A Process Guide for Expanding Curriculum Overview Samples into Instructional Units

Colorado’s District Sample Curriculum Project







Acknowledgements

Thank you to all of the participants in the three phases of Colorado’s District Sample Curriculum Project for their dedication, hard work, creativity, and passion for ensuring that all Colorado students receive a world-class, 21st century education. Without the tireless work of these educators neither the curriculum samples nor this process guide would exist.

List of Districts with Participants in the All Phases of Colorado’s District Sample Curriculum Project

ACADEMY 20

ADAMS 12 FIVE STAR SCHOOLS

ADAMS-ARAPAHOE 28J

AKRON R-1

ALAMOSA RE-11J

ARCHULETA COUNTY 50 JT

ASPEN 1

BAYFIELD 10 JT-R

BENNETT 29J

BOULDER VALLEY RE 2

BRIGHTON 27J

BUENA VISTA R-31

BUFFALO RE-4

BURLINGTON RE-6J

BYERS 32J

CAMPO RE-6

CANON CITY RE-1

CENTENNIAL R-1

CENTER 26 JT

CHERRY CREEK 5

CHEYENNE MOUNTAIN 12

CLEAR CREEK RE-1

COLORADO SPRINGS 11

CREEDE SCHOOL DISTRICT

DEL NORTE C-7

DELTA COUNTY 50(J)

DENVER COUNTY 1

DOLORES COUNTY RE NO.2

DOLORES RE-4A

DOUGLAS COUNTY RE 1

DURANGO 9-R

EADS RE-1

EAGLE COUNTY RE 50

EAST GRAND 2

EAST OTERO R-1

EATON RE-2

ELLICOTT 22

ENGLEWOOD 1

FALCON 49

FORT MORGAN RE-3

FOUNTAIN 8

FREMONT RE-2

FRENCHMAN RE-3

GARFIELD 16

GARFIELD RE-2

GRANADA RE-1

GREELEY 6

GUNNISON WATERSHED RE1J

HARRISON 2

HAXTUN RE-2J

HOLLY RE-3

HOLYOKE RE-1J

IGNACIO 11 JT

JEFFERSON COUNTY R-1

JOHNSTOWN-MILLIKEN RE-5J

JULESBURG RE-1

KARVAL RE-23

KEENESBURG RE-3(J)

