NATIONAL 4-H
COUNCIL

4-H Tech Changemakers Project

4-H GROWS HERE | Microsoft

Community Visioning, Part One

Our Community Now

Where We Are Now

Who Can Help

Assessing Needs

Who Needs Help?

Important

Engaging the Local ISP

When I think about my community's broadband access and digital skills:
- Where is my community now?
- What are good things going on in the community that will help our project be successful?
- What are some challenges our community faces in this area?

Steps to Accomplish

Welcome & Introductions

AGENDA, HOUSEKEEPING, SUPPLIES

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

4-H GROWS HERE

Microsoft

Agenda – Day 1

Welcome

Overview of Project

Resources

Exploring the Content

Community Engagement

Partnerships

Lesson Sampling

Let's Get Acquainted!

- What is your name? Where are you from?

- What are you excited about with the 4-H Tech Changemakers training?

- What are you unsure about with the 4-H Tech Changemakers training?

- How do you think 4-H Tech Changemakers can impact your community?

Project Overview:
What is Tech Changemakers?

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

Our Goal

The Microsoft and 4-H Tech Changemakers partnership empowers youth to help close the broadband internet gap.

Our Objective

Through the course of their work 4-H teen leaders will work with 4-H educators, broadband service providers, community members, civic leaders and Microsoft to help people thrive in a digital economy and benefit from high-speed connectivity.

4-H GROWS HERE | Microsoft

Participating States
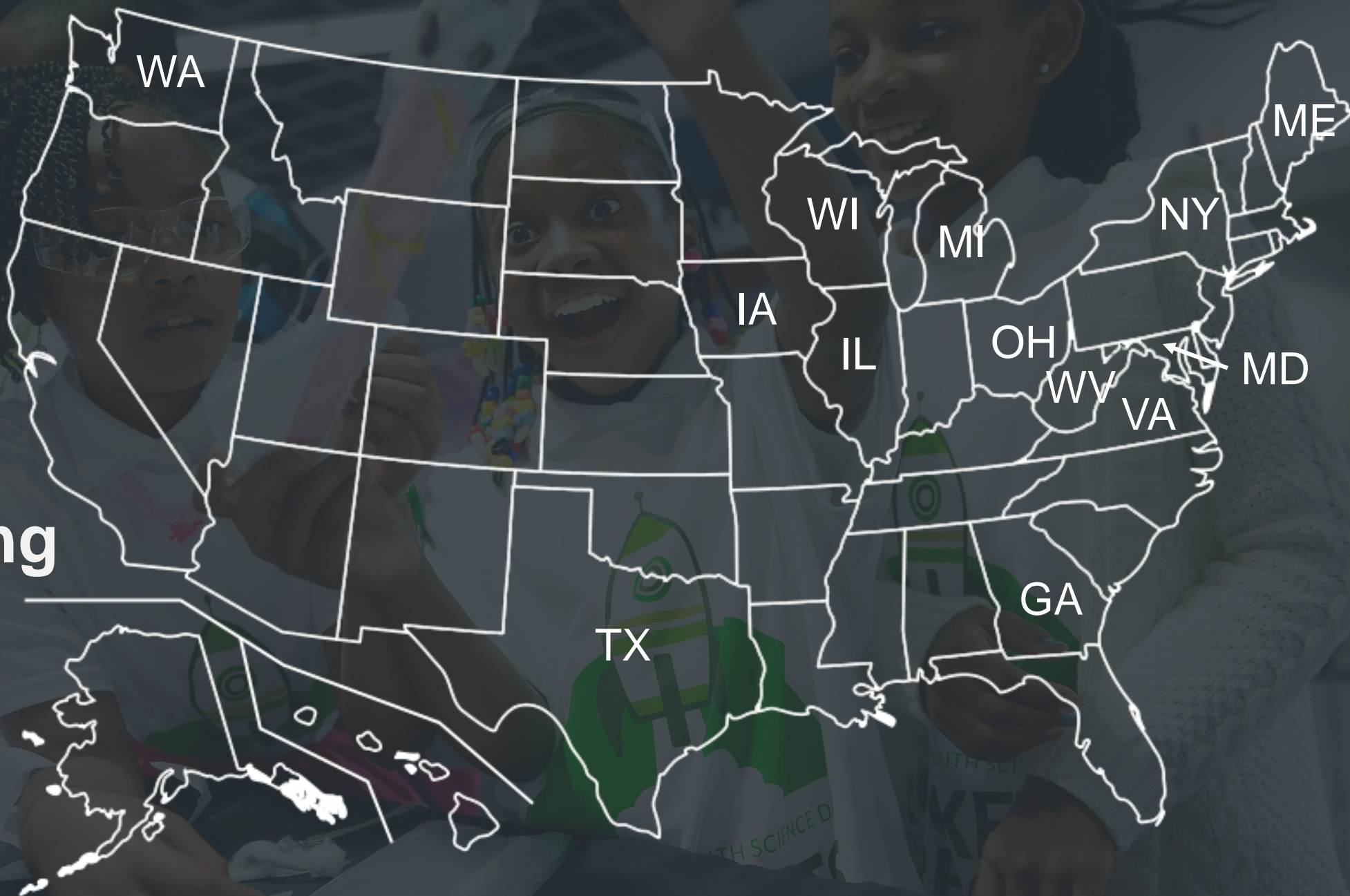
WA
ME
WI
MI
NY
IA
IL
OH
MD
WV
VA
GA
TX

Timeline

2019

2020

PROJECT LAUNCH
Jan.

SNAPSHOTS & STORY

Feb.

REGIONAL TRAININGS
Mar.

COMMUNITY SESSION PLANS
Apr.

SNAPSHOTS & STORY
May

COMMON MEASURES
July

SNAPSHOTS & STORY

PROJECT ENDS

FINAL REPORT

COMMON MEASURES

SNAPSHOTS & STORY
Aug.

MID-TERM REPORT
Sept.

SNAPSHOTS & STORY
Nov.

Roles & Responsibilities

National 4-H Council

Southern Rural Development Center

University of Georgia

State Efforts

National Digital Education Extension Team

4-H GROWS HERE

Microsoft
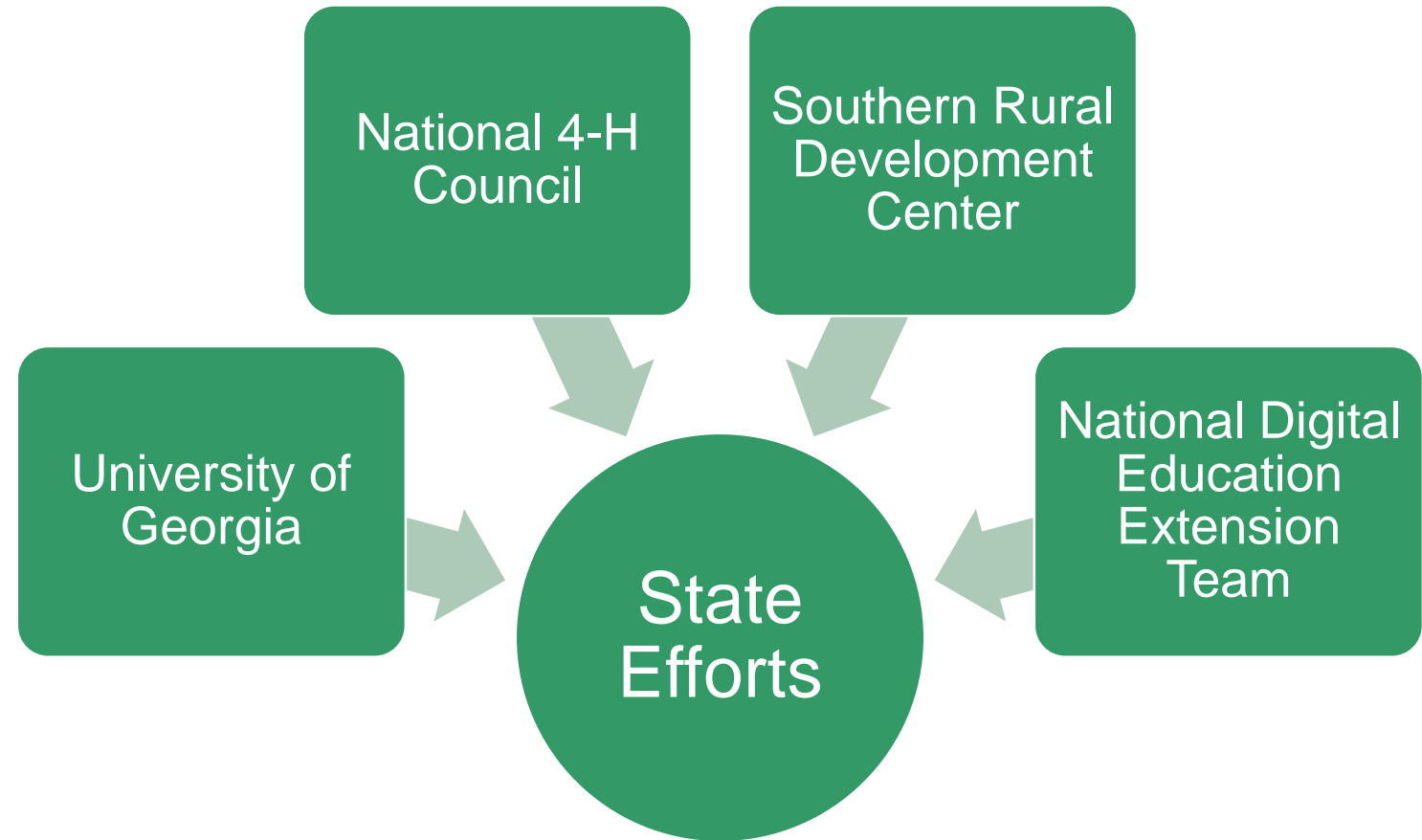
Oversee the Project

Donor Relationship

Lead Regional Trainings

Develop the Guidebook with SRDC

Webinars & Coaching Calls

Individualized Assistance

Lead National Training

Provide Technical Assistance on Digital Literacy Skills

Assist with Community Engagement Principles

Community Roles

- Teens will be leading digital skills trainings and starting a local dialogue about the ways digital tools can be used as a force for good –from online safety to computer basics to device training.

