|  | **Topic of Study** | **Purpose of Topic** | **Objectives** | | **Experiments / Activities** | **TIME** | **Materials Needed** | **General Notes** |
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| **DAY 1** | | | | | | | | |
| **1** | **Welcome** | Go over Camp Welcome and Rules.pdf  Engage in team building activity | *SWBAT (Students will be able to): Know what to expect and how to behave.* | Icebreakers, Energizers, & Team Building. See sample activities.pdf | | **8:30am**  **DAY 1:**  **9:00**  30 Min. | None | Use “getting to know you” type icebreaker activities of your choice ad that are appropriate to the group. |
| **2** | **Economics of STEM Careers**  **Activity** | Introduce students to the possible career paths offered through STEM fields. | *SWBAT: Understand and explain the importance of math and science in many career paths and fields* | Use Economics of STEM Careers.pdf for the activity. Budgeting and virtual shopping exercise with different income levels. | | **9:00**  **DAY 1:**  **10:00**  60 min. | A range of jobs, some with STEM requirements and some without, to demonstrate the career and lifetime earnings impact of STEM education. | **Some students many need help with the budgeting sheet to calculate percentages**. |
| **3** | **Energy Safety:**  **Presentation** | To provide students with appropriate knowledge on the potential dangers of electricity. | *SWBAT: Identify possible scenarios where safety hazards are present, and correct the hazards with appropriate actions.* | **Option A** (**Recommended)**: Invite local utility company to give a presentation on Energy Safety**. This could be Electric City or the Safety Trailer (may be longer than 30 min).**  **Option B:**  Use Energy Safety Instructional materials or website links to go over situational awareness and appropriate reactions during emergencies. | | **10:00**  **DAY 1:**  **10:30**  30 Min. | Option A:  Presentation area from utility guest speakers.  Option B: Classroom as a group or in teams; Computer lab; or Computer and projection with sound. | The purpose of this topic is to provide an electrical safety overview.  Students should be refreshed on safety within each topic of study. |
|  | **BREAK** |  |  |  | | **10:30**  **BREAK 10:45** |  |  |
| **4** | **Potential & Kinetic Intro:**  **Teach** | Introduction to Potential and Kinetic Energy | *SWBAT: Identify the difference between potential and kinetic energy and identify the forms of energy that are transformed from potential to kinetic (or visa versa)* | 5 minute refresher  10 minute activity Potential and Kinetic Energy | | **10:45**  **DAY 1:**  **11:00**  15 Min. | Teaching lesson/handout provided | Content delivery to setup “theory in action” in the labs. |
| **5** | **Potential-Kinetic Energy: Conservation of Energy:**  **Lab or Activity** | This is an important aspect in illustrating the principle that energy can neither be created nor destroyed, rather it is merely transferred and to demonstrate some of the many forms it can take. | *SWBAT: Demonstrate and describe conversions from potential and kinetic energy* | **Option A**: Located on a school or university campus with a physics lab with teacher demonstrate more advanced activities.  **Option B:** Conduct simple experiments from the materials provided.  **Option C:** Use online simulations. | | **11:00**  **DAY 1:**  **11:45**  45 Min. | Option A: “The Mad Scientist’s choice” - the guest speaker provides a demonstration with their own materials.  Option B: Students experiment. | This topic meant to generate a large amount of excitement and anticipation for the next day. |
|  | **LUNCH** | Recommend that students be give this time to visit and socialize rather than use time for passive instruction from instructor or Energy professionals. | | **Lunch** | | **11:45**  **to**  **12:15**  30 Min. | Executives may visit and sit at several tables to get to know the students. | |