KIM REORGANIZED 88

KIT CARSON R-1

LAKE COUNTY R-1

LAMAR RE-2

LITTLETON 6

LONE STAR 101

MANCOS RE-6

MANITOU SPRINGS 14

MAPLETON 1

MC CLAVE RE-2

MEEKER RE1

MESA COUNTY VALLEY 51

MOFFAT 2

MOFFAT COUNTY RE:NO 1

MONTE VISTA C-8

MONTEZUMA-CORTEZ RE-1

MONTROSE COUNTY RE-1J

MOUNTAIN VALLEY RE 1

NORTH CONEJOS RE-1J

NORWOOD R-2J

OTIS R-3

PARK COUNTY RE-2

PLAINVIEW RE-2

PLATEAU RE-5

PLATEAU VALLEY 50

PLATTE CANYON 1

PLATTE VALLEY RE-3

POUDRE R-1

PRIMERO REORGANIZED 2

PRITCHETT RE-3

PUEBLO CITY 60

PUEBLO COUNTY 70

RIDGWAY R-2

ROARING FORK RE-1

ROCKY FORD R-2

SALIDA R-32

SANFORD 6J

SANGRE DE CRISTO RE-22J

SARGENT RE-33J

SOUTH CONEJOS RE-10

SOUTH ROUTT RE 3

SPRINGFIELD RE-4

ST VRAIN VALLEY RE 1J

STEAMBOAT SPRINGS RE-2

SUMMIT RE-1

THOMPSON R-2J

VALLEY RE-1

VILAS RE-5

WALSH RE-1

WELD COUNTY RE-1

WEST END RE-2

WEST GRAND 1-JT

WIDEFIELD 3

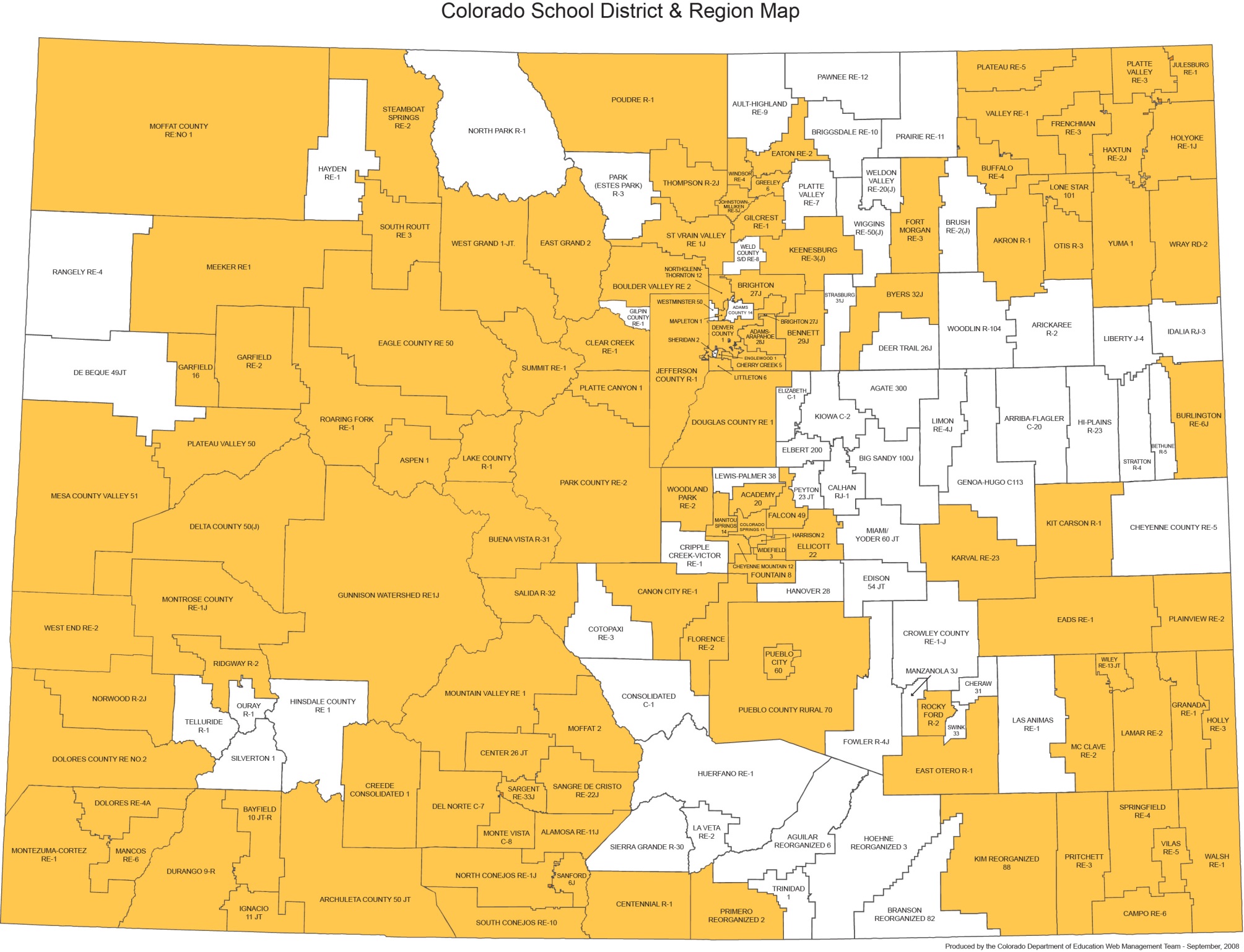
WILEY RE-13 JT

WINDSOR RE-4

WOODLAND PARK RE-2

WRAY RD-2

YUMA 1



Colorado’s District Sample Curriculum Project

District Participation for All Three Phases

Colorado’s District Sample Curriculum Project:

A Process Guide for Translating Curriculum Overviews into Instructional Units

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Introduction

This guide describes a process for using the [curriculum overviews](http://www.cde.state.co.us/standardsandinstruction/curriculumoverviews) created by Colorado educators during the first phase of Colorado’s District Sample Curriculum Project to create fully developed instructional units. We begin by examining the origins of the Project as well as the templates and samples produced thus far. From there, the guide segues to the processes used to create instructional units from curriculum overviews. And the remainder of the document provides a step-by-step examination of the creation of the units with successive sections illuminating specific strategies for completing each section of the instructional unit template.

The Origins of Colorado’s District Sample Curriculum Project

Colorado’s District Sample Curriculum Project has its roots in two nearly simultaneous events. In March, 2012, the Colorado Department of Education hosted a one-day summit on the new Colorado Academic Standards (CAS) that garnered surprisingly consistent feedback from the 450 summit-attendees regarding the “next steps” for successful standards implementation. There was, in fact, unanimity around the desire for sample curriculum based on the new standards. That same month, then president of the Colorado Association of Superintendents and Senior Administrators, Mark DeVoti, wrote a letter to Colorado school executives describing similar interest in sample curriculum. In this letter, he wrote:

“If we consider our students and schools being on a journey to reach a destination, and the Colorado Academic Standards are the road signs that guide us…wouldn’t the curriculum be the map we follow to get to our destination? And should we not all have access to the same map and the choice of whether or not to use it in reaching our common destination? If we are all travelling to the same place, why not have the option of using the same tools?”