- Through the course of their work 4-H teen leaders will work with 4-H educators, broadband service providers, community members, civic leaders and Microsoft to help people thrive in a digital economy and benefit from high-speed connectivity.

4-H GROWS HERE | Microsoft

Deliverables & Expectations

- Develop a Plan of Action that includes at least 6-10 Learning Sessions in Selected Communities

- Develop local partnerships with ISP and other partners such as the library

- Contribute to Snapshots and Stories- (5/15/19, 8/15/19, 11/15/19, 2/14/20 and 5/15/20)

- Use evaluation survey for the Teen Leaders and also a short survey for the participants.

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

Deliverables & Expectations Cont.

- Virtual Trainings

- On-going Coaching

- Learning Session Plan – April 1, 2019

- Mid-Term Reports – September 2019

- Survey & Evaluations – July 31, 2020

- Final Report – July 31, 2020

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.
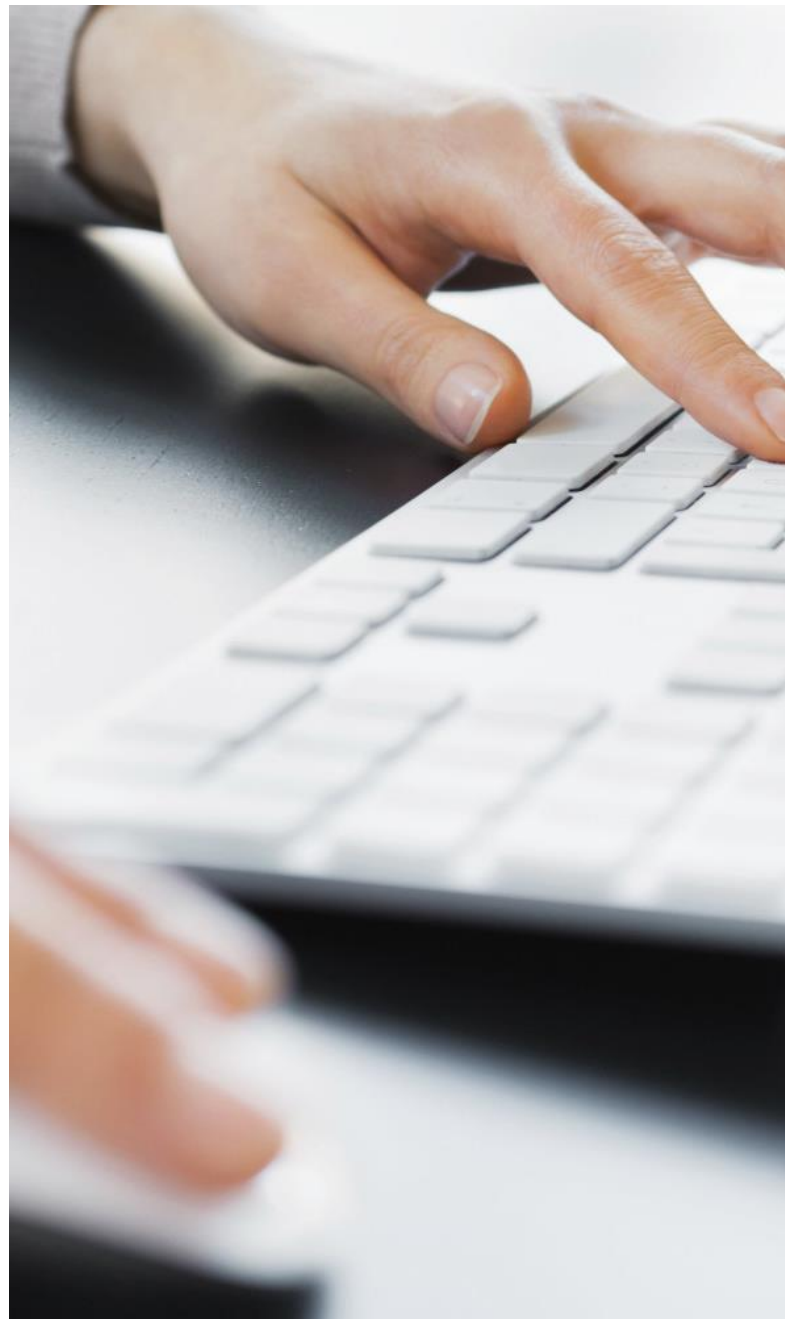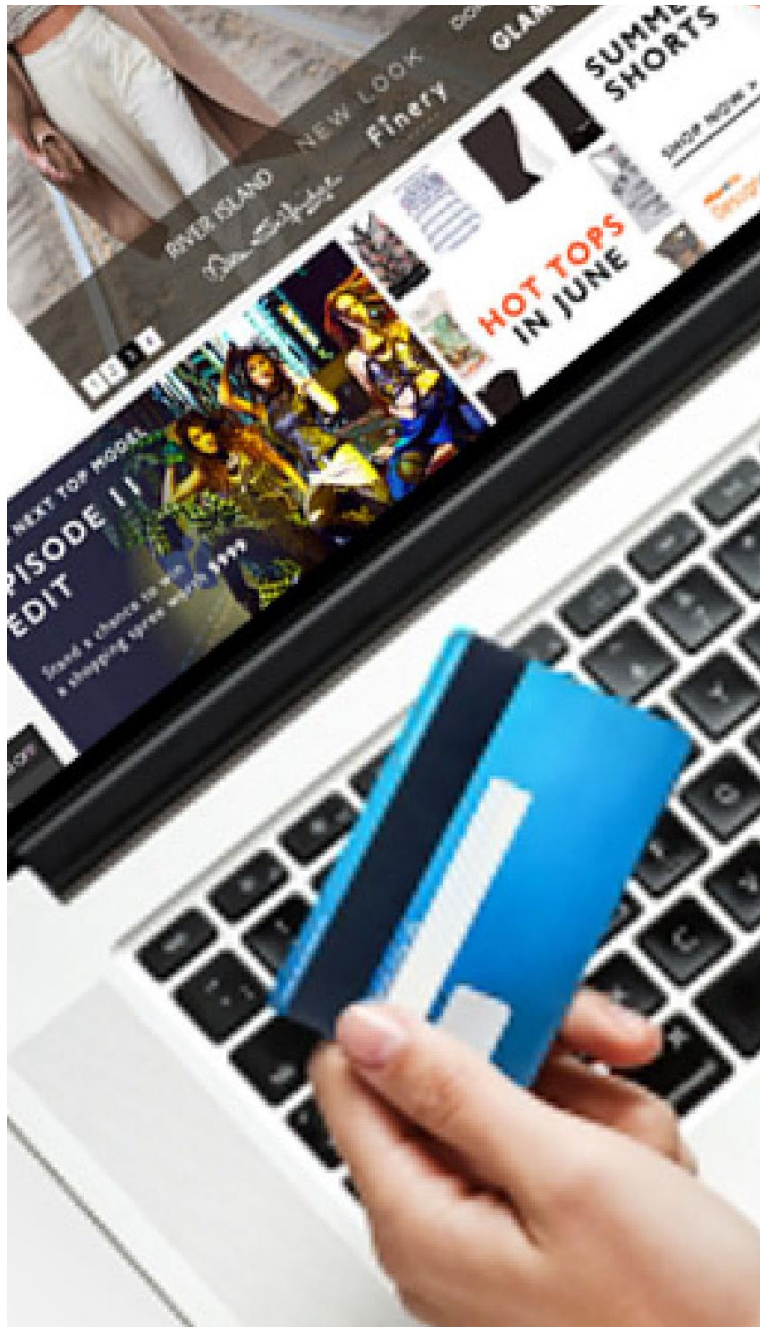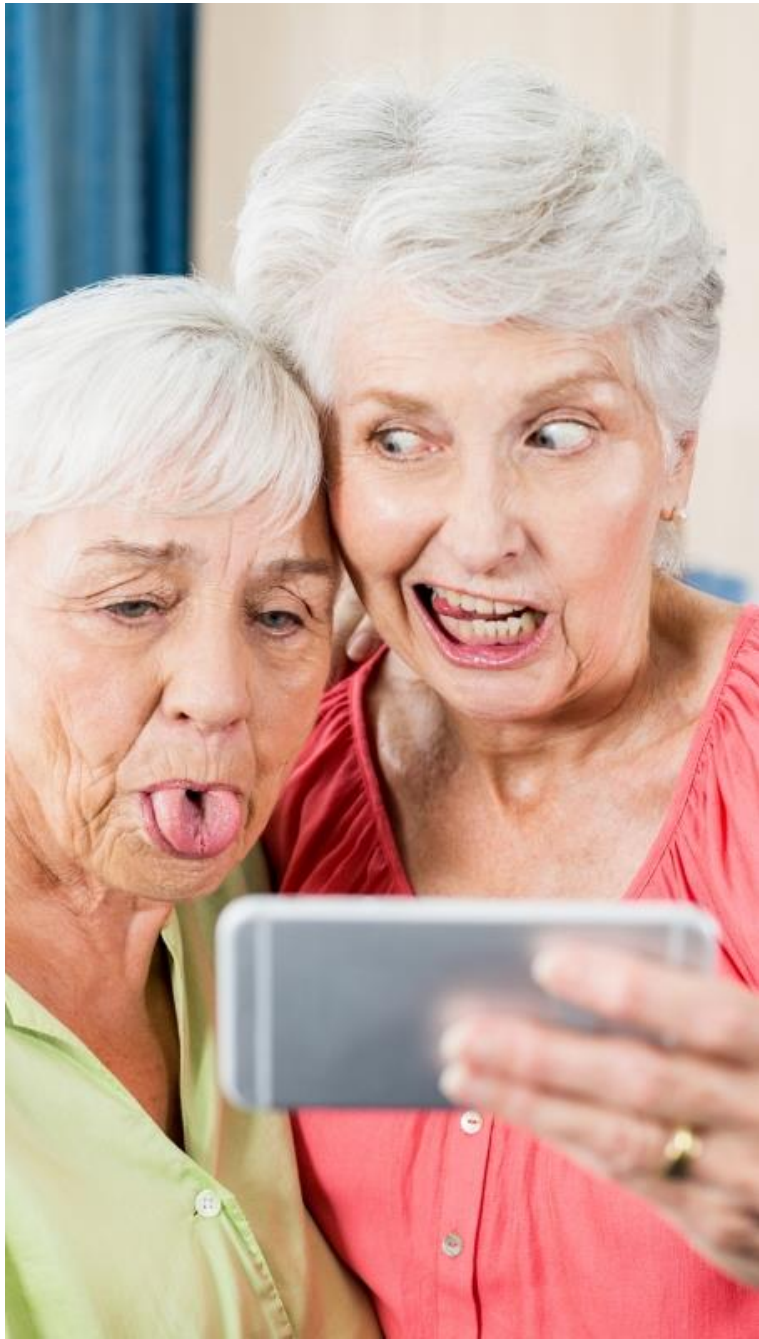
Resources & Support

