



NC STATE UNIVERSITY

Institute for Emerging Issues

kidonomics

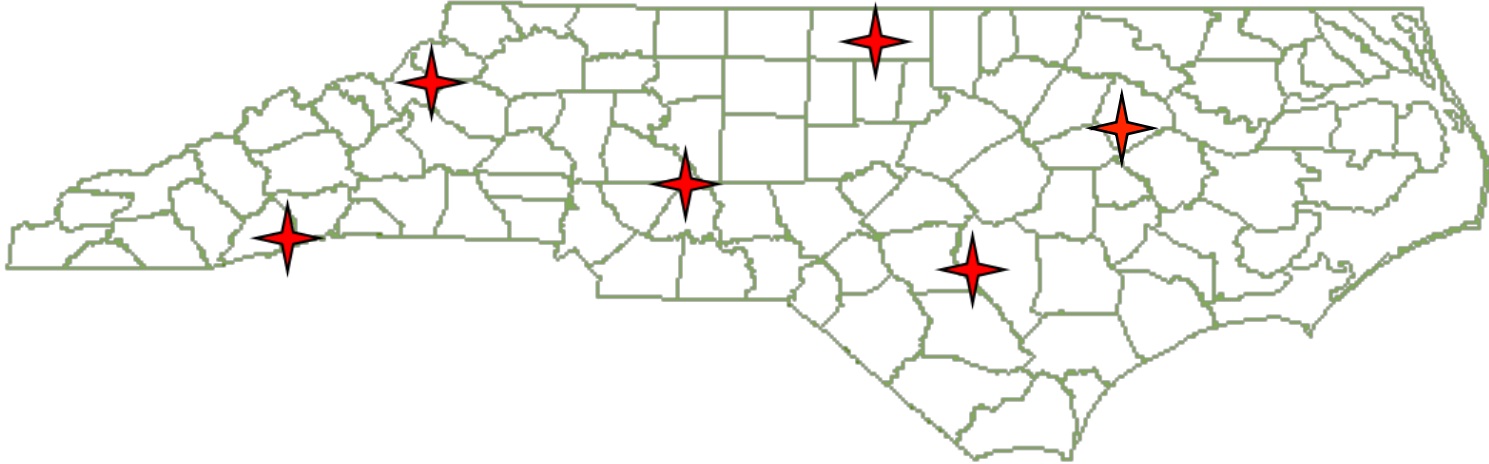
THE ECONOMICS OF EARLY CHILDHOOD INVESTMENT

FOCUS FORUM 2017

EMERGING ISSUES FORUM 2018

What is the **Institute for Emerging Issues**?

- “Think and Do” organization created in 2002.
- Believes when people work together with a shared will and common vision, progress is smarter, more comprehensive, and enduring.
- Over-arching goal is to ensure North Carolina’s economic competitiveness.

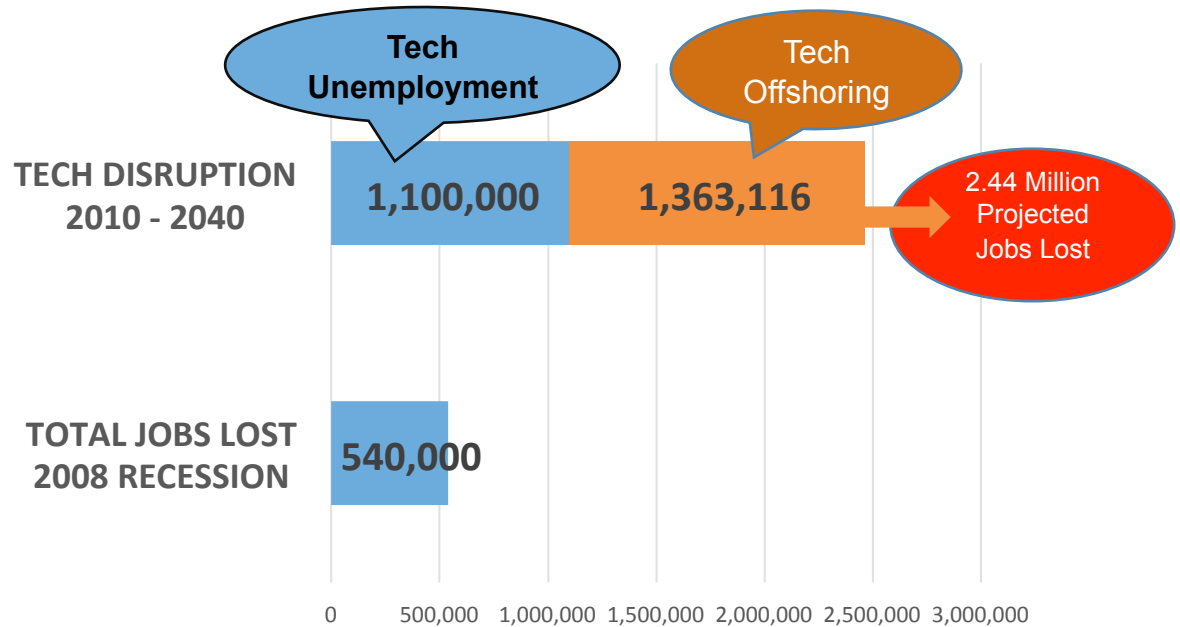


Crib to Career Workshops Summer 2017

The Tech Revolution & America's Greatest Challenge

Job Loss Impacts Due to Tech Disruption

- Automation and technology-enabled offshoring may erase 2.4 million jobs from NC's economy by 2040
- That's five times the jobs lost here during the Great Recession



What about those areas where we have seen job growth?

Of the 20 fastest growing occupations in North Carolina, 11 are low-wage.
Of the remaining nine, three are projected to disappear due to technological advances.



The Charlotte Observer

Politics & Government

April 12, 2017

Self-driving car testing on Triangle Expressway hinges on federal funding

By Anna Douglas





Robots are already replacing delivery drivers in major American cities.

