Curriculum Sample Template – 8 Pages Max. (12 pages for integrated ELA sample)

Grade Level	4th	**Content Area**	Science
Course Title (grades 9-12 Only)	NA		
Expected Prior Knowledge *List the knowledge/skills mastered earlier in the year that are foundational to the mastery of the Required Standard(s).*	Basis of Electricity Safety Rules during laboratory/inquiry experiences		
Alignment to Program of Instruction *Describe how the methods of instruction found in this sequence of lessons align to the Program of Instruction described in the application package.*	Pensar Academy utilizes a Blended Learning (BL) educational model that includes Direct Instruction (DI), Small Group Intervention, and Projects Based Learning (PBL) for students to achieve mastery of the Arizona College and Career Readiness Standards (ACCRS). Lessons are comprised of the 21st century skills of critical thinking, collaboration, communication, and creativity. Pensar Academy ensures that all students can reach mastery through the use of Universal Design for Learning (UDL) in the preparation of lessons that incorporate multiple learning styles, such as visual, auditory, tactile and kinesthetic. Pensar Academy's rotational model has embedded Response to Intervention (RTI) logistics to ensure that students who did not meet mastery are provided intervention immediately following the lesson to increase their understanding of the material. Students who are at the mastery level (a minimum of 80%) after the direct instruction will have the opportunity for enrichment through the use of Study Island and teacher constructed online learning activities. All students will apply learned content and skills learned through this rotational model in PBL extension periods. These components ensure that, at Pensar Academy, will students receive an individualized education comprised of 21st century skill building and optimal success in surpassing the ACCRS.		
Standard Number* and Description *The standard number and description of the Required Standard(s) being instructed and assessed to mastery in the curriculum sample.*	**4.S5.C3.PO1 & PO3** 4th Grade Strand 5 – Physical Science Concept 3 – Energy and Magnetism PO1. Demonstrate that electricity flowing in circuits can produce light, heat, sound, and magnetic effects. PO3. Explain the purpose of conductors and insulators in various practical applications.		
Materials/Resources Needed *List all items the teacher and students will need for the entire sequence of instruction (excluding common consumables)*	Computer with internet access, centers' direction cards, battery holders, batteries, bulb holders, bulbs, wires – with alligator clips, paper clip, electrical buzzer, thermometers, compasses, magnets, golf tee, multi-meter, paper, coins, pen, plastic utensils, and cards with brads attached. Document camera.		

* ***Standard Number****: For English Language Arts (Reading and Writing), use Grade, Strand, Standard (e.g., 3.RI.2). For K-8 Math, use Grade, Domain, Cluster, Standard (e.g., 6.EE.B.7). For HS Math, use Conceptual Category-Domain, Cluster, Standard (e.g., A-REI.C.6).*

