Digital Equity Data Profile

> *This is Version 1.1 of the Digital Equity Data Profile Worksheet that was developed for the June 24, 2019 SETDA E-Rate SIG Meeting.*
> *The profile is aligned with Version 0.19.2 of the I3 Connectivity Explorer.*
>
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> *The worksheet is licensed under the CC BY-SA 4.0 license. An editable version of the worksheet can be downloaded from: https://internet-is-infrastructure.org/download/digital-equity-data-profile-v1-1/*

1. Introduction

The goal of the Digital Equity Data Profile worksheet is to support education leaders in gathering and synthesizing federal data about broadband access and adoption. Pairing federal data with local data and insights will support data-driven decision making at the local level.

Online Tools

- The I3 Connectivity Explorer
- NTIA's Digital Nation Data Explorer

Data Sets Used

- U.S. Census American Community Survey (ACS) 5-year estimates- 2013-2017
- FCC 477 Fixed + Satellite, December 2017, Revised
- FCC 477 Mobile Providers, December 2017
- Measurement Lab NDT Speed Tests
- NCES Common Core of Data (CCD), 2016-2017

2. Getting Started

To start this assessment, you should:

1. Create an account on the I3 Connectivity Explorer
2. Login in and create a "Notebook" for the County or School District you wish to profile. Those steps are documented in the "Jump Start Guide" listed in the Resources.

3. About this Data Profile

About this Data Profile	
Complete the following table with the background information this assessment.	
Prepared by	
State Name	
Notebook Name	
School Division	
Locality	*For this worksheet, we recommend that you select a single "School District" as the locality. If you choose some other type of locality please list it.* *Other Locality Type:_____*

4. Internet use in your State

Understanding Internet Use in Your State

As part of the US Census' Current Population Survey, the National Telecommunications and Information Administration has been conducting a biennial survey about Internet usage since 1998. This survey allows us to see trends at the State and National Level. The NTIA Digital Nation Data Explorer provides a variety of ways to look at State-level data beyond the charts provided in the I3 Connectivity Explorer.

Complete the "Internet Use in Your State table" by reviewing data from the NTIA Digital Nation Data Explorer.

You can also reach the Digital Nation Data Explorer via the 'Resources > NTIA Digital Nation Data Explorer` menu item in the I3 Connectivity Explorer.

Your State	Percent State/Total U.S.
From the "Internet Use" section:	
Internet Use at Home	[ ]% / 71.9%
Internet Use at School	[ ]% / 15.6%

From the "Device Use" section:	
Internet-Enabled Mobile Phone	[ ]% / 64%
From the "Most Important Aspect of Home Internet Service" section	
Percent of Respondents that indicate **Reliability** is the most important aspect of Home Internet Service	[ ]% / 37.6%
Percent of Respondents that indicate **Speed** is the most important aspect of Home Internet Service	[ ]% / 28.8%
Percent of Respondents that indicate **Affordability** is the most important aspect of Home Internet Service	[ ]% / 26.2%
Percent of Respondents that indicate **Data Cap** is the most important aspect of Home Internet Service	[ ]% / 1.5%
Percent of Respondents that indicate **Mobility** is the most important aspect of Home Internet Service	[ ]% / 1.8%
Percent of Respondents that indicate **Customer Service** is the most important aspect of Home Internet Service	[ ]% / 1.8%

Reflecting on the Data
- This survey was taken in 2017. What trends do you think will be different in the 2019 data? Why do you think that respondents say that Internet use at school is so low?
- What are the top two criteria that residents in your State consider when selecting an Internet service?
- How does your State rank against other States or against the National average?

5. Community Data Snapshot

For this and subsequent questions, you'll be using the I3 Connectivity Explorer. You need to be logged in to your account for the links to work.

Community Data Snapshot	
When you visit the "Home" page of your active notebook, you can view some summary statistics. Fill in those numbers below.	
What is the total population?	

What is the overall population density per square mile?	
What is the median household income?	

6. Your Community Digital Equity Data Snapshot

This section will lead you through several data views that relate to internet access and availability.

Subscribers: States vs Local

Complete the "**State vs Local**" table by comparing the percentage of households in your community, your state, and the United States on the following indicators of computer and broadband.

This information can be found by visiting the 'ACS » Internet > Subscription Characteristics: Summary' page. A handy drop-down menu allows you to switch between 'Totals' and 'Percentages'.

Number/Percent of Persons in households	U.S. (Percent)	Your State (Percent)	Your Community (Percent)
With computer and broadband			
With computer, but no Internet			
Without computer			

Reflecting on the Data:
- How would you describe the State vs. Local data on households "With computer and broadband, "With computer but no Internet", and "Without computer?

Understanding Internet Subscription Usage

Complete the "Internet Subscription Usage" table below by comparing the percentage of households in your community, your state, and the United States on the following indicators of internet subscription.