| **6** | **Potential-Kinetic Energy: Experimentation: Student Activity** | Students will be able to build their own potential/kinetic rubber band car. | *SWBAT: Demonstrate the difference between kinetic and potential energy* | CD Rubber band car Student handout provided  This activity allows students to experience potential and kinetic energy in action. | | **12:15**  **to**  **1:00**  45 Min. | Materials list and instruction provided. May be individual or team activity. | May use any other experiments if available such as Marble Rollercoaster that adequately demonstrates Potential and Kinetic Energy. |
| **7** | **Electrical Energy: Magnets and Poles to Induce Voltage**  **Conductors and Insulators** | **Teach**  **Activity**  Review Electrical theory through discussion and active learning | *SWBAT: Demonstrate understanding of atoms, elements, magnetism, electricity, conductors, insulators and circuits.* | Magnetic Lines of Flux Activity  Electricity Word Match  Conductor Insulator experiment | | **1:00**  **DAY 1:**  **1:45**  Total 70 Min  Cont. after break | Materials lists included in materials provided. | Must facilitate to complete this section on timeline. |
|  | **BREAK** | Take at a good breaking point during Section 7 |  |  | | **1:45**  **BREAK 2:00** |  |  |
| **7**  **Con’t** | **Electrical Energy: Magnets and Poles to Induce Voltage**  **Conductors and Insulators Con’t** | **Teach**  **Activity**  Review Electrical theory through discussion and active learning | *SWBAT: Demonstrate understanding of atoms, elements, magnetism, electricity, conductors, insulators and circuits.* | Magnet experiment  Electricity Word Match  Conductor Insulator experiment | | **2:00**  **DAY 1:**  **2:25**  Cont. Total 70 Min | Materials lists included in materials provided. | Must facilitate to complete this section on timeline. |
| **8** | **Circuits: Flow of Electrons**  **Teach** | Teach: Review of circuit components, electrical flow and types of current through discussion and active learning. | *SWBAT: Demonstrate understanding of electrical flow and circuits.* | Discussion | | **2:25**  **to**  **2:35**  10 Min. | Handout in materials provided | Use questions to probe what they already know. Ensure they have understanding of all the concepts in the handout. |
| **9** | **Circuits: Flow of Electrons**  **Activity** | The study of electron flow can help demonstrate to students why electricity takes the path of least resistance. This is a possible venue for further safety lessons regarding grounding. | *SWBAT: Demonstrate understanding of electrical flow and circuits and to build simple circuits.* | **Option A**: Snap circuit kits  **Option B**: Explore online circuit building simulators:  See options in the overview document. | | **DAY 1:**  **2:35**  to  **3:25**  50 Min. | Option A: Snap circuit kit for every 2-3 students  Option B: Student computer lab with internet access | It would be beneficial to have guests or helpers to assist with the kit building activities as needed. |
| **10** | **End of Day Review** | Ask students to share what they have learned. | *SWBAT: Share KWL (know, want, learn) thoughts in student led discussion*  *Complete Plus/Delta evaluation as a group.* | If insufficient time to complete debrief of the day’s activities, can be done as part of the kick off on Day 2.  Setup Wind Turbine design/build | | **3:25**  **DAY 1:**  **Adjourn at Between 3:45pm and 4:00 as needed** | Can bring supplies from home if they want for wind turbine project tomorrow. | They need to start thinking about their design for a wind turbine. |

|  | **Topic of Study** | **Purpose of Topic** | **Objectives** | **Experiments / Activities** | **TIME** | **Materials Needed** | **General Notes** |
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| **DAY 2** | | | | | | | |
| **1** | **Morning Activity** | Review yesterday’s activity.  Go over today’s topics.  **Conduct opening activity**. | *SWBAT: Be more comfortable working in groups, providing feedback and to begin focusing on day’s topics.* | If no time at the end of yesterday, complete the debrief exercises now. | **8:30**  **DAY 2:**  **9:00**  30 Min. | Boxes/Bags  Popcorn | The activity’s purpose is to demonstrate line loss in a fun and visual way. |
