

Day One

3D CAD Design: Scavenger Hunt

Objective: Basic Mouse and Keyboarding Skills, Familiarity with the Onshape CAD Platform

Standards:

- Next Generation Science Standards (NGSS): 3.5.ETS1.2
- English Language Arts Common Core State Standards (ELA-CCSS): SL.5.1.B, SL.5.1.C

Vocabulary:

- Rotate – Move or cause to move in a circle around an axis or center.
- Pan – Movement to turn the camera horizontally so it sweeps around the screen.
- Zoom – To change smoothly from a long shot to a close up.

Extension Activity: [CAD and 3D Printing](#)

Finding the Percent

Objective: Determining percent based on equivalent fractions and decimal conversions

Standards:

- Mathematics Common Core State Standards (Math-CCSS): 4.NF.A.1, 4.NF.C.5, 4.NF.C.6, 5.NBT.A.4, 5.NF.B.3, 6.RP.A.3.C
- Next Generation Science Standards (NGSS): 5.PS1.1
- English Language Arts Common Core State Standards (ELA-CCSS): SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4, L.5.4B

Vocabulary:

- Percent – One part of a hundred
- Solubility – The ability of a substance to dissolve
- Solute – A substance dissolved in a solution
- Solution – A homogeneous mixture of two or more substances that can exist in any phase. Example: Brass or gaseous air
- Solvent- The component of a solution that is present in the greatest amount. The substance in which the solute is dissolved

Extension Activity: [Percent Extension Activities](#)

Basic Graphing

Objective: Collect data using observations and experiments, represent data on tables and graphs, and analyze data to identify solutions or make informed decisions

Standards:

- Mathematics Common Core State Standards (Math-CCSS): 3.MD.B.3
- English Language Arts Common Core State Standards (ELA-CCSS): RF.5.3, RF.5.4, SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D

Vocabulary:

- Data – Individual facts, statistics, or items of information.
- Graph – A diagram showing the relationship of quantities.
- Table – An arrangement of words, numbers, and/or signs, to exhibit facts or relations in a definite, compact, and comprehensive form.

Extension Activity: [Graphing](#)

DoD STARBASE Idaho Lesson Objectives, Standards, Vocabulary and Extension Activities Page 2

Basic Measurement: Mass, Length, Liquid Volume

Objective: Using appropriate tools and units of mass, length, and liquid volume to accurately measure

Standards:

- Idaho Content Standards – Science (ICSS): PS1.5.3
- Mathematics Common Core State Standards (Math-CCSS): 3.MD.A.2, 4.MD.A.1, 4.MD.A.2, 5.MD.C.3, 5.MD.C.3.B, 5.MD.C.4, 5.MD.C.5, 5.MD.C.5.B
- Next Generation Science Standards (NGSS): 5.PS1.3
- English Language Arts Common Core State Standards (ELA-CCSS): RF.5.3, RF.5.3.A, RF.5.4, RF.5.4.A, SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4, L.5.4

Vocabulary:

- Gram – standard metric unit used to measure the mass of an object
- Mass – The amount of matter in an object independent of gravity.
- Metric system – Universal system of measurement.
- Capacity – The amount a container will hold
- Meter – International standard unit of length. Equivalent to 39.37 inches
- Volume – Amount of space an object occupies.
- Graduated Cylinder – A container used to for measuring liquids, marked with a graded scale
- Liter – Standard metric unit used to measure liquid volume
- Meniscus – The curvature of a column of liquid caused by surface tension

Extension Activity: [Metric Measurements](#), [Measurement Review](#)

Contraption Action: Engineering Design Process (EDP)

Objective: Utilize the steps of the EDP to complete a group work task

Standards:

- Idaho Content Standards – Science (ICSS): PS2.5.1, PS3.MS.5
- Next Generation Science Standards (NGSS): 3.5.ETS1.1, 3.5.ETS1.2, 3.5.ETS1.3, 4.PS3.1, 4.PS3.3, 4.PS3.4, 5.PS2.1
- English Language Arts Common Core Science Standards (ELA-CCSS): SI.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4

Vocabulary:

- Engineering Design Process (EDP) – A cyclical method of problem solving used to create a system, a product or a process that meets an identified need.
- Energy – A measure of the capacity to do work, expressed as the work that it does, measured in joules.
- Energy Transfer or Transformation – The change of energy from one form to one or more different forms.
- Gravitational Energy – The potential energy in an object due to its height.
- Kinetic energy – The energy of motion
- Law of Conservation of Energy – The principle that energy cannot be created or destroyed, but changes from one form to another.

