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| **Technical Drawing/Sketching**  What type of drawing is in the image?  https://www.quia.com/files/quia/users/christieschmitt/ETF1test/orthographic.jpg  Answer: Oblique | **Manufacturing and Design**  What is the definition of an inventor?  Answer: A person who develops creative new solutions or products |
| **Manufacturing and Design**  A mock-up is…  Answer: Rough 3-D model | **Manufacturing and Design**  What is the definition of a designer?  Answer:  A person who designs or improves devices to solve problems, meet people’s needs, and are attractive to look at |
| **Manufacturing and Design**  Choose the definition that provides the broadest definition of the term “technology.”  Answer: Changes made to the world to satisfy human needs or wants. | **Technical Drawing/Sketching**  What are the 3 main views of an orthographic drawing?  Answer: Top, front, right side |
| **Manufacturing and Design**  What is the definition of an engineer?  Answer:  A person who applies science and mathematics to improve or design technologies to solve problems and meet people’s needs | **Technical Drawing/Sketching**  What type of drawing is in the image?  https://www.quia.com/files/quia/users/christieschmitt/ETF1test/Isometric.jpg  Answer: isometric |
| **Manufacturing and Design**  What is the definition of a scientist?  Answer: A person who actively investigates the natural world | **Manufacturing and Design**  https://www.quia.com/files/quia/users/christieschmitt/ETF1test/gnatt.jpg  What is the chart in the picture called and what is its purpose?  Answer: Divide large projects into small  time segments. |
| **Manufacturing and Design**  What are the 8 steps of the design process?  Answer: Define the problem, research, develop possible solutions, choose the best solution, create a prototype, test and evaluate, communicate, redesign | **Technical Drawing/Sketching**  What type of drawing is in the image?  https://www.quia.com/files/quia/users/christieschmitt/ETF1test/oblique.jpg  Answer: Oblique |
| **Manufacturing and Design**  Define retail cost.  Answer: Cost of the product to the consumer | **Technical Drawing/Sketching**  What type of drawing is in the image?  https://www.quia.com/files/quia/users/christieschmitt/ETF1test/persepective.jpg  Answer: Perspective |
| **Manufacturing and Design**  Define wholesale cost.  Answer: Production cost plus a profit – price the retailer pays | **Manufacturing and Design**  What are the three types of research?  Answer: market, library, and internet |
| **Manufacturing and Design**  Define overhead cost.  Answer: Total cost to produce the product including the labor cost, material cost, and overhead | **Technical Drawing/Sketching**  Outlines the drawing sheet as well as the title strip.  Answer: Boarder lines |
| **Manufacturing and Design**  Define total production cost.  Answer: Rent for the factory, utility bills, and business maintenance | **Technical Drawing/Sketching**  A quick way to show an idea without being perfect is called  Answer: Sketching |
| **Technical Drawing/Sketching**  Which type of working drawing shows the contours and elevations of the earth’s surface  in a specific area.  Answer: Typographical map | **Technical Drawing/Sketching**  A more precise form of drafting where tools and machines are used is called:  Answer: Mechanical Drawing |
| **Technical Drawing/Sketching**  These lines help to build the drawing.  Answer: Construction lines | **Technical Drawing/Sketching**  When one measurement is used to represent a larger or smaller measurement it is called drawing an object to:  Answer: Scale |
| **Technical Drawing/Sketching**  A person that makes working plans and detailed drawings is referred to as:  Answer: A drafter | **Technical Drawing/Sketching**  Used to show the centerline of an object or the location of the center of a hole  Answer: Center line |
| **Technical Drawing/Sketching**  Which drawing technique shows depth but no real measurement?  Answer: perspective | **Technical Drawing/Sketching**  Used to show the edges of a hidden feature within an object  Answer: hidden line |
| **Technical Drawing/Sketching**  Shows the distance between extension lines  Answer: dimension lines | **Technical Drawing/Sketching**  Drafting is called the “International Language of Industry” because:  Answer: It uses standardized symbols, lines  and figures that are understood  in many countries. |
| **Technical Drawing/Sketching**  Architectural drawings include which  types of drawings?  Answer: floorplans, foundation plans, plumbing/electrical plans | **Technical Drawing/Sketching**  The set of specifically drawn lines that represent special features within the drawing of an object is called:  Answer: the alphabet of lines |
| **Technical Drawing/Sketching**  Shows the outline of the shape of an object.  Answer: object lines | **Technical Drawing/Sketching**  CAD is an acronym (word made of the first letters of other words) for:  Answer: Computer Aided Drafting |
