ENERGY + AGRICULTURE

SUCCESS

EXPLORE STRATEGIES FOR TEACHING OTHERS ABOUT THE IMPORTANCE OF ENERGY AND AGRICULTURE!

FACILITATOR KIT

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AMERICAN FARM BUREAU FOUNDATION FOR AGRICULTURE

TRI-STATE Generation and Transmission Association, Inc.
A Touchstone Energy® Cooperative

E.1 NO SOIL NEEDED

Materials Needed

- Glass jars – one per student
- Water
- Mature plant in which to take cuttings – Swedish ivy or wandering jew work well
- Scissors
- Activity Resource: Hydroponic Watering Systems (p 17)
- Tape
- Marker

Directions

- Display mature plant and facilitate a discussion about the energy plants need to grow and the source of that energy.
- Conclude that plants actually get their energy from the sun, not the soil. We know this because plants can grow without soil.
- Give each student a baby food jar.
- Have each student
  - » Label their jar with their name using a small piece of tape and a marker.
  - » Fill their jar with water.
  - » Cut a 4-5" piece off of the mature plant with a scissors.
  - » Place cutting in baby food jar.
  - » Place jar in a spot where it will receive as much sunlight as possible.
- Facilitate a discussion on what students can expect to see in the next few days and weeks.

Processing Questions

- What does this mean for the farmers that grow our food?
  - » Hydroponics – growing plants in water; soilless growing of plants (Show pictures of hydroponics system.)
  - » Hydroponics systems can be set up to recirculate water. (Show pictures of recirculating system.)
- So what are other practices farmers use to conserve energy and natural resources?
- Now what are some ways we could conserve energy and natural resources like farmers do when they use recirculating hydroponics systems?

Next Generation Science Standards

2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.

5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.

Key Messages

Solar power is a powerful source of energy. One that is used by farmers on a daily basis.

Farmers do their part to conserve energy. A recirculating hydroponics systems is just one example.

E.2 FRESH NOT FROZEN

Materials Needed
- Scratch paper – ½ sheet per student
- Writing surface for Fresh/Preserved chart
- Writing utensils to mark on Fresh/Preserved chart – 3 – 4 total
- Activity Resource: Goals (p 18)

Directions
- Pose the question, “What did you eat last night?”
- Have each student list every item he/she ate, including the ingredients that went in to making their meal.
- Circle the items from their list that were fresh, not processed. The processed foods are foods that needed energy to preserve them or keep them usable. This does not include a refrigerator, as some fresh foods are kept in a refrigerator.
- On the board, create a chart with two columns – Fresh and Processed
- Have each student come to the front and put a tally in the appropriate column for every item on their list. (Finished chart will probably depict a majority of tallies in the processed column.)

Processing Questions
- What do you notice about the chart? What do you think this chart would have looked like when your parents were children? Why?
- So what does this tell us about our society’s use of energy in everyday food consumption?
- Now what are some ways we could personally cut down our use of energy in our daily food consumption? (Complete the Fresh Not Frozen Goals sheet.)

Next Generation Science Standards

K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

Key Messages

An increased demand for highly processed food increases daily energy use.

Even we, as elementary students, can conserve energy by incorporating more fresh foods into our diet.

E.3 ENERGY MOVES

Materials Needed
- Flip chart paper – one per small group
- Markers – one for each flip chart
- Tape
- Activity Resource: Energy Sources (p 19-21)

Directions
- Hang flip charts around the room and leave a marker by each.
- Divide class into small groups (3-4 students).
- Have each list everything they've done so far today (encourage them to be very specific).
- Next, circle all actions that require energy.
- Have each group share.
- Following processing questions, have students create a body motion to help them remember each energy source.

Processing Questions
- What do you notice about every group's paper? Does all of this energy come from the same source? What are some examples of the different sources we have used today? (Reveal Energy Sources Activity Resource.)
- So what is the main purpose of all of these different types of energy sources? Do we need them all? Who else uses these energy sources? (Tie discussion to farmers, our food, and/or locally grown agricultural crops.)
- Now what if we completely eliminated one of these energy source (give an example), how would we (insert activity requiring that energy source)?