Extension Activity: [EDP Extensions](#)

DoD STARBASE Idaho Lesson Objectives, Standards, Vocabulary and Extension Activities Page 3

Fly on the Ceiling

Objective: Apply geometric properties and relationships to specific problems using a coordinate plane, angle, area, surface area, or volume.

Standards:

- Mathematics Common Core State Standards (Math-CCSS): 5.G.A.1, 5.G.A.2
- English Language Arts Common Core State Standards (ELA-CCSS): SL.5.1, SL.5.1.B, SL.5.4

Vocabulary:

- Axis – A number line which may be vertical or horizontal
- Cartesian Coordinate System – A coordinate system in which the coordinates of a point are its distances from a set of perpendicular lines that intersect at an origin
- Coordinate – An ordered pair of numbers which give the location of a point on a plane (X,Y)
- Coordinate plane – A grid on a plane with two perpendicular and intersecting lines of axes
- Grid – A set of horizontal and vertical lines spaced uniformly
- Origin – The point where the two axes of a coordinate plane intersect
- Quadrant – Any of the four areas into which a plane is divided, designated as first, second, third, and fourth counting counterclockwise
- X-Axis – The horizontal axis in a system of rectangular coordinates
- Y-Axis – The vertical axis in a system of rectangular coordinates

Extension Activity: [Coordinate Graph Writing](#)

Fingerprint Analysis

Objective: Conversion of fractions into decimals and percent

Standards:

- Mathematics Common Core State Standards (Math-CCSS): 3.MD.B.3, 5.NBT.A.4, 5.NF.B.3, 6.RP.A.3.C, 6.SP.B.5.A, 6.SP.B.5.B
- English Language Arts Common Core State Standards (ELA-CCSS): SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4

Vocabulary:

- Automated Fingerprint Identification System (AFIS) - A computer system that scans fingerprints from crime scenes and compares them with others around the world
- Fingerprint – An impression of the markings of the inner surface of the finger.

Extension Activity: [Graphing](#)

Andromeda

Energy Explorations

Objective: Understand different types of energy and that energy transfer is all around

Standards:

- Idaho Content Standards-Science (ICSS): PS1.4.2, PS1.4.4, PS1.MS.6, PS3.MS.5
- Next Generation Science Standards (NGSS): 4.PS3.1, 4.PS3.2, 4.PS3.4, MS.PS1.6, Ms.PS3.5
- English Language Arts Common Core Standards (ELA-CCSS): RF.5.3, RF.5.3.A, RF.5.4, RF.5.4.A, SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1D, SL.5.4, L.5.4

Vocabulary:

- Atom – The smallest particle of an element that retains all the properties of that element
- Chemical Energy – Energy in a substance that can be released by a chemical reaction
- Conservation of Energy – A principal stating that the total energy of an isolated system remains constant regardless of changes within the system
- Electrical Energy – Energy made available by the flow of electric charge through a conductor
- Energy – A measure of the capacity to do work, measured in Joules
- Energy Transfer – The change of energy from one form to one or more different forms
- Force – A push or pull that gives energy to an object, sometime causing a change in the motion of the object.
- Gravitational Energy – The potential energy in an object due to its height
- Kinetic Energy – The Energy of a body with respect to its motion
- Light (Radiant) Energy – Energy in a form that can radiate or travel in waves, generally electromagnetic energy such as energy from the sun.
- Mechanical Energy – The sum of potential energy and kinetic energy; the energy associated with motion and position of an object
- Nuclear Energy – Energy released by a nuclear reaction (nuclear fission or nuclear fusion) and used as a power source
- Potential Energy – Energy that is stored within an object, not in motion but capable of becoming active
- Sound Energy – Energy present as a sound wave
- State of Matter – Distinct forms in which material can exist
- Thermal Energy – Internal energy present in a system due to its temperature
- Work – Work is done upon an object when a force causes it to be moved or changed