Lesson (add as needed)	**Instructional Strategies -** *List and describe teacher actions, lesson by lesson, which will provide students with opportunities to engage the grade-level rigor defined by the Required Standard(s). Indicate alignment of instructional strategies to specific component(s) or content/skill(s) of the Required Standard/component.*	**Student Activities -** *Describe the activities, lesson by lesson, in which students will engage to allow them to master the grade-level rigor defined by the Required Standard(s). Indicate alignment of student activities to specific component(s) or content/skill(s) of the Required Standard/component.*
1	**Objective:** Students will be able to (SWBAT) Construct a simple circuit and Test it to ensure the flow of electricity. **Anticipatory Set (AS)**: 1) Ask students to complete a bubble map answering: What is electricity? 2) Discuss a couple of the students' ideas presented by the students. **Teacher Model/Inquiry:** 1) Review the concept of electricity. 2) Discuss the requirements for a circuit to function appropriately. **Guided Practice:** Demonstrate appropriate use of the materials provided for the inquiry (i.e. appropriate use of the alligator clips and battery holders, etc.) **Check for Understanding**: Ask students to identify different elements needed for the circuit (i.e. what's the source of electrons?). **Independent Practice:** 1) Direct students to construct as many functional circuits as they can with the given materials and record the circuits' structure through drawings. 2) Monitor students' behavior and ensure safety procedures are being used. 3) Answer students' questions or ask questions to ensure understanding of the process. **Closure:** Provide students with the Exit Ticket: *Your family goes on a camping trip to a remote location. Upon arrival your parent realized they forgot to bring the flashlights and the lamp they wanted for inside the tents. Luckily for the family you have learned how to build a circuit and have the necessary materials to build one including a lightbulb. Write a step by step procedure on how to build the circuit including the necessary materials.*	**Objective:** Students will restate the learning objective… I will construct a simple circuit and test it to ensure the flow of electricity. **Anticipatory Set (AS)**: 1) Complete a bubble map on: What is electricity? 2) Share with the class some of their ideas. **Teacher Model/Inquiry:** 1) Listen and answer teacher questions regarding electricity. 2) Write down the requirements to build a functional circuit and ask clarifying questions – if any. **Guided Practice:** Observe the teacher's demonstration of laboratory equipment usage and ask clarifying questions – if any. **Check for Understanding**: Answer the questions presented by the teacher. **Independent Practice:** 1) Construct as many circuits as they can with the given material and record them through drawings. 2) Exhibit appropriate safety procedures through the laboratory experience. 3) Ask or answer questions to/from the teacher. **Closure:** Complete the Exit Ticket: Write a step by step procedure to build a circuit that includes a lightbulb to generate light. **Small Group Re-teaching:** If the students cannot write a procedure that leads into the successful creation of circuit then the student would be provided small group instruction. S/he will be allowed to manipulate the materials to conduct trial an error and record procedures until s/he succeed. The teacher will ensure the student does not continue to commit the same error by questioning student – prompting reflection – when proposing the same procedure. **Extensions:** Students will write a short story regarding the "camping trip" they took with the family in which they present themselves as the family's hero/heroine for the construction of the circuit that provided the lightning for the tents.
2	**Objective:** Students will be able to (SWBAT) Construct circuits to demonstrate that electricity flowing in circuits can produce light, heat, sound, and magnetic effects. **Anticipatory Set (AS)**: Present students with a picture and diagram of an incomplete circuit. Ask students to add the missing components to complete the circuit. **Teacher Model/Inquiry:** 1) Discuss the expectation of constructing circuits – one for each product – to demonstrate that electricity flowing through the circuit can produce light, heat, sound, and magnetic effects. 2) Request for students to complete diagrams of each of the circuits constructed. **Guided Practice:** 1) Teacher will request students' assistance, through	**Objective:** Students will restate the learning objective… I will construct circuits to demonstrate that electricity flowing in circuits can produce light, heat, sound, and magnetic effects. **Anticipatory Set (AS)**: Draw the diagram of the circuit adding the missing components. **Teacher Model/Inquiry:** Listen and follow along as the teacher discussed the expectation for the inquiry. **Guided Practice:** 1) Provide directions to the teacher on how to build a circuit that includes a lightbulb. 2) Observe and ask clarifying questions as the teacher draw the circuit diagram. **Check for Understanding**: 1) Take turn with shoulder partner and discuss the