Next Generation Science Standards

4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

Key Messages

We use a variety of energy sources every day.

There is no magical source of energy – we need all of them.

E. 4 SCORE!

Materials Needed

- Masking tape or colored painters tape
- Cards with points for each ring of circle
- Ping pong ball
- Blindfold
- Pinwheel
- Remote control car
- Straws

Directions

- Create a target in an open area of the room, labeling each ring with points at increasing increments of five.
- Divide students into three or four teams.
- The goal of each round is to get as many or more points as the previous round(s).
- For each round, team members will sit on the floor with legs crossed at least two feet away from the outside of the target. Each will have 2 chances to roll their team's ping pong ball into the circle, attempting to collect as many points as possible each time. On a writing surface visible to all, each team should track their points.
- Round 1: Only hands can be used to roll ping pong ball to the target.
  - » Following round, note each team's point totals and share observations:
  - » What did you notice about this round? What was easy about this round? What was difficult?
- Round 2: Same as round 1, but blindfolded.
  - » Following round, note each team's point totals and share observations:
  - » What was different in this round? What role did the light, or absence of the light, play?
- Round 3: This time you can use energy sources. Each team members may choose a different source they think will help them get more points. Team members still may only roll ping pong ball from a seated position at least two feet away from the outside of the target.
  - » Following round, note each team's point totals and share observations:
  - » What did you notice about this round? What was easy? What was more difficult? What role did the use of energy sources play?

Next Generation Science Standards

4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

Key Messages

Energy makes our lives easier.

Energy has helped advance the world we live in today, and will continue to do so in the future.

Processing Questions

- What affect did the use of energy, or the lack there of, play in each round?
- So what does this tell us about our need for energy today? Ten year ago? Ten year from now?
- Now in what others ways has energy had a positive effect on us the world around us? (Link discussion to agriculture by typing in food, local agricultural crops, etc.)

M.1 NAME THAT ENGINEER

Materials Needed

- Adhesive name tags with engineer name – one per student
- Note cards (for notes during first part of activity)
- Markers
- Activity Resource: Name That Engineer (p23-24)

Directions

- Give each student five note cards and a marker.
- Instruct students to head each note card with one type of engineer: Electrical Engineer, Mechanical Engineer, Civil Engineer, Chemical Engineer, and Environmental Engineer (If a white-board is available, write these titles there so they are visible to students.)
- Instruct students that you will be reading a description of each type of engineer. While you read the description, they are to record five key facts about each type of engineer.
- Following the reading of each description, have students share their five key facts. If some students did not get their cards complete, this will be the time to fill in their remaining facts.
- When students have all note cards complete, have them partner up and review the facts about each engineer. Express the need for them to be comfortable with these engineers as they will be "quizzed" soon. Eight to ten minutes will be needed for this review.
- Explain to students how to play "Name That Engineer"
    - » In just a moment each student will receive a name tag with a name of an engineer. This name tag will be placed on their forehead or back, and their goal to is determine which engineer they have been assigned. To do this, each student will go around asking yes or no questions to classmates to decipher their engineer. Once they think they have their engineer correct, they will return to their seats and wait for further instructions.
    - » Once all students are sitting, go around the room and have students guess their engineer. Ask them to identify what they found out that made them decide which engineer they were portraying. If students guessed incorrectly, have the class help them get the correct answer.

- Group students by their engineer type, and have them create a rap about the importance of their engineer to energy. Do not limit the students on their creation, but encourage them to be creative and think outside the box – consider how their engineer affects others, conservation, the future of energy resources, etc.

Next Generation Science Standards

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

Key Messages

Engineers are vital to our efforts of conserving energy and using energy efficiently.

Engineers play a pivotal role in the use, conservation, and future impact of energy and energy sources.

