

# PUTTING SCIENCE IN 4-H ANIMAL SCIENCE

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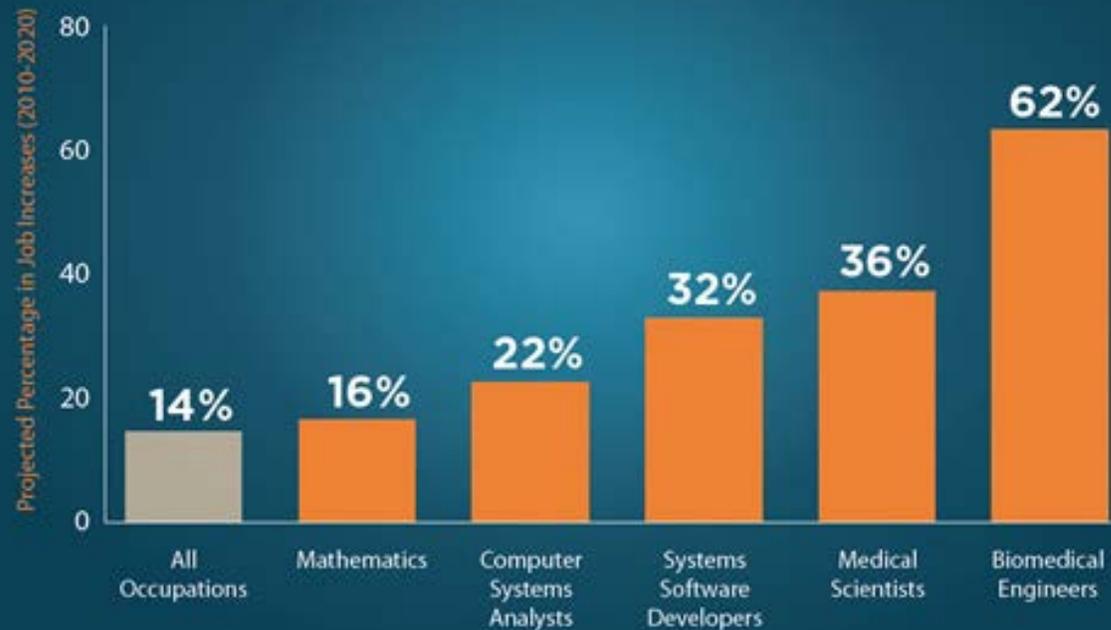
4-H Extension Specialist-Science Initiatives

# WHY IS STEM EDUCATION A BUZZ WORD

- STEM: Science, Technology, Engineering and Math
- “STEM occupations will grow 1.7 times faster than non-STEM occupations over the period from 2008 – 2018.”
  - Office of Science and Technology and Policy
- “At all levels of educational attainment, STEM job holders earn 11 percent higher wages compared with their same-degree counterparts in other jobs.”
- “STEM workers drive our nation’s innovation and competitiveness by generating new ideas, new companies and new industries. However, U.S. businesses frequently voice concerns over the supply and availability of STEM workers. Over the past 10 years, growth in STEM jobs was three times as fast as growth in non-STEM jobs.”
  - STEM: Good Jobs Now and for the Future, U.S. Department of Commerce

# WHY IS STEM EDUCATION A BUZZ WORD

## PROJECTED PERCENTAGE INCREASES IN STEM JOBS: 2010-2020



# WHAT IS SCIENCE? WHY 4-H SCIENCE?



- Science:
  - The intellectual and practical activity encompassing the systematic study of the structure and behavior of the physical and natural world through observation and experiment
- How do we define 4-H Science?
  - Inquiry Based Learning
- Why do we think it is important in 4-H?



# WHAT DOES SCIENCE LOOK LIKE IN 4-H?

- 4-H Projects
  - What 4-H Projects would be considered “Science”?
- Special Interest Areas/Activities
  - Robotics, Science Behind Agriculture/Teens Teaching Biotechnology/Aerospace/NYSD/Etc.
  - Other?
- 4-H Camp
- Day Camp
- Other 4-H Events and Activities



# WHERE DO WE DO SCIENCE?

- 4-H Club meetings
- Afterschool Programs
- Area Events
- 4-H Camp
- 4-H Day Camps (Spring Break, Summer, Fall Break)
- Fair
- Agriculture Days
- Community Festivals and Fairs



# HOW DO WE DO SCIENCE?

- 4-H Club programs
- Curriculum Development Events
- Special Interest Clubs
  - 4-H Science Clubs
  - Livestock Project Clubs
  - Natural Resource Clubs
  - Robotics Clubs
  - Sewing Clubs
  - Foods Club
- Integrating a 4-H Science Officer or a Mission Area Officer
- Grab and Go Activities for Club Meetings that can be YOUTH led
  - NYSD Experiments
  - Soy Sensations
  - Acres of Adventures
  - 4-H Curriculum Grab & Gos
  - Other



# SO WHO TEACHES SCIENCE IN 4-H?

- Who teaches it?
  - Leaders
  - Extension Educators
  - Teens
  - YOUTH
  - Experts

- In Essence . . . . .

EVERYONE



# SO WHAT ABOUT ANIMAL SCIENCE?

- Animal science is our largest and longest run way to teach science in 4-H
- We have been doing it for 100 years

BUT . . . . We need to be more intentional

- Intentional teaching of science concepts
- Hands-on experimenting and learning
- Youth led and driven opportunities for learning
- Encourage the use of learning about technology
- Encourage excitement and interest in Ag/Animal related careers

WHY?

- It's our future! Agriculture Industries are one of the faster growing STEM jobs available for college graduates



# 10 WAYS TO INTEGRATE SCIENCE INTO 4-H PROJECTS

- 1. Think of Science as Discovery
- 2. Think of Engineering as Imaginative Design
- 3. Think of Technology as “Tools”
- 4. Make time to question everyday occurrences
- 5. Remember that kids are naturally inquisitive and like puzzles
- 6. Engage 4-H members in experiments
- 7. Visit places in your community that relate to Science, Engineering and Technology
- 8. Share stories of using Science, Engineering and Technology in your life
- 9. Contact the Extension Office to ask questions and get answer from the University
- 10. Ask 4-H members to share their ideas



# SO WHAT NEXT?



- Intentional Programming
- New Audiences
- Thinking Outside the Box
- Youth Led/Youth Driven
- Feed the passion!!!



# QUESTIONS