This information can be found by visiting the '[ACS » Internet > Subscription Rates: Summary](#)' page

Percent of households…	U.S.	Your State	Your Community
With any Internet subscription			
With a Broadband subscription			
Wireline (e.g. DSL, cable, or fiber) service			
Cellular data plan only			
With Satellite Internet service			
With dial-up only			
Without an Internet subscription			

Reflecting on the Data:

- How does your community compare to the state and nation in terms of Internet subscription rates for wireline, cellular data plan only, satellite, dial-up, and without a subscription? To what do you attribute these differences?

- How might a "cellular data plan only" subscription impact students' ability to complete online work at home?

Understanding Internet Device Access in the Home

Complete the "Devices in the Home" table below by comparing the percentage of households in your community, your state, and the country on the following indicators of access to internet devices.

This information can be found by visiting the 'ACS » Internet > Computing Devices in the Home: Summary' page.

Percent of households with…	U.S.	Your State	Your Community
One or more computing devices (total)			
Desktop or laptop (total), ~~meaning with some other type of device.~~			
Desktop or laptop (alone), meaning with no other types of device.			
Smart phone (alone), meaning with no other types of device			
Tablet (alone), meaning with no other type of device			
Households without a computer			

Reflecting on the Data:

- How does your community compare to the state and nation in terms of device ownership? To what do you attribute these differences?

- How might only having access to a Smart Phone (alone) or tablet (alone) impact a students' ability to complete online work at home?
- How would you describe the device availability in your community? To what do you attribute these differences?

Broadband Providers

Complete the "Providers" table below by reviewing the number and names of providers for both Wired and Wireless services.

Wireline provider information can be found by visiting the 'Wireline > Providers (table)' page.

Wireless provider can be found by visiting the 'Wireless > Providers (table)' page.

	Number of Providers	Names of the Providers
At the wireline speed of 25 Mbps download, 3 Mbps upload		
For the Wireless service 4G LTE		

Reflecting on the Data

- Is the provider information as reported by the FCC consistent with your community experience of available Internet Service Providers?

- Are there any local providers not represented in the FCC data?

Broadband Speeds (Optional)

Complete the "Speeds" table below by reviewing available speed test data.

Visit the 'SpeedTests > M-Lab Speed Test Results' page. In the calendar selector, select 'Last 12 Months' and 'Download Speed' and update display. For the questions below, you can use the most recent data point available; it will be the data point shown on the right of the chart.

	State	Your Community
Median Download Speed (Mbs)		
Mean Download Speed (Mbs)		

Reflecting on the Data

- The test data comes from individuals and companies running M -Lab Speed Tests and reporting the results. How do the trends for your area look? How does your area compare to the State?

7. Households, Neighborhoods, and Schools

Now look at the schools in your community in the context of Internet Access to identify those you want to focus on.

<table>
<tr><td colspan="3">

Households without an Internet Subscription

1. Complete the table below to identify the range of rates for households in your community without an Internet subscription.

2. Calculate the difference between the highest and the lowest percentage of those without a subscription. The larger the difference, the greater range of accessibility.

3. Review the census tracts that report the highest percentage of households without any subscription. In the table, record which schools serve these neighborhoods.

This information can be found by visiting the 'ACS » Internet > Subscription Rates: Details' page. Use the drop-down to select 'Without an Internet Subscription.' Click on a bar in the bar-chart to highlight those tracts. Click on the Layer icon in the upper right-hand corner of the map to display schools. Which schools are nearby?

</td></tr>
<tr>
<td></td>
<td>Percentage of households <u>without an Internet subscription</u></td>
<td>Schools that serve neighborhoods reporting the highest percentage of households <u>without an Internet subscription</u></td>
</tr>
<tr>
<td>Highest%</td>
<td></td>
<td rowspan="3"></td>
</tr>
<tr>
<td>Lowest%</td>
<td></td>
</tr>
<tr>
<td>Difference %</td>
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</table>

Households Reporting a "Cellular data plan only" Subscription

1. Complete the table below to identify the range of rates for households in your community reporting a "Cellular data plan only" subscription.

2. Calculate the difference between the highest and the lowest percentage of those with a "Cellular data plan only" subscription.

3. Review the census tracts that report the highest percentage of households with a "cellular data plan only" subscription. In the table, record which schools serve these neighborhoods.

This information can be found by visiting the 'ACS » Internet >Subscription Rates: Details' page. Look at the range of range of subscription rates when you've selected 'Cellular data plan only'. Click on a bar in the bar-chart to highlight those tracts. Click on the Layer icon in the upper right-hand corner of the map to display schools. Which schools are nearby?

	Percentage of households with a "Cellular data plan only" subscription	**Schools that serve neighborhoods reporting the highest percentage of households Cellular data plan only" subscription**
Highest %		
Lowest %		
Difference %		

Households Reporting "No Computer"

1. Complete the table below to identify the range of rates for households in your community reporting "no computer in the home.

2. Calculate the difference between the highest and the lowest percentage of those reporting "no computer" in the home.

3. Review the census tracts that report the highest percentage of households reporting "no computer". In the table, record which schools serve these neighborhoods.

