

## **World-Class Knowledge**



English
Math
Multiple languages
STE<del>M</del>
Arts
Social Sciences

## What's required

Requirements for Earning a South Carolina High School Diploma

The student must earn a total of 24 units of credit as follows:

- English language arts 4.0
- Mathematics 4.0
- · Science 3.0
- U.S. History and Constitution 1.0
- Economics 0.5
- U.S. Government 0.5
- · Other social studies 1.0
- Physical education or Junior ROTC 1.0
- Computer science (including keyboarding) 1.0
- Foreign language or career and technology education 1.0
- Electives 7.0

## What to choose

- 1. English (4 credits) ✓
- 2. Math (4 credits) ✓
- 3. Multiple languages (1 credit maybe—Foreign language)
- 4. STEM
  - Science (3 credits) ✓
  - *Technology* (1 credit--Computer Science) ✓
  - **Engineering** (1 credit maybe--CATE)

PLUS... 7 credits in electives ✓

- 5. Arts
- **6. Social Sciences** (3 credits: U.S. History and Constitution, Economics, U.S. Government, Other social studies) ✓

## How are we doing?

### **ACT Scores in 2016**

	SC	NC	GA	US
English	17.3	17.8	20.7	20.1
Reading	19.0	19.5	21.8	21.3
Math	18.5	19.4	20.6	20.6
Science	18.6	19.2	21.0	20.8
Composite	18.5	19.1	21.1	20.8

## What Employers Want...English

- Data from Help Wanted Online® (a product of The Conference Board) says that <u>7.2% of the over 506,000 job advertisements</u> in the last 12 months mention English specifically as a job skill.
- "Graduates need strong communication and problem-solving skills if
  they want to interview well and succeed in the workplace, because
  effective writing, speaking, and critical thinking enables you to
  accomplish business goals and get ahead." Dan Schawbel, Future
  Workplace
- According to O\*Net, there are <u>757 occupations (out of the 1,110)</u> or 68% in their database) where ENGLISH skills are considered "important."

## What Employers Want...Math

- Math was mentioned as a specific skill in <u>18,230 job ads</u> in the last 12 months.
- According to O\*Net, there are <u>231 occupations (out of the 1,110) or</u>
   21% in their database) where MATH skills are considered "important."
- "...the act of learning how to do the math establishes a new kind of brain wiring in your mind, a kind of problem solving brain wiring. So it's not about what you learn, it's about what methods, tools, and tactics you have to develop in order to solve the problem..." (Astrophysicist Neil deGrasse Tyson)

## What Employers Want...Languages

- 3,270 online job ads in SC mention the need for a "bilingual" worker or a worker with a specific foreign language skill in the last 12 months
- Occupations in these areas have a high need for multi-lingual workers:
  - -Human Resources
- -Marketing
- -Insurance

- -Law Enforcement
- -Healthcare
- -Real Estate

- -Customer Service
- -Banking (1/3 of ads for Bank of America mention bi-lingual)
- Bilingual workers also earn more: \$1 more per hour; 5-20% increase
- · Hispanic population is growing...
  - o 2000: 2.4% of the population
  - 0 2010: 4.6%
  - o 2015: 5.3% (avg. age was 26 years old)

# What are we giving them?... Languages

- Schools must offer levels 1 and 2 of at least one modern or classical language. Most state four-year colleges/universities require at least two units of the same modern or classical language for admission. (SBE Regulation 43-234 Defined Program grades 9-12)
- Of the 24 required credits to graduate, 1.0 credit is required for "foreign language or career and technology education."
- 56.6% of high schools offer 4 language "opportunities"; 23.7% offer 1 opportunity; 9 schools offer "-1"

(Source: http://ed.sc.gov/data/report-cards/state-report-cards/2016/data-files-for-researchers-2016/)

 383 CATE students statewide were in the foreign, modern, or world language pathways in 2015-16

# What Employers Want... Science/STEM

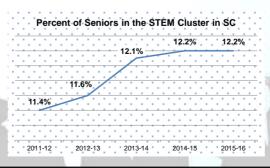
- According to O\*Net, there are <u>173 occupations (out of the 1,110) or</u> <u>16%</u> in their database) where SCIENCE skills are considered "important."
- Science was mentioned in 23,101 job ads in the last 12 months.
- Three are 308 occupations (28%) listed under STEM in O\*Net.
- "STEM" was mentioned in 502 job ads in the last 12 months.

