



## Academic Content Standards Taught and Applied in the Ford PAS Curriculum

This document lists the national academic content standards that are taught and applied in each module of the Ford PAS curriculum. It is intended for schools and program sites to use when aligning the Ford PAS curriculum with state standards. These lists identify the most significant standards that are addressed in each module and therefore do not correspond exactly to the lists of standards in the tables of learning goals for each module activity. In some instances, standards listed here combine the language of more than one national standard or somewhat modify the wording of the national standards to correspond more closely to the content addressed in the modules. The lists identify each standard by the same abbreviations and number/letter designations that are used in the learning goals tables. The national academic standards referred to in the lists are identified below.

### **The Ford PAS Curriculum has been developed in correlation with the following national academic standards:**

#### Standards for the English Language Arts

- National Council of Teachers of English (NCTE) and International Reading Association (IRA)

#### New Standards Performance Standards, English Language Arts

- National Council on Education and the Economy (NCEE) and the University of Pittsburgh

#### Principles and Standards for School Mathematics

- National Council of Teachers of Mathematics (NCTM)

#### National Science Education Standards

- National Research Council (NRC)

#### Curriculum Standards for Social Studies

- National Council for the Social Studies (NCSS)

#### Voluntary National Content Standards in Economics

- National Council on Economic Education (NCEE)

#### National Standards for History

- National Center for History in the Schools (NCHS)

#### National Standards for Business Education

- National Business Education Association (NBEA)

#### Standards for Engineering Education

- Mid-continent Research for Education and Learning (McREL)

#### National Educational Technology Standards

- International Society for Technology in Education (ISTE)

#### Standards for Technological Literacy

- International Technology Education Association (ITEA)

## Module 1

### **Academic Content Taught and Assessed**

- Gather, evaluate, and synthesize data from a variety of sources to create and communicate knowledge using a variety of technological and information resources. (NCTE/IRA 7 and 8)
- Use spoken, written, and visual language for a particular purpose or to a particular audience. (NCTE/IRA 7 and 12)
- Read and comprehend written materials and produce written or oral work that summarizes information or provides a guide to action and anticipates readers' needs. (NCEE/Pitt 1c and 2d)
- Produce, critique, and revise functional documents, demonstrating awareness of audience and purpose. (NCTE/IRA 7a and 7b)
- Make judgments about the transformation of the physical world and human society by technology. (NCSS 8b)
- Analyze and explain cause-and-effect relationships. (NCHS 3c)
- Explain the importance of productivity and the impact of division of labor on productivity. (NBEA: ECON 3)

### **Academic Content Applied**

- Prepare and deliver a presentation that shapes information to achieve a particular purpose and to appeal to the interests and knowledge of audience members. (NCEE/Pitt 3C)
- Use concepts such as chronology and causality to analyze patterns of historical change and continuity. (NCSS 2b)
- Work independently and cooperatively to accomplish goals. (NCSS 4h)
- Use technology tools to enhance learning, productivity, and creativity. (ISTE 3.1)

## Module 2

### **Academic Content Taught and Assessed**

- Read and comprehend informational materials and summarize. (NCEE/Pitt 1c)
- Listen to and take notes on information. (NCEE/Pitt 3e)
- Analyze, edit, and revise written work to make the message more effective. (NCEE/Pitt 4b)
- Communicate (orally and in writing) effectively and appropriately for a variety of purposes, audiences, and contexts. (NCTE/IRA 4 and 5, NCEE/Pitt 2a)
- Prepare, present, and evaluate persuasive messages. (NCEE/Pitt 6a and 6b)
- Create functional documents related to the world of work, including resumes and cover letters.(NCEE/Pitt 7b)
- Use appropriate technology to communicate information and ideas. (ISTE 4.2)
- Understand how information is interpreted by people in different cultures. (NCSS 1b)
- Make informed judgments about media messages and evaluate the role of the media in focusing attention and in forming opinions. (NCEE/Pitt 3d)

### **Academic Content Applied**

- Appropriately use conventions and rules of English language. (NCEE/Pitt 4a)