| **2** | **DC/AC**  **Teach** | Review and build on understanding of DC/AC, applications of each and how it relates to utility scale electricity. | *SWBAT: Understand difference between DC/AC and how each is used in difference energy applications.* | AC vs DC  **a Hila Science Video**: <http://www.youtube.com/watch?v=xyQfrzBfnDU>  Review: 5 min  Video : 10 min | **9:00**  **DAY 2:**  **9:15**  15 min |  | Alternate video:  The Battle of the Currents – AC vs DC YouTube video: [www.youtube.com/watch?v=dIfIRj0Crc8](http://www.youtube.com/watch?v=dIfIRj0Crc8)  Contains graphic footage of elephant execution |
| **3** | **DC**  **Activity** | Applied experimentation of Direct Current with additional learning regarding conductors, insulators, current, voltage and resistance. | *SWBAT: Use teamwork, critical thinking and problems solving to apply Theory and Terms in discussing the flow of DC electricity and in building the project.* | **Option A: Fruit power plant experiment**  **Option B: How to Charge an iPod with fruits**  **Option C: Potato power**  Materials lists included in materials provided | **9:15**  **DAY 2:**  **10:15**  60 Min. | Option A: [www.stevespanglerscience.com/lab/experiments/fruit-power-battery](http://www.stevespanglerscience.com/lab/experiments/fruit-power-battery)  Option B: <http://www.youtube.com/watch?v=PuiPDBA3XZI>  Option C: [www.teachengineering.org/view\_activity.php?url=collection/cub\_/activities/cub\_energy2/cub\_energy2\_lesson04\_activity2.xml](http://www.teachengineering.org/view_activity.php?url=collection/cub_/activities/cub_energy2/cub_energy2_lesson04_activity2.xml) | Computer and projection with sound for video  Choose 1 OR have each team do a different one. Strongly suggest make up “kits” ahead of time |
|  | **BREAK** |  |  |  | **10:15**  **BREAK 10:30** |  |  |
| **4** | **Motors,**  **Induction and Generation**  **Teach**  **Activity**  **Wrap up Video** | Show the relationship between magnets and electricity and reinforce the Law of Conservation of Energy. Introduce the process for producing AC and functions of a Utility in producing and delivering electricity to homes and businesses. | *SWBAT: Explain the processes by which energy transforms between chemical, mechanical, thermal and electrical and understand the relationship between magnetism, electricity and how motors and generators are same and different.* | **Teach - 7 min**  Review A/C & Videos  **Magnetic Induction Video – 3 Min**  **World's First Electric Generator**  <http://www.youtube.com/watch?v=NqdOyxJZj0U>  **Relationship of Motors and Generators Video – 2 min**  <http://www.youtube.com/watch?v=d_aTC0iKO68>  **Activity - 50 min**  Simple magnet motor project (student handout)  50 min  **Electrical Utility Video – 5 min**  Energy 101: Electricity Generation YouTube video introduction: <http://www.youtube.com/watch?v=20Vb6hlLQSg>  **Clean up area for lunch**  **Total 75 min** | **10:30**  **DAY 2:**  **11:45**  75 Min. | D-Cell battery, Battery holder,  2 Rubber Bands, Plastic cup,  2 8” bare wire or large paper clips,  40” 22AWG magnetic enamel coated wire,  2 Alligator clip wires,  Flat magnet: 1” x ¾” x 3/16”,  Sandpaper or emery board, Pencil, Flathead screwdriver  Computer and projection with sound for video | Students will have concrete understanding of:  The relationship between motors and generators, how chemical or mechanical energy is transformed into A/C electrical energy and introduction to how utilities produce energy for our use and deliver to our homes. |
|  | **LUNCH** |  |  | **Lunch** | **11:45**  **to**  **12:30** | Executives may visit and sit at several tables to get to know the students. | Recommend that students be give this time to visit and socialize rather than use time for passive instruction from instructor or Energy professionals. |
