



# **Technology: The Human Made System**



# Essential Question

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- How can we explain how a technology works?

# Georgia Performance Standards

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- MSENGR-TS-1a,b,c: The students will develop an understanding of the Universal Systems Model


# **Technology Is A Totally Human Entity.**

It is designed to benefit people, it has positive and negative impacts on the quality of human life, and its future is in the hands of human will.

# Technology Is Systematic

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- The various parts of technological activities work together in a predictable way to accomplish a common goal.

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# Technology As A System

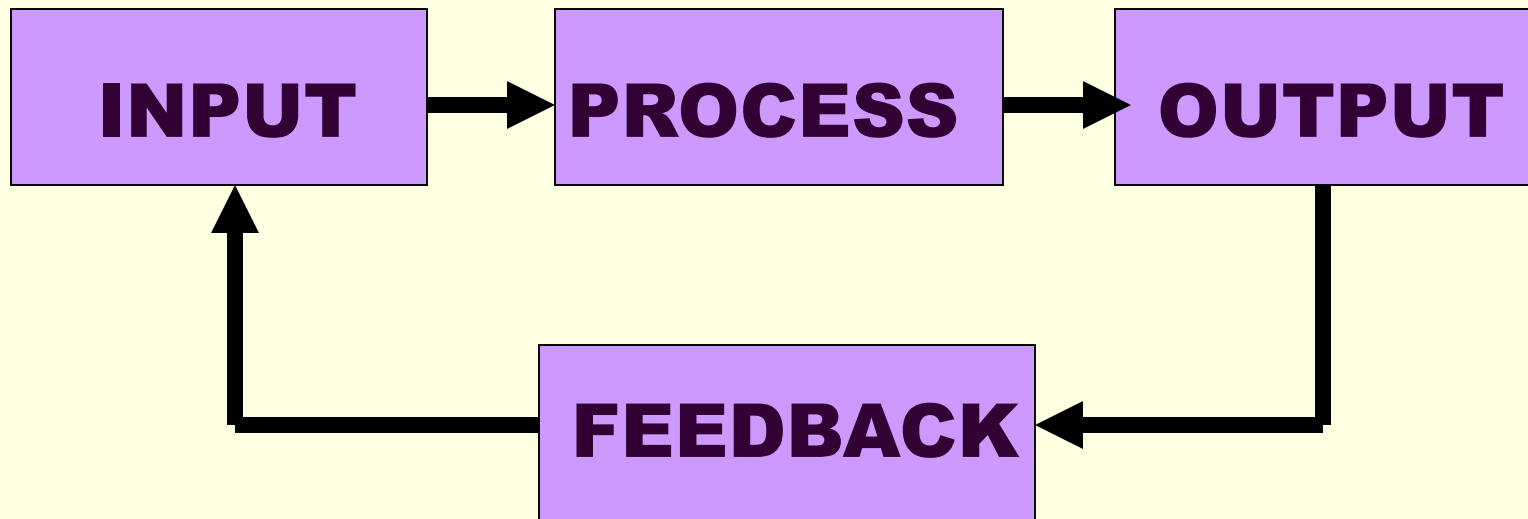
# WHAT IS A SYSTEM?

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- A system is a group of parts that work together to achieve a goal.

# Technological System

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# **System Components**



# Systems have several major components which include:

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- Goals
- Inputs
- Processes
- Outputs
- Feedback

# GOALS

Technology is designed to reach a desired goal.

Most technology is designed with several goals in mind.

# INPUTS

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- **Inputs are the elements that flow into the system and are consumed or processed by the system.**

# Input

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- The command given to the system, it includes the:

# INPUT

## Seven Resources of Technology

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- People
- Information
- Materials
- Tools and Machines
- Energy
- Capital
- Time

# PROCESS

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The process includes all of the activities that need to take place for the \_\_\_\_ system to give the expected result.

# Processes

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- Processes are the steps needed to complete an identified task.
- Technology uses two major types of processes:
  1. **Problem-Solving processes**
  2. **Transformation processes**



# **Transformation processes include:**

- **Production processes**
- **Management processes**

# Production Processes

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- **Production processes are actions that create the physical solution to a problem or opportunity**



# Management Processes

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## Functions of Management

- **Planning** – Developing goals and objectives
- **Organizing** - Structuring procedures to meet goals
- **Actuating** – Starting tasks
- **Controlling** – Checking results against goals

# OUTPUTS

**The result of the system**

# OUTPUT

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Output includes everything that results when the \_\_input and the process parts of the system go into effect.

