THE GREAT TECH STORY

CHM

Students exploring The Great Tech Story exhibits and immersive experiences will encounter a variety of computing and technology artifacts and concepts. The list below provides basic definitions of key elements.

COMPUTING TERMS

Algorithm — A set of rules or instructions, generally as part of a computer program. For instance, an *algorithm* for identifying correct answers in student test results.

Branching — A decision point in a program, where it may do different things depending on certain conditions. For instance, "if the battery reads full, stop charging. Otherwise continue charging."

Compilers — Programs that turn the English-like words of a high-level computer language into the 1s and 0s that computer chips understand.

Design thinking — A five-step process used to improve product design. The five steps are: empathize, define (the problem), ideate, prototype, and test.

Engineering design process — A series of steps engineers use to find a solution to a design problem.

Gates —

AND gate — A logic function that requires all inputs to be "1" to output a "1"; otherwise the output is "0."

OR gate — A logic function that requires any inputs to be "1" to output a "1"; otherwise the output is "0."

Hardware — The physical parts of a computer, such as the monitor, keyboard, hard drive, and motherboard.

Input — The raw material a computer uses when it runs a program; information the computer receives.

Internet — The global "network of networks" that connects over four billion people.

Memory — A place in the computer that stores temporary information.

Microchips — Complex electrical circuits printed on a single small "chip." A microchip can contain millions of switches in the form of transistors, with many miles of connections between them. Some microchips are general-purpose computers (microprocessors), while many others do specialized tasks, from math calculations to processing sounds or video.

Product — The final result of designing something that is then produced or sold.

Output — The results of a computer program; information the computer sends.

Processor — The "brain" of the computer.

Program/Software — A series of instructions for a computer that runs on the computer's hardware.

Prototype — A rough mock-up or model used for testing.

Punched cards — Stiff paper cards with holes punched in them. The pattern of the holes can tell a machine what to do (a program), or contain data in a form a machine can read. Invented to control factory equipment 200 years ago, punched cards were later adapted to computers.

Relay — An electrical device that uses a small signal to control a larger current or device.

ETHICS CONCEPTS

Access — Being able to use resources, such as the internet, computers, and information. Many people can't easily access these things because they are too expensive or are limited to members of certain groups.

Diversity — A variety of different kinds of people in an organization or society, such as a mix of different ethnic backgrounds, ages, gender identities, abilities, and sexual preferences.

Intentions — Goals and hopes for an outcome someone plans for and works to make happen. Actual outcomes may be quite different from the original plan. Looking at situations from different points of view can help make sure there aren't unintended consequences.

Privacy — The right to control what information you share rather than having it spread around by others.

Transparency — When organizations make decisions in ways that anybody can read about or follow.

ROLES & RESPONSIBILITIES

CEO — A Chief Executive Officer (CEO) is the highest ranking leader in a company and is in charge of managing all aspects of the business or organization.

Chief Operating Officer — A company's top manager for running operations of all kinds, from buildings, to purchasing and maintaining equipment, to ensuring online and physical security.

Chief Financial Officer — A company's top manager for handling its money. Duties include making sure that payments are made and received, and that all transactions, big and small, are properly tracked.

Curator — A museum professional responsible for choosing items to collect or borrow and how to display or interpret them, often in an exhibit. The popular use of "curated" refers to anything which is carefully chosen, like a music playlist.

Engineer — Engineers are problem-solvers who love figuring out how and why things work the way they do. They study to learn special skills and use their knowledge of math, physics, chemistry, computer science, and other sciences to find new ways to design, code, and build complex machines, products, systems, or structures.

Founder — Somebody who starts, or *founds*, an organization or a project. When two or more people do this together they are *cofounders*.