## What are we giving them?... Science/STEM

- According to ACT, <u>24,325 graduates (13%) expressed an interest in</u> STEM in 2016.
- According to ACT, the percentage of SC <u>students interested in STEM</u> DECREASED by 4%.

(ACT uses these categories to define STEM: Science, Computer Science, Math, Medical/Health, Engineering, and Technology.)

Data about career clusters in SC differ from the ACT numbers...



## **But what about the Arts?**

#### **BENEFITS OF ART**

- Motor skills: Gross and fine motor skills
- Cognitive skills: Creative thinking, problem solving, making decisions, risktaking
- Visual learning: Visual-spatial skills, interpret visual information
- Inventiveness: Thinking creatively, expression, innovation, resourcefulness
- People skills: Working in groups, flexibility, fairness, contribution

"Numerous studies have shown that **exposure to the arts** lead to <u>higher scores on standardized testing</u> and greater levels of <u>understanding in other subjects such as languages</u>, <u>history</u>, <u>geography and science</u>. But exposure to arts goes beyond testing. It has been shown to help **reduce student dropout**, **raise student attendance**, **develop better teamwork**, **increase student creativity and help to better prepare students for the workplace**. Arts may reach students that normally cannot be reached through traditional classroom means." (<a href="http://www.greenwichedgroup.com/blog/2016/9/29/the-importance-of-art-education">http://www.greenwichedgroup.com/blog/2016/9/29/the-importance-of-art-education</a>)

## Looking closer... PROFILE OF THE South Carolina Graduate WORLD-CLASS WORLD-CLASS KNOWLEDGE SKILLS Creativity and innovation Rigorous standards in language arts Ordical thinking and and math for career and college problem solving readness Collaboration and teamwork Multiple languages, science, technology, Communication, information, engineering, mathematics (STEM), arts and media and technology ROCKE SCIENCES Knowing how to learn LIFE AND CAREER CHARACTERISTICS Integrity · Self-direction · Global perspective · enseverance Work ethic · herpersonal skills. COMPTTTIVENESS

# What employers want... Global Perspective

- 1,200 businesses in SC are foreign-owned
- They employ more than 131,900 residents.
- That equals 8.2% of the state's private industry employment



# What employers want... Soft Skills

Oral and written communication

Integrity

Marketing

Team-oriented, teamwork

**Microsoft Office** 

**Detail oriented** 

**Customer service oriented** 

**Problem solving** 

**Organizational skills** 

**High Energy** 

Work independently

Self-starting / Self-motivated

Creativity

Coaching

**Customer satisfaction** 

Employers define soft skills as the skills a jobseeker <u>should</u> walk in the door with.

## What employers REALLY want?

## **Work Ethic**

- It is a belief in the moral benefit and importance of work and its inherent ability to strengthen character. (www.dictionary.com)
- Small Business Chronicle says a good work ethic includes reliability, dedication, productivity, cooperation, and character.

Workers with these traits aren't easy to come by, said Cindy Herold, who runs the Old Europe restaurant in Washington. In a moment of frustration, Mrs. Herold recently put a sign outside seeking workers with "common sense."

"I can teach somebody how to slice and dice onions. I can teach somebody how to cook a soup. But it's hard to teach someone normal manners, or what you consider work ethic." she said.

# What employers want... Hard Skills

Freight+ (shipping software)
Quality Assurance
Preventive maintenance
Forklifts
Quality control
Tractor-trailer driving
Bilingual
English speaker
Technical support
Computer-based training
Pallet jacks
Geriatrics
Medicaid
Mathematics
Pediatrics