Forbes

FDA Clearance For New Heart Monitor

June 2017

By: Sarah Hedgecock



New technology allows doctors to do electrocardiograms with a smartphone. Huge potential impacts

Industrial Automation

Robots can now
perform
functions that
were exclusively
human



But, there are those who
question the impact of
automation on our
economy...

The zombie robot argument lurches on

There is no evidence that automation leads to joblessness or inequality

*Economic Policy Institute
May 2017*





Robots taking jobs in five years is BS, says GE CEO Jeff Immelt

Arjun Kharpal

Thursday, 15 Jun 2017



Then again, we have our best and brightest telling us that we are witnessing the dawn of a new day in the modern workplace.

--Elon Musk

--Bill Gates

--Stephen Hawking...



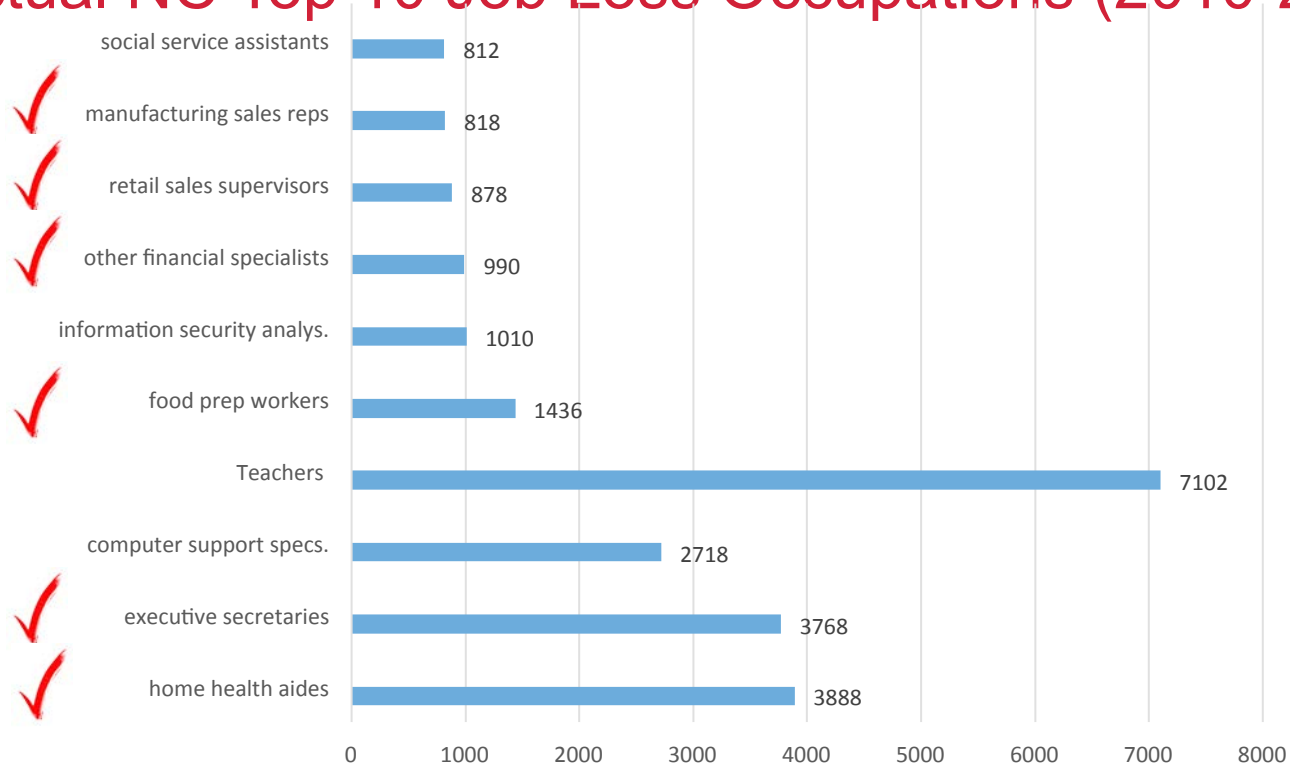
Long term...automation isn't bull---
If we don't have machines and software capable of performing most of the tasks we call labor in 30, 40, 50 years, then it will be a failure of Google and our technology ecosystem.

Google Chairman Eric Schmidt

The Implications for Economic/ Workforce Development & Early Childhood

Evidence is already pointing to the beginnings of a trend of automation decreasing job totals in a number of industries in North Carolina's economy...

Actual NC Top 10 Job Loss Occupations (2010-2015)

