

The Ultimate Guide to Google Analytics 4

Introduction to Google Analytics 4

From July 2023 Google's reporting platform Universal Analytics (UA) will no longer process data.

Instead, it will be replaced by Google Analytics 4 (GA4), which was released by Google in October 2020. GA4 is specifically designed to accommodate increased data privacy while providing insights produced by machine learning. Although all your old data will remain in UA, if your business doesn't make the switch to GA4 by July 2023, you will lose future valuable data on your website performance. The sooner you switch, the better.

This guide will help you understand what you need to know about GA4, to ensure you have a smooth transition before 1 July 2023.

01 JULY

Only GA4 will
collect data from
1 July 2023

Why should your business switch now?

Because the changeover won't arrive until next year, many marketers have avoided making an early transition to GA4 and tackling all of the challenges that come with that. This is a mistake.

If you want to take full advantage of GA4 when the switch comes in mid-2023, you'll need to start using GA4 as soon as possible.

Getting a head start on GA4

GA4 does not use the same data model as UA. The platforms organise data and the relationship between data differently, so some of the changes can feel quite jarring at first glance. Several familiar metrics found in UA like bounce rates, for example, can no longer be found in GA4 (for now). Although the data collected by UA and GA4 are difficult to compare due to their different models, having a period where you can use both UA and GA4 side by side will help you to prepare for the transition to come.

Even if you've read up on everything there is to know about GA4 before the switch, there's one great reason you should start using GA4 now instead of waiting for UA to be discontinued.

As UA won't be available from July 2023, you'll need to start using GA4 as soon as possible if you want to be able to compare your data from this year to next year.

Businesses that began using GA4 earlier have the edge

Businesses that began using GA4 earlier will have the analytical edge while those that waited until the switch was necessary will risk getting left behind.

GA4 also comes with plenty of benefits and new features that tackle emerging challenges that you'll be able to take advantage of as soon as you begin using it.

GA4's advantages over UA

Better event tracking

GA4's event tracking allows for more specificity than UA's. In UA, for example, you might collect data on all the times forms are filled out across your pages.

With GA4 you can specify whether these forms are newsletter sign-ups, contact us forms, or surveys. What UA would only define as email addresses, GA4 can break down into addresses for a business' HQ, its customer service, and more.

Engagement can be divided by type of content like videos and infographics.

You'll be able to analyse the way audiences use your site on a more forensic level

This degree of specificity pays huge dividends when it comes to analysing your data.

Instead of grouping your data into broad categories and leaving you to parse through searching for trends, you'll be able to analyse the way audiences use your website on a more forensic level.

UA is not reliably accurate in its own right

Greater accuracy

A lot of the data you can collect in UA is useful from a comparative standpoint, but is not reliably accurate in its own right.

If someone visited one of your pages and then left the tab open while browsing elsewhere, for example, UA would continue to record that as their session duration.

As a result you might have an average 4 minute session duration that people are actually abandoning earlier.

You might still be able to glean some insights by comparing a 4 minute session duration to one with a 2 minute session duration (assuming that both are, on average, off by the same amount of time) but that level of inaccuracy still leaves a lot to be desired.

Google Analytics 4's metrics are generally more accurate across the board

GA4 goes a long way towards fixing this. It is able to tell when a user changes tabs, recording a more accurate session duration from the user's perspective even if they're still technically on the site.

GA4's metrics are generally more accurate across the board, which is never a bad thing from an analytics standpoint.

UA's advantages over GA4

GA4 removes some conveniences that you may be used to in UA, so you'll have to learn to live without once it stops processing data in 2023.

More standard reports

In UA you can rely on a wide range of standard report types which will put your data together for you.

GA4 has far fewer standard report types, often leaving your data harder to understand without the use of GA4's inbuilt AI insights. UA can be more accessible in this sense, while analysing your data in GA4 requires you to spend time making your own exploration reports.

UA's greater number of standard reports keeps it easier to navigate than Google Analytics 4

Despite this, there are already more standard report options available in GA4 now than there were at its launch, with more likely on the way.

For now, however, UA's greater number of standard reports keeps it easier to navigate than GA4.

Longer data retention

When it comes to UA's advantages over GA4, data retention sticks out like a sore thumb.

When it comes to UA's advantages over GA4, data retention sticks out like a sore thumb. UA lets you retain your data indefinitely, allowing you to compare data across multiple years.