- Website:
  - Georgia4h.org/digitalambassadors
  - Marketing Toolkit
- Guidebook
  - Still in draft format
  - Welcome lesson plans
- Monthly Check-In
- Webinars – working with ISPs, implementation techniques, lesson plans, evaluation, etc.
- Individualized Assistance, if needed

What does a 4-H Tech Changemaker project look like?

4-H GROWS HERE | Microsoft

Questions
&
Discussion

4-H GROWS HERE   Microsoft

Microsoft Video Discussion

- What are the two Americas Brad Smith describes?
- How can technology divide people?
- How can technology unite people?
- What did you learn from the video that affects how you think about your role as a 4-H Tech Changemaker?

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

Microsoft Overview

AND WORKING WITH ISPS

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

Project Resources

EXPLORE THE GUIDEBOOK

4-H Tech Changemakers

GUIDEBOOK
DRAFT

UNIVERSITY OF GEORGIA EXTENSION | 4-H | 4-H GROWS HERE | Microsoft | SRDC

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

4-H GROWS HERE | Microsoft

Exploring the Context

BROADBAND & RURAL 101
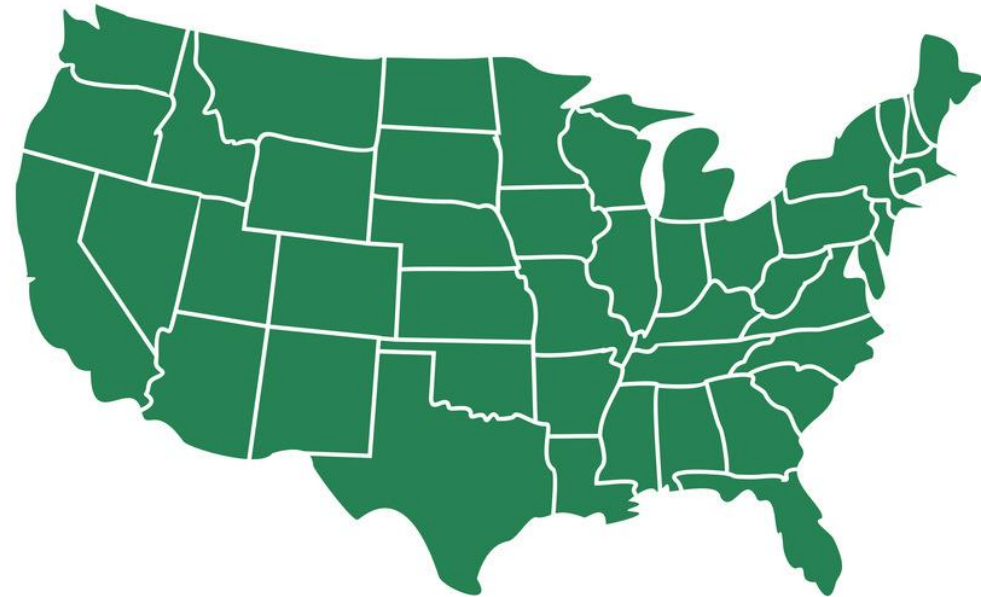
Overview

- ## What is rural?
  - Census geographies
  - Different categories/typologies

- ## What is broadband?
  - Brief history
  - Key terms
  - Technologies
  - Deployment models

Census Geographies

Less granular

More granular

- Nation
- States
- Counties
- Place
- Census Tracts
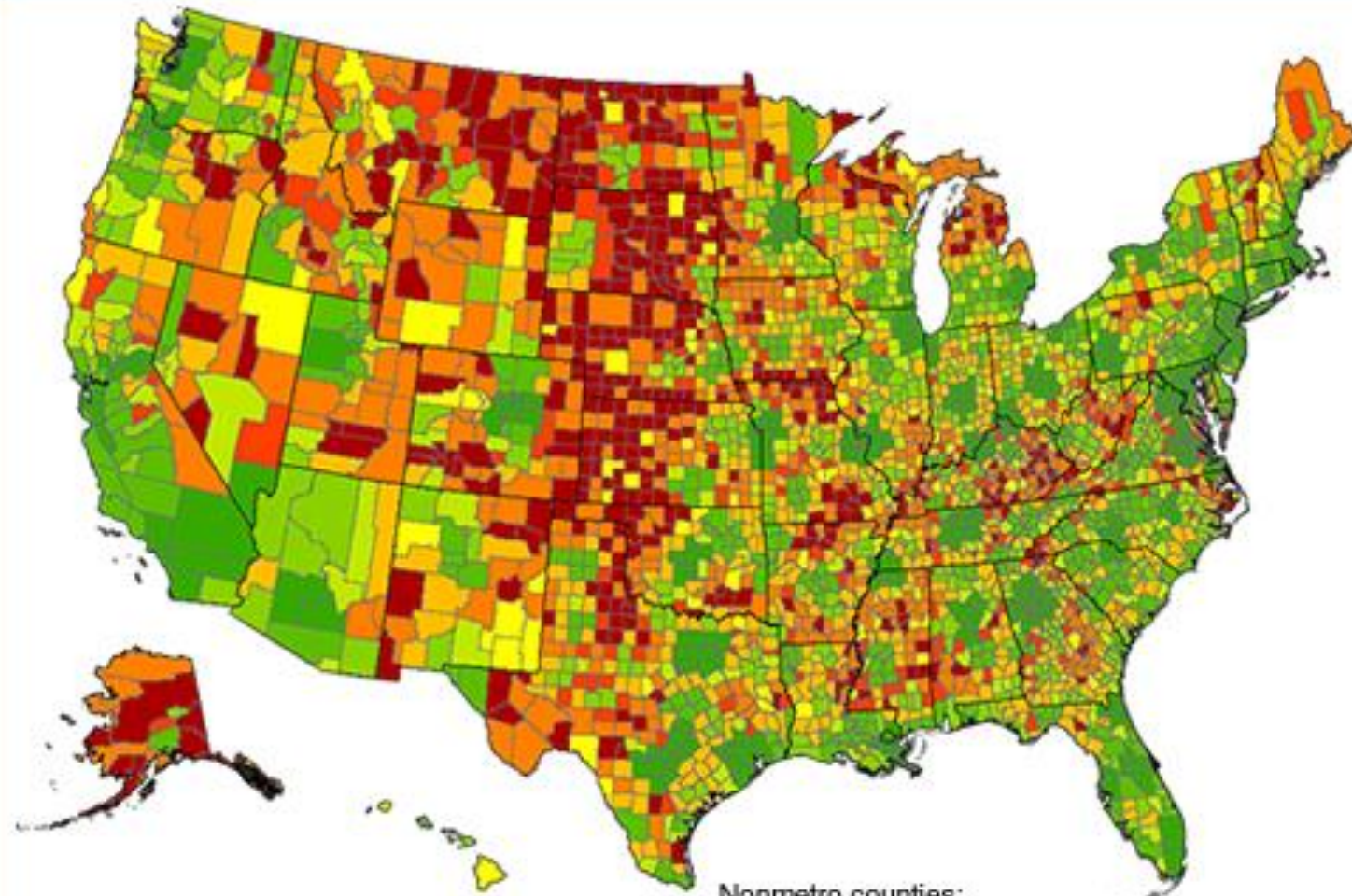- Block Groups
- Blocks

Microsoft

What is Rural?