Extension Activity: [Energy Cootie Catcher](#)

Bernoulli's

Objective: Understand how fluids behave, what defines a fluid

Standards:

- Idaho Content Standards – Science (ICSS): PS2.MS.2
- Next Generation Science Standards (NGSS): MS.PS2.2
- English Language Arts Common Core State Standards (ELA-CCSS): RF.5.3, RF.5.3.A, RF.5.4, RF.5.4.A, SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1D, SL.5.4

Vocabulary:

- Fluids – Any substance that flows freely, has no definite shape, and changes shape with pressure.
- Fluid dynamics – Fluids in motion
- Fluid statics – Fluids at rest

Extension Activity: [Build Your Own Submarine](#)

DoD STARBASE Idaho Lesson Objectives, Standards, Vocabulary and Extension Activities Page 5

Creating and Building Molecular Models

Objective: All matter is made from atoms, which are made from elements on the periodic table, parts of an atom, difference between a compound and a molecule

Standards:

- Idaho Content Standards – Science (ICSS): PS1.5.1, PS1.MS.1
- Next Generation Science Standards (NGSS): 5.PS1.1, MS.PS1.1
- English Language Arts Common Core State Standards (ELA-CCSS): RF.5.3, RF.5.3.A, RF.5.4, RF.5.4.A, SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4, L.5.4, L.5.4B

Vocabulary:

- Atom – The smallest particle of an element that retains all the properties of that element
- Chemical formula – A model that gives information about the atoms that makes up a chemical compound
- Compounds – Substance made of two or more types of atoms. Example: H₂O (Water)
- Electrons – Negatively charged particles that exist in a cloud surrounding the nucleus
- Elements – Substances made of only one type of atom. Example: O₂ (Oxygen)
- Molecule – The smallest particle of an element or compound that retains the chemical and physical properties of the substance. Two or more atoms chemically bonded
- Nucleus – The center of an atom composed of protons and neutrons
- Protons – Subatomic particles with a positive charge found in the nucleus of an atom

Extension Activity: [Building Blocks of Matter](#)

States of Matter

Objective: Students will learn that a change in the state of matter is caused by kinetic (thermal) energy.

Standards:

- Idaho Content Standards – Science (ICSS): PS1.MS.4
- Next Generation Science Standards (NGSS): MS.PS1.4, MS.PS3.5
- English Language Arts Common Core State Standards (ELA-CCSS): SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4

Vocabulary:

- Kinetic energy – Energy of motion
- Gases – A state of matter in which the molecules are not bound to one another. Gases do not have a fixed shape or volume.
- Liquids – A state of matter in which the molecules are loosely bonded. Liquids have no fixed shape or volume.
- Solids – A state of matter in which the molecules are bound tightly. Solids have a fixed shape and volume.
- Plasma – A state of matter in which the molecules are not bound to one another and have a charge. Plasmas have no fixed shape or volume.

Extension Activity: [States of Matter Review Poster](#), [States of Matter Crossword](#)

DoD STARBASE Idaho Lesson Objectives, Standards, Vocabulary and Extension Activities Page 6

Fluid Characteristics

Objective: Understand how fluids behave, what defines a fluid

Standards:

- Idaho Content Standards – Science (ICSS): PS1.5.3
- Next Generation Science Standards (NGSS): 5.PS1.3
- English Language Arts Common Core State Standards (ELA-CCSS): RF.5.3, RF.5.3.A, RF.5.4.A, SL.5.1, SL.5.1.B, SL.5.1C, SL.5.1.D, L.5.4

Vocabulary:

- Compressibility – The property of being able to occupy less space.
- Density – The amount of mass per unit volume.
- Dynamic – Characterized by continuous change, activity or progress.
- Flow – To move with a continuous change in placement and position of particles.
- Force – A push or pull that gives energy to an object, sometimes causing a change in motion of the object.
- Pressure – The application of continuous force by one body on another that is touching (compression).
- Static – Having no motion, being at rest.
- Surface tension – A property of liquids arising from unbalanced molecular cohesive forces at or near the surface.
- Viscosity – The property of a fluid that resists the force tending to cause the fluid to flow.