This information can be found by visiting the 'ACS » Internet > Computing Devices in the Home: Details' page. Use the drop down to select "Without a computer". Look at the range of subscription rates. Click on a bar in the bar-chart to highlight those tracts. Click on the Layer icon in the upper right-hand corner of the map to display schools. Which schools are nearby?

	Percentage of households reporting "no computer" in the home.	**Schools that serve neighborhoods reporting the highest percentage of households reporting "no computer in the home"**

Highest %		
Lowest %		
Difference %		

Households Reporting "Smart Phone (Alone)" in the Home

1. Complete the table below to identify the range of rates for households in your community reporting smart phone alone" in the home.

2. Calculate the difference between the highest and the lowest percentage of those reporting Smart Phone (alone) in the home.

3. Review the census tracts that report the highest percentage of households reporting "smart phone alone." In the table, record which schools serve these neighborhoods.

This information can be found by visiting the 'ACS » Internet > Computing Devices in the Home: Details'. Use the Drop Down to select 'Smart Phone (alone)'. Click on a bar in the bar-chart to highlight those tracts. Click on the Layer icon in the upper right-hand corner of the map to display schools. Look at the range of rates.

	Percentage of households reporting "Smart Phone (alone)" in the home.	**Schools that serve neighborhoods reporting the highest percentage of households reporting "Smart Phone (alone)" in the home**
Highest %		
Lowest %		
Difference %		

Internet Subscribers Under 18

1. Complete the table below to identify the percentage of persons under 18 in your community reporting having a Computer with Broadband, a Computer but No Internet and No Computer

2. Review the census tracts that report the highest percentage of persons under 18 with a computer but no Internet and no computer. In the table, record which schools serve these neighborhoods.

This data can be found by visiting the 'ACS » Internet > Subscription Characteristics: Details' page, then select 'Age', When you choose a cell in the table, the map will be updated. For each category, choose the appropriate cell and view the range of rates at the tract level. Click on a bar in the bar-chart to highlight those tracts. Click on the Layer icon in the upper right-hand corner of the map to display schools. Which schools are nearby?

	What is the highest percentage on any tract for	**Schools that serve neighborhoods reporting the highest percentage of persons under 18 reporting…**
Computer with broadband		
Computer/No Internet		
No computer		

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Review

Review the lists of schools gathered above and identify the top three schools or neighborhoods where lack of high-speed Internet access or limited Internet access may be impacting educational opportunities. The data in the table is only a suggestion, you may choose to incorporate division-collected data or other educational data as applicable.

	Insert name of school or neighborhood	Insert name of school or neighborhood	Insert name of school or neighborhood
Percentage of households without an Internet subscription			
Percentage of households reporting a "Cellular data plan-only" subscription			
Percentage of households reporting "no computer"			
Percentage of Households reporting a Smart Phone (alone)			
Percentage of persons under 18 with a computer, but no Internet			
Percentage of persons under 18 with no computer			

Reflecting on the Data

1. For schools that serve neighborhoods with a high percentage of households without a subscription, high percentage of "cellular data plan" subscriptions, or high percentage of persons under 18 with computers, but no Internet—how might improved access to affordable broadband improve other academic outcomes?
2. What actions might the school, district, or state take to support students with limited access to affordable broadband in their homes or neighborhood?
3. For schools that serve neighborhoods with a high percentage of households with no computers or high percentage of persons under 18 with no computers, or Internet access Smart Phone (alone) how might limited access to devices be impacting educational opportunities and other academic outcomes?
4. What actions might the school, district or state do to support students with limited devices in their homes?
5. How does the data from the I3 tool compare to your school or district survey data, (if you collect this data) on households without Internet access?
6. What other school or district data might complement the data above to create a full picture of digital equity in your community? Consider adding this data to the chart above.

8. Next Steps

At this point you can start to formulate goals and begin to develop an action plan. Your plan will depend on local knowledge and local resources and connections.

Here are some ideas to get you started:
1. Identify other persons or groups in your community that may want to be part of a larger collaboration such as local governments, banks, foundations, Internet Service Providers, (ISP), Wireless Internet Service Providers (WISPS), local or regional libraries, *etc*.
2. Consider conducting a local assessment to identify local resources that might support the implementation of a cohesive digital equity plan. Identify:
   a. Local, state, or national organizations that offer low cost or refurbished computers or loan out Wi-Fi or cellular hotspots.
   b. Local, state, or national organizations that provide digital literacy training including training that might support parents of students, and multi-lingual programs.
   c. Local, state, or national organizations that teach constructive thinking, coding, math, online softy, and other web literacies.
   d. Community anchor institutions or local businesses that offer free access to computers and the Internet.
   e. Develop a web page on your school district web site that has information and resources for communities that includes a directory of Wi-Fi hotspots (see the Fairfax County Public Schools web page [Access to Technology](#) to use as a model web page).
   f. Does your city or county have a GIS department? How can they help?
   g. Consult with your local banks about CRA funds or any Foundations that may be able to contribute funding to support initiatives.

Resources

- A Jump-start Guide to the I3 Connectivity Explorer: https://internet-is-infrastructure.org/download/introductory-guide/