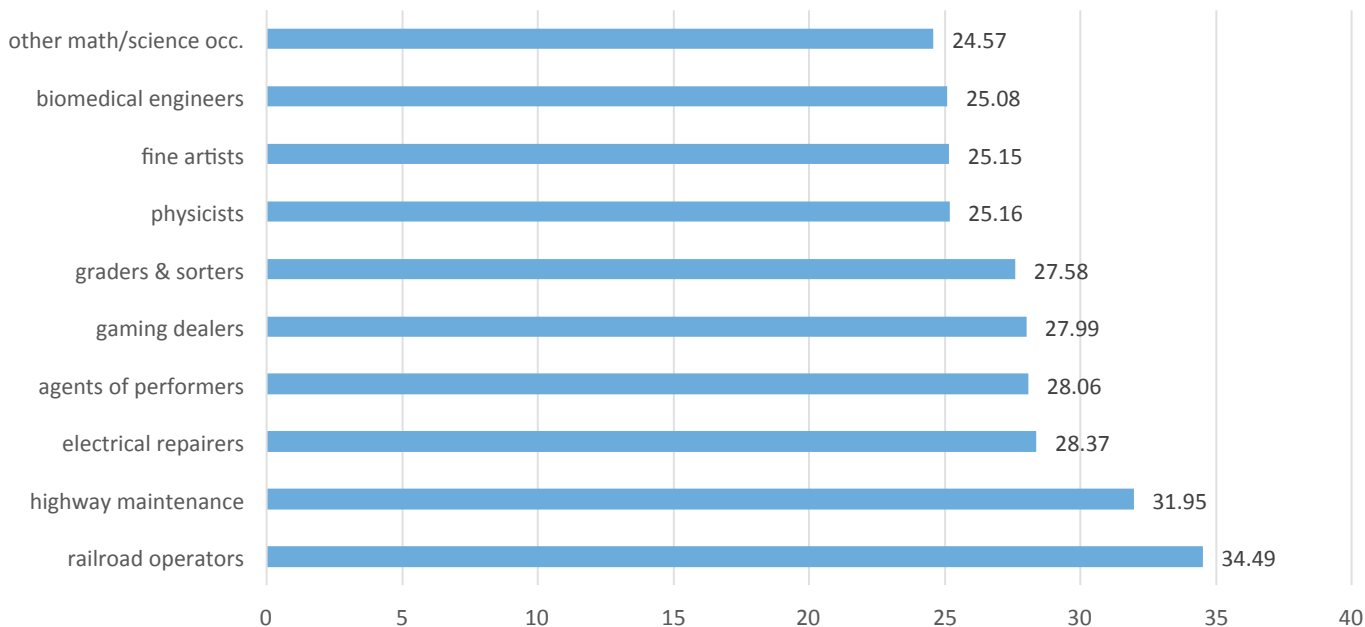


✓ = Confirmed Predictions from IEI's Disruption Index



Emergent job growth leaders are typically those occupations that require higher skills and education

Actual NC Top 10 Job Growth Leaders (2010-2015)



Putting it in Perspective

- Economic Shifts – 65% of ALL jobs will require post secondary degree in 3 yrs
- Greater machine-human interface in workplace will require advanced skills
- Industry Impacts: There is a growing skills gap in many American industries
- US falling farther behind other developed nations in education & skills attainment



England will become the first country in the world to mandate computer programming in primary and secondary schools in the announced 2014 curriculum. Children will start learning to write code when they enter school the age of five, and will not stop until at least 16.

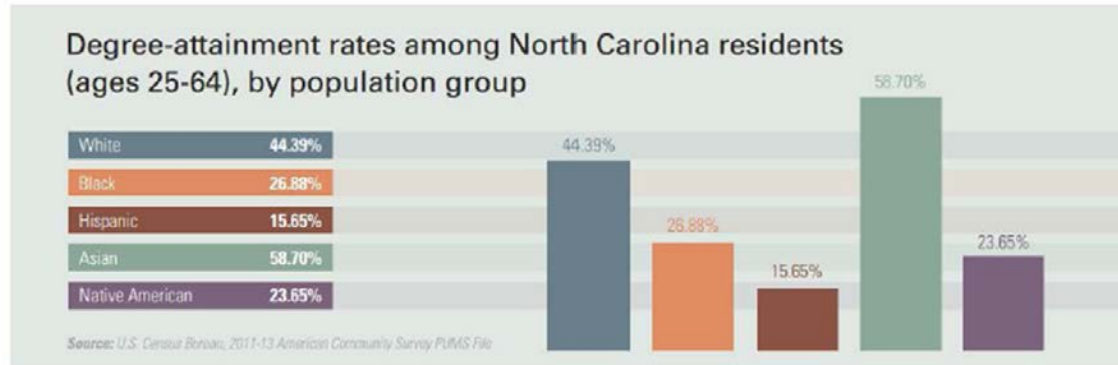


The Class of 2022

In 2022, North Carolina will graduate its first high school class that has more minorities than white students.



Degree attainment in North Carolina



Source: "A Stronger Nation Through Higher Education," Lumina Foundation Annual Report, 2015

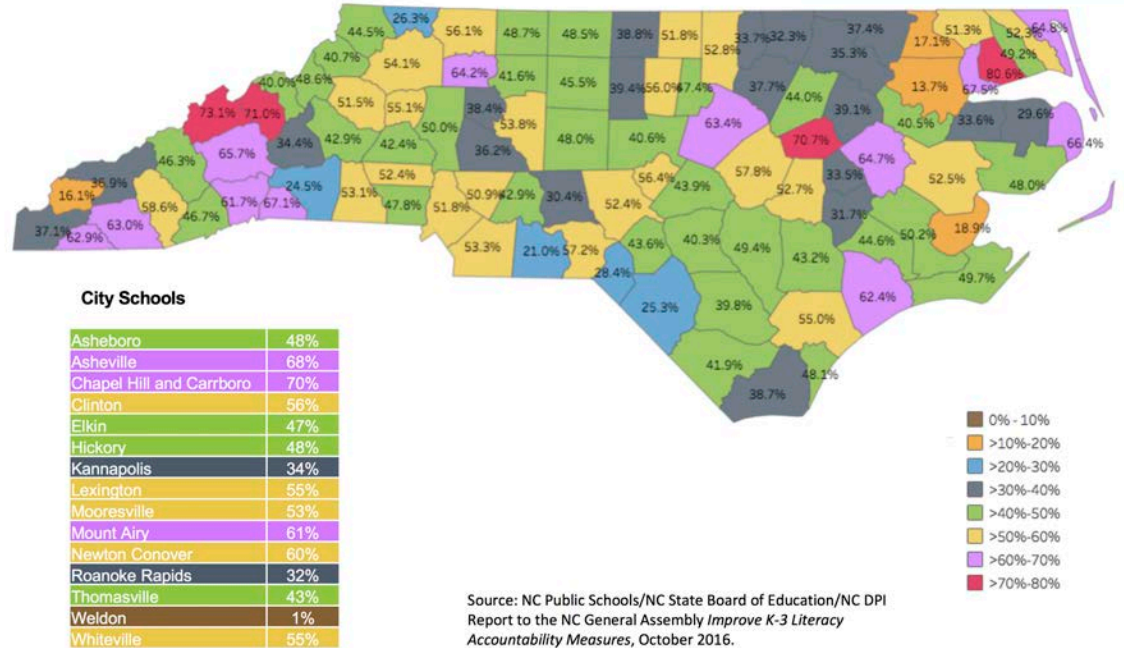


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While race is an important factor, community characteristics are just as important. Low resource communities with very few minorities are dealing with significant talent development deficits as well.