Even if your data retention was shorter in UA you would still be able to see a lot of your data in your standard reports. GA4's fewer standard reports makes its data retention issue worse.

GA4's default data retention is just 2 months

In contrast, GA4's default data retention is just 2 months. You can change this in your settings – in fact, you should – but even then you can only extend that retention to a maximum of 14 months.

You can keep all your GA4 data by integrating it with Google's BigQuery. Not only is this mass data collection less organised, however, but it also requires you to learn how to use a whole new system on top of the learning curve that comes with GA4.

At the end of the day you'll have to prepare to transition away from UA no matter what.

You should, however, consider UA's advantages over GA4 and prepare for some of the conveniences you will lose so that you can make that transition as smoothly as possible.

Google Chrome is phasing out cookies in 2024

Moving to a cookie-less world

Another change to get used to is the phasing out of third-party cookies on Google Chrome, which is due to happen towards the end of 2024. How will this affect your data collection?

First, let's review what cookies are and what they do. Cookies are small blocks of data which have been used since the '90s to track individual users. First-party cookies connect users to one website – to save their password, for example. Third-party cookies enable tracking across multiple websites.

Legislation has targeted cookies to protect individual privacy online

In Google's case, being able to track users and their behaviour using third-party cookies has been key to developing targeted audiences for Google Ads.

The last several years, however, have seen legislation targeting third-party cookies with the aim of protecting individual privacy online.

Cookies are now being regulated more than ever in the name of privacy. As of 2019, UK law requires webpages to gain explicit permission from users before tracking them using cookies. Before GA4 was launched in 2020, restrictions like these had already led to a 40-60% drop in recorded sessions across many of the sites we report on. That's a lot of lost data, which is where GA4 comes in.

Cookies are already being phased out in digital

Despite Google Chrome not gradually removing third-party cookies until 2024 at the earliest, cookies are already being phased out across the world of digital marketing and have been for some time.

So, if you're going to retain useful information about your audience, you'll need to know how to use GA4 to make the most of the available data and fill the gap cookies are leaving behind.

GA4 was designed specifically with the decline of third-party cookies in mind

Filling the gaps with GA4

GA4 was designed specifically with the decline of third-party cookies in mind. Although analysts have been able to use both GA4 and Google's previous reporting platform Universal Analytics for some time, GA4 is set to fully take over when UA stops processing data on July 1, 2023.

AI insights

GA4's "Insights" feature uses machine learning to help users make the most of the available data. These Insights highlight trends and irregularities in your data automatically, making it an extremely useful tool.

Where can you find Insights in GA4? Login to your GA4 home page then scroll down to find Insights. You can also find Insights in your Advertising report. They'll look similar to figure 1.

Google Tag Manager

Google Tag Manager allows you to track User ID instead of cookies, allowing the user to maintain anonymity while

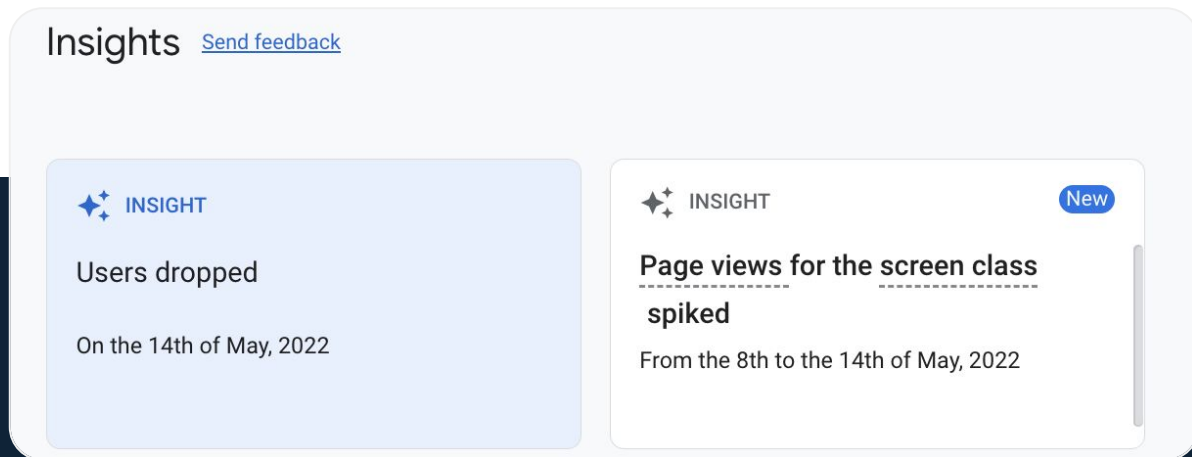
still tracking their behaviour on a site and enabling you to learn more about the people visiting your site and the actions they are taking.

