Becoming a Lifelong Learning Educator

Teaching for Student Success Today, Tomorrow, and Beyond

Webinar Presentation Handout

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Handout 1

Notes

Why do we need to prepare students for a lifetime of learning?

Some things to think about:

What do these words or phrases suggest to you about the world we live in today? What does it mean for the world students will live in tomorrow and beyond?

What are the words or phrases that you would use to describe the world students will live in?

Some givens about students and their future:

- Students will face significant personal, professional, and public-civic challenges throughout their lives.
- Students will have 13 years of K-12 schooling, and some will have college schooling. Most students will have approximately 60 or more years beyond of learning, growth, and problem solving beyond schooling.

Handout 2

Notes

What educational goals improve the chances of success today and also prepare students for the world of tomorrow?

Four key goals

1. **Develop a growth mindset**—raising curiosity and interest in learning; increasing the willingness and desire of students to deal with personal, professional and public challenges; seeing failure as learning opportunities; knowing that effort is important to learning, improvement, and growth.

> **Question: How can we develop a positive learning environment that helps our students develop a growth mindset?**

Examples:

- **Raise curiosity and interest in learning**—Focusing learning around compelling essential questions is one way to develop curiosity and interest in learning.
- **Encourage students to see error and failure as opportunities for learning.**
  - "With a growth mindset, students see mistakes as learning opportunities, and they learn from feedback. Instead of feeling like they've failed the task, students realize that they haven't met the expectations . . . yet." (Hellerich, 2020).
  - Hellerich (2020) suggests the use of "retakes"—multiple opportunities for students to rework assignments—to foster a growth mindset. Students are given many opportunities to rework errors and earn additional credit within a two-week window" (*Teaching for Lifelong Learning*, p. 84).

2. **Create a meaningful foundation of concepts, big ideas, and understandings, with linked knowledge, that helps students make sense of the world around them.**

> **Question: What can we do to focus student learning around relevant, meaningful, important, and significant content?**

Examples:

- **Focus content learning around a few core, key understandings, such as:**
  - Key ideas in and genres of varied types of literature
  - How science works: the scientific method and science investigation

- The difference between fact and fiction (and how to tell the difference)
- Survival and adaptation of living creatures
- Democratic development over time
- Numeracy, data, statistics
- Art and music genres and the creative process
- Wellness
- Citizenship challenges and issues—climate change, artificial intelligence, social media, gun violence

3 Develop core "learning to learn" skill sets.

Question: What can we do to focus student learning around the most vital skills necessary for today and tomorrow's learning?

- **Examples of key skill sets:**

  - **Be an active researcher**: Be able to read and understand, search for, and find a variety of resources (not just a textbook or one source) in order to study, digest, evaluate and synthesize information and ideas.
  - **Think critically and creatively:** Think logically and use brainstorming and other creative methods to solve problems.
  - **Be a good communicator:** Know how to discuss issues with others, organize thoughts for presentations, and be able to write stories, persuasive essays, research papers, and the like.
  - **Collaborate well with others**: Know how to learn and solve problems with others in small and large groups.

4 Develop the ability to apply and deepen learning.

Question: What can I do to help students learn how to apply and deepen learning? How can I help students to become independent/interdependent, self-directed learners?

- **Examples:**

  - Take what you know and can do and apply it to a new situation;
  - Read, take notes, organize thoughts and ideas on one's own;
  - Complete a project independently or in a group from start to finish;
  - Conduct research to learn more about a topic;
  - Apply prior learning to a new task (e.g writing an original song, producing an op-ed piece, writing a poem, presenting to a city council . . .);
  - Work in a small group to solve a problem.

Handout 3

Reflection Exercise

Sample Fifth Grade Social Studies Unit

Exercise: Read the following fifth grade social studies unit, and underline/mark in the margins some of the ways that this teacher has integrated the four lifelong learning education goals into her teaching:

- Develop a growth mindset;
- Develop a meaningful foundation of concepts, big ideas, and understandings, with linked knowledge;
- Develop core learning to learn skill sets: research, thinking, communication, collaboration;
- Apply and deepen learning: develop independence, interdependence, and self-directedness.

A fifth grade teacher is teaching a social studies unit on early New World explorers. She has decided on a few key concepts/understandings to examine with students based on the social studies standards and unit objectives—the meaning of exploration, the difficulties faced by explorers, and the risks and rewards of exploration. From these concepts/understandings she has developed three essential questions to explore as starting points for the unit:

Why do people explore?
What are the difficulties and challenges many explorers face?
What are the risks and rewards of exploration?

