Landing Page & Sessions

Use hit level scope dimensions & metrics together: Pages & Unique Pageviews/Pageviews

Takeaway #3

When analyzing content, let the questions you're trying to answer guide you to the report - either All Pages or Landing Pages - think about the user journey!

Use Unique Pageviews as your surrogate for sessions when using the page level dimension

Takeaway #4

Don't mix differently scoped dimensions and metrics in reporting -- especially in custom reports

Session level scoped dimensions/metrics combined with Hit level scoped dimensions/metrics will give you misleading data

Takeaway #5

Scope is powerful - tread carefully!

Some dimensions are session level dimensions- they relate to entire sessions, and some dimensions are page level dimensions and relate to a specific page

Questions?

Please enter them into the chat box

Please contact us with any follow up questions at dap@support.digitalgov.gov