Outputs can be:

**Expected** or **unexpected**

# What are outputs?

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- **manufactured product**
- **constructed work**
- **communicated message**
- **transported person**
- **scrap and waste**
- **pollution**

# FEEDBACK

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- **Feedback is information about the outputs of a process or system that is used to regulate the system.**

# All Technological Systems Share Some Common Characteristics.

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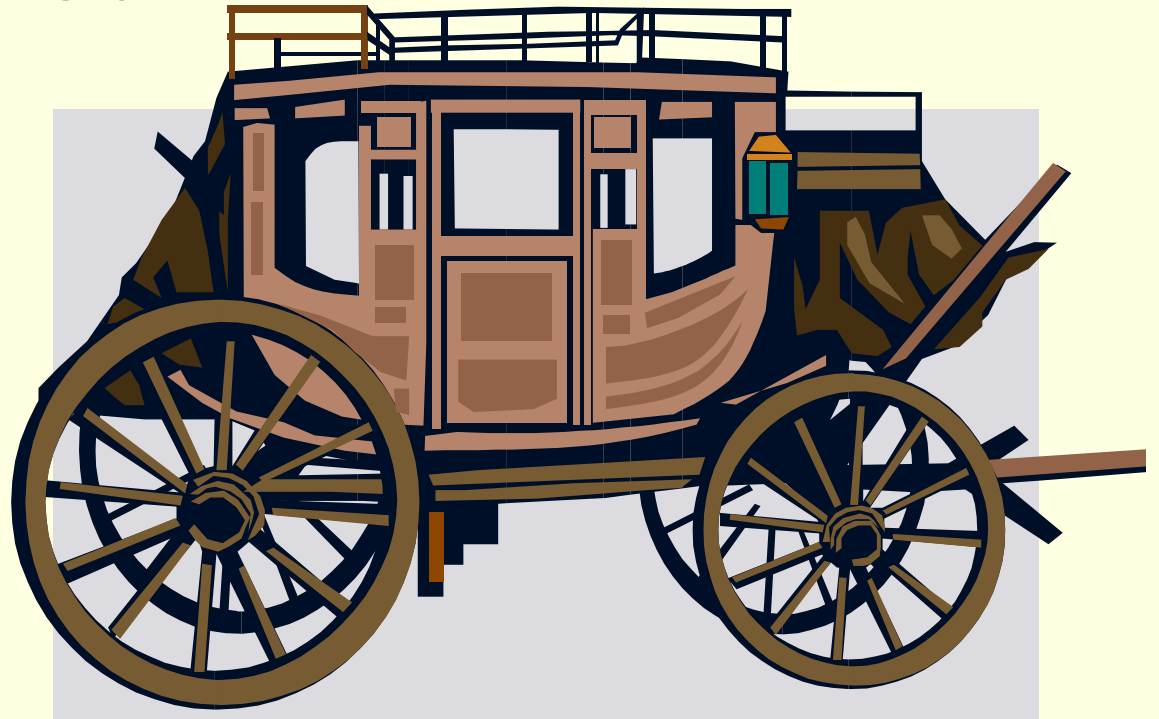
- They arise out of a human need.
- They are designed and developed by people
- They integrate resources to produce outputs
- They have consequences for people society, and the environment



- They are evaluated by people

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- In time, they are modified or abandoned.



# Level of Development

- Obsolete Technology – Those that can no longer efficiently meet human needs for products and services
- Current Technology – Techniques used to produce most of the products and services today
- Emerging Technology – New technologies that are not widely employed today

# FEEDBACK

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There are two different kinds of feedback:

- Positive/negative
- Desirable/undesirable

# FORECASTING FOR THE FUTURE

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How can we determine what future technology or systems look like?

- A. Trends – something that is emerging as popular
- B. Surveys – a sample or collection of facts and figures
- C. Scenarios – an imagined set of events with details, plans or possibilities
- D. Simulations – imitation or acting how something works