1. To stimulate students' interest and curiosity about what they will learn, she introduces these questions to students, defines new terms found in the questions (for example, *difficulties*, *challenges*, *risks*, and *rewards*), and gives students a chance to think about and share what they already know about each question before they begin studying New World explorers. As students learn more about the explorers who traditionally have been credited with finding the territory that would become the United States of America, they will reexamine the essential questions to consider how unit activities answer the questions and further discuss and clarify the answers.

2. Next, the teacher and students together read from a text about the early New World explorers. As students read, they use the survey, question, read, recite, and review (SQ3R) study method. They first *survey* the text for information that might help answer the essential questions, and then develop additional *questions* from the text headings. Then, as they go back and *read* the text more carefully, they are asked to pick out key ideas and state (*recite*) these ideas to a partner. Finally, the teacher and students together write a *review* of what they have learned so far as answers to both the essential questions and the SQ3R questions, and further discuss and develop explorer vocabulary and concepts.

3. In another lesson, in small groups, students are tasked with creating timeline maps that show for each major explorer the years exploration took place, where the explorers started from, what routes they took, miles and days they traveled, where they landed, and any additional helpful information. As students complete this activity, they collect additional information from their text and use computers to research information from other sources. They draw conclusions from this information by discussing what their results tell them about these explorers, the difficulties they faced, the risks they took, and what else they discovered. When

they complete the timeline maps, students hang them around the classroom and do a gallery walk (walking around the classroom in small groups) to examine all the timeline maps their peers completed for this activity.

4. Using the data collected in the last activity, the entire class, working together under the teacher's guidance, develops a chart that compares and contrasts key information for each explorer. Students are given the opportunity to examine and write about the similarities and differences between these explorers.

5. Next, the teacher again divides students into small groups. Each group works on their own and deepens their learning by doing a research project on one explorer. They conduct further research on that explorer, finding additional articles and readings, and add to the information and understanding already gleaned from their work so far. Emphasis is on increasing knowledge and understanding of the explorers' goals, what they wanted to achieve, the challenges they faced, the risks they took, the hardships they endured and overcame, what they discovered, and what they accomplished. As they work, the teacher goes from group to group, giving students help, support, guidance, and feedback for improvement. Each group shares their results using their own display chart.

6. For the final assessment, students answer the following questions in a short essay, with their resources available to them. They share their answers with each other in small groups, and students give each other feedback to help them improve their essays. They then discuss their final answers first in small groups and then together with the entire class.

   - Which explorer that we have studied is the most interesting to you? Why?
   - Which explorer faced the most hardships? Took the most risks? How did he overcome his hardships and risks?
   - Which explorer do you think was the most important? Why?
   - What have you learned about exploration that is important for understanding explorers (like space explorers) in the modern world?

Handout 4

How can we plan and teach—organize instruction—to integrate the four goals of a lifelong learning education, insure greater success, and prepare students for a lifetime of learning?

Exercise: Review the four-phase instruction model with descriptors on page 7, and then return to pages 4-5 to reflect on how the fifth grade social studies unit is organized into the four phases. Paragraph numbered 1 sets the stage; paragraphs #2-4 builds the foundation. Paragraph #5 applies and deepens learning; paragraph #6 provides closure. Don't look at the content of the unit so much as the types of activities used in each phase and how students are engaged in the learning process. If you like, you can also do this exercise by analyzing one of the six additional four-phase unit examples found on pages 10–23.

Use the outline below to jot down your thoughts about each phase of the unit, how the activities in each phase increase the odds of success and how they help prepare students for a lifetime of learning.

Set the Stage:

Build the Foundation:

Apply and Deepen Learning

Closure:

FOUR-PHASE INSTRUCTION MODEL WITH DESCRIPTORS

SET THE STAGE Students:

- Are invited into the learning process with essential questions, puzzles and problems, learning challenges, and other activities that provoke curiosity, interest and inquiry.
- Are introduced to the key understandings, big ideas, concepts, knowledge, facts and skills to be learned.
- Are introduced to major tasks and projects to be accomplished.
- Are provided with a meaningful context for learning.
- Activate their prior knowledge.

BUILD A FOUNDATION Students:

- Think and act like a researcher as they learn.
- Develop, practice, and grow meaningful concepts and understandings.
- Acquire relevant knowledge related to concepts and understandings.
- Learn and practice key skills, such as study and reading skills, how to be an active researcher, critical and creative thinking, communication, and collaboration.
- Learn more about and begin to develop key tasks, projects, and student work with teacher guidance.
- Are given opportunities for student improvement through feedback and formative assessment.