	questioning, on the construction of a circuit that includes a lightbulb. 2) Teacher will construct the circuit as specified by students and test for functionality – light production. 3) Draw a diagram of the circuit. **Check for Understanding**: 1) Direct students to share with their shoulder partners what are the tasks for the day. 2) Listen to the students' conversations. 3) Ask a couple of students to share their partners understanding of the tasks for the day. **Independent Practice:** 1) Direct students to start working on the construction of the circuits. 2) Monitor students' progress on the tasks. 3) Assess appropriate usage of equipment and safety practices. **Closure:** Ask students to explain an application for one of the demonstration they completed (i.e. an iron uses electricity that produces heat that we apply on clothing to release wrinkles.)	tasks for the day. 2) Share with the class what their partner understanding of the tasks for the day. **Independent Practice:** Construct 4 circuits; one to demonstrate each of the expected products – light, sound, heat, and magnetic effect. **Closure:** Write an example of an application of one of the demonstration completed. **Small Group Re-teaching:** Students who are unable to complete the required circuits will be guided by a teacher in a small group setting to complete the task. **Extensions:** Students will create a tutorial video to demonstrate how the flow of electricity through a circuit produces any of the following: sound, light, heat, or magnetic effect.
3	**Objective:** Students will be able to (SWBAT) Explore insulators and conductors and explain practical application of insulators and conductors. **Anticipatory Set (AS)**: Show students a picture with two circuits labeled A and B; A should be a completed circuit with a lightbulb and B should be an incomplete circuit with a light bulb. State the following: *One of these circuits will produce light and the other will not. Identify which will produce the light and propose a way to get the other circuit to light the bulb.* **Teacher Model/Inquiry:** 1) Discuss with students the concepts of insulator and conductor. 2) Explain to students the tasks for the day of exploring different objects – paper clips, coins, paper, etc. – and determine whether they are insulators or conductors. 3) Discuss the directions for completing the inquiry and its report. **Guided Practice:** Demonstrate how to set up the incomplete circuit and show students how to test whether an object is an insulator or conductor. **Check for Understanding**: Ask comprehension questions (i.e. Are you setting a complete circuit? Why?) **Independent Practice:** 1) Direct students to complete the inquiry – testing of the objects. 2) Monitor students' progress on the tasks. 3) Assess appropriate usage of equipment and safety practices. **Closure:** Give each group and item in which insulators or conductor are use (i.e. lamp with a plastic at the end of the chord) and ask students to explain the applicability of the insulator or the item assigned.	**Objective:** Students will restate the learning objective… I will explore insulators and conductors explain practical application of insulators and conductors. **Anticipatory Set (AS)**: Identify the circuit that will produce light and propose a way to get the other one to produce light as well. **Teacher Model/Inquiry:** 1) Take notes about insulators and conductors. 2) Pay attention as the teacher explains the task for the day. 3) Follow along as the teacher discusses the directions for completing the inquiry and the associated report. **Guided Practice:** Observe as the teacher demonstrate the appropriate setting for the objects testing. **Check for Understanding**: Answer the questions posed by the teacher. **Independent Practice:** Complete the inquiry by testing the different objects while following appropriate safety procedure. **Closure:** Analyze the item provided and write an explanation on how insulator or conductor are been used on the particular item. **Small Group Re-teaching:** Students who do not master the classification of objects as insulators or conductor will be assigned to a small group that will use a check list to help them classify the objects. **Extensions:** Students will design a new utility item – lamp, iron, etc. - that usages insulators or conductors and explain it operation.
4	**Objective:** Students will be able to (SWBAT) explain the purpose of the insulator in various practical applications. Students will be able to (SWBAT) explain the purpose of the conductor in various practical applications. **Anticipatory Set (AS)**: The teacher will give the students the following scenario: You have been left to babysit a younger sibling. Why would you stop from sticking object into an outlet? Teacher will call on random students to share their discussion with the class. **Teacher Model/Inquiry:** 1) Teacher will show the students tangible devices (iron and lamp) with an insulator and the teacher will show where the insulator is located on the device. 2) Teacher will explain the purpose of the plastic	**Objective:** Students will restate the learning objective to their shoulder partner. Teacher will call on a couple of random students to restate their partner's statement. **Anticipatory Set (AS)**: Students will listen to teacher. Student will discuss their answer with their shoulder partner. If called upon, the student will share a summary of their discussion. **Teacher Model/Inquiry:** Listen to the teacher as s/he explains the concept. Students will have a picture of the lamp and iron. They will label the insulator when the teacher shows it on the tangible device. Students will restate the teacher's explanation on their picture to explain the purpose of the insulator in