4 in material moving 3 in healthcare 2 related to quality 2 related to language

## **Current Employment**

#### Employment by Industry in SC, 2016

Industry Total, All Industries	Avg. Employment 1,995,932	% of Total
Health Care and Social Assistance	261,584	13.1%
Retail Trade	247,866	12.4%
Manufacturing	238,128	11.9%
Accommodation and Food Services	218,364	10.9%
Educational Services	168,364	8.4%
Admin./Support and Waste Mgmnt./Remediation*	158,633	7.9%
Public Administration	113,323	5.7%
Professional, Scientific, and Technical Services	95,059	4.8%
Construction	94,480	4.7%
Wholesale Trade	71,742	3.6%
Transportation and Warehousing	69,786	3.5%
Finance and Insurance	68,244	3.4%
Other Services	51,629	2.6%
Arts, Entertainment, and Recreation	31,992	1.6%
Real Estate and Rental and Leasing	30,058	1.5%
Information	29,046	1.5%
Management of Companies and Enterprises	17,935	0.9%
Utilities	17,487	0.9%
Agriculture, Forestry, Fishing and Hunting	10,747	0.5%
Mining, Quarrying, and Oil and Gas Extraction	1,464	0.1%
*Includes temporary employment agencies/companies		

General Medical and Surgical Hospitals Nursing Care Facilities (Skilled Nursing) Individual and Family Services Home Health Care Services Continuing Care Retirement Communities

# What employers want NOW... Occupations

Top 20 Occupations in Online Job Advertisements in SC, June 2016 to May 2017

- 1. Heavy and Tractor-Trailer Truck Drivers
- 2. Registered Nurses
- 3. First-Line Supervisors of Retail Sales Workers
- 4. Retail Salespersons
- 5. Customer Service Representatives
- 6. First-Line Supervisors of Food Prep./Serving Workers
- 7. First-Line Supervisors of Office/Admin. Workers
- 8. Maintenance and Repair Workers, General
- 9. Stock Clerks and Order Fillers
- 10. Social and Human Service Assistants

- 11. Cashiers
- 12. Medical and Health Services Managers
- 13. Computer User Support Specialists
- 14. First-Line Supervisors of Production Workers
- 15. Computer Occupations, All Other 16. Industrial Engineers
- 17. Sales Reps., Wholesale/Mfg., Exc. Technical/Scientific Products
- 18. Insurance Sales Agents
- 19. Combined Food Prep./Serving Workers, Including Fast Food
- 20. Licensed Practical and Licensed Vocational Nurses

ource: The Conference Board's Help Wanted Online® data serie

# What employers want NOW... Job Ads by Education

Job Advertisements by Education Level in SC, June 2016-May 2017

HS Diploma/GED	211,359	42.8%
Associate's	116,357	23.6%
Bachelor's	141,762	28.7%
Master's	11,112	2.3%
Doctorate	12,702	2.6%
	493,292	100.0%

# What are we giving employers now... Career Clusters

Career Cluster of SC High School Seniors, 2015-16

	% of 12th	
Cluster	graders	Top Pathway*
Health Science	24.1%	Therapeutic Services
Arts, Audio-Video Technology, and Communications	14.9%	Performing Arts
Science, Technology, Engineering, and Mathematics	12.2%	Engineering
Business Management and Administration	7.5%	General Management
Education and Training	6.8%	Teacher Education
Law, Public Safety, Corrections, and Security	6.3%	Military Science
Human Services	5.1%	Cosmetology
Government and Public Administration	4.6%	Military Science
Transportation, Distribution, and Logistics	3.1%	Automotive Technology
Information Technology	2.9%	Programming and Software Development
Agriculture, Food, and Natural Resources	2.9%	Environmental and Natural Resources Management
Architecture & Construction	2.8%	Building Construction
Manufacturing	2.3%	Welding
Hospitality and Tourism	2.3%	Culinary Arts
Marketing	1.3%	Marketing Communications
Finance	1.0%	Accounting
TOTAL	100.0%	

Note: 247 students did not declare a specific cluster.

\*Greenville did not report pathways for students

# What employers want... Certifications

9 are in healthcare 4 are related to transportation

Top 20 Certifications in Online Job Ads in SC, June 2016 to May 2017

1. Driver's License	11. Secret Clearance		
2. Commercial Driver's License	12. Advanced Cardiac Life Support		
3. Certified Registered Nurse	13. Food safety programs		
4. Basic Life Support	14. Licensed Practical Nurse		
5. HAZMAT	15. Certified in Nursing Administration		
6. Certification in CPR	16. Basic Cardiac Life Support		
7. OSHA Certification	17. Health Insurance Portability and Accountability Act - HIPPA		
8. Sales Associate	18. Accounting		
9. Continuing Education	19. DOT Medical card		
10. Certified Purchasing Manager	20. Board Certified		

# What we are giving them... Certifications

**CATE Completers in 2014-15: 10,459** 

11,185 assessments given

Earned Industry Credential: 4,015 (38%)

# What employers want... WorkKeys

- · WorkKeys is a job skills assessment.
- It helps employers select, hire, and train the most qualified candidate.
- Test questions are based on everyday work situations.
- WorkKeys can measure 10 workplace skills, but the ones 11<sup>th</sup> graders take are:
  - o Applied Mathematics
  - o Locating for Information
  - Reading for Information

Employers use WorkKeys scores to help with hiring! Over 3,100 employers in SC have endorsed WorkKeys.

