OHIO DEPARTMENT OF EDUCATION
ACADEMIC CONTENT STANDARDS
TECHNOLOGY DETAILED CHECKLIST
~KINDERGARTEN~

Nature of Technology

Students develop an understanding of technology, its characteristics, scope, core concepts and relationships between technologies and other fields.

Students learn that technology extends human potential by allowing people to do things more efficiently than they would otherwise be able to. Students learn that useful technological development is a product of human knowledge, creativity, invention, innovation, motivation and demand for new products and systems. They learn that the natural and human-made designed worlds are different, and that tools and materials are used to alter the environment. Students learn that the development of emerging technology is exponential, driven by history, design, commercialization, and shaped by creative/inventive thinking, economic factors and cultural influences.

Benchmark A: Recognize the characteristics and scope of technology.

Technology Characteristics	**Date Achieved**
1. Identify objects created within the human-made world (e.g., books, chairs, houses, buses) and objects that occur in nature (e.g., trees, flowers, rocks and rivers).	
2. Describe how people use tools to help them do things.	

Benchmark B: Describe and give examples of technology's core concepts: systems, resources and processes.

Systems	**Date Achieved**
1. Identify common systems in the school or home (e.g., the plumbing system delivers water to and from your bathtub).	
Processes	
2. Recall that planning is necessary to successfully complete a task.	

Benchmark C: Describe the relationships among technologies, and the connections between technology and other fields of study.

Technology Devices	**Date Achieved**
1. Identify technology devices in the classroom (e.g., bells, computer, fire alarm, pencil sharpener).	
Connections	
2. Recognize the connection between technology and other fields of study (e.g., technology can be used to make or create music or musical instruments).	

Technology and Society Interaction

Students recognize interactions among society, the environment and technology, and understand technology's relationship with history. Consideration of these concepts forms a foundation for engaging in responsible and ethical use of technology.

Students learn that the interaction between society and technology has an impact on their lives and that technology may have unintended consequences which may be helpful or harmful. They learn that interaction of technology will affect the economy, ethical standards, environment and culture. Students evaluate the impact of products or systems by gathering and synthesizing information, analyzing trends and drawing conclusions. Students analyze technological issues and the implications of using technology. They acquire technological understanding and develop attitudes and practices that support ethical decision-making and lifelong learning.

Benchmark A: Identify responsible citizenship relative to technology and its use.

Technology and Citizenship	**Date Achieved**
1. Describe how the use of tools and machines can be helpful or harmful.	

Benchmark B: Recognize that technology has an interrelationship with the environment.

Technology and the Environment	**Date Achieved**
1. Explain how waste results from making and using things, discarding them.	
2. Identify materials that can be reused and/or recycled.	

Benchmark C: Describe and demonstrate how technology has had an influence on our world.

Technology and History	**Date Achieved**
1. Recognize that technology changes the way people live and work.	

Benchmark D: Collect information about products and discuss whether solutions create positive or negative results.

Technology Assessment	**Date Achieved**
1. Collect information about products and systems used at home by asking questions (e.g., electronic toothbrush, toaster, TV).	
2. Describe how a product or system can be used the right way and the wrong way (e.g., using scissors as a knife, a screwdriver as a can opener).	

Technology for Productivity Applications

Students learn the operations of technology through the usage of technology and productivity tools.

Students use computer and multimedia resources to support their learning. Students understand terminology, communicate technically and select the appropriate technology tool based on their needs. They use technology tools to collaborate, plan and produce a sample product to enhance their learning and solve problems by investigating, troubleshooting and experimenting using technical resources.

Benchmark A: Understand basic computer and multimedia technology concepts and terminology.

Basic Concepts	**Date Achieved**
1. Locate computer and multimedia technology in the classroom and identify it by name (e.g., computer, VCR, listening station).	
2. Name the basic parts of a computer (e.g., monitor, keyboard, mouse, printer).	
3. Use computer and multimedia technology with teacher assistance (e.g., computer, VCR, listening station).	

Benchmark B: Demonstrate operation of basic computer and multimedia technology tools.

Responsible Usage	**Date Achieved**
1. Listen to directions and use proper care when handling computer and multimedia technology.	
2. Follow the correct order for turning computers and multimedia technology resources on and off with teacher assistance.	
Basic Operations	
3. Identify and use input (keyboard, mouse) and output (printer) devices to operate computer and multimedia technology tools with teacher assistance.	
4. Use software programs with teacher assistance.	
Problem-solving	
5. Discover that technology tools can help solve problems.	
Productivity Tools	

6. View multimedia presentations and discuss motion and sound.	

Benchmark C: Use productivity tools to produce creative works.

Productivity Tools	**Date Achieved**
1. Recognize productivity tools (e.g., presentations, drawing programs).	
Research Tools	
2. Identify/recognize technology resources (e.g., pre-selected Web sites, educational software).	

Technology and Communication Applications

Students use an array of technologies and apply design concepts to communicate with multiple audiences, acquire and disseminate information and enhance learning.

Students acquire and publish information in a variety of media formats. They incorporate communication design principles in their work. They use technology to disseminate information to multiple audiences. Students use telecommunication tools to interact with others. They collaborate in real-time with individuals and groups who are located in different schools, communities, states and countries. Students participate in distance education opportunities which expand academic offerings and enhance learning.

