By the Numbers:

Finding and Using Data from the Internet

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Finding data is only a click away.

This publication provides tips to help in finding and using data online.

Kentucky: By The Numbers
http://kybtn.ca.uky.edu

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Part of having 21st century skills for a 21st century world means being able to find and use data that are available online. Since secondary data are so easily available, knowing how to find and use these data are now an expected part of our work.

How do I begin?

With so much data available online, it is quickly easy to feel overwhelmed. Oftentimes, when we go looking for data, it is for a particular project, program, or purpose in mind. When it comes to finding data, **let that purpose be your guide** by asking yourself:

What do I want to know? ⟷ **Why do I want to know it?**

Answering these two questions can help you identify numbers that are not just interesting, but are useful for your specific needs. Another way of focusing your search is to ask:

How will knowing this number help in making a decision?

Answering these questions can help you distinguish between numbers that are useful and numbers that are interesting but may not be the most useful ones for your particular needs.

When it comes to finding data, resist the urge to let an online search engine find it for you. It can produce a dizzyingly long list of links which may or not be good sources for data. For example, it might not be clear how old the data are or where the numbers came from.

Different types of data websites

When it comes to data websites, in general, you will encounter two different types. I call them original source websites and compilation websites.

Original source websites

Original source websites are websites that are generated by the organization or agency that **produced the data in the first place**. These can contain a specific data source, or they can be data hubs where you can access several data sources that are all produced by the same agency. A good example of this is the Census Bureau's website https://data.census.gov.

The good news about original source data websites is that they contain the **most up-to-date data**, and they will have all of the geographies available for those data (states, counties, etc).

Compilation Websites

The second kind of website you will encounter are compilation websites. These websites contain data from **multiple data sources** that are compiled **in one place**. Most are

topic-specific websites like the national Kids Count Data Center (https://datacenter.aecf.org/). The good news about topic-specific compilation websites is that you can find data from many different sources in one place.

When it comes to using compilation websites, remember that it takes time to pull all of the data together. So, the data may **not** be the most up-to-date available.

(If you think there may be more recent data available, check the list of sources they used and then go to the original source website.)

Be careful where you "click"

When you start to use a data website, take a look around. No two websites work in the same way and the **website may have changed since you last used it**.

As web technology has changed, data sites have become a lot more complicated than they used to be. In addition to providing access to data, some websites now offer a variety of options such as charts and graphs, maps, or even analysis tools.

To help you navigate these websites, here are a few tips.

Do not rely on the "back button" on your web browser.

Once you are inside a data website, if it offers you a "back" button as part of the website, be sure to use it. On some websites if you use your browser's back button to go back a step, it will actually kick you out of the website entirely. If this happens, it means starting all over again.

What looks like open space might be a hidden link.

Links to features of a website are not always clear. Because links can be hidden, even if something looks like dead space, it may not be, and you can suddenly find yourself in a part of the website you did not intend to use.

Sometimes you still have to click "go."

It may sound silly, but on some websites, after you make a selection, it will automatically take you to that page. On others, the website won't do anything until you actually click "go" (or "search"). So, if the website you are using doesn't seem to accept your selection, it may be that you just need to click "go."

I found my data, now what do I do?

Locating data for your county is just the beginning and knowing how much of something you have is only one piece of information. For example, finding out that in 2023 your county had 932 youth ages 14-17 years old may be informative, it does not tell you if that is a large part of the total population in your county.

With just a few calculations, you can learn even more.

In case it's been a while,
here are some helpful reminders.

How to calculate a percent

Sometimes, we may want to know what ***the percent of something*** is. To use data for Wayne County as an example, the most recent population counts come from the Census Bureau's population estimates. For Wayne County in 2023, there were 932 youth ages 14-17 years old living in the county.

To calculate a percent, we can compare the number to the total population for the county as a whole. For our example of Wayne County, the 2023 estimate for the total population was 19,580 people.

From here, the math is simple. To calculate a percent, you take the number of youth ages 14-17 years old and divide by the total population. It looks like this:

The number of youth ages 14-17 in your county

divided by

the total number of people your county

multiply by 100

equals the % of the total population in your county who are 14-17 years old

In our example, according to the 2023 population estimates, 4.9% of those living Wayne County were 14-17 years old.

Sometimes website do the math for us and sometimes we need to do it ourselves. If a website provides a percent, be sure you can answer the question:

Percent of what?

How to look at change over time

If you want to know how much ***a number has changed over time***, there are two ways of doing this: aggregate change and percent change.

Figuring out the ***aggregate*** **or** ***numerical change*** is straightforward. It simply means the total amount that something has changed between two points in time.

Let's look at our example again. We already know that according to the 2023 population estimates, there were 932 youth ages 14-17 years old in Wayne County. But, in the 2021, there were 953 youth who are 14-17 years old.

To find the ***aggregate*** **or** ***numerical change***, all you do is take the number 2023 number and subtract the number from the earlier year of 2021. In this case, between 2021 and 2023, the number of youth in Wayne County ages 14-17 decreased by 21 persons.

How to calculate percent change

While it may be useful to know that the number of youth ages 14-17 years old decreased by 21 persons, you may want to know more. How quickly is the change happening? How does the pace of change in our county compare with another county or the state? To do this, you will want to figure out the rate or ***percent change***.