Amazon, Allied Barton Security, Colonial Life, M.B. Kahn Construction, Midlands Tech, Michelin, Boeing, Sloan Construction, Sizemore Security, Amazon, Firestone, Haile Gold Mine

# What we are giving them... WorkKeys

WorkKeys scores translate into a "metallic" level for the National Career Readiness Certificate (NCRC).

		% of jobs
	Score	qualified for
Bronze	3	17
Silver	4	69
Gold	5	93
Platinum	6	99

	Bronze	Silver	Gold	Platinum
South Carolina	21.7	47.7	17.2	0.2
BAMBERG ONE	21.0	54.3	13.3	0.0
CHARLESTON COUNTY	18.9	44.2	24.3	0.5
DILLON FOUR	31.1	47.7	6.4	0.0
GEORGETOWN	25.5	49.1	11.6	0.0
HORRY COUNTY	18.1	51.6	19.6	0.1
LEXINGTON COUNTY THREE	23.1	47.6	14.0	0.7
ORANGEBURG THREE	33.0	37.2	4.3	0.0
SALUDA COUNTY	23.1	51.2	6.6	0.0
UNION COUNTY	24.3	46.7	12.9	0.0
YORK COUNTY THREE	20.5	49.5	17.5	0.1

# What employers want in 2024... Occupations

#### Top 20 Projected Occupations in SC, 2014-24

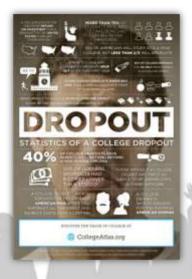
Projected Occupation	Education/Experience/On-the-Job Training	Career Cluster
Combined Food Prep./Serving Workers, Inc. Fast Food	Less than HS+short OJT	Hospitality & Tourism
Registered Nurses	Bachelor's	Health Science
Team Assemblers	HS Diploma/GED+moderate OJT	Manufacturing
Retail Salespersons	Less than HS+short OJT	Marketing & Sales
Laborers and Material Movers	Less than HS+short OJT	Transportation, Distribution & Logistics
Customer Service Representatives	HS Diploma/GED+short OJT	Business Management & Administration
Home Health Aides	Less than HS+short OJT	Health Science
Cooks, Restaurant	Less than HS+less than 5 yrs. exp.+moderate OJT	Hospitality & Tourism
Janitors	Less than HS+short OJT	Hospitality & Tourism
Personal Care Aides	Less than HS+short OJT	Human Services
Nursing Assistants	Postsecondary nondegree	Health Science
General and Operations Managers	Bachelor's+5 yrs. or more exp.	Business Management & Administration
Waiters and Waitresses	Less than HS+short OJT	Hospitality & Tourism
Construction Laborers	Less than HS+short OJT	Architecture & Construction
Heavy and Tractor-Trailer Truck Drivers	Postsecondary nondegree+short OJT	Transportation, Distribution & Logistics
First-Line Supervisors of Food Prep./Serving Workers	HS Diploma/GED+less than 5 yrs. exp.	Hospitality & Tourism
First-Line Supervisors of Office/Admin. Workers	HS Diploma/GED+less than 5 yrs. exp.	Business Management & Administration
Cashiers	Less than HS+short OJT	Marketing & Sales
Maintenance and Repair Workers, General	HS Diploma/GED+long OJT	Manufacturing
Landscaping and Groundskeeping Workers	Less than HS+short OJT	Agriculture, Food & Natural Resources

# What are we giving employers in 2024... College Majors

#### Top College Majors in SC (2015-16)

- 1. Business/Management/Marketing
- 2. Health Professions
- 3. Liberal Arts
- 4. Education
- 5. Biological/Biomedical Sciences
- 6. Engineering
- 7. Social Sciences
- 8. Psychology
- 9. Computer and Information Sciences
- 10. Visual and Performing Arts

# Why is the college retention rate only 63%?



- More than 75% of students who take remedial classes never graduate.
- 60% of college dropouts had no help from parents in paying tuition.
- 20% of students reported that they had performed poorly on a test or project because of alcohol or drug use.
- 35% "felt overwhelmed" by schoolwork and other commitments.