Benchmark A: Investigate the nature and operation of communication systems.

Media Formats	**Date Achieved**
1. Explore different types of media formats used to communicate information (e.g., e-mail, TV, newspapers, film, phones, Web pages).	

Benchmark B: Explore how information can be published and presented in different formats.

Productivity Tools	**Date Achieved**
1. Examine digital images in learning (e.g., students select pictures of community helpers from teacher-identified materials).	

Benchmark C: Participate in group projects and learning activities using technology communications.

Use of Communications	**Date Achieved**
1. Engage in teacher-directed online learning activities (e.g., 100th day of kindergarten activities, online field trips).	

Technology and Information Literacy

Students engage in information literacy strategies, use the Internet, technology tools and resources, and apply information-management skills to answer questions and expand knowledge.

Students become information-literate learners by utilizing a research process model. They recognize the need for information and define the problem, need or task. Students understand the structure of information systems and apply these concepts in acquiring and managing information. Using technology tools, a variety of resources are identified, accessed and evaluated. Relevant information is selected, analyzed and synthesized to generate a finished product. Students evaluate their information process and product.

Benchmark A: State what information is, and show where it can be found.

Understanding Information	**Date Achieved**
1. Identify what information is and recognize that it can be represented in a variety of ways (e.g., numbers, words, pictures, sounds).	
2. Identify places where information can be found and retrieve information from a specified location (e.g., classroom, school library, public library, the Internet, computer folder, hard drive, Web site, book).	

Benchmark B: Use a simple research process model which includes deciding what to use, finding resources, using information and checking work to generate a product.

Decide	**Date Achieved**
1. Ask questions about an identified topic.	
Find	
2. View information in an information source selected by the teacher or librarian.	
Use	
3. Tell what was learned using technology tools (e.g., use a computer drawing/paint program to draw a picture that explains what was learned).	

Benchmark C: Apply basic browser and navigation skills to find information from the Internet.

Internet Concepts	**Date Achieved**
1. Talk about the Internet as an information source.	
2. Use Web page functions: a. Scroll up and down page; b. Click on links; and c. Use back button.	

Design

Students apply a number of problem-solving strategies demonstrating the nature of design, the role of engineering and the role of assessment.

Students recognize the attributes of design; that it is purposeful, based on requirements, systematic, iterative, creative, and provides solution and alternatives. Students explain critical design factors and/or processes in the development, application and utilization of technology as a key process in problem-solving. Students describe inventors and their inventions, multiple inventions that solve the same problem, and how design has affected their community. They apply and explain the contribution of thinking and procedural steps to create an appropriate design and the process skills required to build a product or system. They critically evaluate a design to address a problem of personal, societal and environmental interests. Students systematically solve a variety of problems using different design approaches including troubleshooting, research and development, innovation, invention and experimentation.

Benchmark A: Identify problems and potential technological solutions.

Technical Problem-solving	**Date Achieved**
1. Identify problems solved by tools (e.g., list tools and describe the problem that they solve such as crayons—communication, coats—protection from elements, clocks—time, toothbrush—cavities).	

Benchmark B: Understand that changes in design can be used to strengthen or improve an object.

Strength and Materials	**Date Achieved**
1. Make observations of how things are made strong (e.g., using more of the same material).	

Benchmark C: Explore how products are invented and repaired.

Technical Problem-solving	**Date Achieved**
1. Ask questions and make observations about how things work (e.g., take a mystery device and ask questions to determine what it does).	
Technical Communication	

2. Communicate information about a product (e.g., describe a favorite toy and how to use it).	

Designed World

Students understand how the physical, informational and bio-related technological systems of the designed world are brought about by the design process. Critical to this will be students' understanding of their role in the designed world: its processes, products, standards, services, history, future, impact, issues and career connections.

Students learn that the designed world consists of technological systems* reflecting the modifications that humans have made to the natural world to satisfy their own needs and wants. Students understand how, through the design process, the resources: materials, tools and machines, information, energy, capital, time and people are used in the development of useful products and systems. Students develop a foundation of knowledge and skills through participation in technically oriented activities for the application of technological systems. Students demonstrate understanding, skills and proficient use of technological tools, machines, instruments, materials and processes across technological systems in unique and/or new contexts. Students identify and assess the historical, cultural, environmental, governmental and economic impacts of technological systems in the designed world.

Benchmark A: Develop an understanding of the goals in physical technologies.

Energy and Power	**Date Achieved**
1. List the things around the home that use energy (e.g., TV, stove, washing machine, computer).	
2. List different energy sources that we use (e.g., electricity, coal, gasoline).	
Transportation	
3. Know that a transportation system has many parts that work together to help people travel (e.g., driver, mechanic, police, road repair crews).	
Manufacturing	
4. Name products that are manufactured (e.g., toys, cars, furniture).	
Construction	
5. Describe different types of buildings (e.g., houses, apartments, office buildings and schools).	

Benchmark B: Develop an understanding of the goals of informational technologies.

Information and Communication	**Date Achieved**
1. Explore ways to share ideas (e.g., speaking, drawing, modeling).	

Benchmark C: Develop an understanding of the goals of bio-related technologies.

Medical	**Date Achieved**
1. Recognize how medicine helps people who are sick to get better.	
Agriculture and Related Biotechnologies	
2. Describe different tools and equipment you might see on a farm.	