Extension Activity: [Build Your Own Submarine](#)

Nebula

3D CAD Design

Objective: Utilizing 3D Onshape program to manipulate pre-made models, and modify using existing parts to create new models

Standards:

- Next Generation Science Standards (NGSS): 3.5.ETS1.2
- English Language Arts Common Core State Standards (ELA-CCSS): SL.5.1.B, SL.5.1.C

Vocabulary:

- Rotate – Move or cause to move in a circle around an axis or center.
- Pan – Movement to turn the camera horizontally so it sweeps around the screen.
- Zoom – To change smoothly from a long shot to a close up.

Extension Activity: [CAD and 3D Printing](#)

Buoyancy

Objective: Understand that an object's density in relation to its surroundings is what will determine whether it floats or sinks

Standards:

- Idaho Content Standards – Science (ICSS): PS1.5.3, PS2.MS.2
- Next Generation Science Standards (NGSS): 5.PS1.3, MS.PS2.2
- English Language Arts Common Core State Standards (ELA-CCSS): RF.5.4.A, SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D

Vocabulary:

- Buoyancy – The property of a fluid to exert an upward force on a body that is wholly or partly submerged in it
- Density – The amount of mass per unit volume
- Float – TO be suspended in or move through space as if supported by a liquid
- Mass – The amount of matter in an object, independent of gravity
- Sink – To go below the surface of water or another fluid
- Surface area – The measure of how much exposed area an object has
- Volume – Amount of space an object occupies.

Extension Activity: [Build Your Own Submarine](#)

Pop Goes the Fizz

Objective: Collecting data points, accurately measuring liquid volume and length using appropriate tools, interpreting and graphing data

Standards:

- Mathematics Common Core State Standards (Math-CCSS): 3.MD.A.2, 3.MD.B.3, 3.MD.B.4, 4.MD.A.1
- Next Generation Science Standards (NGSS): 3.5.EST1.2, 3.5.ETS1.3
- English Language Arts Common Core State Standards (ELA-CCSS): RF.5.3, RF.5.4, RF.5.4.A, SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4

Vocabulary:

- Effervescence – The bubbling of a solution due to the escape of gas.
- Variable – The part of the experiment that changes
- Constant – The part of the experiment that stays the same.
- Dependent Variables – The variable that changes based on the independent variable.
- Independent Variables – The variable you control.

Extension Activity: [Graphing](#)

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STARBITS

Objective: Identify the 3 parts of a basic circuit, use of circuits and technology to solve real-world problems

Standards:

- Idaho Content Standards – Science (ICSS): PS1.4.1, PS1.4.2, PS1.4.4, PS2.MS.3
- Next Generation Science Standards (NGSS): 3.5.ETS1.1, 3.5.ETS1.3, 4.PS3.1, 4.PS3.2, 4.PS3.4, 5.PS1.3
- English Language Arts Common Core Science Standards (ELA-CCSS): RF.5.3, RF.5.4, RF.5.4.A, SL.5.1, SL.5.1, SL.5.1.B, SL.5.1.C

Vocabulary:

- Atom – The smallest particle of an element that retains all the properties of that element
- Closed circuit – An electrical circuit providing an uninterrupted, endless path for the flow of current
- Conductor – A material or an object that conducts heat, electricity, light or sound.
- Dynamic Electricity – A flow of electrical charge
- Electrical current – A flow of electricity through a conductor
- Electricity – The physical phenomena arising from the behavior of electrons and protons that is caused by the attraction of particles with opposite charges and the repulsion of particles with the same charge
- Electrons – Negatively charged particles that exist in a cloud surrounding the nucleus
- Open circuit – An electrical circuit through with currents cannot flow because the path is broken or interrupted by and opening.