	coating of the cord using metacognition. 3. Teacher will write the explanation of the purpose of the insulator in the functionality and safety of the device on the picture. 4. Show students a tangible device (fan motor and computers speakers) and will show where the conductor is located. 4) Teacher will use metacognition to explain the purpose of the conductor in the functionality and safety of the device. **Guided Practice:** Before the gallery walk, the teacher will model and explain how to do the activity. During the gallery walk, the teacher will monitor students. Teacher will listen to student's discussions and their explanation during the activity. **Check for Understanding**: Teacher will call on random students to put the picture of the given station under the document camera. Teacher will listen to the student's explanation of the insulator and the conductor's purpose in the functionality and safety of the device. Teacher will have students put a thumb up if they agree with the student's explanation or a thumb down if they do not agree. Teacher will call on random students to explain their justification for agreeing or disagreeing. **Independent Practice:** Teacher will give students a worksheet with five devices. Students will label the insulator and conductor with an explanation of the purpose of each in the functionality and safety of the device in the picture. Mastery is correctly answering 4 out of 5 correctly (80%). **Closure:** Teacher will put 2 cognitive closure questions on the board. Teacher will collect the post-it at the end of class. 1. How can I use this knowledge in your everyday life? 2. How would I teach this concept to a friend?	the functionality and safety of the device. Students will have a picture of the fan motor and computer speakers. They will label the conductor when the teacher shows it on the tangible device. Students will restate the teacher's explanation on their picture to explain the purpose of the conductor in the functionality and safety of the device. **Guided Practice:** Students will complete a gallery walk in groups of two. There will be 6 stations with tangible devices. At each station there will be a picture of the device. Students will label the conductor and insulator on the picture. Students will write an explanation of the purpose of the conductor and insulators in the functionality and safety of the device. The tangible devices are a lamp, vacuum, alarm clock, video game console, toaster, and outlet. **Check for Understanding**: The students will put the picture of the device under the document camera. The student will point to the insulator and the conductor and explain their written statement of the insulator and the conductor's purpose in the functionality and safety. Students will put a thumb up if they agree with the student's explanation or a thumb down if they do not agree. If called upon by the teacher, the students will verbally explain their justification for agreeing or disagreeing. **Independent Practice:** Students will complete the independent practice. **Closure:** Students will select a sentence stem from the cognitive closure and write their statement on a post-it note. **Small Group Re-teaching:** Students who did not receive an 80% on the will attend a small group session with teacher. **Extensions:** Students who achieve mastery will use the computer program Study Island to complete additional questions pertaining to the standard.
5	**Objective:** Students will be able to (SWBAT) Explore electricity, circuits, the effect of energy transfer – sound, heat, etc. –, and different insulators and conductors through a Web Quest. **Anticipatory Set (AS)**: State the following: *It was a dark and stormy night. Thunder boomed and lightning crashed. The power was out so you grabbed your flashlight to see what was going on. You pushed the on button just as you heard a strange noise, but nothing happened. You were still in total darkness. Why was your flashlight not working?* Brainstorm some ideas with your group and create a concept map of those ideas. **Teacher Model/Inquiry:** Web Quest site - http://corder.wrightcity.k12.mo.us/Science/ScienceLinks_files/Electricity%20WebQuest.htm 1) Discuss the task(s) for the Web Quest with students. 2) Explain the expectations for collaboration between partners as they work on completing the Web Quest. **Guided Practice:** Teacher will model how to access the necessary documents and websites. **Check for Understanding**: 1) Ask students to open the first website required	**Objective:** Students will restate the learning objective… I will explore electricity, circuits, the effect of energy transfer – sound, heat, etc. –, and different insulators and conductors through a Web Quest. **Anticipatory Set (AS)**: Create a concept map explaining what happened to the flashlight on the situation described by the teacher. **Teacher Model/Inquiry:** Listen to the teacher as s/he explains the task(s) of the Web Quest and ask clarifying questions – if any. **Guided Practice:** Pay attention as the teachers navigate the websites and download the necessary documentation for the Web Quest. **Check for Understanding**: 1) Open the first website required by the Web Quest. 2) Download the required documents for the Web Quest report. **Independent Practice:** Follow the directions present in the Web Quest site - http://corder.wrightcity.k12.mo.us/Science/ScienceLinks_files/Electricity%20WebQuest.htm – and complete it. **Closure:** Review or refine the concept map created during the anticipatory set. **Small Group Re-teaching:** Students that do not complete the Web Quest report will be assigned to a small group in which the teacher will guide the students through the process and use strategic questioning/prompting to aid them with the