APPLY LEARNING, WORK INDEPENDENTLY, INTERDEPENDENTLY, DEEPEN LEARNING Students:

- Are given increased responsibility for learning—to set their own goals, plans, schedules, deadlines, etc.
- Apply what they have learned to a new task, situation or problem.
- Independently or interdependently work on a project(s) related to the content of the unit.
- Choose an interest and plan for, develop and deepen learning in this area of interest.
- Continue to develop and improve key tasks and student work.

CLOSURE Students:

- Complete tasks, projects, student work, and products.
- Demonstrate and explain what they have learned, make presentations, share their work with others.
- Continue learning, digging deeper into the topic and questions by learning from others, acquiring greater knowledge and information, and developing still greater understanding and better use of skills.

Handout 5 Some Concluding Thoughts

The four-phase instructional model is not only helpful to prepare students for lifelong learning, but it is also a good model for everyday teaching that:

- Promotes a positive classroom climate;
- Actively engages students throughout the learning process;
- Develops student curiosity;
- Focuses learning around key understandings and skills;
- Improves student work and learning over time.

The four-phase instructional model is ***not designed to be used for each lesson***. It is used to design a number of lessons that are part of "arcs of learning," such as:

- Units of study
- Book reading
- Performance tasks and projects

Each phase consists of a series of lessons with different goals.

The lifelong learning four-phase instructional model is a very useful framework for planning and instructing ***in person and/or online***. It encourages student engagement and participation and makes learning more meaningful (for example, with essential questions). Students practice and apply important skills. Students are able to improve their work and deepen their learning through discussion and projects. Sharing of final student work is encouraged.

Handout 6

Some Follow-Up Suggestions

1. **If you are a teacher, try out one or more instructional changes that support the goals of a lifelong learning education**, such as:

   - Begin each unit with a compelling essential question, a challenge, or a problem (growth mindset, curiosity, interest in learning);
   - Provide feedback to students on their work more often, and give students the opportunity to improve and modify it (growth mindset);
   - Teach a foundational skill important to a lifelong learning education, such as how to search for and process information and ideas (research skills);
   - Help students apply and deepen learning. For example, after students learn how to develop a complete project, give them a choice of projects for a self-directed learning experience;
   - Give them a chance at the end of a unit to share and present their final work to others.

2. **Find out more about the four-phase instructional model**. Take some time to further review the descriptors on page 7 and examine one or more of the additional four-phase unit examples from pages 10–23. Read a blog about the model at https://bit.ly/3m4ZAJx. My website at www.lifelonglearninged.org has many other blogs and resources that might be helpful and of interest.

   You might also want to develop your own unit of study. You can download a reproducible copy of a blank planning guide at the solution tree website https://bit.ly/2Ybr1bN. Once developed, the unit can be piloted in your classroom.

3. **Read my book *Teaching for Lifelong Learning* (Seif, 2021).** Learn more about the key characteristics of, and practical suggestions for, implementing a lifelong learning education. The book can be purchased through the Solution Tree website (SolutionTree.com/LifelongLearning) or through Amazon. A free book study guide is also available on the Solution Tree website and on my website www.lifelonglearninged.org. The book and its book study guide can also be used for a long-term school-based study.

4. **If you are an administrator, consider how to make your school or district into a center for lifelong learning education**. If your school is a PLC, consider how you might use the lifelong learning education framework to help teachers consider goals and instructional strategies to improve learning and prepare students for a lifetime of learning. Read my blog at https://bit.ly/3RGTDQ3 to examine how you might do this.

5. **Feel free to contact me directly** through my website with any follow-up questions, reflections, insights, suggestions, thoughts, or comments: www.lifelonglearninged.org

Six Additional Four-Phase Unit Examples

Unit Example A

Unit: Reading literature: fiction and non-fiction
Subject: Many subjects
Grade Level: Primary, but can be adapted to other grade levels

Setting the Stage

- The teacher introduces the theme of the book to build interest and curiosity and uses a think-pair-share activity to ask students what they already know about the theme of the book. In think-pair-share each student individually thinks of what they already know about the theme of the book, shares what they know in pairs, and then discusses it as a class, with the teacher writing down the results.
- The teacher shares an essential question(s) related to the book and then begins a discussion of the essential question(s) that the students will explore together while the book is being read.
- If appropriate, the teacher brings in and discusses additional information about the author and/or the background of the book that will help students better understand the book and its context.
- The teacher introduces the tasks that will be accomplished as the book is read. Examples include visual organizers, discussions, reflections, research about the author, and finding and reading other books written by the author. This project is to be completed at the end of the unit.