Extension Activity: [Circuits Extension Activity](#)

Double Bubble Trouble

Objective: Identifying the differences between chemical and physical changes, recognizing that changes require kinetic energy

Standards:

- Idaho Content Standards – Science (ICSS): PS1.4.4, PS1.5.3, PS1.5.4, PS1.MS.2, PS1.MS.4
- Mathematics Common Core State Standards (Math-CCSS): 3.MD.A.2, 4.MD.A.1
- Next Generation Science Standards (NGSS): 5.PS1.3, 5.PS1.4, MS.PS1.2, Ms.PS1.4, MS.PS3.5
- English Language Arts Common Core State Standards (ELA-CCSS): SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4

Vocabulary:

- Atom – The smallest particle of an element that retains all the properties of the element
- Catalyst – A substance that increase the rate of a chemical reaction without
- Chemical Change – A change resulting from a chemical reaction in which bonds are broken and new bonds are formed between different atoms in a substance. A chemical change produces one or more new substances with different chemical properties.
- Chemical Energy – That part of the energy in a substance that can be released by a chemical reaction
- Chemical formula – A model that gives information about atoms that make up a particular chemical compound
- Compounds – Substances made of two or more types of atoms ex: H₂O
- Elements – Substances made of only one type of atom ex: O₂
- Endothermic Reaction – A chemical reaction that absorbs energy in the form of heat
- Exothermic Reaction – A chemical reaction in which energy in the form of heat
- Physical change – A change in physical properties that does not affect the chemical nature of a substance
- Physical Property - A basic or essential attribute shared by all members of a class.
- Temperature – The measurement of hear energy in a system or substance

Extension Activity: [Physical and Chemical Change](#)

Mars

Newton's Laws

Objective: To understand Newton's three laws of motion (Inertia, $F=MA$, Equal and Opposite reactions)

Standards:

- Idaho Content Standards – Science (ICSS): PS2.5.1, PS2.MS.2, PS3.MS.1, PS3.MS.5
- Mathematics Common Core State Standards (Math-CCSS): 5.NBT.A.3.A, 5.MD.B.2, 6.EE.B.5
- Next Generations Science Standards (NGSS): MS.PS2.2, 5.PS2.1, MS.PS3.1, MS.PS3.5
- English Language Arts Common Core State Standards: RF.5.3, RF.5.4.A, SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4, L.5.4, L.5.4.B

Vocabulary:

- Mass - The amount of matter in an object, independent of gravity
- Force - A push or pull that gives energy to an object, sometimes causing a change in motion of the object
- Newton's 1st law of Motion (Inertia) – An object in motion will stay in motion or an object at rest will stay at rest unless acted upon by an outside force
- Newton's 2nd law of Motion ($F=MA$) – Acceleration is produced when a force acts on a mass. The greater the mass, the greater the amount of force necessary to accelerate the mass
- Newton's 3rd law of Motion (Equal and opposite reactions) – Every action is followed by a reaction equal in magnitude and opposite in direction

Extension Activity: [The Great Marble Race](#)

Robo Loops

Objective: To investigate technological innovations and the learner will employ technologies to solve a simulated or real-world problem

Standards:

- Mathematics Common Core State Standards (Math-CCSS): 4.MD.C.6
- Next Generation Science Standards (NGSS): 3.5.ETS1.1, 3.5.ETS1.2, 3.5.ETS1.3
- English Language Arts Common Core Science Standards (ELA-CCSS): SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D

Vocabulary:

- Engineering Design Process – A cyclical method of problem solving used to create a system, a product, or a process that meets an identified need
- Input – Something put into a system or expended in its operation to achieve an output or result
- Loop – A sequence of instructions that repeats either a specified number of times or until a particular condition is met
- Output – The information produced by a program or process from a specific input
- Program – To provide a machine with a set of coded working instructions

Extension Activity: [Robots Extension Activities and Quizzes](#)

DoD STARBASE Idaho Lesson Objectives, Standards, Vocabulary and Extension Activities Page 10

Eggbert

Objective: Apply the steps of the Engineering Design Process to solve a simulated or real-world problem

Standards:

- Idaho Content Standards – Science (ICSS): PS1.4.1, PS1.4.3, PS2.5.1, PS2.MS.1, PS2.MS.2, PS3.MS.5
- Mathematics Common Core State Standards (Math-CCSS): 4.OA.A.1, 4.NBT.A.3, 5.NBT.B.5
- Next Generations Science Standards (NGSS): 3.5.ETS1.1, 3.5.ETS1.2, 3.5.ETS1.3, 4.PS3.1, 5.PS2.1, MS.PS2.1, MS.PS2.2
- English Language Arts Common Core State Standards (ELA-CCSS): SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4

Vocabulary:

- Acceleration – A change in velocity (to speed up or slow down)
- Engineering Design Process (EDP) – A cyclical method of problem solving used to create a system, a product or a process that meets an identified need.
- Force – A push or pull that gives energy to an object, sometimes causing a change in the motion of the object
- Inertia – The tendency of an object to resist a change in motion
- Kinetic Energy – Energy in motion
- Potential Energy – Energy that is stored within an object, not in motion but capable of becoming active.