Audiences

Using GA4 to understand visitors' behaviour can allow you to build more accurate Audiences in Google Ads. In this case, Audiences are a group – defined by their online behaviour – that your Google Ads will target.

GA4 allows you to target Audiences based on a greater range and combination of factors than UA did.

Figure 1



Instead of just targeting an Audience who had visited a particular webpage, for example, GA4 allows you to specify that you want your ads to appear on a one-week delay to people who scrolled to a certain depth on a certain page. This feature includes some templates to help you get started.

Finding new avenues for tracking data

If you aren't primarily using Google Ads but are using another service like Facebook Ads, you may need to use third-party tools that will help you personalise your campaigns without cookies.

Tracking isn't the only way you can personalise your marketing campaigns, however.

If you have your customer lists saved, for example, you could pivot to focus on email, which allows you to be very personal and specific with your audience. It's one of the main reasons email marketing is still 40x more effective at bringing in new customers than Facebook and Twitter combined.

A combination of filling the gaps left by cookies using GA4 and finding new avenues to reach your audience will be key as more privacy protections come into place. Google may be delaying its timeline but that isn't a reason to delay planning your business' transition away from cookies. Instead, it's an opportunity to get ahead of the curve.

How to use Google Analytics 4

Learning how to use GA4 when you're used to UA can be intimidating.

But, as we've discussed, GA4 comes with some new features that can make this task less daunting and your data collection and analysis more convenient than ever.

GA4 uses AI to overcome data collection challenges

Google Analytics 4's most important features

Here are GA4's 5 most important features, and how they can help make both your data collection and learning experience go more smoothly.

AI insights

GA4 introduces AI which can use machine learning to overcome some major challenges data collection has faced in recent years.

GA4's AI can fill in a lot of the gaps cookies left behind. The new AI can also predict and highlight data irregularities and automatically identify trends in your data. All in all, it's one of the most useful new features found in GA4.

More specific Google Ads Audiences

Audiences are a specific group targeted by your Google Ads based on their behaviour online.

GA4 has far more advanced options when it comes to defining audiences. Previously, you might have been able to specify that you wanted your Google Ads to target an audience which had visited a certain webpage – useful, but limited.

GA4 allows you to define audiences to a high degree of specificity

Now, GA4 allows you to target audiences based on a greater range and combination of factors.

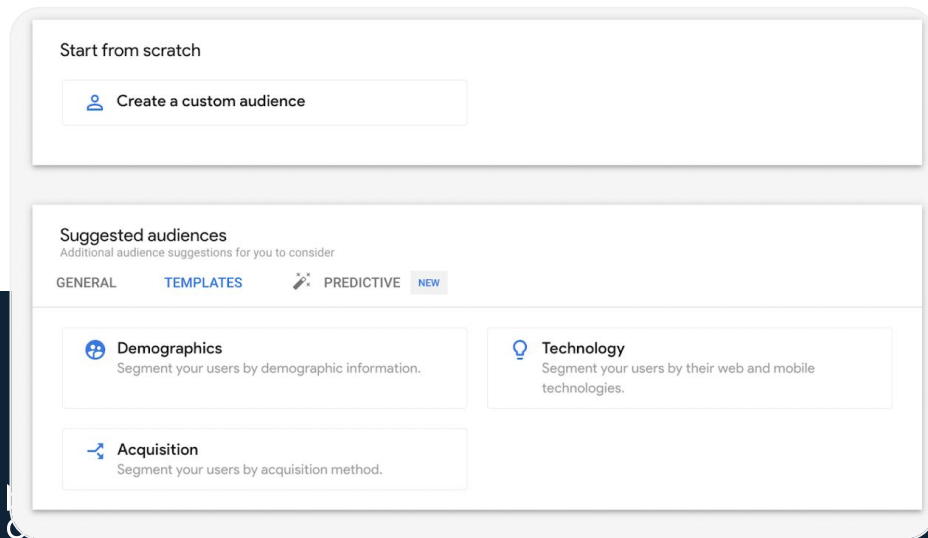
If you want your ads to appear to users one week after they visited your site and scrolled over 75% of the page, then GA4 allows you to define audiences to this degree of specificity, opening up a world of possibilities and allowing you to send your ads to the people most likely to respond.