Building the Foundation

- The teacher introduces and defines new vocabulary words and key concepts prior to reading the book.
- The teacher reads the book to (or with) students.
- As the book is being read, the teacher asks students questions about the text. After the book is read, students work in small groups to create a visual organizer (an artistic creation) that illustrates the main narrative and ideas of the story.
- The teacher and students together search for more information about the author and the theme of the book. The teacher helps students with their searches and reads, listens to, and discusses the readings and other sources found in the search.

Applying and Deepening Learning

- The teacher again asks the essential question(s) discussed in setting the stage, only this time asks if the book helps to answer the question. Students give their opinions, but this time must back up their opinions with evidence from the book.
- Students discuss and expound on their own ideas about the book's theme.
- Students find and read other books on their own, either by the same author or with a similar theme.
- Students create and complete a project related to the theme of the book, the context of the book, or the author. Products related to the project might include posterboards, artwork, graphic organizers, or short essays.

Closure

- The teacher asks students to write (or dictate) a brief self-reflection—what they liked about the book, what they learned as a result of reading and discussing the book, and how they would now answer the question explored at the beginning of the reading. The drafts are rewritten with the students to improve grammar, vocabulary, and meaning.
- Final reflections are shared among the students and discussed and sent home to parents-guardians for discussion with the students.
- Students write, dictate, and share reflections of other books that they read on their own during the deepening learning phase.
- Students share the results of their deepening learning projects with other students, parents, etc.

Unit Example B

Unit: What does it mean to be a good citizen?
Subject: Citizenship
Grade Level: Primary

Setting the Stage

- The teacher introduces the unit by reading the following questions to the class and asking for answers:

  I think the topic of citizenship will be interesting because . . .
  While studying this topic, I would really like to learn about . . .
  I am excited about studying this topic because . . .

  The teacher writes down student responses, reads them back to the class, and uses them to help decide on the direction of the unit and some of its activities.

- The teacher introduces the essential questions: What would it be like if we didn't have rules in school? Why is it necessary to have rules? Students, together with the teacher, discuss these two questions and make a list of the reasons we have rules, and what would happen if we didn't have them.

- The teacher introduces the essential questions: What does it mean to be a good citizen? What are the responsibilities of a good citizen? Students discuss and brainstorm answers. The teacher records answers on chart paper and posts them around the room for review and revision at the end of the unit.

- The teacher introduces the idea of government and how government helps set the rules for us. Students learn the names and functions of political leaders at different levels (local, national) to help them understand who heads different governments and what the governments and people in those roles do.

Building the Foundation

- Students are introduced to the idea that they are able to be active citizens and have a voice in how things are run and how rules are made. They discuss and brainstorm their current roles and responsibilities as citizens and write down their responses.

- The teacher shares and discusses classroom and school rules and why they were developed. Students work in small groups to make suggestions as to how to improve these rules. Together, the class decides on a list of classroom rules that will be posted in the room for the remainder of the school year. Students plan a visit with the school head to share their views on how to improve school rules.

- Students, together with the teacher, examine fundamental ideas about American government. The teacher explains how leaders are chosen, how our leaders pass laws, and how people are involved in government activities.

- A local political leader comes to class to explain how the local government works. Together, the class and the local political leader create a diagram of how local government works and how laws are passed. Students ask the local political leader questions that were prepared in advance. The teacher reads to students a book about how government works and puts key words on the board to further explain government and the purposes it is designed to serve.

- Students discuss the idea of what a citizen is and brainstorm the characteristics of a good citizen. The class begins to think about what they can do on a daily basis to demonstrate good citizenship.

Applying and Deepening Learning

- Each student is provided with a daily active citizenship chart where they check off the things they do each day to be a good, responsible citizen. Examples include following a classroom or school rule, helping a friend, helping at school or at home, or describing a problem they helped solve.

- The class goes on a field trip to local government offices where they meet the local leader and other elected officials. Students ask questions about how they got their jobs, what they do during the day, how they help people, and so on.

- Students meet with the principal to discuss school rules and make suggestions on how to improve them. The principal has agreed in advance to consider their suggestions and make changes if appropriate.

Closure

- The teacher revisits the essential question: What does it mean to be a good citizen? Students discuss and brainstorm answers now that they have completed the unit. The teacher revisits the original answers on chart paper and rewrites them to reflect student answers at the end of the unit.