Deficits are visible across the state as early as 1st grade and they compound as kids move through the system.

Percent of First Graders Proficient in Reading





CRIB TO CAREER NORTH CAROLINA'S TRUE WORKFORCE PIPELINE



5.4%
of children
ages 0-5
receive early
intervention
or school entry
services

ONLY
50%
of 1st graders
were proficient
in reading

ONLY
38%
of 4th graders
were proficient
by NAEP
reading
standards

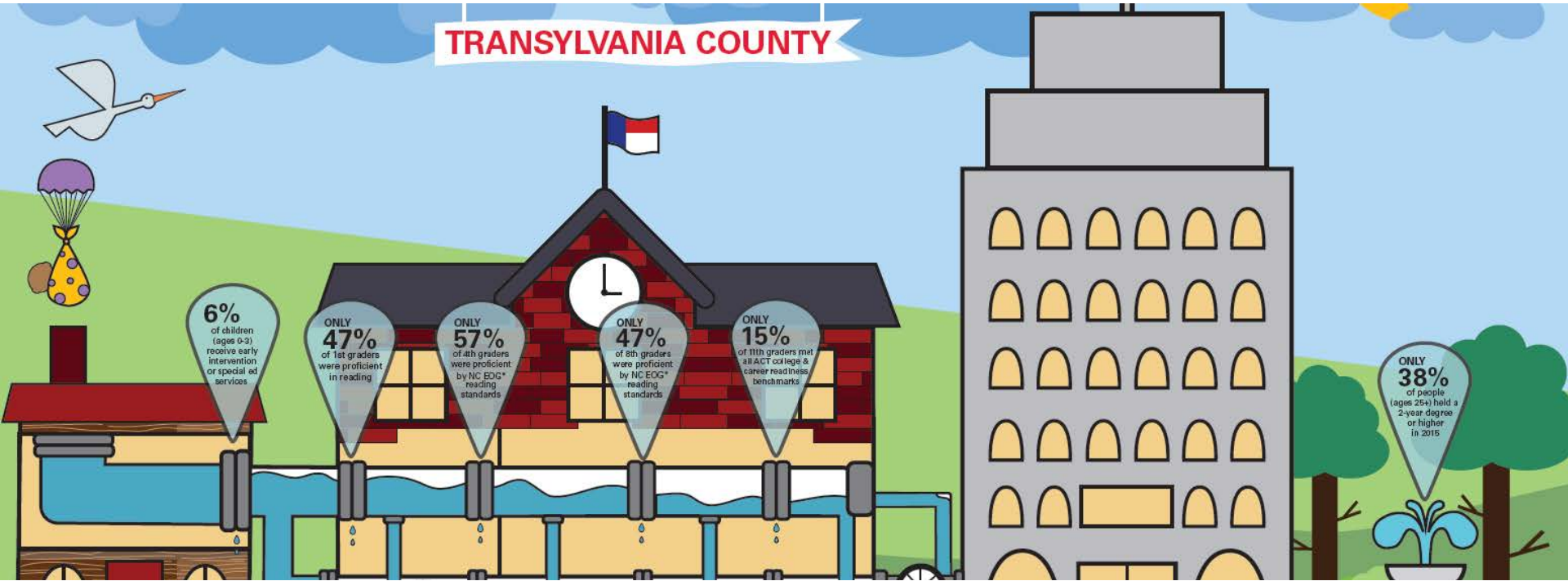
ONLY
30%
of 8th graders
were proficient
by NAEP
reading
standards

