

ODE TECHNOLOGY GUIDELINES

~GRADE 1~

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

Benchmark A: Recognize the characteristics and scope of technology.

1. Distinguish between the natural and human-made world (e.g., a forest vs. a city skyline).
2. Cite examples of how people use tools and processes to perform tasks.

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

1. Identify and describe a technological system.
2. Identify and demonstrate processes necessary to complete a task.

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

1. Identify school-wide technology devices (e.g., office public address system, library-automated book check-out, auditorium audio-visual system, electronic lunch purchase).
2. Describe the connections between technology and other fields of study (e.g., teachers use computers, scientists use microscopes, farmers use tractors).

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.

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

1. Identify tools and machines that can be helpful and/or harmful.
2. Describe the reasons for making products (e.g., to meet needs and wants).

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

1. Explain how various materials can be reused or recycled.
2. Describe the reasons for doing things or behaving in ways that protect the environment.

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

1. Describe or list ways technology has changed the way people lived and worked throughout history (e.g., grandparents' era to today).

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

1. Collect information about products and systems used at school by asking questions (e.g., books, computers, piano).
2. Describe how the use of a product or system might cause something bad to happen (e.g., running a car causes pollution, cars get into accidents).

Technology for Productivity Applications—Students learn the operations of technology through the usage of technology and productivity tools.

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

1. Identify and use computer and multimedia

technology and know the terms used to describe it (e.g., computer, printer, VCR, DVD player, audio players).

2. Identify various parts of a computer by name (e.g., monitor, mouse, keyboard, power button, disk drive, CD/DVD drive).

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

1. Discuss and demonstrate proper care when using computer and multimedia technology resources (e.g., describe rules, list directions).
2. Turn computer and multimedia technology resources on and off.
3. Discuss software and why it is necessary to operate computer and multimedia technology.
4. Start, use and exit software programs with teacher assistance.
5. Use input (keyboard, mouse) and output (printer) devices to operate computer and multimedia technology tools with teacher assistance.
6. Use software programs designed to develop problem-solving skills.
7. Begin to locate letters and special keys on the keyboard with teacher assistance (e.g., enter key, escape key, space bar).

Benchmark C: Use productivity tools to produce creative works.

1. Describe how productivity tools are used to create documents, presentations and drawings.
2. Use technology resources with teacher assistance (e.g., pre-selected Web sites, launching applications, 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.

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

- ___ 1. Explain media formats used to communicate information (e.g., e-mail, newsletters, TV, phones, newspapers, Web pages).
- ___ 2. Show, within a group, various types of communication formats used in everyday life.

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

- ___ 1. Create documents with teacher assistance (e.g., students observe the teacher making a document, they add ideas, and select images for the teacher to import).
- ___ 2. Identify and explore different forms of electronic communication (e.g., written documents in electronic form, e-mail, Web pages, video, multimedia).

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

- ___ 1. Contribute to teacher-directed online projects (e.g., collecting weather data, listing of bird counts).

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.

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

- ___ 1. Talk about the difference between factual information and fiction (e.g., what is real and what is pretend or make-believe).
- ___ 2. Use a graphic organizer to sort information.

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.*

- ___ 1. Ask questions about an identified topic and list facts already known about the topic (e.g., graphic organizers for brainstorming, charting,

webbing).

- ___ 2. Find information in a technology-based resource (e.g., Web site, database, DVD, software program, video).
- ___ 3. Use technology to tell what was learned from information gathered (e.g., use simple presentation tools to create a poster, book, slide show).
- ___ 4. Tell where information came from (e.g., name of Web sites, software, databases).

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

- ___ 1. List types of information available on the Internet (e.g., school Web site, local information, animals, maps).
- ___ 2. Use teacher or librarian selected Web site to find information or learn new things.
- ___ 3. Use browser tools and buttons:
 - a. Forward and back button;
 - b. Home button;
 - c. Choose a link from the bookmarks or favorites list.

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

Benchmark A: *Identify problems and potential technological solutions.*

- ___ 1. Identify possible solutions to a problem.
- ___ 2. Distinguish the difference between people's needs and wants and how this can influence potential solutions.
- ___ 3. Identify and describe characteristics of different materials used to create technological products that provide solutions (e.g., wood, metal, glass, plastic).

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

- ___ 1. Recognize that designs have limited strength (e.g., a toy bridge made of craft sticks can support only so much weight).
- ___ 2. List the materials used in common items (e.g., house, car, toys).
- ___ 3. Describe how things are built by thinking of an idea, trying out a design and sharing it with others.
- ___ 4. Understand we can draw things and then have someone else build them.

Benchmark C: *Explore how products are invented and repaired.*

- ___ 1. Understand that things break but can often be fixed (e.g., have students share their experiences).
- ___ 2. Describe how to repair a broken toy (e.g., make sure the switch is on, the batteries are charged and nothing is blocking the toy's operation).

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.

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

- ___ 1. List the various forms of energy that are used in the community (e.g., electrical, mechanical, thermal).
- ___ 2. List the kinds of energy we can purchase (e.g., batteries, gas, electricity).
- ___ 3. Understand that vehicles move people or goods from one place to another in water, air or space and on land (e.g., boats, airplanes, rockets, trucks).
- ___ 4. Name products that are produced in large quantities (e.g., candy, baseballs, cars).
- ___ 5. Name things that are constructed where they are used (e.g., roads, buildings, bridges).

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

- ____ 1. Use symbols to communicate (e.g., write a sentence using pictures).
- ____ 2. Describe how technology enables communication by sending and receiving information (e.g., telephone, TV, magazines, e-mail).

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

- ____ 1. Know that vaccinations protect people from getting certain diseases.
- ____ 2. Explain how the use of technologies in agriculture makes it possible for food to be available year round.