- Students share their active citizenship charts and write a reflection on what they learned by completing it.

- Students answer a new set of questions to determine what they have learned by the end of this unit. Some of the questions include: Why is it important to have government? How do people get to be government leaders? What do government leaders do that is important?

- Each student creates a booklet titled *What Does It Mean to Be a Good, Responsible Citizen?* They devote a page to a different way to be a good citizen. Examples include work together, help others, don't litter, and help make the rules. The pages include text and drawings illustrating good citizenship. They share the books with each other, with parents and guardians, and with local politicians.

Unit Example C

Unit: You are what you eat
Subject: Health education
Grade Level: Upper elementary, middle, or high school

Setting the Stage

- Begin a discussion with the essential questions: What is healthful eating? Why is it important? Use a think-pair-share activity to enable students to respond to these questions. First, students individually have time to write their responses. Then, they share their responses with one other student. Finally, the entire class discusses the responses and the teacher creates a list of student responses to be posted in the classroom. The responses will be examined and revised at the end of the unit.

- Share with students that this unit will focus on healthy eating. Introduce a set of questions for discussion that are designed to diagnose the level of learning and understanding about nutrition groups, healthy foods, diets, and so on. Examples include: What do you know about good nutrition? Which foods are the most healthy for you to eat and why?

- Share, discuss, and answer questions about the unit tasks and projects described below:

  - **Personal Eating Action Plan**
    Students will prepare a personal action plan for healthful eating based on their unique characteristics (for example, height, weight, activity level, and so on). The action plan includes nutrition goals and specific actions needed to achieve those goals. Students will be encouraged to share their action plans with parents or guardians.

  - **Illustrated Nutrition Brochure for Elementary School Children**
    Each student will design an illustrated nutrition brochure to teach younger children about the importance of good nutrition for healthy living and the problems associated with poor eating.

  - **Chow Down**
    For the culminating performance task, students will develop a three-day menu of meals and snacks for an upcoming Outdoor Education camp experience. They write a letter to the camp director to explain why their menu should be selected. This task is completed individually and is evaluated with a four-point rubric.

Building the Foundation

- As an ongoing activity during the unit time period, students create a chart of their daily eating and drinking for periodic discussion and feedback, later review, and evaluation.

- Students use the textbook and other resources to research information about different food groups. The teacher introduces a list of a variety of foods, each on separate cards, and students work in groups to sort them into different food groups (concept attainment lesson). Students share and evaluate their results.

- Using the textbook and other resources, students find information about the Food Pyramid and identify foods in each group. Students work in groups to develop a poster of the Food Pyramid containing cut-out pictures of foods in each group. Posters will be developed in draft form, with feedback provided by the teacher and other students. Display the posters in the classroom or hallway.

- The teacher gives a quiz on the Food Groups and Food Pyramid (matching format) and, after the quiz is taken, discusses the results to determine level of understanding of Food Groups and the Food Pyramid and dispel misconceptions and misunderstandings.

- The teacher hands out, reads, reviews, and discusses a nutrition brochure from the USDA. Discussion questions: What does this brochure help us to understand about good nutrition? Must everyone follow the same diet in order to be healthy?

- The teacher shows and discusses the video, *Nutrition and You*. The class discusses the health problems linked to poor eating.

- Students listen to, and ask questions of, a guest speaker, such as a nutritionist from a local hospital, about good nutrition and health problems caused by poor nutrition.

- The teacher models how to read and interpret food label information on nutritional values. Then, students practice reading and interpreting food labels using boxes, cans, and empty bottles brought from home. An alternative option is to take a field trip to a local supermarket and ask students to work in small groups in different sections to read and interpret food label information to share with the rest of the class.

Applying and Deepening Learning

- Students respond to the written prompt: Describe two health problems that could arise as a result of poor nutrition and explain what changes in eating could help to avoid them. These are collected, students are provided with feedback, students have time to improve them, and then the teacher grades them.

- Working in small groups, students analyze a hypothetical family's diet (deliberately unbalanced) and make recommendations for improved nutrition. The teacher observes, coaches, and provides feedback to students as they work. The groups share their diet analyses and discuss as a class. The teacher collects and reviews the diet analyses to look for misunderstandings needing instructional attention.

- Each student designs an illustrated nutrition brochure to teach younger children about the importance of good nutrition for healthy living and the problems associated with poor eating. Drafts are developed, feedback is given, and brochures are completed. This activity is completed both inside and outside of class as homework. The final brochures will be given to an elementary school to share with students and help them understand good nutritional habits for healthy eating.