#### Dropping out can cause:

- More debt
- Lower income
- · Lower quality of life

## **Declining Occupations + Robots**

#### Top 20 Declining Occupations in SC, 2014-24

Cooks, Fast Food Postal Service Mail Carriers Switchboard Operators, Including Answering Service Textile Knitting and Weaving Machine Setters/Operators/Tenders Cutting/Punching/Press Machine Setters/Operators/Tenders, Metal/Plastic Executive Secretaries and Executive Administrative Assistants Extruding/Drawing Machine Setters/Operators/Tenders, Metal/Plastic Postal Service Mail Sorters/Processors/Processing Machine Operators Molding/Coremaking/Casting Machine Setters/Operators/Tenders, Metal/Plastic  $Grinding/Lapping/Polishing/Buffing\ Machine\ Tool\ Setters/Operators/Tenders,\ Metal/Plastic$ Bill and Account Collectors Mail Clerks and Mail Machine Operators, Except Postal Service Textile Winding/Twisting/Drawing Out Machine Setters/Operators/Tenders Office Machine Operators, Except Computer Cooks, Short Order **Printing Press Operators** Lathe/Turning Machine Tool Setters/Operators/Tenders, Metal/Plastic Procurement Clerks

Postal Service Clerks

In the U.S., 38% of jobs could be at risk of automation, compared with 30% in Britain, 35% in Germany and 21% in Japan.

Jobs most likely to be lost are:

- Finance
- Insurance
- Hospitality/Food Service
- Transportation/Storage

#### Harder to automate?

- Healthcare
- Teachers
- Artists

# What future workers want... Millennial Characteristics

- Assets: Collective action, optimism, ability to multi-task, and technological savvy
- <u>Liabilities</u>: Need for supervision and structure; inexperience particularly with handling difficult people issues
- · Rewards: Awards, certificates, tangible evidence of credibility
- Communication: Instant messages, blogs, text messages, emails

From AARP's "Leading a Multigenerational Workforce" (http://assets.aarp.org/www.aarp.org\_/articles/money/employers/leading\_multigenerational\_workforce.pdf)

## What students want...Money

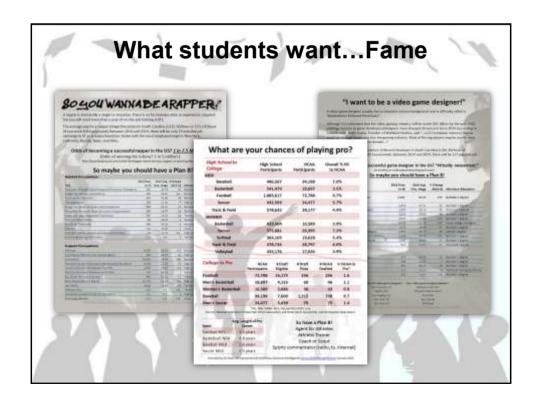
Entry Salaries in SC by Occupation Group, 2016

According to the Bureau of Labor Statistics, the average entry salary for all occupations in the United States in 2016 was \$24,140; it was \$21,470 for South Carolina.

When you look at occupational groups in SC, the numbers vary greatly!

Management	57,890
Architecture and Engineering	52,730
Computer and Mathematical	48,160
Life, Physical, and Social Science	42,010
Healthcare Practitioners and Technical	40,240
Business and Financial Operations	39,760
Legal	38,490
Installation, Maintenance, and Repair	29,680
Education, Training, and Library	29,360
Community and Social Service	28,800
Construction and Extraction	27,750
Arts, Design, Entertainment, Sports, and Media	25,800
Protective Service	25,730
Production	24,980
Office and Administrative Support	23,690
Farming, Fishing, and Forestry	23,570
All Occupations	21,470
Transportation and Material Moving	21,190
Healthcare Support	20,600
Sales and Related	18,470
Building and Grounds Cleaning and Maintenance	18,100
Personal Care and Service	17,560
Food Preparation and Serving Related	17,170