| **5** | **Renewable Energy Generation: Solar, Wind, Biomass, Hydro**  **Teach**  **Design** | Provide foundational knowledge regarding renewable energy sources. Reinforce relationship between motors and generators. To provide guidance on design and testing of wind turbine. Exposure to possible career options. | *SWBAT: Understand the current common forms of energy generation and be able to identify possible future sources. Describe career options available within renewable industry. Understand requirements for design/build process of wind turbine blade project.* | **Teach**  **Never Ending Supply (Nova PBS)** **2:45 min**  **Activity 30 min:**  Energy Mix for power production  <http://www.energyville.com/>  If no computer Lab, use alternative solar activity  **Career Options**  **15 min**  **Energy 101: Solar Power** **3:24 min**  **Energy 101: Wind Power** **2:14 min** | **12:30**  **DAY 2:**  **1:20**  **50 min** | **Videos:**  **Never Ending Supply (Nova PBS)** **2:45 min**  <http://www.youtube.com/watch?v=_osI4x5XOzA&list=PLpflbUkzCZLyXTUmgh78yqs66jcI95iNP>  **Energy 101: Solar Power** **3:24 min**  <http://www.youtube.com/watch?v=NDZzAIcCQLQ>  **Energy 101: Wind Power** **2:14 min**  <http://www.youtube.com/watch?v=niZ_cvu9Fts> | Alternative Solar activity:  Materials: PV cells, alligator clips and voltmeter   1. Have pairs or groups put cells together in series, parallel, full sun, partial sun, shade. 2. Record results. 3. Report out.   ADDITIONAL ALTERNATIVE ACTIVITIES:  See Teacher Resources  Computer and projections system with sound for videos.  Relate to relevance around all of us including the current political and economic environments Discuss the opportunities for modern day inventors, innovators and career options. |
|  | **BREAK** |  |  | **1:20 - BREAK - 1: 35** | | |  |
| **6** | **Renewable Energy Generation: Solar, Wind, Biomass, Hydro**  **Build**  **Test** | To promote creativity, engineering and STEM skills in wind turbine design competition in a fun, practical and hands-on environment. The wind turbine will harness the energy created by the box fan and register that energy output through a voltmeter and load. | *SWBAT: Demonstrate use of creativity and scientific methodology for design/build of wind turbine.* | **Design/Build Process**  **5 min**  Wind Turbine Design Test Data Sheet (student handout)  **Mini Wind Turbine** **4:05 min**  **Design, Build, Test**  **65 min** | **1:35**  **DAY 2:**  **3:15**  **90 Min.** | **Mini Wind Turbine** **4:05 min**  <http://www.youtube.com/watch?v=AS74oAmjpxU>  **See the Pre-camp tower/nacelle construction document included in the time block detailed curriculum.** | Safety should be closely tied in with this topic. As they design, safe construction and operation are as essential as the effective ness of the design to produce voltage.  Alternative activities for solar PV and Thermal, biomass, hydro may be found in Teacher Resources. |
| **7** | **Renewable Energy Semi-final or Final Competition** | To test blade designs to determine which design provides the most voltage output. Provide students’ opportunity to experience that all design efforts don’t always result in good design for purpose. | *SWBAT: Understand how differences in design affect the resulting voltage output.* | Design, Build and Test  Awards for the top 3 designs. | **3:15**  **DAY 2:**  15 min  **3:30** | **Wind Turbine tower and motor assembly, fan, voltmeter**  **Students should be encouraged to tweak their designs in order to have the highest energy output.** | **NOTE:**  **If few or no field trips are scheduled for Day 3 then this can be moved to Day 3 and extend the Design/Build/Test time.** |