Processing Questions

- What about these engineers was surprising?
- So what value do the combination of these five engineers provide?
- Now what do we need to consider to put ourselves on the path to becoming one of these engineers?

M.2 FROM A TO B

Materials Needed

- Activity Resource: Cards (p 25)
  - » Sunlight and milk carton; sunlight and raw steak; sunlight and package of cheese; sunlight and grilled pork chop
- Tape
- Note cards
- Markers
- Poster with symbol and names of energy sources

Directions

- During activity and processing, encourage students to consider ALL types of energy and energy sources – mechanical, potential, kinetic, thermal, chemical, electrical; biomass, solar, wind, water, coal, natural gas, etc.
- Divide class into four groups; If there is a large class, divide into eight groups.
- Give each group a processing card package and stack of note cards. The processing cards represent the start of the process and the final product.
- Give each group a stack of note cards in which to illustrate the steps needed to get from start to finish.
- Tape these cards (in order) on a wall or somewhere visible for others to see.
- Once all processes have been posted, have groups travel around the room to review other groups' processes. Encourage them to use note cards to further illustrate any pieces groups may have forgotten (marketing product, selling product, transportation, etc.).

Processing Questions

- What steps in these processes do not require the use of an energy source? Does all of this energy come from the same source? What are some examples of the different sources? (Reveal poster with energy source symbols.)
- So what is the main purpose of all of these different types of energy sources? Do we need them all? Who else uses these energy sources? (Tie discussion to farmers, our food, and/or locally grown agricultural crops.)
- Now what if we completely eliminated one of these energy source (give an example), how would we (insert activity requiring that energy source)?

Next Generation Science Standards

5-PS3-1. Use models to describe that the energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

Key Messages

We use a variety of energy sources every day.

There is no magical source of energy – we need all of them.

M.3 KEEP IT WARM

Materials Needed
- Glass jar (Mason jar)
- Water
- Method for boiling water (Microwave, stove top, burner, etc.)
- Measuring cup for boiling water
- Tin coffee can
- Insulation materials – Examples include towel, newspaper, bubble wrap, old cloth, batting
- Thermometer
- Stop watch
- Activity Resource: Insulation Lab Notes (p 26)

Directions
- Divide class into small groups.
- Have each group select three different insulation materials.
- Complete the "Predictions" section of Insulation Lab Notes.
- Give each group a coffee can and glass jar.
- Heat water to boiling.
- While water is heating, set up coffee can with one insulation material (use different material each round).
- Poor boiling water into glass jar (same amount for each round).
- Place thermometer in boiling water.
- Place glass jar into coffee can, surrounded by insulation material.
- After five minutes, read temperature and record on Insulation Prediction page.
- Repeat steps two more times, changing insulation materials.
- Finish Insulation Prediction page.

Processing Questions
- What did you discover? Were you predictions correct? Why or why not? What materials served as the best insulators? Why?
- So if we were designing an agricultural building (name one related to a locally grown commodity) what would we need to consider when selecting the insulation materials and/or deciding whether or not to insulate?
- Now what are other ways energy can be conserved in the design of agricultural buildings?

Next Generation Science Standards

MS-PS3.3. Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.

MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

Key Messages

Energy can be conserved through insulation and other energy-efficient choices made in the design of agricultural buildings.

M.4 ON YOUR MARKS, GET SET, GO!