## Module 3

### **Academic Content Taught and Assessed**

- Gather, evaluate, and synthesize data from a variety of sources. (NCTE/IRA 7)
- Critically evaluate primary and secondary source documents for point of view, bias, and accuracy. (NCHS 2a, 2c, and 2d)
- Conduct systematic research of primary and secondary sources. (NCHS 2e, 2f, and 4)
- Demonstrate when and where to cite sources using the appropriate form of citation. (NCHS 2a)
- Construct a sound historical interpretation. (NCHS 4D)
- Understand the pre-Industrial, Industrial, and post-Industrial periods of American history with a specific focus on the role of employees, the role of women and children, living conditions, unions, legislation, and technology. (NCHS Eras 2, 4, 6, 7, 8, 9, and 10)
- Analyze patterns of change and continuity. (NCSS 2b).

### **Academic Content Applied**

- Appreciate various historical perspectives via documents, images, and artifacts. (NCHS 2F)
- Consider multiple perspectives. (NCHS 3B)

## Module 4

### **Academic Content Taught and Assessed**

- Analyze written text and develop a position based on a written document that makes effective use of argument and anticipates counter-claims. (NCTE/IRA 3)
- Write a report appropriate for a purpose, audience, and context, with an organizing structure, appropriate facts and details, and a sense of closure. (NCEE/Pitt 2a)
- Prepare and deliver a presentation that shapes information to achieve a particular purpose and to appeal to the interests and knowledge of audience members. (NCEE/Pitt 3c)
- Gather, evaluate, and synthesize data from a variety of sources. (NCTE/IRA 7)
- Use technology to locate, evaluate, and collect information. (ISTE 5.1)
- Understand the nature and operation of technology systems. (ISTE 1.1)
- Understand the role of institutions in furthering continuity and change. (NCSS 5f)

### **Academic Content Applied**

- Use reflective writing to develop ideas and a point of view. (NCTE/IRA 5)
- Participate actively in one-on-one conferences or interviews with adults by initiating new topics, asking and answering questions, and confirming understanding by paraphrasing. (NCEE/Pitt 3a)
- Participate actively in group meetings, displaying appropriate turn-taking behaviors, offering and soliciting comments or opinions, responding appropriately, giving reasons, and expanding on responses when asked. (NCEE/Pitt 3b)

## Module 5

### **Academic Content Taught and Assessed**

- Understand natural resources. (NRC F3)
- Understand environmental quality. (NRC F4)
- Understand natural and human-induced hazards. (NRC F5)
- Use the design process to solve problems. (McREL 14)
- Understand energy and power types, sources, and conversions. (McREL 5)
- Understand the effects of technology on the environment. (ITEA 5)
- Make judgments about the transformation of the physical world and human society by science and technology. (NCSS 8b)
- Analyze data to interpret trends. (NCTM 5)
- Prepare and deliver a presentation that shapes information to achieve a particular purpose and to appeal to the interests and knowledge of audience members. (NCEE/ Pitt 3c)

### **Academic Content Applied**

- Understand science and technology in local, national, and global challenges. (NRC F6)
- Apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. (NCTE/IRA 3)
- Use technology for solving problems and making informed decisions. (ISTE 6.1)
- Use technology to develop strategies for solving problems in the real world. (ISTE 6.2)

## Module 6

### **Academic Content Taught and Assessed**

- Analyze social and economic patterns of change and continuity. (NCSS 2b)
- Gather, evaluate, and synthesize data from a variety of sources to create and communicate knowledge through a structured team effort. (NCTE/IRA 7)
- Use representations to model and interpret physical, social, and mathematical phenomena. (NCTM 10.2)
- Explain the importance of productivity and discuss productivity systems, such as division of labor. (NBEA: ECON 3)

### **Academic Content Applied**

- Prepare and deliver a presentation that shapes information to achieve a particular purpose and to appeal to the interests and knowledge of audience members. (NCEE/Pitt 3c)
- Recognize and apply mathematics in contexts outside of mathematics. (NCTM 9.1)
- Listen to and analyze a public speaking performance, taking notes on salient information and accurately summarizing the speaker's remarks. (NCEE/Pitt 3e)
- Use technology tools to enhance learning, productivity, and creativity. (ISTE 3.1)
- Use technology for solving problems and making informed decisions. (ISTE 6.1)