It depends …

- Urbanized areas, urban clusters, rural (UA/UC/R)
- Level of Rurality (LR)
- Rural Urban Continuum Codes (RUCC)
- Urban Influence Codes (UIC)
- Rural Urban Commuting Areas (RUCA)

4-H GROWS HERE | Microsoft

2013 Rural-Urban Continuum Codes

Metro counties:
population size of metro area
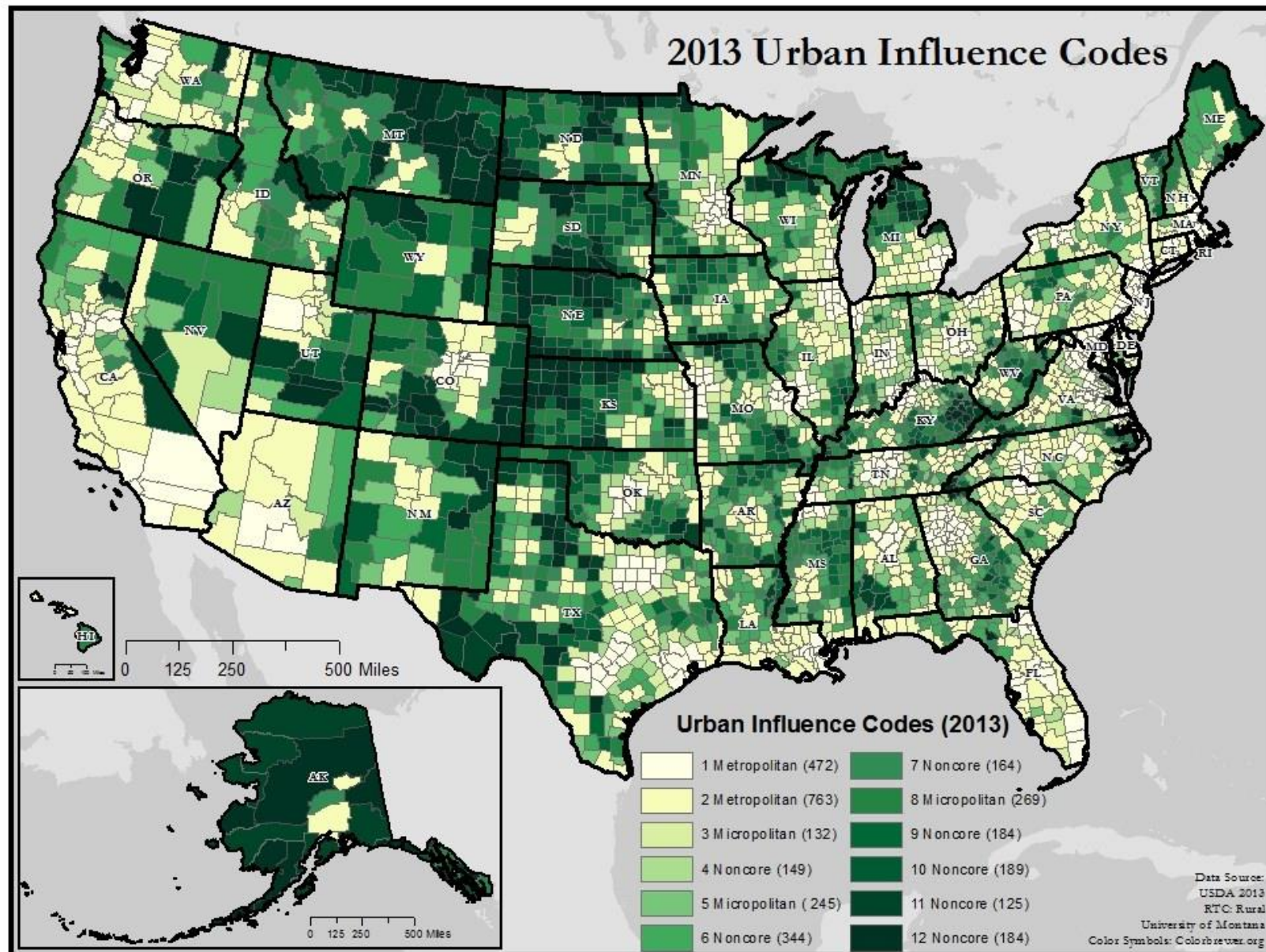- 1 million or more
- 250,000 to 1 million
- Fewer than 250,000

Nonmetro counties:
size of urban population, adjacency
- 20,000 or more, adjacent
- 20,000 or more, nonadjacent
- 2,500 to 19,999, adjacent
- 2,500 to 19,999, nonadjacent
- < 2,500 or completely rural, adjacent
- < 2,500 or completely rural, nonadjacent

Source: USDA, Economic Research Service using data from the U.S. Census Bureau.

2013 Urban Influence Codes

Urban Influence Codes (2013)

1 Metropolitan (472)	7 Noncore (164)
2 Metropolitan (763)	8 Micropolitan (269)
3 Micropolitan (132)	9 Noncore (184)
4 Noncore (149)	10 Noncore (189)
5 Micropolitan (245)	11 Noncore (125)
6 Noncore (344)	12 Noncore (184)

Data Source:
USDA 2013
RTC: Rural
University of Montana
Color Symbols: Colorbrewer.org

Source: University of Montana

What is Rural?

2017	Total	Urban/Metro	Rural/Nonmetro	% Rural/Nonmetro
UA/UC/R*	308 million	249 million	59 million	19.3
LR	321 million	265 million	55 million	17.1
RUCA	320 million	270 million	50 million	15.8
RUCC	325 million	279 million	46 million	14.1
UIC	325 million	279 million	46 million	14.1

What is Rural?

- Geographic granularity has pros and cons
- Aggregate from county or tract level
- Be consistent
- No measure is perfect
- Urban & rural contexts, different!

History of the Internet

The ARPANET in December 1969

History of the Internet

- 1960s: ARPANET is launched
- 1970s: Ethernet; TCP/IP → transferring data over phone lines
- 1980s: Local Area Networks → Domain Name System
- 1990s: World Wide Web (WWW) → HTML → URL
- 2000s: Sophisticated cloud-based applications

4-H GROWS HERE | Microsoft

Broadband: Key Terms

- <u>Bits</u>: 1s & 0s; basic unit of information
    - Kilobit (Kbps): 1,000 bits per second
    - Megabit (Mbps): 1,000,000 bits per second
    - Gigabit: (Gbps): 1,000,000,000 bits per second
- <u>Download</u>: speed measured in bits that your computer receives data
- <u>Upload</u>: speed measured in bits that your computer sends data
- <u>Symmetric</u>: comparable upload/download speeds

4-H GROWS HERE | Microsoft
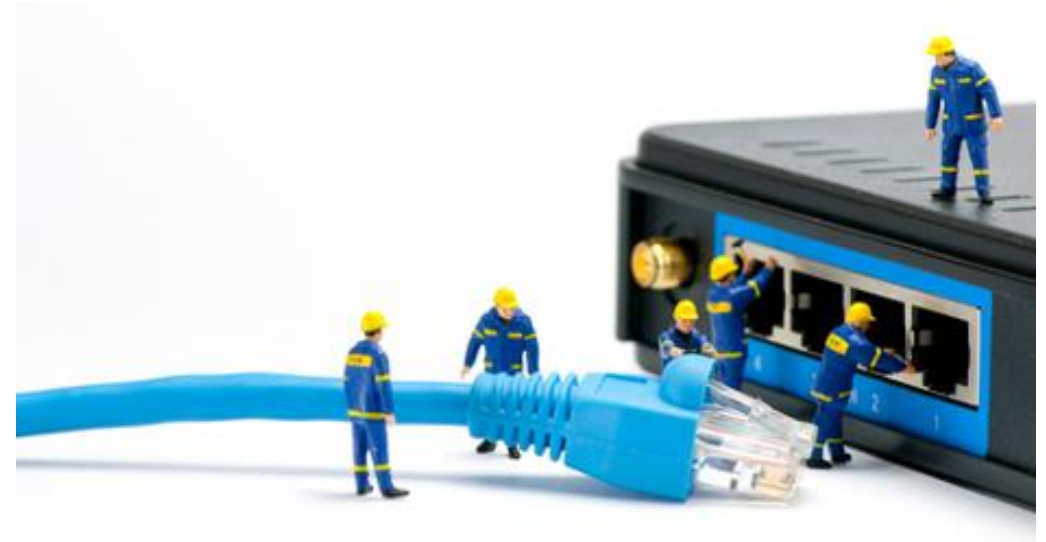
Broadband: Key Terms (cont'd)

- <u>Middle mile</u>: network section that connects last mile networks to the backbone of the internet

- <u>Last mile</u>: connection between network and home subscriber

- <u>FTTH</u>: fiber-to-the-home

- <u>WISPs</u>: wireless internet service providers

- <u>Open access</u>: separates physical network from the services
  - Two-layer: municipality builds/owns/operates; ISPs provide service
  - Three-layer: municipality builds/owns; independent party operates; ISPs provide service