Closure

- Students and teacher revisit the essential questions: What is healthful eating? Why is it important? Students work in small groups to review the responses given at the beginning of the unit and create a new set of responses based on what they have learned during this unit. They then write their own individual responses that are collected by the teacher for review.

- For the final assessment, students work in small groups to develop a three-day nutritionally balanced camp menu, then evaluate and give feedback on the camp menu project to each other. Students self- and peer-assess their projects using rubrics.

- At the conclusion of the unit, students review their completed daily eating chart and self assess the "healthfulness" of their eating. Have they noticed changes? Improvements? Do they notice changes in how they feel and/or their appearance? Their self-assessments are graded based on their understanding of unit ideas.

- Students develop a personal "eating action plan" for healthful eating. These are saved and shared at upcoming parent conferences.

Unit Example D

Unit: What is poetry?
Subject: Language arts
Grade Level: Upper elementary, middle, or high school

Setting the Stage

- Ask students the essential question: What is poetry? Write down their responses. Ask them to consider another essential question: What makes poetry meaningful? Read several poems, one at a time, and revisit the essential questions after each reading to gather new answers to each question.

- Discus the question: Why is poetry an important way to communicate? Read several examples of poems by leading poets (e.g. Robert Frost, Langston Hughes) and ask students what the poems communicate and mean. Explain that this unit will explore poems like the ones read n class, how poetry differs from prose, and the different types of poetry. One goal is that students will understand why poetry is such an important part of the communication experience.

- Read the poem *Fog* by Carl Sandburg to the class. Ask: Is this a poem? Why or why not? Have students use a think-pair-share to answer these questions. Students first individually write down whether they think this is a poem and why or why not. Then, they pair up with another student to discuss their answers. Finally, the entire class discusses the responses. The teacher uses this activity to briefly introduce and discuss the meaning and forms of poetry.

- In order to develop a definition of poetry, students will work in groups with a variety of short selections of both poetry and prose. They will decide which selections are forms of poetry and which are not. They then decide what are the characteristics of the poetry selections. What makes a poem a poem? Students should begin to realize that meter, rhyme, rhythm, and the ability to convey emotion and feeling concisely are key aspects of poetry.

- Based on the activities and discussions above, students will together write a beginning definition of a poem that will be examined and revised at the end of this unit.

Building a Foundation

- Students will further examine different ways of communicating and consider when and why they are used. Working in small groups, students will fill out a "Different Ways of Communicating" chart with three columns—What is it? When do we use it? Why do we use it? The different forms of communication might include songs, fictional stories, letters, research papers, news stories, op-ed pieces, and poetry, to name a few.

- The teacher will introduce, review, and discuss the many types of poetic devices and terminology of poetry, with many examples. These include alliteration, hyperbole, metaphor, rhyme, similes, and other devices.

- The teacher will conduct a number of discussions in which she will read a poem to the class, ask an interpretive question about the poem, and also ask for their reactions to the poem. The students will discuss

the background, form, style, devices used, and meaning of each poem. Students will begin to create a poetry portfolio by searching for, finding, and identifying poems that they like that represent many different types of poetry. They will place these poems in their portfolio. Each poem will be labeled with the type of poetry it represents and why it was chosen to be in the portfolio (e.g. limerick, diamante, haiku, blank verse).

- A first poetry slam will be conducted in class. Up to ten student volunteers will select a poem that they like, and they will read the poem to the rest of the class. The class will reflect on each poem read to identify why it was appealing to the student, and examine its type, organization, and meaning.

Applying and Deepening Learning

- Students will select a poem from a variety of works provided by the teacher. They will research information and ideas about the poem, its author, and its background, and then write a reflective and analytical essay about the poem's writer and the form and meaning of the poem. Students will also have the option of choosing their own poem or poet, with the approval of the teacher, to research for the reflective and analytical essay.

- Students will begin writing a poem based on an essay or theme that is of interest to them. They will have the opportunity to examine essays online and in a text, and then decide which essay they will turn into a poem. They may also select a theme that interests them as the vehicle for writing a poem (e.g. love, war and peace, feelings, etc.). Once an essay is selected or theme determined, students will draft a poem based on one of the forms learned earlier, using a variety of devices as they write. They will have a chance to share the draft with the teacher and others and revise it before it is completed.

Closure

- Students will reexamine the definition of a poem written earlier, reflect on the definition, and make changes based on the work done for this unit.