| **Technical Drawing/Sketching**  Which drawing shows three sides of an object in a single view and can be measured?  Answer: Orthographic | **Technical Drawing/Sketching**  A(n) \_\_\_\_\_\_\_\_\_ plans and designs homes,  commercial buildings, schools and requires  a masters degree.  Answer: An Architect |
| **Technical Drawing/Sketching**  Which is not a pictorial drawing? – Isometric, Orthographic, assembly, perspective  Answer: Orthographic | **Technical Drawing/Sketching**  Lines that extend from points on the object to show where measurements begin and end.  Answer: Extension lines |
| **Technical Drawing/Sketching**  The drawings used to direct the production of a product that contains detailed  dimensions are called:  Answer: Working drawings | **Technical Drawing/Sketching**  The lines used in an Orthographic drawing to transfer the dimensions of one view to another without measuring.  Answer: Projection lines |
| **Technical Drawing/Sketching**  Which type of drawing shows how parts  fit together?  Answer: Assembly | **Technical Drawing/Sketching**  The career field who simplifies and improves  the operation and appearance of industrial  products is:  Answer: Industrial Designer |
| **Construction and Thermal Systems**  How does a room heating system transfer energy?  Answer: Convection | **Construction and Thermal Systems**  Would an outside wall contribute to a live load or dead load in a building?  Answer: dead load |
| **Construction and Thermal Systems**  Define elasticity.  Answer: Ability of a material to be stretched or deformed and return to its original shape | **Construction and Thermal Systems**  Define brittle.  Answer: Describes materials that do not deform plastically but fracture shortly after reaching their elastic limit |
| **Construction and Thermal Systems**  Define strain.  Answer: Measure of how much a material  deforms due to applied stress | **Construction and Thermal Systems**  Which of the following properties is most  important for steel used to make springs?  Answer: elasticity |
| **Construction and Thermal Systems**  If someone is changing the tire on a car, what  kind of force is being exerted if he or she is  using a lug wrench to remove the wheel nuts?  Answer: Torsion | **Construction and Thermal Systems**  Define Malleability.  Answer: Ability of a material to be stretched or deformed and return to its original shape |
| **Construction and Thermal Systems**  How does the sun transfer energy?  Answer: Radiation | **Construction and Thermal Systems**  The figure shows the handle of a spoon that  bent while being used to scoop frozen ice cream.  What does the bend indicate about the property  of the material in the spoon’s handle that  made it inappropriate for this use?  https://www.quia.com/files/quia/users/christieschmitt/ETF2Test/13.bmp  Answer: It was too malleable. |
| **Construction and Thermal Systems**  A person walking across a simple plank bridge  https://www.quia.com/files/quia/users/christieschmitt/ETF2Test/24.bmpexerts a downward force in the middle. The plank is supported by an upward force at each end.  At which point are cracks in the board due to tension most likely to appear first?  Answer: Y | **Construction and Thermal Systems**  Define elastic limit.  Answer: Point at which a material will  not go back to its original shape when stress is removed |
| **Construction and Thermal Systems**  A manufacturer has hired a chemical engineer to develop a new-and improved home insulating material. Which of the following properties will be most important for the new insulator to have?  Answer: Low thermal conductivity | **Construction and Thermal Systems**  Define stress.  Answer: Ratio of an applied force divided  by the area over which the force acts |
| **Fluid Systems**  Why is acetone, not hot water, used in the syringe to demonstrate a heat engine?  Answer: It has a low boiling point | **Fluid Systems**  This system can transfer energy to move an object.  Answer: Hydraulic and Pneumatic System |
| **Fluid Systems**  This type of system uses pressure difference in gas to do work.  Answer: Pneumatic System | **Fluid Systems**  This system can take a small input force and transmit a larger output force.  Answer: Hydraulic System |
| **Fluid Systems**  This system has some “springiness.”  Answer: Pneumatic System | **Fluid Systems**  The working fluid used in this system  can store energy.  Answer: Pneumatic and Hydraulic System |
| **Fluid Systems**  The working fluid used in this system cannot be compressed.  Answer: Hydraulic System | **Fluid Systems**  The working fluid of this system transmits a force right away.  Answer: Hydraulic System |
| **Fluid Systems**  This system can be analyzed for the relationship among pressure, force, and area.  Answer: Pneumatic System | **Fluid Systems**  https://www.quia.com/files/quia/users/christieschmitt/ETF_Project_3_Test_Images/Foot_pedal.jpgWhat is the name of the manufacturing process?  Answer: Forming |