- <u>Dark fiber</u>: laid but not "lit"; left as unused until needed or desired

4-H GROWS HERE

Microsoft

Broadband: Key Terms (cont'd)
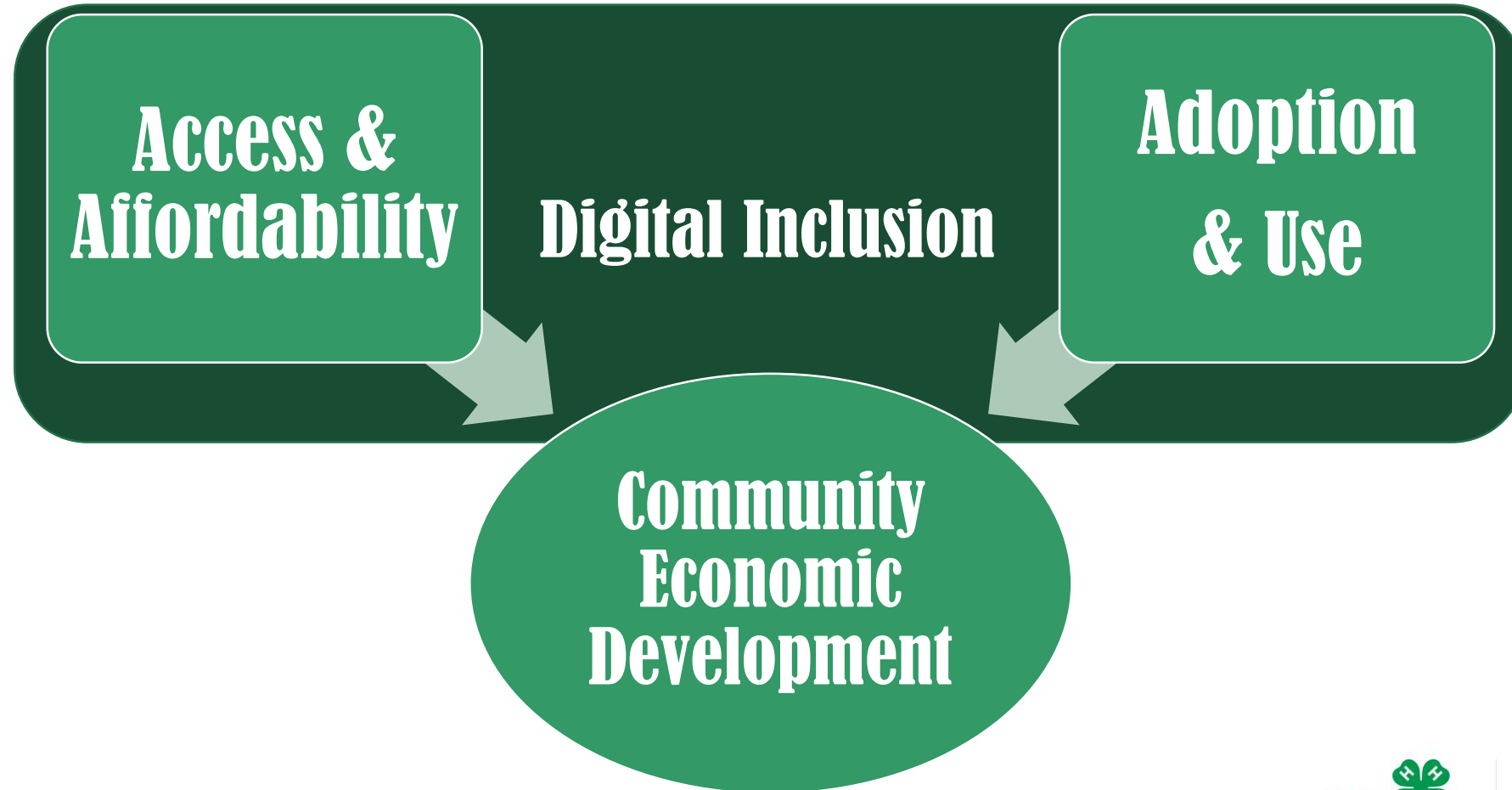
Broadband: Definition

- Internet access that is always on and faster than dial-up

- Defined by speed
  - Download: 25 Mbps
  - Upload: 3 Mbps
  - 25/3 for short

- Different technologies, different speeds

- Advertised versus actual

4-H GROWS HERE

Microsoft

Broadband Technologies

- Digital Subscriber Line (DSL)

- Cable Modem

- Fiber-optic

- Fixed Wireless

- Satellite

- Broadband over Power Line (BPL)

- Fixed Versus Mobile

Broadband Deployment Models

Private sector

- Large providers; WISPs; Telephone/Cable

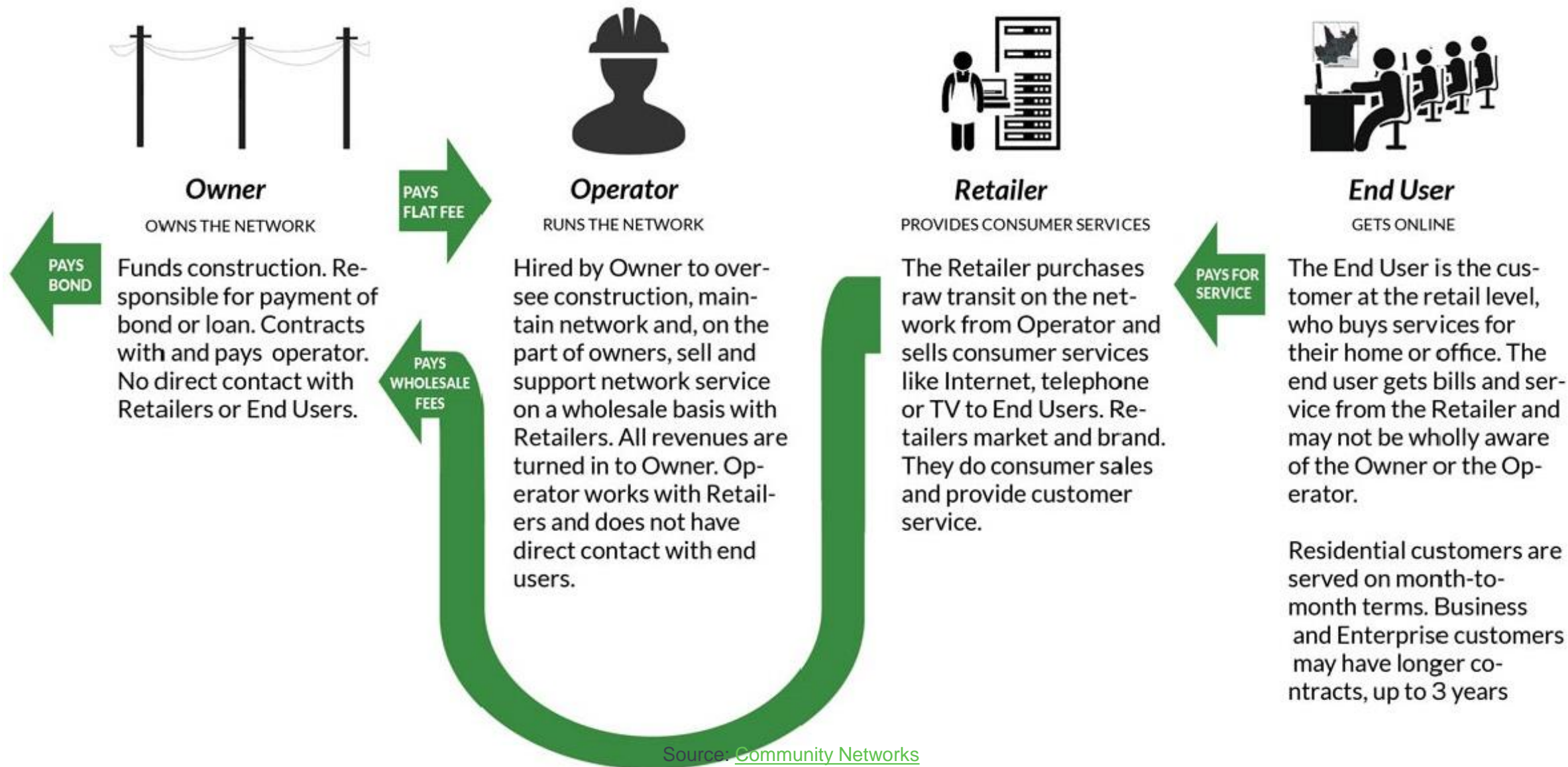**Public-private partnership (P3)**

- Ammon, Idaho
- South Bend, Indiana

Municipal

- Nashville, Tennessee

Co-operatives

- Minnesota

Broadband: Open Access

Owner
OWNS THE NETWORK

PAYS FLAT FEE

PAYS BOND

Funds construction. Responsible for payment of bond or loan. Contracts with and pays operator. No direct contact with Retailers or End Users.

Operator
RUNS THE NETWORK

PAYS WHOLESALE FEES

Hired by Owner to oversee construction, maintain network and, on the part of owners, sell and support network service on a wholesale basis with Retailers. All revenues are turned in to Owner. Operator works with Retailers and does not have direct contact with end users.

Retailer
PROVIDES CONSUMER SERVICES

PAYS FOR SERVICE

The Retailer purchases raw transit on the network from Operator and sells consumer services like Internet, telephone or TV to End Users. Retailers market and brand. They do consumer sales and provide customer service.

End User
GETS ONLINE

The End User is the customer at the retail level, who buys services for their home or office. The end user gets bills and service from the Retailer and may not be wholly aware of the Owner or the Operator.

Residential customers are served on month-to-month terms. Business and Enterprise customers may have longer contracts, up to 3 years

Source: Community Networks

Broadband: Barriers

- Lack of leadership
- Lack of density
- ROI inexistent
- Right-of-ways
- Easements
- Topography
- Lack of adoption/use

4-H GROWS HERE | Microsoft

Funding Options

- Private providers
- USDA – Community Connect Grants
- USDA – Distance Learning and Telemedicine Grants
- USDA – Rural Broadband Access Loan and Loan Guarantees
- USDA – Telecommunications Infrastructure Loans and Guarantees
- USDA – ReConnect
- State Funding (Minnesota, Indiana, etc.)
- Local banks (Community Reinvestment Act)

Questions
&
Discussion

4-H GROWS HERE | Microsoft

Community Visioning, Part Two

When I think where this project can take our community:

- What do I think will be different?
- What challenges will we have helped to address?
- How will people's lives be better?
- How will our community be better?