Materials Needed
- Tape
- Pom Pom
- Balloon
- Hair dryer(s)
- Extension cord(s)
- Stop watch

Directions
- Create a race course on the floor using tape. Make the course curvy and, to add challenge, have the course go up and down hill by incorporate textbooks and other items of challenge. Identify a start and finish line.
- Divide students into three or four teams.
- The goal of each round is to get your pom pom to cross the finish line before other teams.
- For each round, teams will have three minutes once the "tools" for that round have been identified to decipher their team's game plan.
- Rules for all rounds: Hands cannot touch pom pom; Only one player from a team may be across the start line at any given time; Every team member must contribute in some way each round.
- Round 1: Only your breath can be used to move the pom pom.
  - » Following round, the time for each team and share observations:
  - » What did you notice this round? What was easy/difficult about this round?
- Round 2: Only a balloon (symbolizing potential energy) can be used to move the pom pom.
  - » Following round, the time for each team and share observations:
  - » What was different in this round? What role did the balloon play?
- Round 3 : Only a hair dryer (symbolizing electricity) can be used to move the pom pom.
  - » Following round, the time for each team and share observations:
  - » What did you notice about this round? What was easy? What was more difficult? What role did the use of an energy source play?

Processing Questions

• During processing, encourage students to consider ALL types of energy and energy sources – mechanical, potential, kinetic, thermal, chemical, electrical; biomass, solar, wind, water, coal, natural gas, etc.

• In what instances in our daily lives must something

Next Generation Science Standards

MS-PS3-5. Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

Key Messages

Energy makes our lives easier.

Energy has helped advance the world we live in today, and will continue to do so in the future.

move to get a job done? (Generate discussion about the production of local agricultural commodities.)
- So what makes these things move? Have these same energy sources always been responsible for the movement? (Share specific examples from the past and what has advanced today.)
- Now what has been, and will continue to be done to ensure the efficient use of energy in getting agricultural equipment to move?
- types of energy sources? Do we need them all? Who else uses these energy sources? (Tie discussion to farmers, our food, and/or locally grown agricultural crops.)
- Now what if we completely eliminated one of these energy source (give an example), how would we (insert activity requiring that energy source)?

H.1 COLOR CONSERVATION

Materials Needed
- Small tin can (i.e. empty soup can)
- Steel wool
- Acrylic paints – white, black and medium color
- Foam paint brushes
- Newspaper or scratch paper for paint mess
- Boiling water
- Method for heating water
- Thermometer
- Stopwatch
- Scratch paper and writing utensil to record water temperatures

Directions
- Divide class into triads.
- Have each triad rough up their tin can with steel wool to help paint stick.
- Have students paint the exterior of their can one color. Be sure to have options of light and dark colors. Allow cans to dry.
- Heat water to boiling.
- Pour ¾ cup of water into small can.
- Place thermometer in boiling water.
- Record the temperature.
- After five minutes, record the temperature.
- Record paint can color and two temperatures on writing surface with other groups' results.

Processing Questions
- What did you notice about the changes in temperatures between different colors of paint cans?
- So if we were designing agricultural structures (name one related to a locally grown commodity) what would we need to consider when selecting building materials (solar panels, color of roof, etc.)?
- Now what are additional ways farmers and ranchers conserve resources?

Next Generation Science Standards

HS-PS3-1. Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

HS-ESS3-3. Evaluate or refine a technological solution that reduces impacts of human activities on natural resources.

Key Messages

Agriculturists use energy conservatively and efficiently by making smart choices in design of agricultural structures.

H.2 GOIN' TO THE RACES

Materials Needed

- Tub of water
- Rubber duck
- A collection of "tools" – fan, spray fan, pinwheel, cup of water, paper fan, etc.
- Stopwatch
- Energy-related prize for winning team – battery, jump drive, flashlight, etc.

Directions

- During activity and processing, encourage students to consider ALL types of energy and energy sources – mechanical, potential, kinetic, thermal, chemical, electrical; biomass, solar, wind, water, coal, natural gas, etc.
- Divide class into 3 or 4 teams.
- Have teams create a team name related to energy.
- Share goal of activity: Your mission is to get your team's rubber duck from one end of this tub to the other end as quickly as possible. You may use any of the items on this table (have table of "tools"), but may not touch the duck once it has been placed in the water.
- Give each group 10 minutes to design their duck and get a game plan for their race.
- Race ducks one by one, timing each and recording the time on a writing surface for all to see.
- Reward the winning team.