| **8** | **End of Day Review** | Ask students to share what they have learned. | *SWBAT: Share KWL (know, want, learn) thoughts in student led discussion Complete Plus/Delta evaluation as a group.* | Clean up  Review Day  If insufficient time to complete debrief of the day’s activities, can be done as part of the kick off on Day 3. | **3:30**  **DAY 2:**  **Adjourn at Between 3:45pm and 4:00 as needed** | ***If Field trips are on the Day 3 agenda, then review REQUIRED dress code.***  ***For most facilities, enclosed leather shoes, and cotton clothing with long sleeves and long pants are required.***  ***Without proper attire, they may not be allowed to join tours at some locations.***  ***Hard Hats and Safety Glasses will also be required and should be supplied by the utility or facility.*** | |

|  | **Topic of Study** | **Purpose of Topic** | **Objectives** | **Experiments / Activities** | **TIME** | **Materials Needed** | **General Notes** |
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| **DAY 3 – Option A - Field Trips Examples** | | | | | | | |
| **This entire day is flexible and can be configured as ALL, NONE or a combination of Field trips and more classroom experiments and activities.** | | | | | | | |
| **1** | **Morning Activity** | **Complete Wind Turbine Design & Competition if needed. (Top 10 Designs)**  **Review today’s itinerary and rules and requirements when at facilities..** | *SWBAT: Become more with the days agenda and to start focusing on topics of the day. Understand the expectations for travel and at field trip locations.* | Wind Turbine competition | **8:30**  **DAY 3:**  45 min  **9:15** |  | Depending on the weather and duration of trips, stock the bus with:  **Water**  **Snacks** |
|  | **Load Bus** |  | *SWBAT: Travel on a bus and visit locations with expected conduct.* | **Field trip expectations** | **9:15**  **to**  **9:30**  **Load bus** | Ensure Hard Hats  Safety glasses are available and proper attire | **Make sure that any required PPE has been ordered and delivered to the field trip locations for student use.** |
| **2** | **TRAVEL** | Provide short overview of topics and explain what they will see on field trips and discuss travel/field trip expectations before loading the bus. | *SWBAT: Travel on a bus and visit locations with expected conduct.* | Travel to Combustion Turbine plant and substation location | **9:30**  **DAY 3:**  30 Min.  **10:00** | Bus |  |
| **3** | **Generation &**  **Transmission** | Topic addresses generation of electricity and moving it on to the grid. | *SWBAT: Understand ways to generation electricity and how energy gets moved to where it can be used and to provide Career Awareness* | Tour CT, Control Room and Substation | **10:00**  **DAY 3:**  60 Min.  **11:00** | Pass out Hard Hats and Safety Glasses  Employees lead tour, discuss what is being viewed, how math and science are important in these activities and career options.  Where possible include hands-on activities.  Gather up Hard Hats, students keep safety glasses for next stop and take home. | |
|  | **LUNCH** |  |  | **Lunch**  **&**  **Load Bus** | **11:00**  **to**  **11:45** | **Recommend that students be give this time to visit and socialize. Employees may be available to visit and for informal Q & A – not lecture or presentation.** | |
| **4** | **TRAVEL** | Provide short overview of topics and explain what they will see on field trips |  | Travel to Business and Technology CC | **11:45**  **DAY 3:**  15 Min.  **12:00** | Bus |  |
| **5** | **Transmission & Distribution** | Topic addresses movement of electricity from power plant into community and homes | *SWBAT: Understand the levels and stages of distribution and how energy gets moved to where it can be used and to provide Career Awareness.* | Lineman Demo with climbing, bucket, Digger, hot stick and other tools.  Other technical skills like welding, PLCs, and other lab demos or hands on activities. | **12:00**  **DAY 3:**  150 Min.  **2:30** | **In addition to MCC-BTC faculty and students, utility employees should be present to connect demonstrations to careers.**  **Employees lead activities, discuss what is being viewed, how math and science are important in these activities and career options.**  **As much as possible include hands-on activities and allow students to touch tools, equipment, etc.** | |
