Data Source: From a Formula

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Formula indicators are an excellent way to handle percentages or to view various types of aggregates. If you are interested in a metric such as *Percent of staff trained*, the best way to manage this is to have two indicators: one for *Number of staff trained* and one for *Number of staff*. DevResults can compute the percentage automatically. Computing percentages and certain totals can reduce data entry, reduce human error, provide a more thorough audit trail, and give more appropriate comparisons of percentages between places, time periods, and activities.

This page will walk you through what you need to know to work with formulas:

- Configuring Formula Indicators
- What operations are supported in formulas?
- Can my formula reference specific disaggregation values only?
- Do formulas support conditional logic?
- What if the features the indicators have in common are too detailed?

Configuring Formula Indicators

In the example below, we will compute

% of new users who pass certification exam

To do so, we will need to divide

of new users certified (e.g. how many passed the certification exam)

by

of new users administered the certification exam

To define your indicator with a formula, click **From a Formula** as your indicator's Data Source.



Once you make this selection, a Formula Editor box will appear for you to write the formula for the indicator.

DevResults Kate's T	Kate's World 'est Site					
Dashboard Activi	ties Results	Calendar	Documents	Photos	Administration	
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Data Source						
Data Source	 Enter indicator Calculate from Populate from 	results directly a formula a data table	ý			
Formula	Enter the formu	la with indio	cator codes in	[brackets]		
	A This indicate	er won't calculat	e until you define	a valid formul	а.	

You'll use square brackets like [this] to reference an indicator by its code. You can begin by typing a left square bracket: [and you will get a dropdown of indicators in your site. You can scroll through these or start typing to narrow the list.

DevResults Kate's World Kate's Test Site
Dashboard Activities Results Calendar Documents Photos Administration
Home Results Hondeators Hon
DV-1.2b % of new users who pass certification exam Definition Targets & Data Reports Forms Documents
Data Source
Data Source Enter indicator results directly Calculate from a formula Populate from a data table
Formula [1.2a # of new users trained. 1.2b # of new users adm 1.2b # of new users cert 1.3a Average number of tr 1.3a Average number of tr 1.4a Total # of toacklog task 0V-1.1b # of new users train 0V-1.2a # of new users tra 0V-1.2b # of new users tra 0V-1.2b # of new users and the train of the train
DV-1.2b n # of new users Characteristics DV-1.3.1a Combined total

You can click or arrow to the indicator you want. Once you've selected the indicator you want, close it with another square bracket. The editor will display confirmation of the indicators you've referenced below, as well as any warnings or problems with the formula.

You can reference as many indicators as you need in the formula. Once you've entered your formula, before you navigate to another field, DevResults will check to see what the referenced indicators have in common. For formulas to compute, the indicators must be referencing the same disaggregations, reporting level, and so on. Our Common Features Evaluator will check all your referenced indicators to determine the most granular set of features they have in common. It will present these common features in a pop-up for you to review. Click **OK** to accept these features.

DevResults Kate's Te	Kate's World est Site		Quick
Dashboard Activit Home * Results * Inc DV-1.2D % O	icators > % of new users who par f new users who par g new users W	Based on this formula, the indicator will be configured to these common features of the indicators: • Reporting level: Location • Results per activity: Yes • Disaggregations: "Gender" • Disaggregation: Parallel	referenced
Data Source		Ca	ncel OK
Data Source	 Enter indicator results directly Calculate from a formula 	Name	% of new users wh
	Populate from a data table	Code	DV-1.2b
Formula	[<u>DV-1.2b_n</u>]/[<u>DV-1.2b_d</u>]	Reference #	
		Active?	Indicator is activ
	Indicators referenced: DV-1.2b_n # of new users ce DV-1.2b_d # of new users ad	rtified ministered the certification exam	cators

What operations are supported in formulas?

The formula editor supports all standard mathematical operations (+, -, /, *) and recognizes parentheses. You can also use whole numbers and deicmals. For example, if you know that your *# of new users certified* indicator is consistently overcounted by 10%, you can multiple it by 0.9 to counteract this bias:

DevResults Kate's T	Kate's World est Site					
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Can my formula reference specific disaggregation values only?

Absolutely! To reference specific disaggregation values only, after you've selected or typed your indicator code, add a vertical bar or pipe: | (on standard English keyboards, this is grouped on the same key as \). The formula editor will then give you a relevant dropdown depending on the disaggregations assigned to that indicator:

DevResults Kate's T	Kate's World est Site					
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Indicators referenced: DV-1.2b_n # of new users certified DV-1.2b_d # of new users administered the certification exam						

Once you select the disaggregation value you want, the **Indicators referenced** section will update accordingly:



Do formulas support conditional logic?

Yes. Conditional formulas use the **IIF** function. The Formula Editor will recognize inline if statements structured in this format:

IIF(, ,)

To create the expression, you can use:

=	Equal to
>	Greater than
<	Less than

AND	Boolean "and"
OR	Boolean "or"
TRUE	Yes or 1
FALSE	No or 0

In our example, maybe we only care about data where the # of new users certified is greater than 5, and if it's less than 5, to use 0 rather than the actual value. In that case, we would use something like this:



What if the features the indicators have in common are too detailed?

While you cannot make a formula indicator *more* detailed than the common features, you can always make it less granular. So, in our example, both the indicators in the formula have a **Gender** disaggregation and are set at the **Location** Reporting Level. The evaluator identified that, assigned the Gender disaggregation, and set my reporting level to Location. But if I don't want the gender disaggregation and I only want to see this calculated at the country level, I can change that:

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Data Source	 Enter indicator results direct Calculate from a formula Populate from a data table 	ły		
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	Indicators referenced: DV-1.2b_n # of new users of DV-1.2b_d # of new users a	ertified administered the certific	cation exam	
Characteristics				
Indicator Type	SumAverageYes/No			
Number format	 Whole number Decimal Percentage Rate per 0 			
Default Reporting Cycle	Quarterly	•		Edit reporting cycles
Unit	Select	v	0	Edit standard units
Periods	Results are: Incremental (since last result)	Targ	ets are: Incremental (since la Cumulative (over the	st target) life of the project)
Disaggregation				
Disaggregations	Disaggregation + Add a disaggregation Results are cross-disaggregation	v ted 💿	alues 🖉 Masi Results are parallel (Disable ter list of disaggregations disaggregated
	Note: this setting will be ignored beca	ause there are no disag	gregations	
Reporting Level	Results are reported by: Location Commune Canton Entity Bosnia and Herzegovina			

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