ONLY
15.4%
of 11th or 12th grad
SAT college &
career readiness
scores

ONLY
37%
of people
ages 25+ hold a
2-year degree
or higher
in 2016

LOW WAGE
JOBS

TRANSYLVANIA COUNTY



BUNCOMBE COUNTY

5.7%

of children
(ages 0-3)
receive early
intervention
or special ed
services

ONLY
66%

of 1st graders
were proficient
in reading

ONLY
51%

of 4th graders
were proficient
by NC EOG*
reading
standards

ONLY
48%

of 8th graders
were proficient
by NC EOG*
reading
standards

ONLY
18%

of 11th graders met
all ACT college &
career readiness
benchmarks

ONLY
44%

of people
(ages 25+) held a
2-year degree
or higher
in 2015

HENDERSON COUNTY

5.5%
of children
(ages 0-3)
receive early
intervention
or special ed
services

ONLY
62%
of 1st graders
were proficient
in reading

ONLY
54%
of 4th graders
were proficient
by NC EOG*
reading
standards

ONLY
56%
of 8th graders
were proficient
by NC EOG*
reading
standards

ONLY
16%
of 11th graders met
all ACT college &
career readiness
benchmarks

ONLY
38%
of people
(ages 25+) held a
2-year degree
or higher
in 2015

CHEROKEE COUNTY

7.8%
of children
(ages 0-2)
receive early
intervention
or special ed
services

ONLY
37%
of 1st graders
were proficient
in reading

ONLY
46%
of 4th graders
were proficient
by NC EOG*
reading
standards

ONLY
41%
of 8th graders
were proficient
by NC EOG*
reading
standards

ONLY
13%
of 11th graders met
all ACT college &
career readiness
benchmarks

ONLY
27%
of people
(ages 25+)
held a
2-year degree
or higher
in 2015

2017 Emerging Issues Forum Findings & Insights



Dr. Nathan Fox
University of Maryland



Child Brain Development

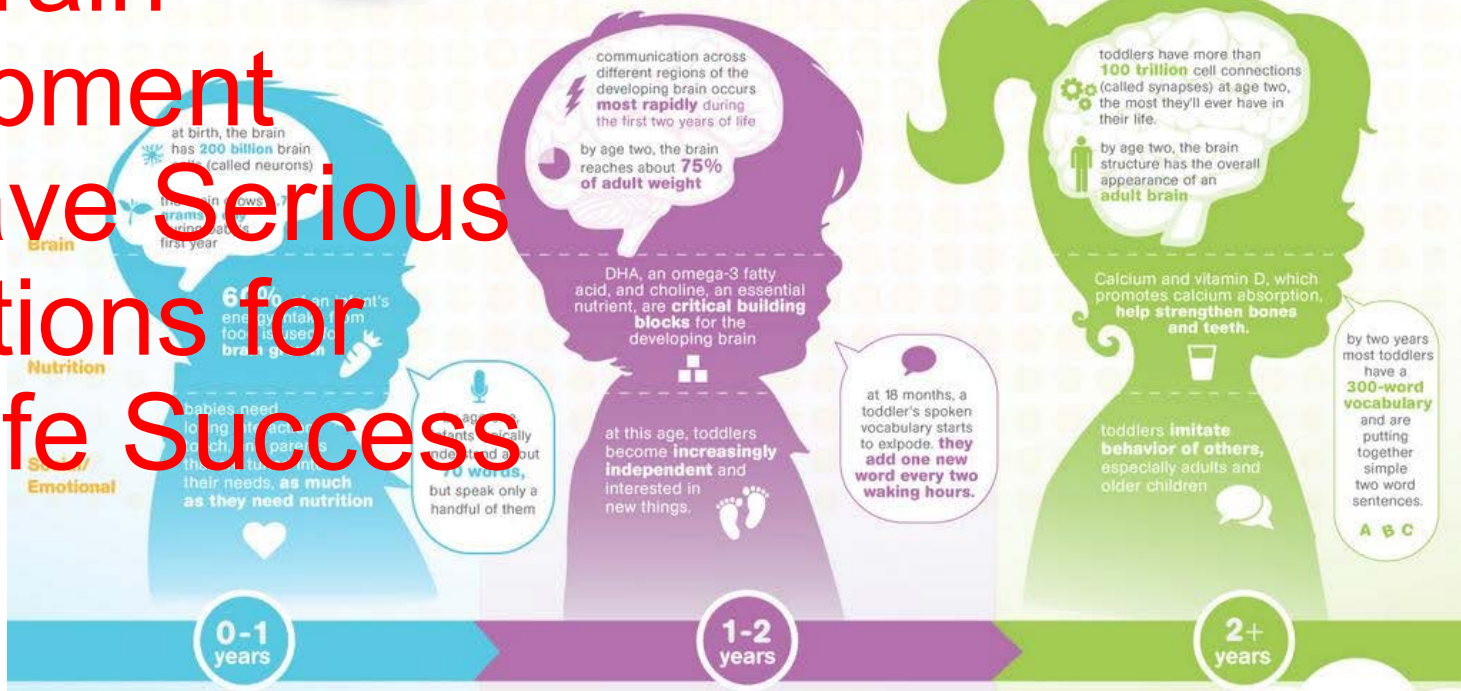


GOOD NUTRITION LEADS TO MORE STABLE MOODS, INCREASES IN ABILITY TO PAY ATTENTION, AND IMPROVED MEMORY.



LOVING AND CONSISTENT CARE-GIVING LEADS TO A BRAIN THAT HAS AN ABILITY TO LEARN TO DELAY GRATIFICATION, PROBLEM SOLVE, AND HAVE EMPATHY FOR OTHERS.

Early Brain Development Can Have Serious Implications for Later Life Success



Dr. Robert Grunewald
Federal Reserve Bank



Quality Early
Childhood
Programming
Can Pay off Big
Dividends for a
Local Community



Kate McEnroe
Industrial Site Selection
Consultant



Industries are Investing in Communities with Strong Early Childhood Systems



**GOOGLE TO ROLL OUT
AFTER-SCHOOL CODING
CLASSES FOR ONE
HUNDRED THOUSAND
NEW YORK CITY
SCHOOL KIDS**











As part of Mayor de Blasio's \$10 million Tech Talent Pipeline initiative, launched last May, the program will give 100,000 school kids the opportunity to learn how to code using Google's CS First, which is aimed to help the youngsters learn.











We learned that local communities are eager to find solutions to this problem. Many initiatives underway, but with little coordination.

So...how does North
Carolina's talent pipeline
stack up against the rest
of the nation?

Best States for Pre-K - 12

Pre-K - 12 Rank	State	College Readiness	High School Grad. Rate	NAEP Math Scores	NAEP Reading Scores	Pre-K Quality	Preschool Enrollment
#1	 New Hampshire	2	6	2	1	-	5
#2	 New Jersey	12	3	4	5	7	1
#3	 Massachusetts	1	19	1	2	19	3
#4	 Connecticut	3	13	20	4	27	2
#5	 Vermont	6	8	5	3	5	13
#6	 Iowa	17	1	14	16	22	6
#7	 Maryland	13	17	25	18	10	7
#8	 Minnesota	23	32	3	6	5	17
#9	 Nebraska	22	2	13	10	10	16
#10	 Illinois	25	20	28	26	12	4

Where We Rank

Pre-K - 12 Rank	State	College Readiness	High School Grad. Rate	NAEP Math Scores	NAEP Reading Scores	Pre-K Quality	Preschool Enrollment
#33	 Arkansas	38	15	44	45	5	20
#34	 North Carolina	45	26	30	39	1	41
#35	 Michigan	30	36	38	31	10	27
#36	 Idaho	14	41	23	13	-	50
#37	 Georgia	24	46	36	37	12	10
#38	 West Virginia	27	25	46	42	1	45
#39	 Alabama	46	18	50	46	1	34
#40	 Hawaii	47	30	35	47	12	25

kidonomics Imperatives

- **Establish Early Childhood as Human Capital Investment**
- **Make the Jobs Connection - Implications for Industry Recruiting**
- **Demonstrate the Local Fiscal Impact of Investing in Early Childhood**
- **Confront the Hard Questions:**
 - **Who Benefits & Who Pays?**
 - **What's the Ideal Role of the State Govt.?**

kidonomics

The Economics of Early Childhood Investment

Mechanisms for Action:

- Blue Ribbon Commission
- Community Forums & Workshops
- Emerging Issues Forum
- Special Emphasis Events
- Custom Research Products
- Digital Engagement Platforms

The ROI for NC & Your Community

ECONOMIC DEVELOPMENT

RETURN ON INVESTMENT ESTIMATES

STRATEGY	ROI
Early Childhood Investment	For every \$1 --- \$10.30 (Average of 3 studies)
College/University Investment	For every \$1 ---- \$6.80 (Economic Modeling Specialist Intl.)
Job Grants Programs	For every \$1 ---- \$6.40 (Florida Economic Development Study)
Industry Tax Credits	For every \$1 ---- \$2.30 Florida Economic Development Study
Infrastructure Investments	For every \$1 ---- \$1.44 (Moodys Analytics)

NC Infant Health Investment Impact?