Processing Questions

- What worked and what did not work? Why did you choose to use your selected tool(s)? Which tools were most effective? Which were less effective?
- So what would have been different if you were only allowed to use only one tool to get your duck from one end of the tub to the other? (While facilitating discussion, transition to the tool being considered an energy source.) How often do we only use one energy source when completing a task (suggest something agricultural-related).
- Now what does this tell us about the importance of conserving our natural resources and energy sources?

Next Generation Science Standards

HS-PS3-3. Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

HS-ESS3-3. Evaluate or refine a technological solution that reduces impacts of human activities on natural resources.

Key Messages

Farmers and ranchers use multiple energy sources in their daily activities.

Farmers and ranchers use these multiple energy sources efficiently and conservatively.

H.3 M&M ENERGY

Materials Needed

- Large bag of M & M candies
- Large cloth to spread onto floor – "pool of energy sources"
- Stopwatch
- Flip chart paper
- Markers
- Tape
- Activity Resource: Color Code (p 27-28)
- Activity Resource: M & M Energy worksheet (p 29)

Directions

- Lay large cloth on the floor and spread out large bag(s) of M & M candies.
- Divide class into groups of 3 or 4 and have them gather around the cloth to hear instructions.
- Begin by explaining that each group represents a local farmer, rancher, or agricultural business who are all dependent upon energy sources. (Have groups decide an identity.)
- Instruct groups to complete the top portion of the Activity Resource (p 29), identifying 12 tasks they must complete on a daily basis that use energy (in their fictitious role). Encourage students to consider ALL types of energy and energy sources they may use – mechanical, potential, kinetic, thermal, chemical, electrical; biomass, solar, wind, water, coal, natural gas, etc.
- Explain to students the rules for accessing the M & Ms. When you say, "Go," one group member will have 1 minute to gather as many M & M candies as possible. Students may not put any part of their body on the cloth when gathering the M & M candies.
- When time is called, students should return to their groups to count each color of M & M and chart the numbers on the Activity Resource sheet. Remind students not to eat the candies until the activity is complete.
- Reveal Activity Resource: Color Code (p 27-28)
- Groups will now associate an energy source with the 12 daily tasks. Remind students that they must use ALL of their energy sources, and that tasks must be distributed according to the quantity of each energy source (number of M & M candies) they have. For example, if a group only has 4 yellow M & M candies, representing solar energy, they should not have 6 tasks relying on that source of energy. Tasks can also be split between energy sources – ½ solar, ½

Next Generation Science Standards

HS-LS2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

HS-LS4-6. Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

Key Messages

Agriculturists use a variety of energy sources every day.

Agriculturists need a variety of energy sources, not just one that can be completed relied upon for everyday activities.

Agriculturists use energy efficiently and conservatively.

natural gas, for example. Check groups work to ensure they have their tasks distributed appropriately. Record these on the M & M Energy worksheet.

- Facilitate a discussion about what could potentially happen to change this plan.
- Impose challenge #1 – It's a cloudy day, and only ½ of your solar power is available. How will you redistribute your solar energy and associated tasks? Record plan on worksheet. Share results.
- Impose challenge # 2 – Your area hasn't received a significant amount of rain in months. There is a severe drought. Water flow is limited. Record plan on worksheet. Share results.
- Impose challenge #3 – Natural gas prices have sky rocketed. Cut your natural gas use by 75%. Record plan on worksheet. Share results.
- While processing, students may eat their M & M candies.

Processing Questions

- What was challenging each round?
- So what does this tell us about an agriculturist's use of energy?
- Now how can agriculturists conserve these energy sources so they are readily available?