## Module 7

### **Academic Content Taught and Assessed**

- Gather, evaluate, and synthesize data from a variety of sources to communicate knowledge to a particular audience. (NCTE/IRA 7)
- Formulate questions that can be addressed with data, and collect, organize, and display relevant data to answer them. (NCTM 5.1)
- Select and use appropriate statistical methods to analyze data. (NCTM 5.2)
- Develop and evaluate inferences and predictions that are based on data. (NCTM 5.3)
- Understand how market forces such as supply and demand, competition, and government regulations and incentives affect the success or failure of businesses and business decisions. (NCSS 7b, NBEA: ECON 8 and 12, NCEE 9)
- Understand the roles, risks, and decisions of entrepreneurs in an economy. (NCEE 14, NBEA: ENT 1)
- Understand how the different components of a system interact. (NRC U1)
- Understand the social and economic effects of technology. (ITEA 4)

### **Academic Content Applied**

- Prepare and deliver a presentation that shapes information to achieve a particular purpose and to appeal to the interests and knowledge of audience members. (NCEE/Pitt 3c)
- Select the most effective or appropriate medium and format to communicate information and ideas to a particular audience. (ISTE 4.2, ITEA 17)
- Create and use representations to organize, record, and communicate mathematical ideas. (NCTM 10.1)
- Consider the perspectives of different groups (demographic, cultural, etc.) in society. (NCSS 1, 5a, and 5b)
- Use spreadsheets to analyze and communicate data. (NBEA: COMM 3, ISTE 4.2)

## Module 8

### **Academic Content Taught and Assessed**

- Formulate questions that can be addressed with data, and collect, organize, and display relevant data to answer them. (NCTM 5.1)
- Select and use appropriate statistical methods to analyze data. (NCTM 5.2)
- Develop and evaluate inferences and predictions that are based on data. (NCTM 5.3)
- Compute fluently and make reasonable estimates. (NCTM 1.3)
- Use representations to model and interpret physical, social, and mathematical phenomena. (NCTM 10.2)
- Develop abilities necessary to do scientific inquiry. (NRC A1)
- Use mathematical procedures to analyze and solve business problems. (NBEA: COMP 6)

### **Academic Content Applied**

- Understand and apply basic concepts of probability. (NCTM 5.4)
- Use a variety of media and formats to communicate information and ideas. (ISTE 4.2)
- Use technology for solving problems and making informed decisions. (ISTE 6.1)
- Write a report appropriate for a purpose, audience and context, with an organizing structure, appropriate facts and details. (NCEE/Pitt 2a)
- Communicate mathematical thinking coherently and clearly to peers, teachers, and others. (NCTM 8.1)

## Module 9

### **Academic Content Taught and Assessed**

- Understand the nature and operation of technology systems. (ISTE 1.1)
- Assess the impact of information systems on society. (NBEA: IS13)
- Understand ethical, social, and political issues related to technology. (ISTE 2.1 and ITEA 4)
- Use technology to locate, evaluate, and collect information. (ISTE 5.1)
- Evaluate and select new information resources and technological innovations. (ISTE 5.2)
- Use technology to solve problems and make informed decisions. (ISTE 6.1)
- Use technology to develop strategies for solving problems in the real world. (ISTE 6.2)
- Use, develop, and modify databases (NBEA: IS 4)
- Use technology tools to enhance learning and productivity. (ISTE 3.1)
- Create, interpret, use, and synthesize information from various representations of the earth, such as maps, globes, and photographs. (NCSS 3b)
- Use appropriate resources, data sources, and geographic tools such as aerial photographs, satellite images, geographic information systems (GIS), map projections, and cartography to generate, manipulate, and interpret information. (NCSS 3c)

### **Academic Content Applied**

- Examine persistent issues involving the rights, roles, and status of the individual in relation to the general welfare. (NCSS 8a)
- Understand science and technology in local, national, and global challenges. (NRC F6)
- Gather, evaluate, and synthesize data from a variety of sources to create and communicate knowledge using a variety of technological and information sources. (NCTE/IRA 7 and 8)
- Read and comprehend informational materials and produce written or oral work that summarizes that information. (NCEE/Pitt 1c)