Our Community of the Future

Where We Are Headed

Teens Teaching Adults

Adapted from Teach SD Curriculum from SDSU Extension

SDSU Extension

4-H GROWS HERE

Microsoft

Introduction

Needs

Skills

Learning Styles
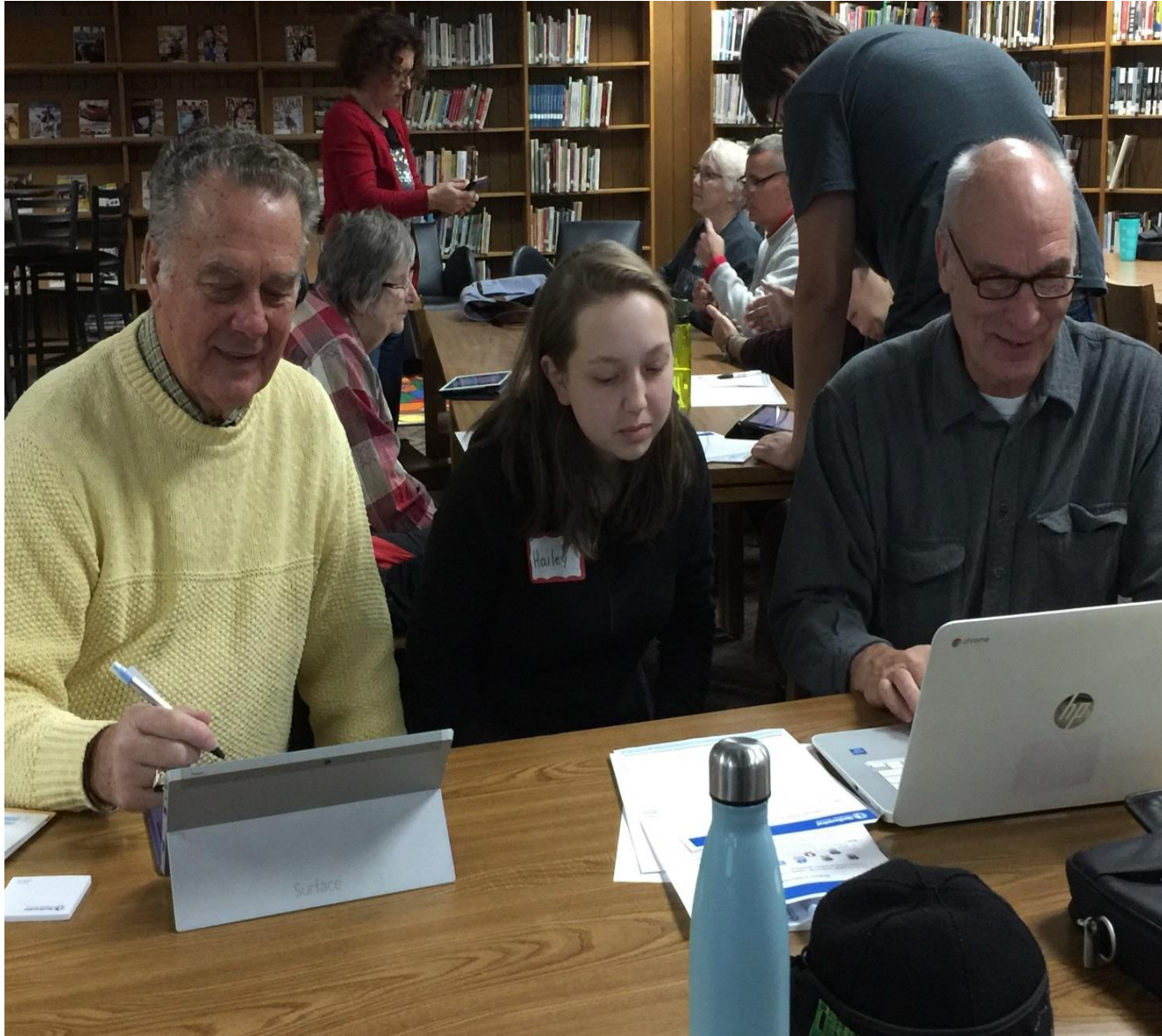
Our Objectives

- Learn ways to enhance the learning experience of Adult Learners
- Learn strategies to teach technology
- Practice adapting teaching techniques to meet audience needs
- Understand how aging and disability impacts learning

©Getty Images/Monkey Business

Getting Started with New Learners

- Motivating factors

- Barriers to adoption

Introduction to Teaching Technology:
https://youtu.be/kyMtINvwKro

Video Discussion

- Describe what you learned.
- What is the most important thing you learned from the videos?
- Age is sometimes a barrier to technology use, what are other barriers you may find in audiences?

Experiential Learning

- Low Vision Simulation
- Hearing Loss Simulation
- Loss of Dexterity and Touch Sensation
- Technology Jargon/Vocabulary Activity

©Photo by Donna Matturri

4-H GROWS HERE | Microsoft

Low Vision Simulation

Experiencing technology through:

- Cataracts
- Glaucoma
- Macular degeneration
- Diabetic retinopathy

- Read Eye Chart
- Use Phone or Tablet to take a picture
- Navigate on a browser to the 4-H Website

4-H GROWS HERE | Microsoft

Hearing Loss Activity

How old are your ears?

https://youtu.be/VxcbppCX6Rk

4-H GROWS HERE
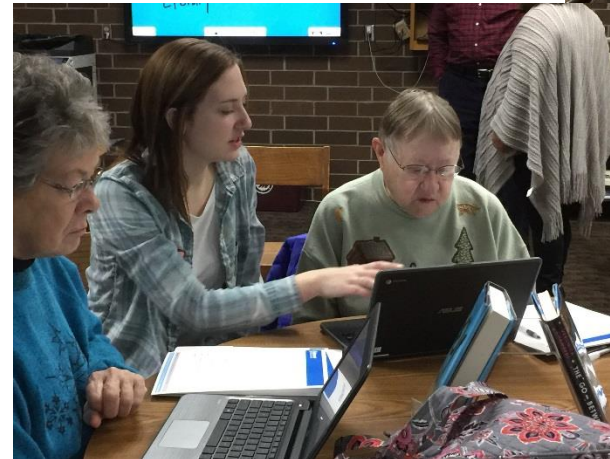
Microsoft
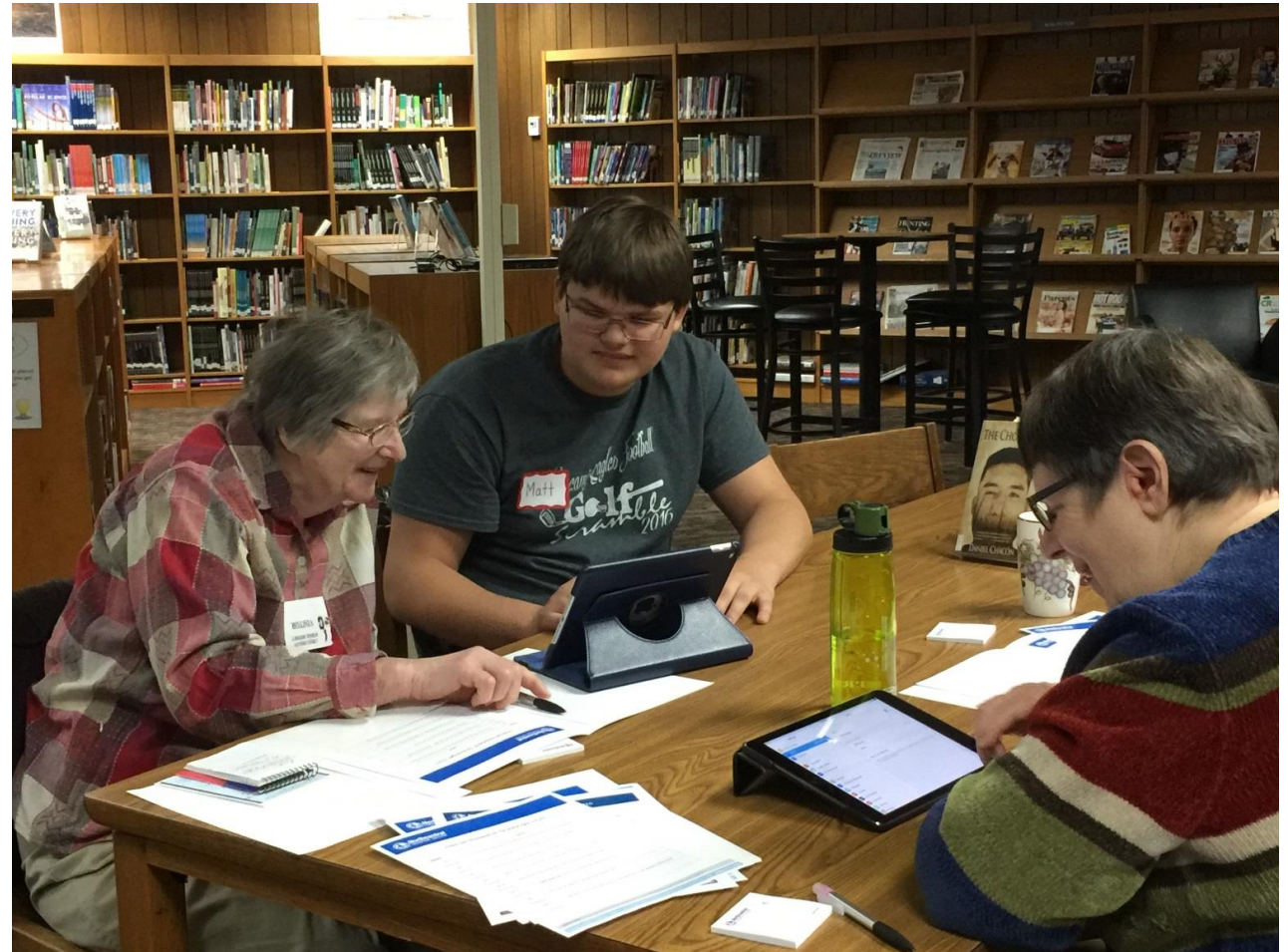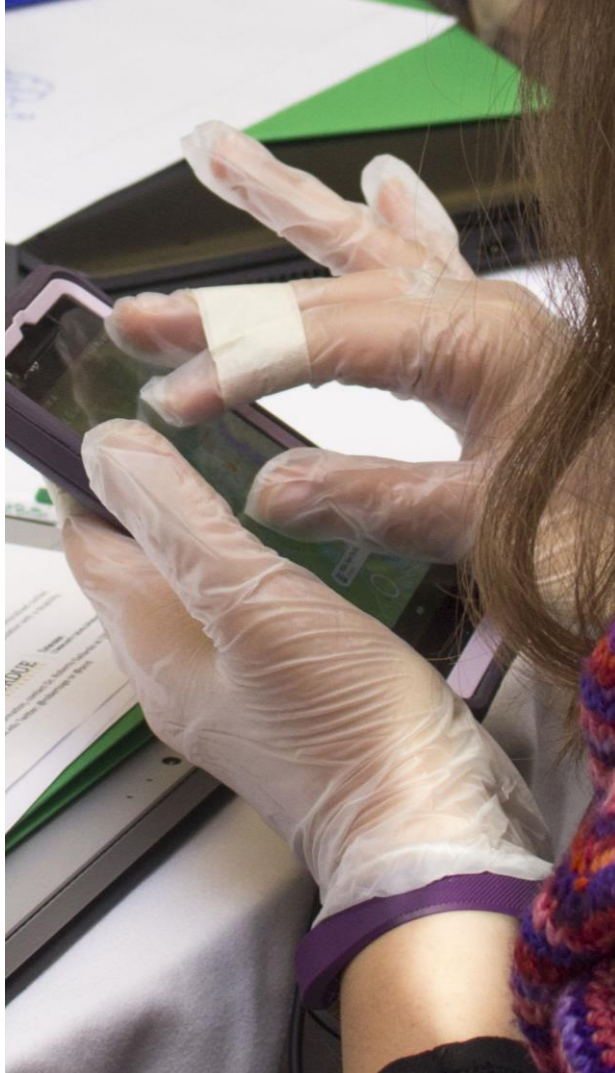
Loss of Dexterity