H.4 IT TAKES MORE THAN ONE

Materials Needed
- Three articles about each energy source – biomass, solar, wind, water, coal, natural gas; If Internet access and computers are available, these can be found and read from computer instead of being printed and distributed.
- Sciencedaily.com/news
- Articles should be agriculture-related, explaining how the source is used and/or identifying current issues pertaining to that source
- Sample public service announcements – found on YouTube
- Computer, projector and speakers to play sample PSAs

Directions
- Divide students into small groups, assigning each a different energy source.
- Give groups 15 minutes to locate three current articles about their energy source, read the articles and highlight key points.
- Reveal to students that they will be creating a public service announcement about the importance of their energy source.
- Facilitate a discussion about what this entails and show YouTube examples. Show both good and bad examples and critique as a class.
- Give students 8-10 minutes to create their PSA.
- Present PSAs to the class.

Processing Questions
- What energy source is the best? Which source could we not live without? What source plays a pivotal role in agriculture? (Conclude that there is no winning source – they are all necessary.)
- So what can we conclude about an agriculturist's need for energy and a variety of energy sources?
- Now what current issues could potentially threaten the availability of these energy sources? (Depending upon articles found.) OR
- Now what practices are agriculturists using to ensure the availability of these energy sources?

Next Generation Science Standards

HS-ESS3-3. Evaluate or refine a technological solution that reduces impacts of human activities on natural resources.

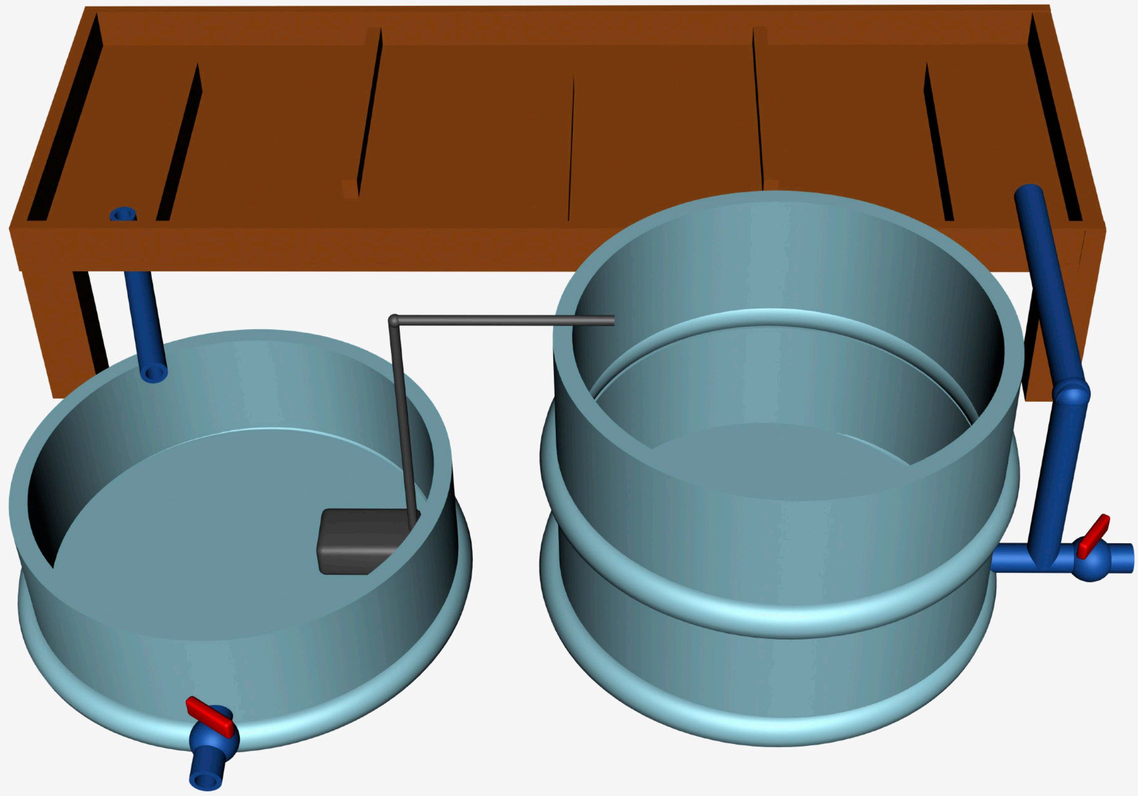
Key Messages

Agriculturists use a wide variety of energy sources every day.