Extension Activity: [EDP Extensions](#)

3D CAD Design

Objective: Utilizing 3D Onshape program to manipulate pre-made models, and modify using existing parts to create new models

Standards:

- Next Generation Science Standards (NGSS): 3.5.ETS1.2
- English Language Arts Common Core State Standards (ELA-CCSS): SL.5.1.B, SL.5.1.C

Vocabulary:

- Rotate – Move or cause to move in a circle around an axis or center.
- Pan – Movement to turn the camera horizontally so it sweeps around the screen.
- Zoom – To change smoothly from a long shot to a close up.

Extension Activity: [CAD and 3D Printing](#)

Day 5

What's Up Dock

Objective: Apply geometric properties and relationships to specific problems using surface area.

Standards:

- Mathematics Common Core State Standards (Math-CCSS): 3.MD.C.5, 3.MD.C.7, 3.MD.C.7.A, 3.MD.C.7.B, 4.MD.A.3, 5.OA.A.1, 5.G.B.4, 6.G.A.1
- English Language Arts Common Core Science State Standards (ELA-CCSS): RF.5.3, RF.5.4, RF.5.4.A, SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4, L.5.4, L.5.4.B

Vocabulary:

- Surface area – The measure of how much exposed area an object has.

Extension Activity: [Shapes and Slides](#)

Robo Putt-Putt

Objective: Apply geometric properties and relationships to specific problems using angles

Standards:

- Mathematics Common Core State Standards (Math-CCSS): 4.MD.C.5, 4.MD.C.5.A, 4.MD.C.5.B, 4.MD.C.6
- English Language Arts Common Core State Standards (ELA-CCSS): SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4

Vocabulary:

- Robot – A machine that is programmed to do work on its own, automatically.
- Angle – A figure formed by two rays having common endpoint
- Orientation – Position with relation to the points of the compass or other specific directions
- Protractor – An instrument for measuring or drawing angles

Extension Activity: [Measuring and Identifying Angles](#)

Bridge Quest

Objective: Utilize the steps of the EDP to complete a group work task

Standards:

- Next Generation Science Standards (NGSS): 3.5.ETS1.1, 3.5.ETS1.2, 3.5.ETS1.3
- English Language Arts Common Core State Standards (ELA-CCSS): RF.5.3, RF.5.3.A, RF.5.4, RF.5.4.A, SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4, L.5.4

Vocabulary:

- Abutment – A mass at each end of a bridge
- Arch Bridge – A bridge with abutments at each end shaped as a curved arch
- Beam Bridge – Bridge with rigid horizontal structures whose ends rest on piers or abutments
- Buoyancy – An upward force that keeps things afloat
- Criteria – A standard, rule, or test on which a judgement or decision can be released
- Engineers – A person who uses scientific knowledge to solve practical problems
- Engineering Design Process (EDP) – A cyclical method of problem solving used to create a system, a product or a process that meets an identified need.
- Floating Bridge – Temporary bridge built over a series of pontoons or boat like structures
- Roadbed – The foundation and surface of a road
- Suspension Bridge – Bridge with a roadbed supported by cables anchored at both ends to towers or other structure.

Extension Activity: [EDP Extensions](#)

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STEM Careers: Personal Investigations

Objective: Lerner will correlate STEM areas to real-world applications in career fields

Standards:

- English Language Arts Common Core State Standards (ELA-CCSS): RF.5.3, RF.5.3.A, SL.5.1, SL.5.1.B, SL.5.1.C, SL.5.1.D, SL.5.4, L.5.4

Vocabulary:

- STEM – Science, Technology, Engineering, Mathematics

Extension Activity: [STEM CAREERS PDF](#)