- Each student will create their own visual image of poetry using the definition and other work done for this unit. These visual images will be posted in the hallway for others to see, and also shared in a student gallery walk.

- Students will have the opportunity to take part in a poetry slam and share their original poetry with classmates, parents-guardians, or the school and/or outside community. The teacher will select several from among those written by students to enter into a poetry competition.

- Students will write a self-reflection on this unit, including what they learned, what went well, what was exciting, what was surprising, and what they will carry forward as a result of this unit.

- Students will add to their poetry portfolio the final definition of poetry and their visual image, their self-reflection, their own poetry, their written reflection and analysis of a poem of their choosing, completed worksheets on poetic forms and poetic devices, and the examples of different types of poetry selected earlier. The portfolio will be submitted to their teacher for review and evaluation.

Unit Example E

Unit: What is our place in the universe?
Subject: Science
Grade Level: Middle and high school

Setting the Stage

- Introduce the unit by briefly examining and discussing the essential questions: Who are we? What is our place in the universe? Students will be asked to look up at the night sky that evening and think about what they see there, then write brief answers to the questions, and bring in their answers the next day. The answers will be discussed in a think-pair-share activity, and then collected and revisited for review and rewrites at the end of the unit. Students will be encouraged throughout the unit to look up at the sky and notice objects in the sky and their distance from Earth.

- Students discuss the question: What can we gain by studying astronomy? The teacher will provide some quotes that illustrate why it's important and powerful to study and learn about the universe. Students will brainstorm ideas about its importance, and these will be placed on newsprint and posted around the room. The teacher will share a reading about why people study astronomy for all to read together, and the teacher will answer student questions based on the reading.

- Do a KWL activity: What do you ***know*** about the universe? What would you ***want*** to know? What have you ***learned*** about the universe from this unit? Have students discuss and complete the first two columns of the KWL, and put the results up in the classroom. The KWL will be revisited at the end of the unit and filled in with what has been learned about the universe.

- Students are shown a photo of Earth taken from outer space. They discuss what Earth looks like from space: its shape and size, continents and seas, and what all this tells us about Earth's place (and ours) in the universe.

- Students read, see a slideshow about, and discuss a history of discoveries of the universe, recent spaceship voyages into outer space, and some recent, amazing discoveries about Earth and the universe. Students will use a visual organizer worksheet to work together to create a timeline of events and discoveries.

- Introduce the performance task/project called "the storybook project." Students will write a storybook for young readers that helps them appreciate and understand the universe and encourages them to "look up" and learn about it. The teacher answers student questions and shares the mechanics of the project, such as the time line, due dates, etc. Stress the idea that there will be a gradual process of developing the project throughout the unit.

Building a Foundation

- Students are asked to read text and watch several videos examining the theories about the origins of the universe, its changes, and its inevitable end. The teacher and students will discuss and reflect on what they have read and seen, and then each student will create a visual organizer-time line on the development of the universe.

- Students are taken through a slide show presentation on the life cycle of the stars (https://bit.ly/31vmOy9). Students will create a flowchart on the board for various stellar masses and their fates.

- Use the "Mind's Eye—Voyage from Home" slide show (https://bit.ly/3kk3zPt) to help students imagine a voyage from Earth into space. Ask students to draw the feelings they had as they moved away from Earth far into space. Post the drawings around the room and do a gallery walk, then a discussion.

- Use the "Levels of Organization" slide show (https://bit.ly/3jd1MKM) to provide factual information about our planet, moon, star, solar system, etc. Have students fill out the graphic organizer with information as the information is shared. This will help students to develop their performance task. Ask students to think about how they can convey the idea of great lengths of time, space, and distance to students through writing and imaging.

- Use the "Galaxies Inductive Sort" slide show (https://bit.ly/2HcbUqn) to have students group and label different types of galaxies (spiral, elliptical, irregular, barred). Hold a class discussion on types of galaxies and how they think some were formed or destroyed.

Applying and Deepening Learning

- Ask each student to conduct research and find one reading or media presentation about our place in the universe that adds to what has already been learned. Have students bring in the reading or media presentation to share with the class.

- Students will create a storybook that helps young readers appreciate and understand the universe and encourages them to "look up" and learn about it. Explain that each story must include a description of different kinds of objects in our solar system, including planets and moons, stars at each different stage of their life cycle, different types of galaxies, and different levels of organization (planet/moon, star/solar system, group/cluster, super cluster, universe). Students must show evidence that they understand the size of and distance between each of these objects, our solar system's location within the Milky Way, and the methods scientists use to visualize deep space objects.