Challenges to technology usage

- Type message while wearing gloves
- Take picture with phone or tablet using non-dominate hand.
- Pinch to enlarge the photo using non-dominate hand.

Technology Jargon/Vocabulary Activity

- Brainstorm technology words
- Find words with double meaning
- Illustrate those meanings

Adaptions & Applications

HTTPS://YOUTU.BE/ZUHIJMHMBBK

Reflect

- What are the most important learning moments you take away from this experience?
- What are the benefits of participating in this learning activity?
- Did anything surprise you? If so, what?
- What are some other audiences adaptions that you may need to consider?
- How will this help you teach technology?

Community Engagement & Partnership Development

GETTING PEOPLE ON BOARD TO SUPPORT THE WORK

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

ORGANIZING SIMULATION

Creating a Win-Win Partnership

Community Organizations and Individuals — How will they benefit? — How will we benefit? — 4-H Tech Changemakers
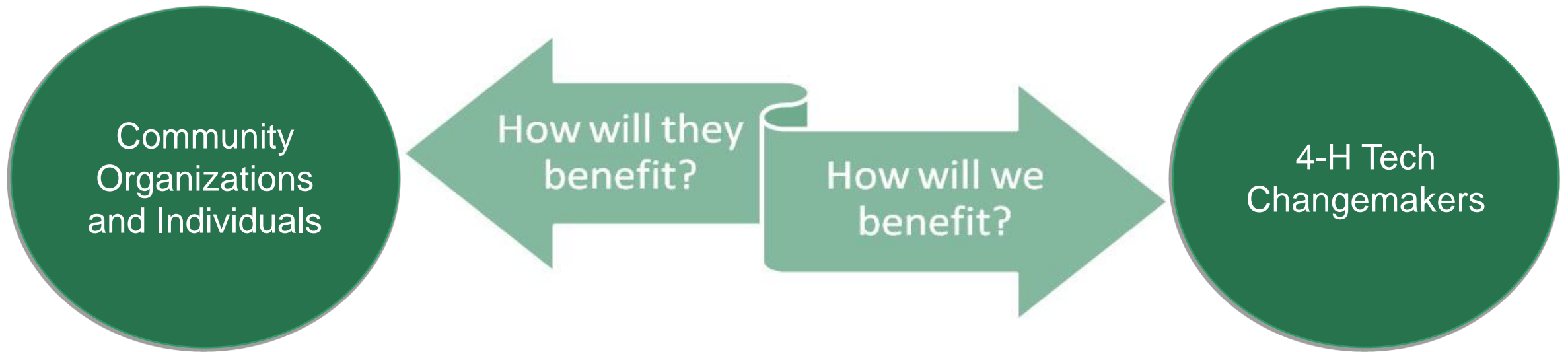
Debrief

- What did you learn from this?

- Who are unusual or unexpected partners you discovered?

- How is the community organizing exercise like or different from your community?

Sampling Activity Sessions

SPLIT INTO GREEN GROUP & YELLOW GROUP

4-H GROWS HERE

Microsoft

Plan Teach-Back Activity

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

Debrief & Reflections

Please Complete!

http://tinyurl.com/y4mqw8en

4-H GROWS HERE

Microsoft

NATIONAL 4-H COUNCIL

4-H Tech Changemakers Project

4-H GROWS HERE | Microsoft

Agenda – Day 2

Welcome & Reflections

Grab & Go Practice Teaching

Marketing Toolkit

Community Action Plan

Next Steps

Welcome & Day 1 Reflections

4-H GROWS HERE | Microsoft

Grab & Go Practice Teaching

4-H GROWS HERE

Microsoft

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

What went well?

What could have made it even better?

Assessing Needs

- Who needs help?
- What would they like to learn?
- What skills do they need?
- Where would they like to learn?
- What would make participating easier for them?

Who Needs Help?

Assessing Needs

How Will We Learn More?

What Skills Are Needed?

Important

Engaging the Local ISP

Steps to Accomplish

Our Community of the Future

Where We Are Headed

Marketing

P R E S E N T A T I O N

- Elevator Pitch
- Tell Your Community's Story

How to Make an Elevator Pitch

- **1st Sentence:** Who you are and what Tech Changemakers is.
- **2nd Sentence:** Why national 4-H Council and Microsoft have partnered together.
- **3rd and 4th Sentence:** Short, easy explanation of your community project.
- **5th and optional 6th Sentence:** What action do you want them to take- how they can help.

Practice Your Pitches

- Pair up with someone from a different group as yours. Take turns being the person pitching and person listening.
- At the end pause and give each other feedback

Then Reflect

Get back into your small groups and take time to discuss the following questions:

- What was challenging?
- What is one thing you did well?
- What is one thing you saw someone else do that you would like to try?
- What will help you to feel confident in doing this?