## **Job Outlook**



#### Healthcare

Registered Nurses, Home Health Aides, Medical Assistants, Medical/Health Managers, LPNs, EMTs

#### **Manufacturing**

Team Assemblers, Machinists, CNC Operators, Inspectors, Welders

### Transportation, Distribution, and Logistics

Truck Drivers, Laborers/Material Movers, Fork Lift Operators

#### STEM

Industrial/Civil/Mechanical Engineers, Statisticians, Electrical Engineers and Specialists

## **SC Future Jobs**

#### **Transportation, Distribution & Logistics**

Widening of Panama Canal, deepening of Charleston Port (187,600 jobs, 1.1 MILLION containers moved in 2016)

#### **Auto Manufacturing**

- · Over 400 automotive-related companies in SC
- Vehicle Manufacturing: Volvo, Daimler-Mercedes Benz, BMW
- Tire Manufacturing: Giti, Bridgestone, Michelin, Firestone, Wanli (newest)

## **Ball Bearing Manufacturing**

35 companies in the state



## Aerospace Manufacturing ( BOEINO

Boeing, plus over 200 aerospace and defense companies in SC

#### Mining

Haile Gold Mine in Kershaw (700 employees)



#### Also...

Distribution centers, V. C. Summer Nuclear Station, solar farms

## Gaps?



#### **ACT Scores**

Improve Math, Science, and English knowledge (scores) to improve college completion rates and success in the workforce

## **Multilingual Skills**

Increase language class participation; expose students to a more global perspective (see handout)

#### **Soft Skills**

Especially communication, honesty, and marketing

#### **Top Occupations**

Promote preparation for Healthcare, Manufacturing, and TDL

# Jobs we haven't even thought of yet...

**Commercial Drone Pilot** 

Couriers (short-time deliveries)

**Space Pilot/Space Tour Guide** 

Organ Designer/Body Part Maker

**Water Harvester** 

Virtual Reality Designer

**Vertical Farmer** 

**IT Waste Handler** 

**Elderly Wellness Consultant** 

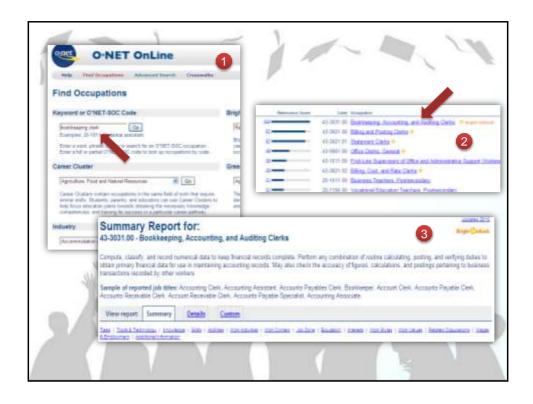








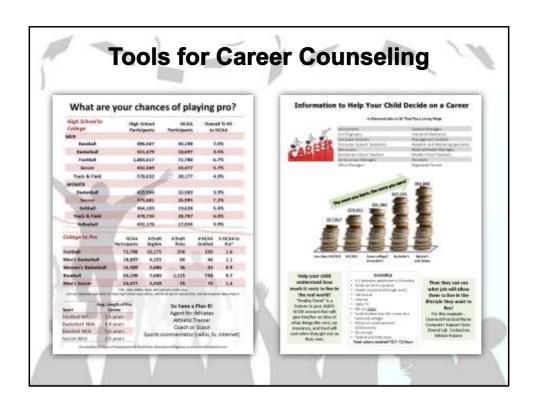






# Community Profiles (con't.) A profile of your area is only three clicks away! 1. Click on "Community Profile Report." 2. Select your geographic area. 3. Click on "View Report." Comprehensive 20+page report contains: Economic Data Demographic Data Industry Data Occupational Projections Data Educational Data







## Items on the EBS App

(under my speaker profile)

- · This presentation (pdf)
- Top 50 Occupational Projections for SC, 2014-24
- · More You Learn, More your Earn
- · College Dropout
- · Global Perspectives in the Classroom
- So you wanna be a rapper?
- · I want to be a video game designer!
- · What are your chances of playing pro?
- O\*Net Desk Aid
- IGP Handout for Parents