Where can you build Audiences in GA4?

Firstly, you'll need to make sure that you've linked your GA4 account to your Google Analytics account.

Once you've done that, you can start building Audiences that can be used for targeting in Google Ads.

To do this, go to "Configure", then "Audiences", then click the "New Audiences" button. You'll see something similar to figure 2.



With the help of GA4's Insights, GTM, and the greater specificity of GA4 Audiences for Google Ads, you can begin plugging the gaps left behind by cookies.

Exploration reports

Exploration reports give you insight into the actions users take on and around your pages.

You could create customised reports before GA4, but they were very limited. Now, GA4 lets you create

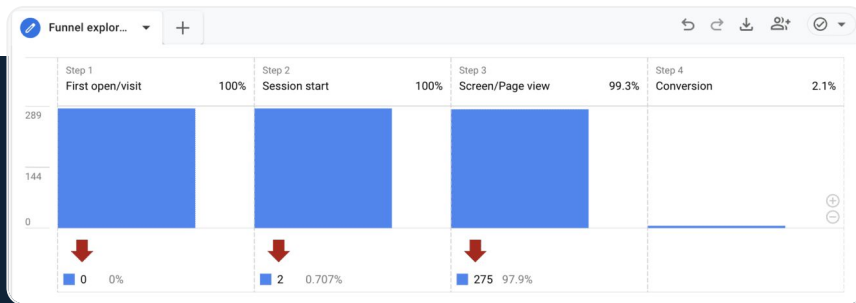
exploration reports that allow you to dig far deeper – and smarter – into your data.

There are now three different types of report, each with their own uses:

1. Free Form
2. Funnel Exploration
3. Path Exploration.

On top of that, if a user takes an action on your site like filling out a form, GA4 will show you how that user got to that point through the actions they took beforehand. This information can be incredibly insightful, giving you access to a whole new perspective when analysing your data (figure 3).

Figure 2 (right). Figure 3 (below)



Built-in events

Events are the actions which users have taken on a webpage.

GA4 allows you to track a set of default events straight out of the box

Previously, event tracking required you to set up a tag manager or add code to your site. GA4 allows you to track a set of default events straight out of the box, including scroll depth, downloads, interactions on videos, and outbound clicks.

You can still set up custom events, and you will need to if you want to get valuable insights into conversion actions like forms. These default events, however, will save you time and effort (figure 4).

Depersonalisation

There are restrictions on the personal data you can collect. Any Personally Identifiable Information (PII) like names, IP addresses, and dates of birth, and more cannot be collected.

GA4 helps you remain compliant with regulation by depersonalising a lot of the data it collects – IPs, for example, are made anonymous automatically.

Before this, accidentally collecting personal information while collecting data could require you to delete far more data than necessary, or even your entire account. GA4's additional level of data security doesn't just protect users visiting sites, it protects your data.

GA4 will save you time and improve your reporting

Learning the ins and outs of GA4 is no small task. Once you've wrapped your head around these 5 features, however, it won't be long before you'll be collecting more insightful information that can save you time and improve your reporting in the long run.



Enhanced measurement

Automatically measure interactions and content on your sites in addition to standard page view measurement.

Data from on-page elements such as links and embedded videos may be collected with relevant events. You must ensure that no personally identifiable information will be sent to Google. [Learn more](#)



Measuring:  Page views  Scrolls  Outbound clicks  Site search  Video engagement  File downloads [Show less](#) 

Figure 4

Getting ahead with event tracking in GA4

Google Analytics 4's advanced features

Event tracking

GA4 comes with some major changes to event tracking. This crash course through GA4 events will help explain what's changed, how to transfer your old UA events, and some of the exciting opportunities that lie ahead.

GA4's data model

The data model in GA4 means everything is now an event.

Every event can have its own set of parameters, which is great for data analysis. GA4 will allow you to collect unlimited events (though that may change) each with up to 25 parameters.

video_current_time

video_duration

video_percent

video_provider

video_title

video_url

If you currently have some important custom dimensions, you could set these globally or for individual events as one of those parameters. With 25 possible parameters, there's huge potential.

It will be necessary to move existing event setups over to Google Analytics 4

Migration

It will be necessary to move existing event setups over to GA4. If you haven't already, establish a document that outlines the events you are currently sending to UA and how you have used Category, Action, and Label fields.