Agriculturists use a variety of techniques to conserve and efficiently use energy.

HYDROPONIC WATERING SYSTEMS

RECIRCULATING SYSTEM



GOALS

My plan for conserving energy.

Today I will...

1.

2.

This week I will...

1.

2.

This month I will...

1.

2.

ENERGY SOURCES

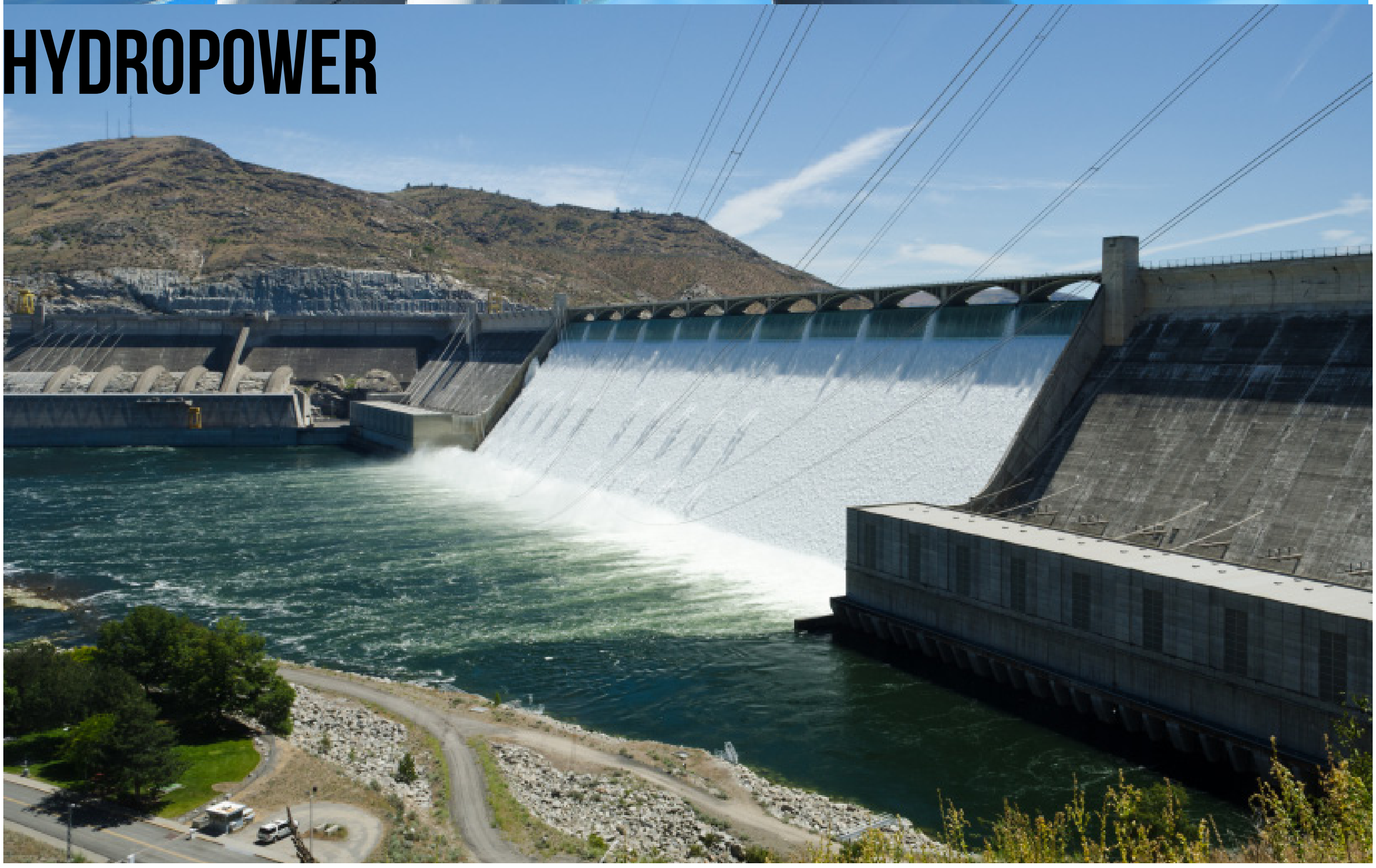
BIOMASS

SOLAR

ACTIVITY RESOURCE

WIND

HYDROPOWER




PETROLEUM


NATURAL GAS


COAL

5 POINTS	10 POINTS
15 POINTS	20 POINTS
25 POINTS	30 POINTS

Electrical Engineer

Electrical engineers are found at every electric utility. These engineers design and build safe, reliable, and efficient electric generation and delivery systems. Modern society is dependent on electricity and this commodity is supplied by an amazing industry. No other industry instantly matches the vast demands of the nation's homes & businesses with the creation and delivery of that product continuously every second of the year. Electrical engineers are critical to making this happen. **Do you want to be an electrical engineer?** These engineers spend at least four years in college taking classes with emphasis in math, physics, electric engineering concepts, economics, and other technical subjects.

Mechanical Engineer

Mechanical engineers provide the understanding to design, build, and operate the complex machines used to generate electricity inside power plants. Mechanical engineers produce steam in boilers fired by coal and other fuels including the sun that move machines that generate electricity. They also develop combustion, hydro, and wind turbines that generate electricity without steam. **Do you want to be a mechanical engineer?** These engineers spend at least four years in college taking classes with emphasis in math, physics, mechanical engineering concepts, economics, and other technical subjects.

Civil Engineer

Civil engineers are responsible for the design and construction of the buildings that house the equipment that generates electricity along with the infrastructure needed to deliver and make use of materials, such as fuel and water, needed to keep power plants operating. They also design and build the structures that support the wires and equipment that deliver the electricity to the consumers. **Do you want to be a civil engineer?** These engineers spend at least four years in college taking classes with emphasis in math, physics, geology, civil engineering concepts, economics, and other technical subjects