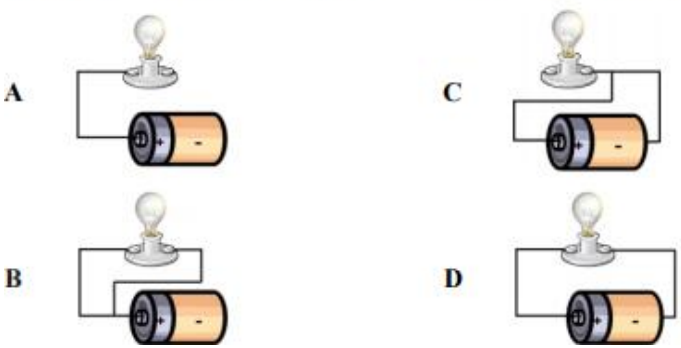
	for the Web Quest. 2) Walk around to ensure all students have the appropriate website. 3) Direct students to download the required documents for the report – Transfer of Energy Organizer, etc. – and check for appropriate completion of the task. **Independent Practice:** 1) Direct students to complete the Web Quest. 2) Ask or answer questions regarding the Web Quest. 3) Monitor students as they complete the Web Quest. **Closure:** 1) Direct students to revisit the concept map created during the anticipatory set and identify or refine the answer to the question *Why was your flashlight not working?* 2) Allow time for students to complete this task while walking around and prompting students with questions.	completion of the Web Quest. **Extensions:** Students will research other websites that can potentially be included in the Web Quest in the future and write the reasoning for the inclusion of each website.
S.A.	*Provide an opportunity for the student to complete the summative assessment items which is clearly separate from instruction and guided or independent practice, and in which the student is assessed independently. In the Student Activities column, provide a brief description of the summative assessment (S.A.) items that will allow students to demonstrate mastery of the rigor of the Required Standard(s)/components, and the context in which the items will be administered.*	The S.A. includes 5 multiple choice summative items and an open response that is graded on a rubric. Item #1 a multiple choice question, worth 2 points, assesses the student's ability to demonstrate that electricity flowing in circuits can produce light. Item #2 a multiple choice question, worth 2 points, assess the student's knowledge of explaining the purpose of the insulator of a device. Item #3 a multiple choice question, worth 2 points, assesses the student's ability to demonstrate that electricity flowing in circuits can produce magnetism. Item # 4 a multiple choice question, worth 2 points, is assessing the students ability to demonstrate the electrical flow of a circuit and the purpose of the conductor. Item # 5, worth 6 points, is an open response scored on a rubric that assesses the student's ability to explain the purpose of the conductor and the insulator's functionality and safety of the device. The students will receive a 3 for an exemplary response, 2 for a satisfactory response, or 1 for a needs improvement response. The score received will be doubled. Item #6 a multiple choice question, worth 2 points, assesses the student's knowledge of the purpose of conductors. The six items are worth a total 16 points. Students need to obtain 13 out of 16 points to be at mastery with an 80% or higher.

Summative Assessment Items and Scoring: *Below, provide at least three Summative Assessment Items that together accurately measure student mastery of the application of the content and/or skills as defined by the grade-level rigor in the Required Standard(s). For each assessment item, provide an answer key or scoring rubric which clearly describes how assessment items are to be scored and how points will be awarded, such that mastery of the application of the content and/or skills as defined by the grade-level rigor in the Required Standard is clearly demonstrated by an acceptable score.*

Summative Assessment Item 1 (clearly identify answer key/scoring rubric, and acceptable score): **(2 pt)**

Direction: Look at the picture below. Read the question. Select the multiple answer. *Answer:* **D**

Each picture shows a light bulb connected to a battery. Which bulb will light?



Item #1 a multiple choice question, worth 2 points, assesses the student's ability to demonstrate that electricity flowing in circuits can produce light.