To find the percent change for our example county, it would look like this:

the number ages 14-17 in **2023**
minus
the number ages 14-17 in **2021**
then divide by
the number ages 14-17 in **2021**

An easy way of remembering this is:

(New-Old) / Old

The result should be a number that is **less that one**. This is the **rate** of change and it can be positive or negative. To turn this into the percent change, simply **multiply by 100**.

For our example of Wayne County, this means that the between 2021 and 2023, number of youth ages 14-17 years old decreased by -2.2%.

Be aware that the dates you pick can affect your results. If one of the points in time is unusually high or unusually low, the result can make it seem like there has been more (or less) change than is usually the case.

Since we have gotten used to having data available online, we can have high expectations that we will find exactly what we need. But that might not be the case.

What to watch out for…

Here are some things to keep in mind when finding and using secondary data online.

- All data are collected with a particular purpose in mind. That original purpose can impact what you find. So, regardless of how we might want to use the data, what is counted and how it is counted depends on why the data were collected in the first place.
- When you are selecting data, always make sure you understand what the data are counting and how they are counting it. Just because data sources use the same words that we do in our everyday language, does not mean that they are referring to the same thing.
- Also, even if two different data sources use the same words, they might not be using the same definitions. This can mean that it looks like you are finding two different numbers for the same thing. In both cases, the numbers should be accurate. The numbers are different because the definitions, or criteria, they are using are likely different.
- If you are making a map or chart or are using one that is created on a website, read the title and legend carefully so you know which data are being used and how they are being displayed. Even differences in color can impact how the data are perceived by you and your audience.
- Be sure to use websites that are intended to be a source of secondary data for policy, research, or local decision-making. Remember, anyone can put data on their websites. If providing data is not a key focus of their website, you could be relying on old or misleading data and not realize it.
- Finally, there can still be times when data are not available. It could that the data were not disclosed because the person or responding unit was potentially identifiable. It could also be that the data just simply do not exist.

Online publicly available secondary data are an important source of data. However, they are **only one kind of information**. Depending upon your needs, other types of information, such as conducting a survey or focus groups or data from local organizations, may be more useful.

Cooperative Extension Service
Agriculture and Natural Resources
Family and Consumer Sciences
4-H Youth Development
Community and Economic Development

MARTIN-GATTON COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

Lexington, KY 40506

Useful Websites with County Level Data

(List Updated: February 2025)

Kentucky: By The Numbers

Includes the "Kentucky: By the Numbers Data Series" as well as publications and resources for finding and using data.

https://kybtn.ca.uky.edu/

Atlas of Rural and Small Town America

Mapping website with demographic, social, and economic data

https://www.ers.usda.gov/data-products/atlas-of-rural-and-small-town-america/go-to-the-atlas

School Report Card

Provides data on Kentucky K-12 public schools

https://reportcard.kyschools.us/

Kentucky Center for Statistics (KY STATS)

Kentucky data include career/college readiness, graduation rates, early childhood profiles and post-secondary attendance.

https://kcews.ky.gov/

County Health Rankings

Provides maps, data, and rankings on health outcomes, factors, and additional health related measures.

https://www.countyhealthrankings.org/

Map the Meal Gap (Feeding America)

Contains data on food insecurity.

https://map.feedingamerica.org/

CDC Places: Local Data for Better Health

Provides health and health-related data using small-area estimation for counties, etc.

https://www.cdc.gov/places/index.html

Kids Count Data Center

Data on indicators of youth well-being.

https://datacenter.aecf.org/

Kentucky State Data Center

2010 Census, American Community Survey, population projections, and data for Area Development Districts.

http://ksdc.louisville.edu/

Kentucky Cabinet for Economic Development

Community data, industrial site and building information for cities and counties. Click on "Community Profiles"

https://ced.ky.gov/KYFacts

data.census.gov (Census Bureau)

Access to Census Bureau data including the American Community Survey, annual Population Estimates, County Business Patterns, and Non-Employer Statistics.

https://data.census.gov/

Unemployment Rates (Official)

The Bureau of Labor Statistics produces the official monthly and annual unemployment rates.

https://www.bls.gov/lau/

Poverty Estimates (Official)

County estimates of individuals living in poverty, children in poverty, and median household income.

https://www.census.gov/programs-surveys/saipe.html

Census of Agriculture

To find data by county, click under "Find Current Data By…" For previous years, click under "Historical Census of Ag Publications" and pick a year.

https://www.nass.usda.gov/AgCensus/

Ag Census Web Maps

Mapping website with data from the 2022 Census of Agriculture.

https://www.nass.usda.gov/Publications/AgCensus/2022/Online_Resources/Ag_Census_Web_Maps/Overview/index.php

Food Environment Atlas

Mapping website with county data including grocery store proximity, food and nutrition assistance programs, and community characteristics.

https://www.ers.usda.gov/data-products/food-environment-atlas

Food Access Research Atlas

Mapping website with food access indicators for low-income and census tracts.

https://www.ers.usda.gov/data-products/food-access-research-atlas

Community and Economic Development Initiative of Kentucky (University of Kentucky)

Economic development data by theme.

https://cedik.ca.uky.edu/CountyDataProfiles

Employment and Income ("Regional Accounts")

Data from the U.S. Bureau of Economic Analysis.

https://www.bea.gov/data/economic-accounts/regional

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