Establish a map of what you have right now. It doesn't have to be more complicated than a spreadsheet. [Feel free to use our template here.](#)

Next, you'll need to know whether your existing event tags will need to be recreated. It may not be necessary to keep all your events.

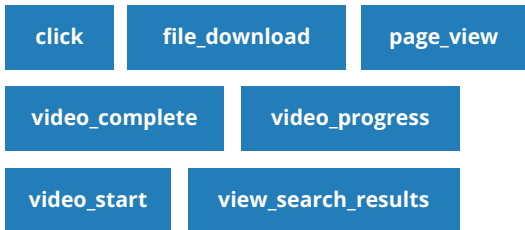
For the events we want to migrate we need to establish which of the following GA4 categories these fall under:

- Automatically collected
- Enhanced measurement
- Recommended
- Custom

Figuring this out is easier than it may seem – these categories are clearly defined. There are only a handful of web-related events that are automatically collected:



There is a longer list of events you can collect with enhanced measurement turned on, such as:



Finally, here is the list of recommended events:



The rest of your tags will be custom. For example, if you want to measure the number of times people clicked on a mailto link or phone number, or a number of form submissions, you'll need your custom tags at the ready.

Executing your migration plan

To get started migrating existing event setups to GA4, create a tab in your migration plan which allows you to specify which old events you want to carry forward and how you're going to track them in GA4.

Start with the existing event name from your previous sheet, and what it will be called in GA4.

Then define the event type (custom, enhanced, etc.). Finally, list all the parameters you want to capture, including the values that will be defined. Use GTM variables if possible.

On the next page, we'll explore a few ways you might migrate UA to GA4.

Scenario 1

Your event is one that's collected automatically or via enhanced measurement. In this case, you might not need to do anything.

Scenario 2

You may want to separate them into more specific events. For example, you may want to use the click event (which tracks outbound clicks) and make a new one that just tracks clicks to social. All you need to do is create an event from your event.

Scenario 3

You may not be happy with the detail that's being collected. Take scroll for example. This only gets triggered when a user has viewed 90% of the page. You might want to see when they have scrolled 25%, 50% and so on. In this case the enhanced measurement won't work for you. To solve this, turn off enhanced measurement and make yourself a custom event.

Be careful when using the enhanced measurement video events. These only work with standard YouTube setup so if you have anything non-standard, like videos loading after an interaction or other video players, you'll need a custom event.

Scenario 4

Your events are not collected yet, whether they are recommended or not. You'll need a custom event. Gather your list of events that need to be custom and open GTM. You will need to create your GA4 config tag first, which you'll need your measurement ID for. Then create a tag (and trigger) for each of your custom events.

Here's an example – making a tag for tracking mailto clicks.

The event is called `email_clicks`.

Add a parameter for `click_type`, and manually set it as "contact" because you'll do the same with phone clicks later. You can look at them together if you want to.

Some dimensions within GA4 give you the freedom to add things that are specifically relevant to your business

Next, add a parameter called `email_address` with the value of `{{Click URL}}` variable. For some websites there might also be something like `customer_type` or `department`. These dimensions give you the freedom to add things that are specifically relevant to your business.

Here is another example for scroll tracking, where you use `percent_scrolled` and `direction` using your built-in variables in GTM.

If you don't want to set all this up from scratch there is a standard container that includes email, phone, form, scroll events, which you can find here. All you need to do is swap out your measurement ID.

Parameter naming conventions

Messy naming conventions make your data awkward to work with. There are already some standard events and parameters in existence, so stick to the conventions they use.

- Use lower case.
- Use underscores to separate words.
- If a parameter exists already, use that.

Here is a list of standard parameters that come with all events:

language

page_location

page_title

page_referrer

screen_resolution

Be strategic. Before you start, ask yourself which events are related to one another, and whether there's anything that these events have in common that would lend itself to comparison later.

Next, ask yourself if there are any global parameters to set. You can set your global parameters in your GA4

config tag, under fields to set. If there are any parameters that will be needed for all events, set them there.

It's important to test your tags and triggers using preview mode

For the values, use existing built-in variables if you can. If you need to create a new custom variable, make sure you follow the same style as the built-in ones. If you're unsure, use preview mode to see what your current variable values are returned as.

Once you have created your tags and triggers, tested them in preview mode, are happy that they are all working, and you've published your container, events will start to collect in GA4.