\$13.4 billion return

**\$622 million
investment**



NC Early Childhood Education Impact?

E A R L Y C H I L D H O O D
E D U C A T I O N

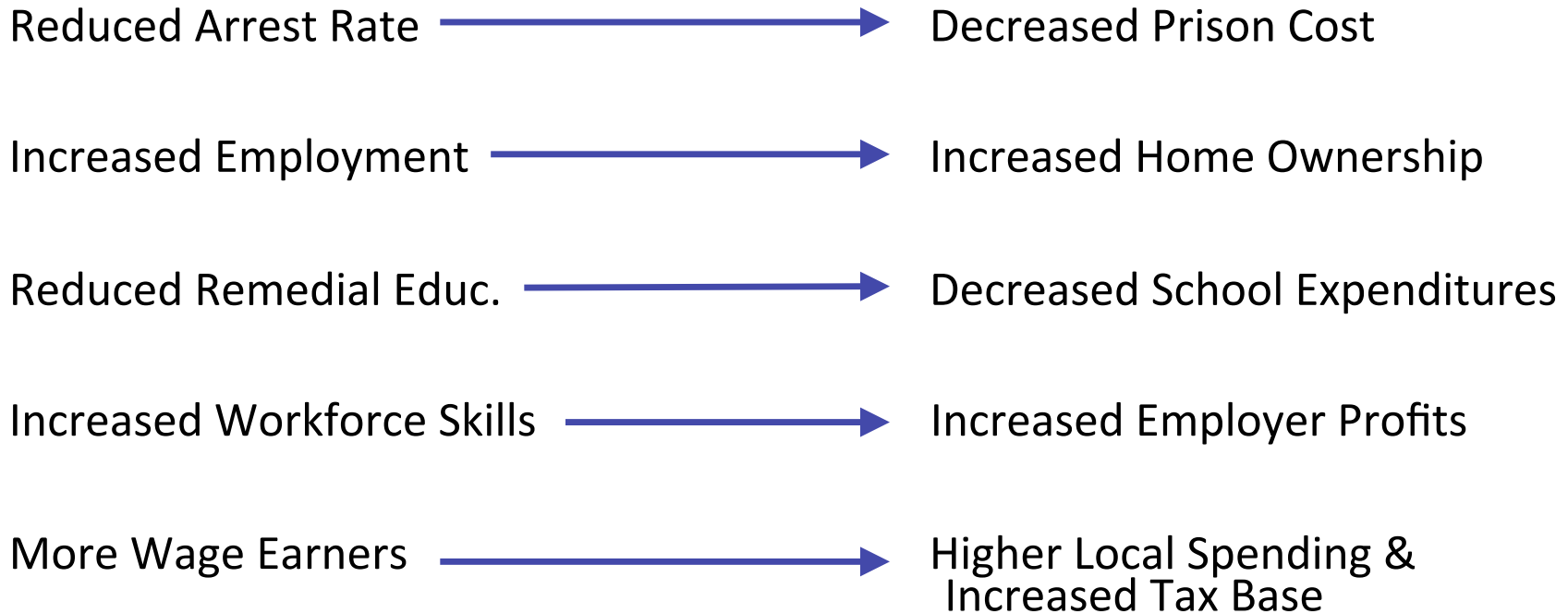


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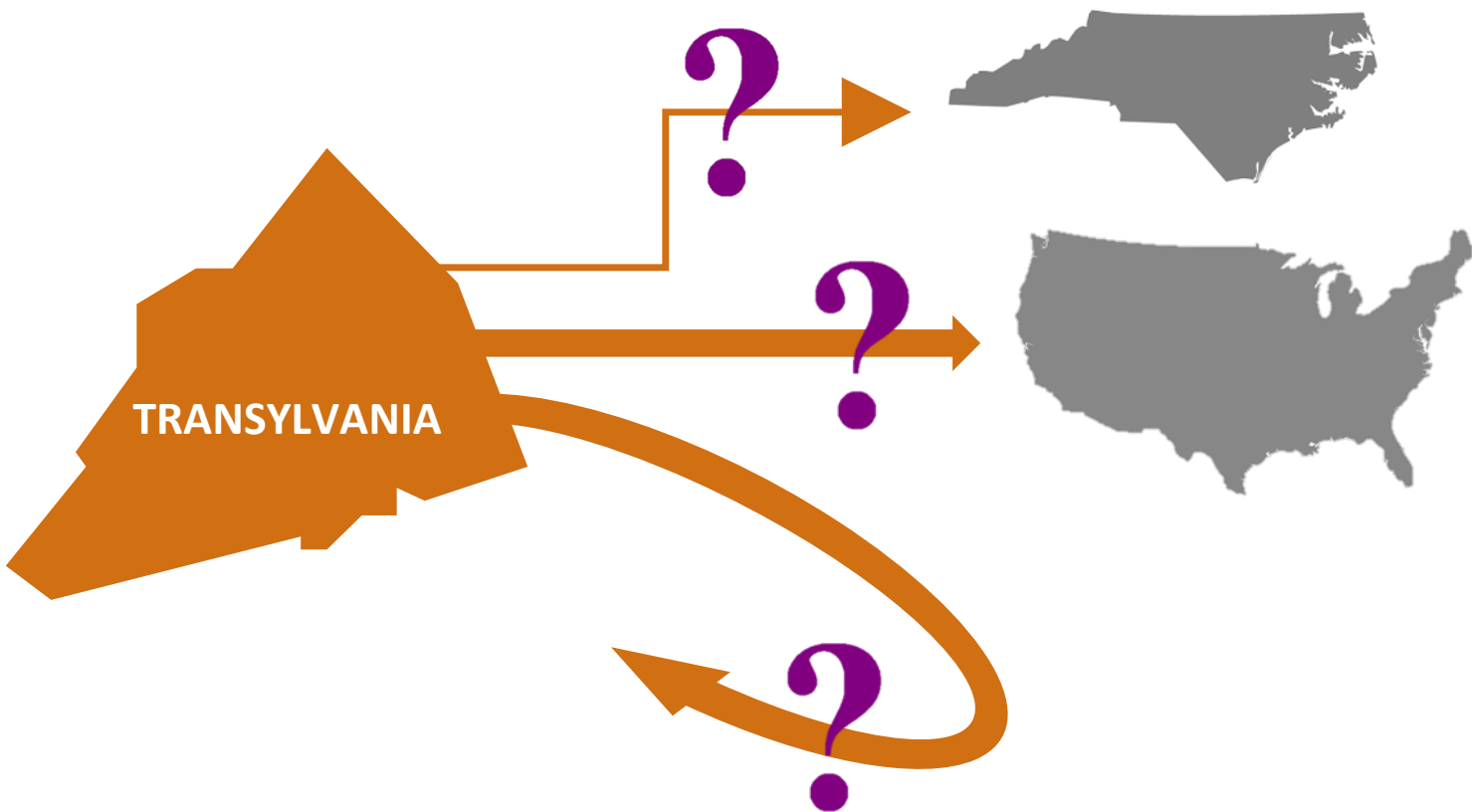
Impact on NC Property Values?