## Module 10

### **Academic Content Taught and Assessed**

- Understand form and function. (NRC U5)
- Develop abilities necessary to do scientific inquiry. (NRC A1)
- Use the design process to solve problems. (McREL 14)
- Understand the interrelationship of manufacturing and society. (McREL 19)
- Understand engineering design. (ITEA 9)
- Use written and visual language to communicate with various audiences. (NCTE/IRA 4)
- Produce functional documents appropriate for an audience and purpose; organizing and conveying information and ideas accurately; including relevant details; anticipating readers' problems, mistakes, and misunderstandings; and employing effective word choices. (NCEE/Pitt 7b)
- Understand that effective decision-making requires comparing the additional costs of alternatives with the additional benefits. (NCEE 2)

### **Academic Content Applied**

- Understand chemical and physical properties of materials. (NRC B)
- Gather and synthesize information and create and communicate knowledge, using a variety of technological and information resources. (NCTE/IRA 8)
- Read and comprehend informational materials and produce written or oral work that summarizes information. (NCEE/Pitt 1c)
- Evaluate alternative courses of action in a historical context. (NCHS 5D)

## Module 11

### **Academic Content Taught and Assessed**

- Understand form and function. (NRC U5)
- Develop abilities necessary to do scientific inquiry. (NRC A1)
- Use the design process to solve problems. (McREL 14)
- Understand engineering design. (ITEA 9)
- Use visualization, spatial reasoning, and geometric modeling to solve problems. (NCTM 3.4)
- Understand the role of troubleshooting, research and development, invention and innovation, and experimentation in problem-solving. (ITEA 10)
- Use written and visual language to communicate with various audiences. (NCTE/IRA 4)
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### **Academic Content Applied**

- Prepare and deliver a presentation that shapes information to achieve a particular purpose and to appeal to the interests and knowledge of audience members. (NCEE/Pitt 3c)
- Write a report appropriate for a purpose, audience, and context, with an organizing structure, appropriate facts and details, and a sense of closure. (NCEE/Pitt 2a)
- Understand that effective decision-making requires comparing the additional costs of alternatives with the additional benefits. (NCEE 2)

## Module 12

### **Academic Content Taught and Assessed**

- Understand scientific principles related to electricity. (McREL 1)
- Understand energy and power types, sources, and conversions. (McREL 5)
- Understand the social, economic, and environmental concerns associated with different sources of energy. (NRC F3 and F4)
- Analyze effects of changing technologies on the global community. (NCSS 9C)
- Gather, evaluate, and synthesize data from a variety of sources to communicate discoveries in ways that suit a purpose and audience. (NCTE/IRA 7)
- Solve problems that arise in contexts outside of mathematics. (NCTM 6.2)
- Understand measurable attributes of objects and the units, systems, and processes of measurement. (NCTM 4.1)
- Apply appropriate techniques, tools, and formulas to determine measurements. (NCTM 4.2)

### **Academic Content Applied**

- Prepare and deliver a presentation that shapes information to achieve a particular purpose and to appeal to the interests and knowledge of audience members. (NCEE/Pitt 3c)
- Read and comprehend informational materials and produce written or oral work that summarizes information. (NCEE/Pitt 1c)
- Apply the design process. (ITEA 11)

## Module 13

### **Academic Content Taught and Assessed**

- Understand that productive resources are limited and that people choose different methods of allocating them. (NCEE 1 and 3)
- Understand that effective decision-making requires comparing the additional costs of alternatives with the additional benefits. (NCEE 2)
- Analyze the role of specialization and exchange in economics. (NCSS 7e)
- Understand the effects of economic indicators, such as unemployment and inflation, and human factors, such as education and health, on individual standard of living and national economic well-being. (NCEE 15,18, and 19)
- Examine economic relationships among nations and international trade. (NBEA: ECON 14)
- Apply economic concepts to evaluate historical and social developments and issues. (NCSS 7H)
- Gather, evaluate, and synthesize data from a variety of sources to create and communicate knowledge using a variety of technological and information resources. (NCTE/IRA 7 and 8)
- Formulate questions that can be addressed with data, and collect, organize, and display relevant data to answer them. (NCTM 5.1)
- Develop and evaluate inferences and predictions that are based on data. (NCTM 5.3)

