

# Agriscience and Technology 8004 (2021)

## Demonstrating Personal Qualities and Abilities

- 1 Demonstrate creativity and innovation. A&T 1.1
- 2 Demonstrate critical thinking and problem solving. A&T 1.2
- 3 Demonstrate initiative and self-direction. A&T 1.3
- 4 Demonstrate integrity. A&T 1.4
- 5 Demonstrate work ethic. A&T 1.5

## Demonstrating Interpersonal Skills

- 6 Demonstrate conflict-resolution skills. A&T 2.6
- 7 Demonstrate listening and speaking skills. A&T 2.7
- 8 Demonstrate respect for diversity. A&T 2.8
- 9 Demonstrate customer service skills. A&T 2.9
- 10 Collaborate with team members. A&T 2.10

## Demonstrating Professional Competencies

- 11 Demonstrate big-picture thinking. A&T 3.11
- 12 Demonstrate career- and life-management skills. A&T 3.12
- 13 Demonstrate continuous learning and adaptability. A&T 3.13
- 14 Manage time and resources. A&T 3.14
- 15 Demonstrate information-literacy skills. A&T 3.15
- 16 Demonstrate an understanding of information security. A&T 3.16
- 17 Maintain working knowledge of current information-technology (IT) systems. A&T 3.17
- 18 Demonstrate proficiency with technologies, tools, and machines common to a specific occupation. A&T 3.18
- 19 Apply mathematical skills to job-specific tasks. A&T 3.19

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**20 Demonstrate professionalism.** A&T 3.20

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**21 Demonstrate reading and writing skills.** A&T 3.21

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**22 Demonstrate workplace safety.** A&T 3.22

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### Addressing Elements of Student Life

**23 Identify the purposes and goals of the student organization.** A&T 4.23

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**24 Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.** A&T 4.24

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**25 Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.** A&T 4.25

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**26 Identify Internet safety issues and procedures for complying with acceptable use standards.** A&T 4.26

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### Exploring Work-Based Learning

**27 Identify the types of work-based learning (WBL) opportunities.** A&T 5.27

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**28 (Optional) Reflect on lessons learned during the WBL experience.** A&T 5.28

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**29 Explore career opportunities related to the WBL experience.** A&T 5.29

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**30 (Optional) Participate in a WBL experience, when appropriate.** A&T 5.30

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**31 Identify the role of supervised agricultural experiences (SAEs) in agricultural education.** A&T 5.31

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**32 Participate in an SAE.** A&T 5.32

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### Exploring Leadership Opportunities through FFA

**33 Identify the benefits and responsibilities of FFA membership.** A&T 5.33

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**34 Describe leadership characteristics and opportunities as they relate to agriculture and FFA.** A&T 5.34

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**35 (Optional) Apply for an FFA degree and/or an agricultural proficiency award.** A&T 5.35

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### Becoming Oriented to Agriscience Technology

**36 Identify class rules, safety precautions, and procedures.** A&T 6.36

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**37 Explore new and emerging technologies in agriculture and agriscience.** A&T 6.37

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**38 Identify the components of an agricultural/agriscience research project.** A&T 6.38

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**39 Identify safety procedures in performing experiments.** A&T 6.39

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**40 Perform an agriculture/agriscience experiment.** A&T 6.40

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**Understanding Global  
Agriculture**

**41 Define terms related to trade.** A&T 7.41

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**42 Explore global agriculture.** A&T 7.42

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**43 Explain the relationship of global trade to Virginia agriculture.** A&T 7.43

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**Understading AFNR  
Businesses**

**44 Identify the significance of agribusiness in agriscience.** A&T 8.44

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**45 Identify types of agribusiness.** A&T 8.45

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**46 Identify risks inherent in agribusiness.** A&T 8.46

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**47 Identify characteristics of an entrepreneur.** A&T 8.47

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**48 Explore career opportunities related to agriculture, food, and natural resources (AFNR).** A&T 8.48

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**Understanding  
Agricultural Mechanics**

**49 Demonstrate safety practices.** A&T 9.49

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**50 Demonstrate measuring skills.** A&T 9.50

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**51 Interpret plans for constructing an agriculture project.** A&T 9.51

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**52 Identify new and emerging equipment and tools in agriscience.** A&T 9.52

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**53 Identify portable hand tools, portable power tools, equipment, and accessories.** A&T 9.53

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**54 Demonstrate the use of hand tools, portable power tools, equipment, and accessories.** A&T 9.54

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**55 Demonstrate woodworking skills.** A&T 9.55

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**56 Explain the principles of electricity.** A&T 9.56

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**57 Demonstrate basic electrical wiring skills.** A&T 9.57

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**58 (Optional) Shape metal.** A&T 9.58

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**59 (Optional) Explain the arc-welding process.** A&T 9.59

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**60 (Optional) Operate arc-welding equipment.** A&T 9.60

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**61 Explain the operating principles of small engines.** A&T 9.61

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**Exploring Animal  
Science**

**62 Categorize breeds of animals.** A&T 10.62

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**63 Identify equipment used in the care of companion and/or livestock animals.** A&T 10.63

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**64 Evaluate types of companion and/or livestock animal feed.** A&T 10.64

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**65 Explore healthcare and maintenance practices for companion and/or livestock animals.** A&T 10.65

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**Exploring Natural Resources**

**66 Identify the importance of natural resource management.** A&T 11.66

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**67 (Optional) Determine the volume and value of timber.** A&T 11.67

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**68 Identify Virginia trees as sawtimber, pulpwood, and/or ornamentals.** A&T 11.68

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**69 (Optional) Explain soil fertility.** A&T 11.69

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**70 Discuss the importance of water to agriculture.** A&T 11.70

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**71 Analyze a water sample.** A&T 11.71

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**Exploring Horticultural Sciences**

**72 Identify common garden, landscape, and interior plants.** A&T 12.72

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**73 Describe integrated pest management.** A&T 12.73

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**74 (Optional) Explore the principles of floral design.** A&T 12.74

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**75 (Optional) Explore the principles of landscape design.** A&T 12.75

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**76 (Optional) Identify common horticultural and landscape tools, equipment, technologies, and practices.** A&T 12.76

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**Exploring Food Science**

**77 Explore the food industry as it relates to agriculture, agriscience, and agribusiness.** A&T 13.77

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**78 Research foodborne illnesses.** A&T 13.78

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**79 Describe methods of food processing and preservation.** A&T 13.79

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**80 Explain food labels.** A&T 13.80

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