Where Are the Cost Savings & Benefits?



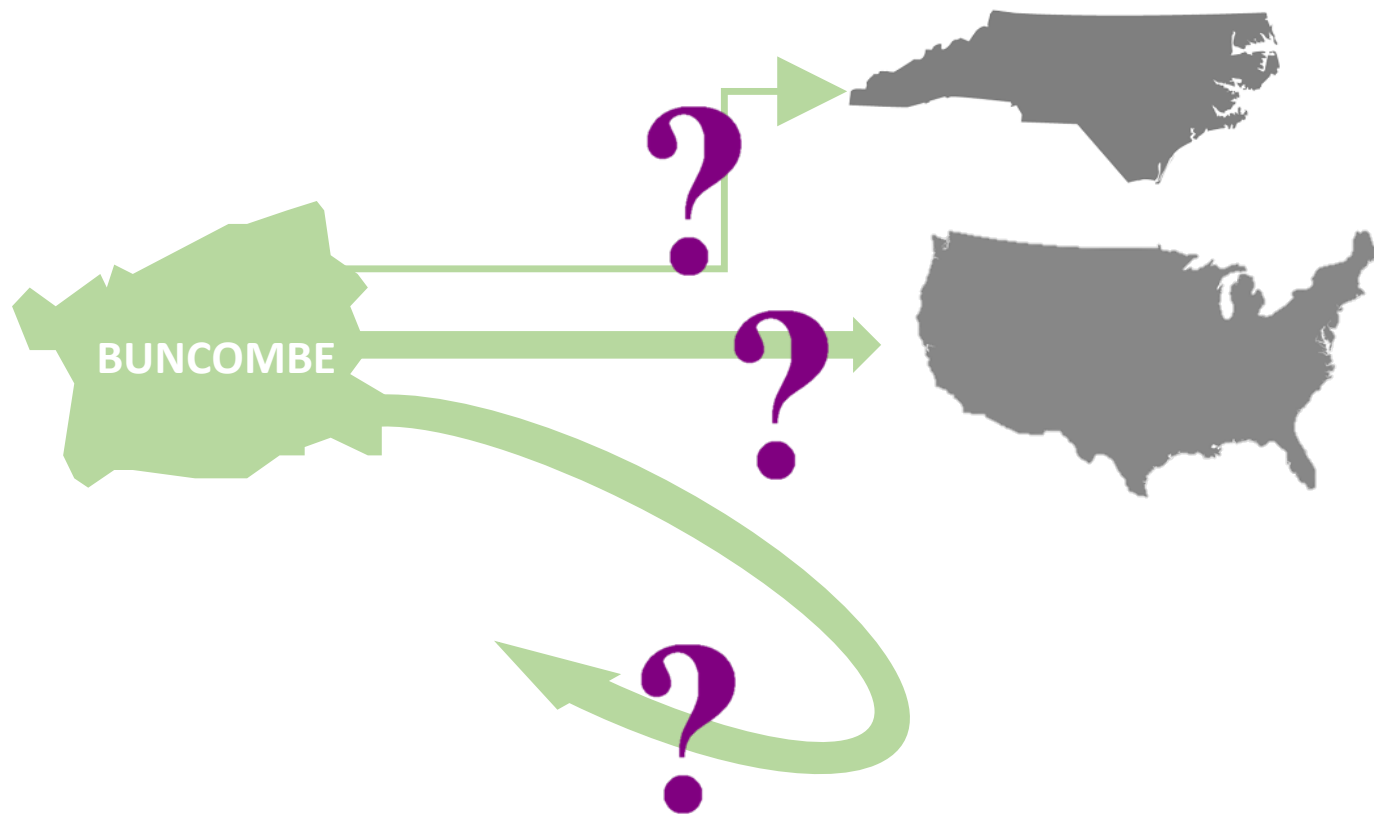
Although the investments are made in your community, the benefits accrue to a mix of federal, state, and local



Estimated Investment Returns

$$\text{ROI} = \frac{(\text{Gain from Investment} - \text{Cost of Investment})}{\text{Cost of Investment}}$$

TRANSYLVANIA	Present Value	Total Return
PRE-K	\$13,119,322	\$72,817,710
NURSE FAM	\$39,746,353	\$220,608,840



Estimated Investment Returns

$$\text{ROI} = \frac{(\text{Gain from Investment} - \text{Cost of Investment})}{\text{Cost of Investment}}$$

BUNCOMBE	Present Value	Total Return
PRE-K	\$63,868,459	\$354,496,590
NURSE FAM	\$1,824,148,440	\$328,650,693

Lower health care costs for industry, workers, & Medicaid

Early childhood
program participants
were shown to have
lower rates of
cardiovascular disease
and other chronic
ailments.