Chemical Engineer

Chemical engineers support electric generation plants by applying their expertise with chemical processes to control pollution from power plants. They work with both air and water pollution control equipment to reduce the negative impacts of the electric industry. Chemical engineers design and build systems to make better use of water needed for electric power generation. **Do you want to be a chemical engineer?** These engineers spend at least four years in college taking classes with emphasis in chemistry, math, physics, chemical engineering concepts, economics, and other technical subjects. The starting average annual salary for chemical engineers is $67,000.

Environmental Engineer

Environmental engineers are responsible for compliance with government regulations created to minimize the impact of electric power generation and delivery on the environment. Regulations have been created to protect our air, water, and land. Environmental engineers work with the instrumentation required to document compliance with environmental regulations. **Do you want to be an environmental engineer?** These engineers spend at least four years in college taking classes with emphasis in chemistry, biology, math, physics, environmental engineering concepts, economics, and other technical subjects

INSULATION PREDICTIONS

Insulation Material #1	
Insulation Material #2	
Insulation Material #3	

Prediction

Which insulation material will keep the water the **warmest?**

Why?

Which insulation material will allow the water to become the **coolest?**

Why?

Observation

Which insulation material kept the water the **warmest?**

Why?

Which insulation material allowed the water to become the **coolest?**

Why?

Reflection

What was surprising?

Why?

How could the best insulation material be improved to better insulate the water?

COLOR CODE

Red SOLAR

WIND Blue

Yellow HYDRO

Orange

NAT. GAS

Green

PETROLEUM

COAL

Brown

Identity: ______________________________

Daily Tasks

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

☐ Red ☐ Green ☐ Blue

☐ Yellow ☐ Orange ☐ Brown

Energy Source Used to Complete Task

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	