| **Fluid Systems**  The Otto engine is an internal combustion engine because fuel is burnt inside the engine. In the Stirling engine heat is provided by a source outside of the engine, so it’s called an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ combustion engine.  Answer: Otto Engine | **Fluid Systems**  When water boils in the putt-putt boat boiler and becomes steam, its volume does what?  Answer: Increases |
| **Electronics**  Binary code consists of a series of numbers. What are the numbers used and what do they mean?  Answer: 0- off, 1- on | **Electronics**  \_\_\_\_\_\_\_\_\_\_\_ controls flow of electricity in a circuit, like a switch, relay, diode, or variable resistor.  Answer: Controller |
| **Electronics**  What step of a signal with its first?  Answer: Encode | **Electronics**  https://www.quia.com/files/quia/users/christieschmitt/ETF4Proj/48-50.bmpIn this circuit, I = 0.1 amps, and the power  source is 2 AA batteries.  What is the value of R for each bulb?  Answer: 30 ohms |
| **Electronics**  What is the difference between a series  and parallel circuit?  Answer: Parallel circuit branches off and a series circuit stays in a line together | **Electronics**  Does the statement apply to analog or  digital signals? Signal can be noisy due to interference  Answer: Analog |
| **Electronics**  How does the brightness of Bulb A compare with the brightness of Bulb B?  https://www.quia.com/files/quia/users/christieschmitt/ETF4Proj/26-27.bmp  Answer: Bulb A is brighter | **Electronics**  Does the statement apply to analog or digital signals? More information can be sent in the same signal  Answer: Digital |
| **Electronics**  Which component of communication system is the person or thing for whom the message is intended.  Answer: A receiver | **Electronics**  What step of a signal with its forth step?  Answer: Decode |
| **Electronics**  in the physical world, like a switch or light  resistor is a \_\_\_\_\_\_\_\_\_\_\_\_.  Answer: Input Device | **Electronics**  Which component of communication system  receives the signal?  Answer: Receiver |
| **Electronics**  The term LED refers to  Answer: Light Emitting Diode | **Electronics**  Which component of communication system  produces the message to be sent.  Answer: Encode |
| **Engineering Careers**  The application of engineering principles to  biological systems.  Answer: Bioengineering | **Engineering Careers**  Study nuclear energy, radiation, and their  beneficial uses.  Answer: Nuclear |
| **Engineering Careers**  Designing and supervising the construction  of roads, buildings, airports, tunnels, bridges,  and water and sewage systems.  Answer: Civil | **Engineering Careers**  Applies science and math to the design,  development, and implementation of  manufacturing systems (i.e. they produce  goods)  Answer: Manufacturing Engineering |
| **Engineering Careers**  Design, develop, test, and help manufacture  aircraft, missiles, and spacecraft  Answer: Aerospace | **Engineering Careers**  Develop new materials, improve traditional  materials, and produce materials that are  economical and reliable through synthesis  and processing  Answer: Material Science Engineering |
| **Engineering Careers**  Concerned with programming robots and  systems to perform tasks autonomously  Answer: Robotics and Automated Systems | **Engineering Careers**  Design and build computer-related  hardware products for many applications,  such as personal computers, cell phones,  automobiles, and even washing machines  Answer; Computer Engineering |
| **Engineering Careers**  Create safer structures and fit more people and objects per square inch into these structures  Answer: Civil Engineering | **Engineering Careers**  Design, produce, operate, and service  machines and mechanical devices  Answer: Mechanical Engineering |
| **Safety**  Which industries does OSHA cover?  Answer: General Industry, Shipyards/maritime, and construction | **Safety**  Among the rights related to OSHA record keeping, workers have the right to review:  **Answer:** The OSHA 300 Log and the OSHA 300A Summary. |
| **Safety**  What type of OSHA inspection is conducted when immediate death or serious harm is likely?  Answer: Imminent danger | **Safety**  When the employer receives an OSHA citation,  it must be  Answer: Posted for 3 days or until the  violation is fixed |
| **Safety**  OSHA's mission is to:  Answer: Protect the safety and health  of America's workers. | **Safety**  A Material Safety Data Sheet (MSDS) gives information about:  Answer: Hazardous chemicals |
| **Safety**  The creation of OSHA provided this  important right to workers:  Answer: The right to a safe and  healthful workplace | **Safety**  The term that refers to the act of Identifying and correcting hazardous situations or conditions:  Answer: Housekeeping |
| **Safety**  Safety Color Yellow means:  Answer: Caution | **Safety**  A safety hazard is:  Answer: a visible unsafe situation |
| **Safety**  A potential hazard is  Answer: only dangerous when something else happens | **Safety**  Safety Color Red means:  Answer: Stop/danger |
| **Safety**  What is the universal systems mode?  Answer: input, process, output, feedback |  |