- Students work on the storybook. They think about who will be the main character and the narrator of the story. They plan for a story plot and how they will integrate information about the earth and its place in the universe. They also consider drawings they will create for the book.

- If possible, have one or more telescopes available for students to use during free time. Provide students with the opportunity to sign out the telescope for use during the evening hours.

- Students search on their own to find articles, readings, podcasts, etc. that tell them more about the universe and our place in it. They hand in a reflection paper on what they discovered.

Closure

- Students revisit their responses to the essential questions: Who are we? What is our place in the universe? Based on the work they have done during this unit, each student will create their own reflection and response

to these questions through a visual image, poem, or brief written reflection. Their responses will be posted on a bulletin board in the hallway of the school for students, teachers, and others to see and reflect on.

- Students return to the KWL they used at the beginning of the unit and in small groups complete the last column—what I learned about the universe during this unit. The answers should include anything that individual students learned through their extra work. The answers will be shared and posted around the room and used for discussion and reflection.

- Students complete the storybook. Before a final draft is completed, students will have the opportunity to meet in small groups, share their books with other students, and get both positive feedback and suggestions for change. Once the books are completed, they will be placed around the room and students will have a chance to walk around the room, read others' books, and write short comments explaining what they liked about the book. Students will also be able to share their books with students at a local elementary school.

- Students complete a multiple choice, short answer quiz to assess information gained during the unit.

- Students complete a self-reflection, developing answers to four questions: What did I like about this unit? What are the major things that I learned? What I would change in this unit? What I might do in the future to continue learning about the universe?

Unit Example F

Unit: The amusement park ride (performance task/project)
Subject: Physics
Grade level: High school

Setting the Stage

- Students will be introduced to and briefly discuss the three essential questions: How do things move? What makes them move? How can we describe that motion? The teacher will demonstrate things that move, one at a time, and ask these questions after each demonstration (How does this move? What makes it move? How can we describe the motion?). The teacher uses this activity to develop curiosity and interest in these questions and to determine what students already know about force and motion.

- Students are introduced to, discuss, and ask questions about the performance task "The amusement park challenge":

  You've bought your ticket and boarded the roller coaster. Now you're barreling down the track at 60 miles per hour, taking hairpin turns and completing death-defying loops. Your heart is in your throat and your stomach is somewhere near your shoes. The only thing separating you from total disaster is a safety harness . . . but are you really in danger?

  The designers of the roller coaster carefully crafted this thrilling ride to be just that, but you're actually in less danger than you think. You face a greater threat of injury playing sports or riding a bike than you do on a park ride. Amusement park rides use physics laws to simulate danger, while the rides themselves are typically very safe.

  *How do physics laws affect amusement park ride design? In this activity, you'll have a chance to find out by designing your own amusement park ride. Plan it carefully—it has to pass a safety inspection.**

Building the Foundation

- The teacher institutes activities designed to provide students with foundational background knowledge and understanding of key mathematics and science concepts, such as inertia, centrifugal force, and centripetal force. Students are asked to find articles and readings that explain these concepts, bring them in to class, and write their own summaries of the articles and readings to share with others in the class. The teacher uses videos and other means of demonstrating and explaining the key concepts. Students create visual organizers to illustrate each of the key physics concepts necessary as background for completing the amusement park ride challenge.

- The students spend a day at *Adventures Unlimited*, a local amusement park, gathering data. Equipped with stopwatches and a meter to measure gravity, they analyze the rides in the park. During the debriefing of the trip, students discuss how the concepts learned, such as inertia, centrifugal force, and centripetal force apply to the amusement park rides.

* Adapted from Amusement Park Physics Interactive: https://www.learner.org/series/interactive-amusement-park-physics/

Applying and Deepening Learning

- Students begin to develop an amusement park ride using their new understanding of the laws of force and motion. The teacher encourages students to use what they know and continue to ask questions to develop their own original goals, plans, and schedules for developing an amusement park ride. They help students wrestle with time, distance, velocity, acceleration, deceleration, and the relationships among them in order to better understand how these concepts can be transferred to the development of an amusement park ride.

- Students develop a draft of a paper explaining and detailing their ride design, including diagrams of the design and providing technical information to show that their design was realistic and doable.

Closure

- Students complete their paper explaining and detailing their ride design and turn it in to the teacher.

- Students develop a slide presentation in order to share their amusement park ride, and the principles upon which it is based, with other students in the class, parents, and other teachers and students.

- Students write a self-reflection in which they explain what they learned during this unit and how they felt about The Amusement Park Ride task and the result.