### **Academic Content Applied**

- Prepare and deliver a presentation that shapes information to achieve a particular purpose and to appeal to the interests and knowledge of audience members. (NCEE/Pitt 3c)
- Read and comprehend informational materials and produce written or oral work that summarizes information. (NCEE/Pitt 1c)

## Module 14

### Academic Content Taught and Assessed

- Distinguish between domestic and global economic systems and explain how the two interact. (NCSS 7i)
- Analyze multiple historical and present-day viewpoints within and across cultures related to important events, recurring dilemmas, and persistent issues, while employing empathy, skepticism, and critical judgment. (NCSS 2e)
- Interpret how values and attitudes may contribute or pose obstacles to understandings across cultures. (NCSS 1f)
- Explain conditions and motivations that contribute to conflict, cooperation, and interdependence among groups, societies, and nations. (NCSS 9b)
- Describe and evaluate the role of international and multinational organizations (NCSS 9g)
- Understand that productive resources are limited and that people choose different methods of allocating them. (NCEE 1)
- Understand the impact of specialization and exchange on production and consumption. (NCSS 7e, NCEE 5 and 6)
- Describe economic relationships among nations and the importance of international trade, investment, and monetary systems. (NBEA: ECON 14)
- Understand that supply and demand changes affect prices, which sends signals and provides incentives to buyers and sellers. (NCEE 8, NCSS 7b)
- Represent and analyze mathematical situations and structures using algebraic symbols. (NCTM 2.2)
- Use mathematical models to represent and understand quantitative relationships. (NCTM 2.3)

### Academic Content Applied

- Gather, evaluate, and synthesize data from a variety of sources to create and communicate knowledge using a variety of technological and information resources. (NCTE/IRA 7 and 8)
- Read and comprehend informational materials and produce written or oral work that summarizes information. (NCEE/Pitt 1c)
- Use spoken, written, and visual language for a particular purpose or to a particular audience. (NCTE/IRA 7 and 12)
- Use technology for solving problems and making informed decisions. (ISTE 6.1)
- Use technology to develop strategies for solving problems in the real world. (ISTE 6.2)

## Module 15

### **Academic Content Taught and Assessed**

- Evaluate the role of institutions in furthering both continuity and change. (NCSS 5F)
- Describe and evaluate the role of international and multinational organizations. (NCSS 9G)
- Illustrate how individual behaviors and decisions connect with global systems. (NCSS 9H)
- Examine the interactions of ethnic, national, or cultural influences in specific situations or events. (NCSS 4E)
- Analyze persistent, contemporary, and emerging global issues. (NCSS 9D)
- Locate, analyze, synthesize, and apply information about selected public issues, considering and evaluating multiple points of view. (NCSS 10C)
- Participate in activities to strengthen the “common good,” based upon careful evaluation of possible options for citizen action. (NCSS 10J)
- Describe the rights and responsibilities of citizens in a global economy, including the role of the political process. (NBEA: ECON 13)
- Understand the interrelationship of manufacturing and society. (McCREL 19)
- Analyze the impact of government regulations and community involvement. (NBEA: MGT 9)
- Formulate questions that can be addressed with data, and collect, organize, and display relevant data to answer them. (NCTM 5.1)

### **Academic Content Applied**

- Interpret how values and attitudes may contribute or pose obstacles to understandings across cultures. (NCSS 1F)
- Create and use representations to organize, record, and communicate mathematical ideas. (NCTM 10.1)
- Use a variety of media and formats to communicate information and ideas. (ISTE 4.2)
- Use technology to locate, evaluate, and collect information. (ISTE 5.1)
- Gather, evaluate, and synthesize data from a variety of sources to create and communicate knowledge using a variety of technological and information resources. (NCTE/IRA 7 and 8)
- Use spoken, written, and visual language for a particular purpose or to a particular audience. (NCTE/IRA 7 and 12)