| **6** | **TRAVEL** | Review travel expectations and short overview of wrap-up activities as loading the bus. | *SWBAT: Travel on a bus and visit locations with expected conduct.* | Travel to UMKC | **2:30**  **DAY 3:**  30 Min.  **3:00** | Bus |  |
| **9** | **Wrap Up:**  **Bringing it Home** | By the end of this section, students should be able to provide a brief summary of how energy is produced, delivered and used. | *SWBAT: Understand the detailed processes involved with providing electricity to homes and businesses.* | **Teach: 25 min:**  **Review steps are in the process of generating and delivering energy- and job in Energy**  Wrap Up  Camp Experience Survey  Certificates  Adjourn | **3:00**  **DAY 3:**  **4:00** | Classroom | Students should be able to explain how / why a light bulb turns on. From generation to transmission. Students should be able to identify necessary steps to becoming an employee in a STEM field. |

**Field Trip Alternatives**

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| **6** | **Travel** |  |  | **OPTION A**  Travel to Project Living Proof Demo House  **OPTION B**  Return to camp and conduct energy efficiency activity | **1:30**  **DAY 3:**  30 Min.  **2:00** | Bus | **Time blocks 6, 7 & 8 may be used for either**  **Option A – Field trip**  **OR**  **Return to school and use for energy efficiency activity** |
| **7** | **OPTION A**  **Transmission/**  **Distribution/ Energy Efficiency** | The current demands associated with energy efficiency translated into everyday actions. | *SWBAT: Provide examples of opportunities to be more energy efficient at home and around their community.* | Project Living Proof Demo House  MEC | **2:00**  **DAY 3:**  1 HR.  **3:00** | **ONLY 45 min for**  Tour  Q & A  **15 min** Travel back to campus | **Students will have an understanding of why it is important and useful to conserve energy by being more efficient with its use.** |
| **8** | **OPTION B**  **Energy Efficiency** | The current demands associated with energy efficiency translated into everyday actions. | *SWBAT: Provide examples of opportunities to be more energy efficient at home and around their community.* | Use materials from National Energy Foundation or other provider | Teach  Hands on activities | **Students will have an understanding of why it is important and useful to conserve energy by being more efficient with its use.** |

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| **DAY 3 – Option B – No Field Trips** | | | | | | | |
| **1** | **Morning Activity** | Review yesterday’s activity.  Go over today’s topics. | *SWBAT: Be more comfortable working in groups, providing feedback and begin focusing on day’s topics.* | If no time at the end of yesterday, complete the debrief exercises now. | **8:30**  **DAY 2:**  **9:00**  30 Min. |  |  |
| **2** | **Alternative Energy Generation: Wind, OR Hydro**  **Design/Build/Test** | Continue Wind Turbine Design/Build/Test activity  OR  Hydro Power Build/Test activity | *SWBAT: Demonstrate use of creativity and scientific methodology for design/build of wind turbine* ***OR*** *Hydro Power* | Prepare for Wind Turbine competition  OR  Build/Test Hydro Power | **9:00**  **DAY 3:**  30 min  **9:30** |  |  |
| **3** | **Alternative Energy Wind Final Competition**  **OR Hydro**  **Build/Test** | To test blade designs to determine which design provides the most voltage output. Provide students’ opportunity to experience that all design efforts don’t always result in good design for purpose.  **OR**  Continue Hydro Power Build/Test activity | *SWBAT: Demonstrate use of creativity and scientific methodology for design/build of wind turbine* ***OR*** *Hydro Power* | Design, Build and Test  Awards for the top 3 designs  OR  **Con’t** Build/Test Hydro Power | **9:30**  **DAY 3:**  30 Min.  **10:00** |  | **If doing the Hydro Power activity, tie learning back to Hydro-electric Generation** |