Science Magazine

2014



The magnitude of a total system improvement initiative and sustained investment would be even greater!

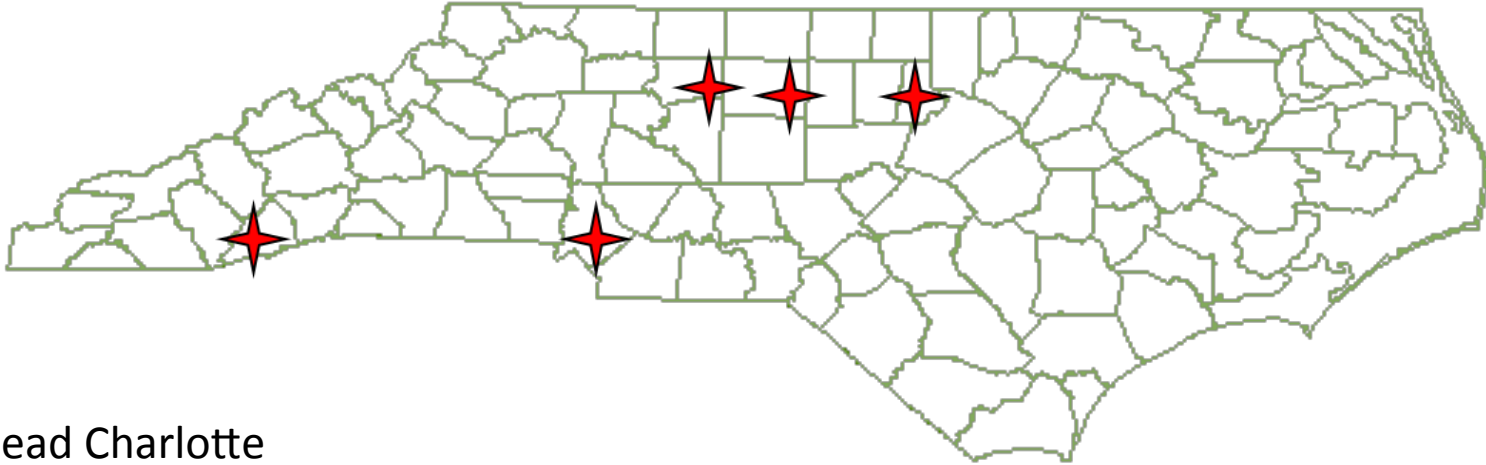


Lessons & Insights From:

- Read Charlotte
- Great Expectations
- Get Ready Guilford
- East Durham Children's Initiative
- Transylvania County



Early Childhood Initiatives



- Read Charlotte
- Get Ready Guilford
- Great Expectations (Winston)
- Transylvania Count ECI
- East Durham Children's Initiative

Key Findings

- Must have heavyweight champions
- Data must guide planning and decision making
- Money is important but not critical in beginning
- Backbone organization role, key to achieving results, but you decide what it looks like
- Find a governance model that gets results

Issues to Consider – Appetite

- **How difficult were past change initiatives, and what were the major obstacles?**
- **Is there a potential enthusiasm gap among some stakeholders that will need to be bridged?**

On Leadership...

- **If your community does not have a ready champion, who or what organization(s) led past initiatives?**
- **In past initiatives, how did they go about securing the support of relevant stakeholders?**

On Funding....

- **High levels of funding not necessarily a requirement...**
- **Leveraging existing resources, talents, and efforts can limit the costs**
- **Community ownership of a branded initiative can lead to more successful grant applications**

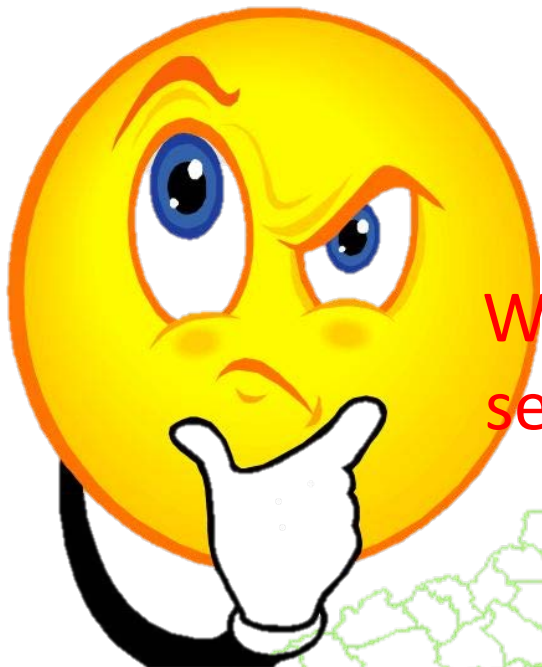
The Importance of Data

- **Necessary to move beyond data informed to being data driven**
- **Data can be contentious, may need to engage an impartial data partner**
- **A rigorous data probe may take 6 months or more**

Backbone Organizations

- **Guide vision and strategy**
- **Support aligned activities**
- **Establish shared measurement practices**
- **Build public will**
- **Advance policy**
- **Keep stakeholders connected**
- **Mobilize funding**

Next Step....
We Listen to You



2018 Early Childhood Demonstration Projects.

Would your community like to be
selected for technical assistance?



Blue Ribbon Commission



Mandy Cohen
DHHS Secretary



Jim Hansen
Pres. PNC Bank



Senator
Chad Barefoot



Brenda Howerton
NCACC President

**Local Economic
Prosperity
Pyramid**



It's a mistake not to view Early Childhood Development as Economic Development

James Heckman

Nobel Economist



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