These events won't appear in your config view for 24 hours, although you will be able to see them in real time. Test each event to make sure that you can see them in the real-time report.

Fortunately, you don't have to wait to do the next two steps.

1. Set up your custom definitions. Your new custom events' parameters won't appear in any of the standard reports unless you define them as a definition. Decide on which parameters from your sheet you want to use in your reports. Whether these are dimensions or metrics, you'll need to define them.
2. Decide on which events will be conversions.

The system for setting up goals in UA was clunky. This is far easier in GA4. Toggle your event to be counted as a conversion. If you only want to count a very specific scenario as a conversion, simply setup an event from your event, add the required conditions and then toggle to mark as conversion. You also have more slots to play with. UA had 20 slots, GA4 has 30. You can switch these back off without losing the historical data.



[Read Anna's guide to setting up and merging events, along with templates and Google Tag Manager containers, here.](#)

What's next?

You can use your events and other conditions to create super-smart audiences that you can then use in your Google Ads campaigns or, like segments, to gain more insights from your data.

Consider using the Data Studio to create dashboards for your new events and conversions

You can go wild creating exploration reports in GA4, or use the Data Studio to create dashboards for your new events and conversions.

You may already have a Data Studio dashboard for your site that you can just adapt.

Consider how the differences will affect your report

GA4 works differently to UA, so think about how that will affect your report before you start afresh.

You might be able to use most of your existing tables or graphs, but remember that the underlying data model is completely different, so you will need to manage expectations for people viewing this new data.

The transition to GA4 presents almost as many challenges as it does opportunities.

Switching to GA4 sooner rather than later, however, will give you the experience and the data backlog you will need to take advantage of this change.

This guide is designed to get you started on just that so you can stay ahead of the curve. For further expert advice navigating GA4, get in touch with Anna Corbett or Iain Scott using the following details:

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For more information on Base Creative's analytics and digital marketing services, head to:

basecreative.co.uk

Google Analytics 4 FAQs

Switching reporting platforms isn't easy. Not only will Universal Analytics stop processing data next year, but you should make the switch from UA to Google Analytics 4 as soon as possible if you want easily comparable data from this year to next.

Such big changes naturally come with a lot of questions. Here are some of the most common questions our clients have asked us while wrapping their heads around GA4.

FAQs

Why is my user engagement per session in GA4 lower than my average session duration in UA?

Both of these metrics aim to measure the length of time a user spends on a site, so why is user engagement per session in GA4 often shorter than average session duration in UA?

GA4's method of measuring user engagement per session is smarter than UA's. For example, GA4's user engagement per session will not count time when a page is open in a browser, but in a closed tab. UA will. This difference can be attributed to GA4's greater accuracy.

Why are my GA4 conversions higher than my UA goal completions?

GA4's conversions and UA's goal completions are two ways of talking about the same thing – they measure the number of times users took particular actions on a page that the analyst has identified and marked as important. A business might set playing a video as a conversion, for example, if their goal is to have as many people see that video as possible. So why does GA4 generally register more conversions than UA does in goal completions?

GA4 will count every instance of an event set as a conversion, while UA only counts the first time that event happens per session. If playing a video was set as a conversion, for example, GA4 would count every time a video was played in that session, while UA would only count the first time.

Where can I find my download events in GA4?

GA4 can track file downloads by default, but finding download data in GA4 can be difficult.

Go to your data streams, found in the property column of your admin panel. Select the data stream you want to measure download data for. A window will open with enhanced measurements. Make sure file downloads are one of the enhanced measurements (they are by default). Then you can go back to your admin panel and to Reports > Engagement > Events and search for file_download to see your data.

FAQs

What's the difference between audiences and segments in GA4?

Segments and audiences both allow you to distinguish between different users, so why are they separate at all?

Segments are created in and used for exploration reports. When you create a segment you can also tick a box which will create an audience using the same criteria. An audience, however, can be used in Google Ads and not exploration reports, while a segment cannot be used in Google Ads but can be used in exploration reports.

Do I still need event tracking and Google Tag Manager with GA4?

Because GA4's enhanced measurement feature has standard event tracking included, it can seem like setting up your own events and tags has become redundant.

But, yes, you will still need event tracking and Google Tag Manager in GA4. Although standard event tracking is in by default, it is limited. Scroll depth is only measured, for example, if 90% of a page has been scrolled through. Use custom events and Google Tag Manager to gather more useful, specific data.

Thank you

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