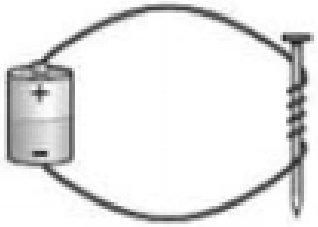
Summative Assessment Item 2 (clearly identify answer key/scoring rubric, and acceptable score): **(2 pt)**
Directions: Look at the picture below. Read the question. Select the multiple answer.
What is the purpose of a lamp wire cord being coated with plastic? *Answer:* **C**

A. to decorate the lamp cord
B. to keep the wire from breaking
C. to insulate the wire
D. to keep animals from chewing the wire

Item #2 a multiple choice question, worth 2 points, assesses the student's knowledge of explaining the purpose of the insulator of a device.

Summative Assessment Item 3 (clearly identify answer key/scoring rubric, and acceptable score): **(2 pt)**
Directions: Look at the picture. Read the question. Select the multiple answer.
The diagram on the right shows an object made from a battery, a nail, and some wire.
What will happen if you touch a metal paperclip to the nail? *Answer:* **D**

A. The wires will melt.
B. The battery will spark.
C. The nail will give you a shock.
D. The paperclip will stick to the nail.

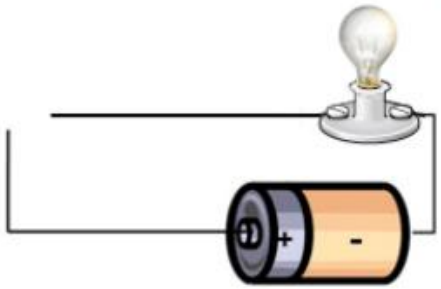


Item #3 a multiple choice question, worth 2 points, assesses the student's ability to demonstrate that electricity flowing in circuits can produce magnetism.
Summative Assessment Item 4 (clearly identify answer key/scoring rubric, and acceptable score): **(2 pt)**

Directions: Look at the picture below. Read the question. Select the multiple answer.

Answer: A

Carlos connected a battery, bulb, and wires as shown in the drawing below.



If the free ends of both wires touch the following objects, which object will allow the bulb to light?

A penny

C newspaper

B cloth shirt

D wood sticks

Item # 4 a multiple choice question, worth 2 points, is assessing the students ability to t demonstrates the electrical flow of a circuit and the purpose of the conductor.

Summative Assessment Item 5 (clearly identify answer key/scoring rubric, and acceptable score): *Each drawing will be evaluated using the rubric below.* **(6 pts)**

Draw a picture of device that contains both an insulator and conductor. Label the insulator and the conductor. Explain the purpose of each of this in the functionality and safety of the device. The following rubric would be used to evaluate your performance.

	Needs Improvement 1 point	Satisfactory 2 points	Exemplary 3 points
Requirements	• The drawing contains an insulator and conductor with incorrect labels • The explanation of the purpose of the insulator in this practical application is inaccurate. • The explanation of the purpose of the conductor in this practical application is inaccurate.	• The drawing contains an insulator and conductor with correct labels Contains only one of the following: • The explanation of the purpose of the insulator in this practical application is accurate. • The explanation of the purpose of the conductor in this practical application is accurate.	• The drawing contains an insulator and conductor with correct labels • The explanation of the purpose of the insulator in this practical application is accurate. • The explanation of the purpose of the conductor in this practical application is accurate.

Item # 5, worth 6 points, is an open response scored on a rubric that assesses the student's ability to explain the purpose of the conductor and the insulator's functionality and safety of the device. The students will receive a 3 an exemplary response, 2 for a satisfactory response, or 1 for a needs improvement response. The score received will be double.

Assessment Item 6 (clearly identify answer key/scoring rubric, and acceptable score): *Each drawing will be evaluated using the rubric below.* **(2 pts).**

Directions: the question. Select the correct multiple answer.

Which statement **best** explains the purpose of electrical wires being made of copper?

A. Copper is strong.

B. Copper is flexible.

C. Copper is a conductor.

D. Copper is an insulator.

Answer: C

Item #6 a multiple choice question, worth 2 points, assesses the student's knowledge of the purpose of conductors. The six items are worth a total 16 points. Students need to obtain 13 out of 16 points to be at mastery with an 80% or higher.