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| **4** | **Alternative Energy: Solar**  **Solar Oven**  **Build/Cook** | Hands on exploration of solar energy. | *SWBAT: Construct a homemade solar oven.* | NASA’s Climate Kids: Make Sun S’mores!  [climatekids.nasa.gov/smores/](http://climatekids.nasa.gov/smores/)  Make Sun Smores! (student handout)   * Put outside to pre-heat * Prepare s’mores and cook for 20-30 minutes (While eating lunch) | **10:00**  **DAY 3:**  105 Min.  **11:45** | **Cardboard box with attached lid, Aluminum foil, Clear plastic wrap, Glue stick, Tape, 1 foot long Stick, Ruler or straight-edge, Box cutter or Xacto knife, Graham crackers, Large marshmallows, Plain chocolate bars (thin), Aluminum pie pan, Napkins!** | Alternative: Cook Hotdogs |
|  |  |  |  | **Lunch** | **11:45**  **to**  **12:30** | Dessert is the S’mores they cook in solar oven | Need non-chocolate alternative. |
| **5** | **Alternative Energy: Solar Cars Build/Race** | Hands on exploration of solar energy. | *SWBAT: Construct solar car from a kit and race it outside.* | PITSCO SunEzoon Solar Car Kit  [www.pitsco.com/store/detail.aspx?ID=2209&bhcp=1](http://www.pitsco.com/store/detail.aspx?ID=2209&bhcp=1) | **12:30**  **DAY 3:**  45 min  **1:15** | 1 kit for every student in the camp  **Watch the daily weather forecast to make sure you will have a sunny day for this activity.** |  |
|  |  |  |  | **Break** | **1:15**  **to**  **1:30** |  |  |

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| **6** | **Careers in Energy** | Provide exposure to the possible careers in energy | *SWBAT: Describe jobs some of the jobs within the energy industry and where to find additional information* | Handouts available from CEWD for student to take home or to put in parent packages | **1:30**  **To**  **2:15**  45 min | **Career Videos**  Computer and projection with sound for video  **This website has education and salary information on engineering and many utility skilled craft positions.**  [**http://www.cewd.org/roadmap/**](http://www.cewd.org/roadmap/) | **This 2:10 min video shows Coal moving thru the plant to fire the boilers to make steam to generate electricity and describes what a technician does.**  [**http://www.wonderville.ca/asset/electrical-instrumentation-technician**](http://www.wonderville.ca/asset/electrical-instrumentation-technician)  **This 2:27 min video shows the parts of the wind turbine and describes what a wind farm operator does.**  [**http://www.wonderville.ca/asset/wind-farm-operator**](http://www.wonderville.ca/asset/wind-farm-operator)  **This 2:17 min video shows part of crane and how it works and describes what a crane operator does.**  [**http://www.wonderville.ca/asset/crane-operator**](http://www.wonderville.ca/asset/crane-operator)  **This 2:36 min video shows a pipeline control room and describes what a controller does.**  [**http://www.wonderville.ca/asset/Gas-Controller**](http://www.wonderville.ca/asset/Gas-Controller)  **This 0:31 sec video shows lineman climbing pole.**  [**http://www.youtube.com/watch?v=xTMm5H2nOYE**](http://www.youtube.com/watch?v=xTMm5H2nOYE)  **This 0:31 sec video shows welder welding.**  [**https://www.youtube.com/watch?v=fNfAYmtaT84**](https://www.youtube.com/watch?v=fNfAYmtaT84) |
| **7** | **Energy Mix-up** | Quick activities to demonstrate the science of energy | *SWBAT: Demonstrate science of energy* |  | **2:15**  **DAY 3:**  75 min  **3:30** |  |  |
| **8** | **Wrap Up:**  **Bringing it Home** | By the end of this section, students should be able to provide a brief, but in-depth, summary of the energy camp. | *SWBAT: Explain the detailed processes involved with providing electricity to a consumer household.* | Wrap Up  Survey: +/∆  Certificates  Adjourn | **3:30**  **DAY 3:**  **4:00** | Diagram depicting the process of generating energy. From the natural resource to the end point consuming device. | Students should be able to explain how / why a light bulb turns on. From generation to transmission. Students should be able to identify necessary steps to becoming an employee in a STEM field. |