4-H GROWS HERE | Microsoft

Tell Your Community's Story

EVERYONE
YOU WILL EVER MEET
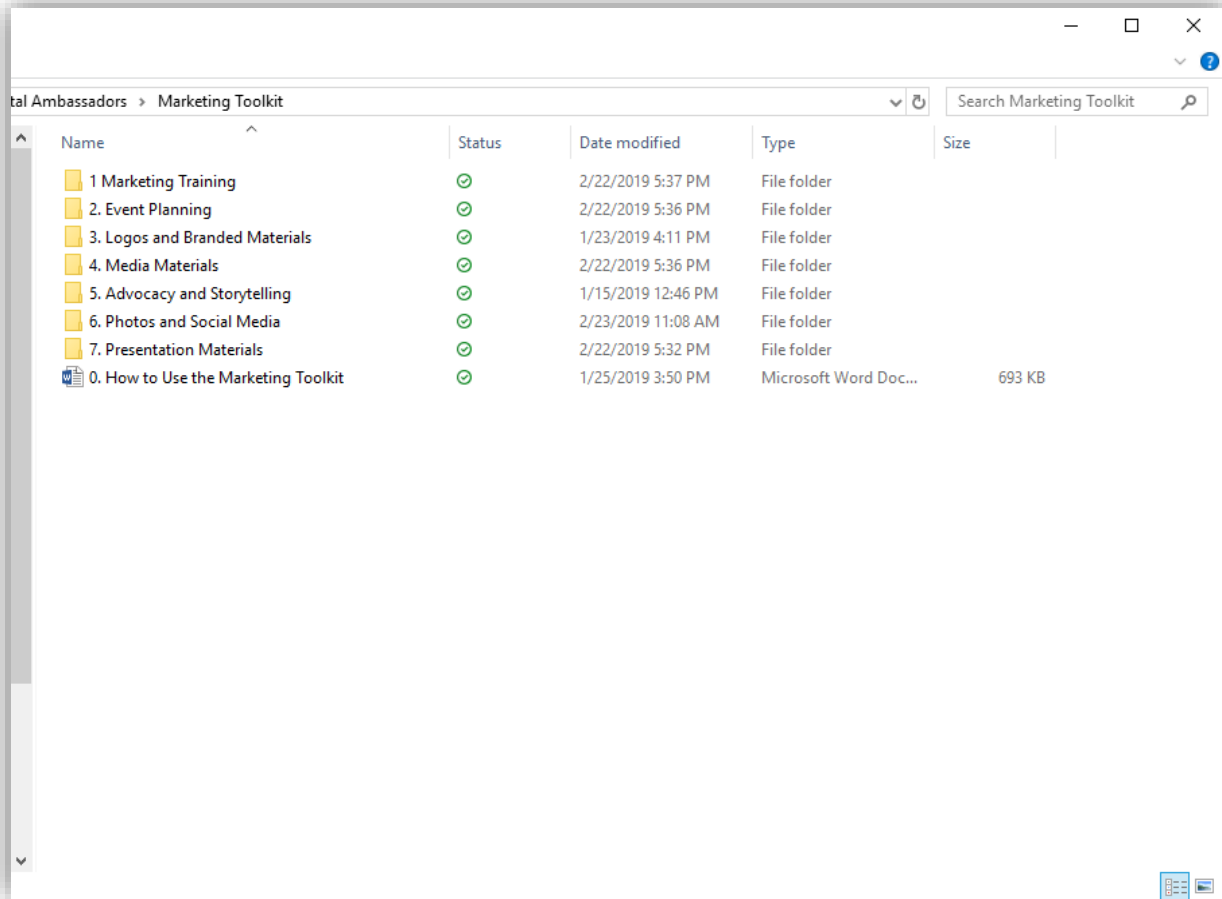KNOWS SOMETHING
YOU DON'T.
~ Bill Nye

Pointers for Good Conversations

1. Ask open ended questions.

2. Practice Mindful listening – this requires watching body language, listening to tone of voice, and being sensitive to what is left unspoken.

3. Don't worry about what you will say next focus on what the person is staying.

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

Pretend you were tasked with writing a story about the Tech Changemaker training. With your team you will complete the following:

1. Gather story content through conversations with your peers. (5 minutes)

2. Regroup with your team and decide on a single story to pursue. (5 minutes)

3. Using the marketing toolkit develop a plan outlining what you'll do with your story once it's complete. (hint check out the story plan in the toolkit) (10 minutes)

TOOLKIT HERE:
georgia4h.org/digitalambassadors

4-H GROWS HERE

Microsoft

Open Ended Question Examples

- Tell me about your community.
- Why did you choose to join the Tech Changemakers?
- What are your long-term goals for your project?
- Where do you access the internet most often?
- How has broadband access personally impacted you?
- What were you feeling about the project before the training?
- Now that the training is almost over, what do you think?

4-H GROWS HERE | Microsoft

Follow-up on Interesting Story Leads

- Share what you learn with your teams
- Tell your 4-H adult leaders
- Plan another conversation with the person you spoke with.
- Make a plan to use the story
- Email National 4-H if you get a great story

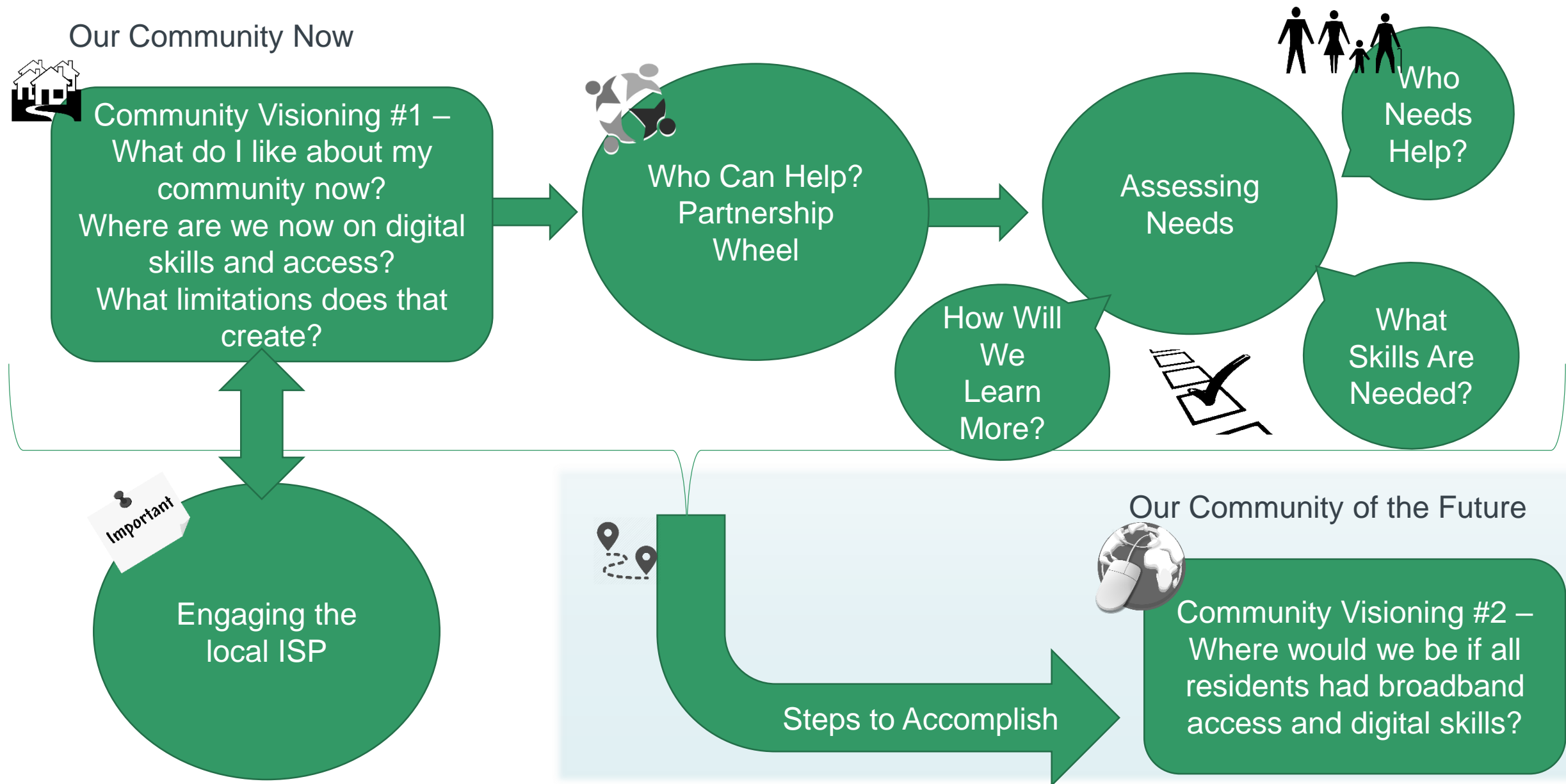4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

Community Action Plan

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

4-H GROWS HERE

Microsoft

Developing Your Plan of Action

Things You Will Need:
- Plan of Action Template
- Overview of Project
- Community Visioning
- Community Data Sheets
- Win-Win Partnership

Building a Plan of Action for Our Project

Our Community Now

Community Visioning #1 – What do I like about my community now?
Where are we now on digital skills and access?
What limitations does that create?

Who Can Help? Partnership Wheel

Assessing Needs

Who Needs Help?

How Will We Learn More?

What Skills Are Needed?

Important

Engaging the local ISP

Our Community of the Future

Steps to Accomplish

Community Visioning #2 – Where would we be if all residents had broadband access and digital skills?

Steps to Accomplish: Five Tasks

Building the local training team

Planning the teaching sessions

Getting local partners on board

Marketing your efforts

Connecting to the local ISP

4-H GROWS HERE | Microsoft

Steps to Accomplish

- What steps do we need to take?

- Who will be responsible for each step?

- When will we need to finish each step?

Steps to Accomplish

Debrief

- What was easy about this process?

- What was hard?

- What did you discover about shared leadership?

- How can you use this tool to continue to grow and involve your team at home?

COMMUNITY

4-H GROWS HERE

Microsoft

Important Partnership:

Working with
Internet Service Providers

Next Steps

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

Next Steps

- Submit Expense Reports –forms to be emailed

- Recruit Teens in your community

- Partake in ISP introductory calls

- Develop partnerships in your community

- Continue to build out plans – due 4/1/19

- Take photos - 1st Snap Shot due 5/15/19

- Take part in coaching calls and webinars

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

Expense Reports

- **Please submit expenses for the following**
  - Transportation to and from training (Miles, Airfare, Trains, Bus, Uber, Taxi)
  - Meal while in route
  - Bags checked

- **The name** on the expense report is **whoever is receiving the check**
- You must fill in all the **yellow areas** on **both pages** and **sign**
- You must have **receipts** for everything over $20
- **Email forms and receipts** to jdepasquale@4-h.org

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

Things to Remember - Expense Forms

- A real signature must be present on the second page

- Please include all receipts and a documentation of mileage (i.e. google maps) if you drove to your destination or airport. We do not reimburse gas, only mileage.

- **MAKE SURE ALL THE APPLICABLE YELLOW HIGHLIGHTED FIELDS ARE COMPLELETED BEFORE YOU SUBMIT!**

4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

Evaluation Survey

http://georgia4h.org/survey/

Debrief & Final Reflections