Together, these grass-roots requests supplied the initial foundation and support for Colorado’s District Sample Curriculum Project. Since the Summit and letter, support for sample curricula and this Project has continued to gain strength across the state.

The Standards and Instructional Support (SIS) website provides more details on the [foundations and principles](http://www.cde.state.co.us/standardsandinstruction/samplecurriculumproject-background) behind Colorado’s District Sample Curriculum Project.

The Goals of the Project

In Colorado, a local-control state, individual school districts are responsible for their own curriculum development. Successful implementation and teaching of the new Colorado Academic Standards, however, necessitates that teachers have a thorough understanding of the standards *and* a curriculum, to make the standards come alive in the classroom. Colorado’s District Sample Curriculum Project aims to strengthen capacities statewide by engaging Colorado educators in the creation of *strictly-for-voluntary-use* curriculum samples based on the standards.

As the next step in standards support for the state, Colorado’s District Sample Curriculum Project is oriented around three fundamental goals:

* **Facilitating** successful implementation of the new Colorado Academic Standards
* **Helping build** the capacity of Colorado educators to create curriculum materials based on the standards
* **Bringing together** Colorado’s educators to create a variety of samples that reflect the diversity of our school districts

Across the Project phases, thousands of Colorado educators will participate in creating unit overviews and fully-developed instructional units for all ten content areas and grades, embodying CDE’s mantra of “all students, all standards.” Educators across the state are *the* driving force behind this project, creating all the voluntary-use curriculum overview and instructional unit samples produced.

The Curriculum Overview Template and Samples

Because the Colorado Academic Standards (CAS) are concept and skill based, a significant departure from content-heavy standards, the curriculum overview template for creating CAS-based samples had to illuminate the connections between the content, concepts, and skills of the standards. We intentionally approached the design of an overview template to illustrate the sequencing of standards across a course or a year. During the summer and early fall of 2012, the Standards and Instructional Support (SIS) Team gathered feedback from over 1000 Colorado educators to refine and edit the template.

The curriculum overview template provides an organized structure for addressing the standards’ grade level expectations (GLEs), evidence outcomes (EOs) and 21st century skills that build students' mastery of the standards at each grade level. This template:

* Centers around ideas
* Supports teaching to greater intellectual depth
* Emphasizes TRANSFER and APPLICATION of
  + - Concepts
    - Content
    - Skills

Given the educator feedback and the foundational belief that the template must be *flexible* enough to meet the needs of Colorado’s diverse districts, the template is unique to Colorado. Its design elements facilitate adaptation by individual districts/schools with varying curricular foci. To illustrate the flexibility of the overview template we created a [crosswalk](http://www.cde.state.co.us/standardsandinstruction/concept-based-curriculum-crosswalk-doc) document that makes connections between the template and dominant curriculum approaches. In addition, the SIS web pages provide an [overview template with explanations](http://www.cde.state.co.us/sites/default/files/documents/standardsandinstruction/curriculum/resources/curriculumtemplate-explanations.docx) and [support resources](http://www.cde.state.co.us/standardsandinstruction/curriculumoverview-resources) for general and content specific information about the curriculum overview samples.

In a series of curriculum design workshops conducted during the fall of 2012, Colorado educators came together to create unit overviews, based on all 10 content areas (grades k-12) of the CAS*.* The outcomes of these workshops:

* + 500+ Colorado educator participants
  + 47 of 64 Colorado counties represented
  + 61 of 178 Colorado districts represented
  + 700+ sample unit overviews produced for all content areas (k-12)

These sample unit overviews provide glimpses at possible ways in which teachers could plan for sequencing the CAS across a course or year. The SIS website provides access to the teacher-created [samples for each content area](http://www.cde.state.co.us/standardsandinstruction/curriculumoverviews-bycontent) of the standards. They also provided the necessary foundation for the next phase of the project: the creation of full instructional units. A [process guide](http://www.cde.state.co.us/standardsandinstruction/samplecurriculumprocessguide) for the creation of the curriculum overview samples is also available on the SIS webpages.

The Instructional Unit Template and Samples

As with the curriculum overviews, pursuing the creation of (full) instructional units also required a template. Following the same development process as the overview template, the SIS team of content specialists sought feedback from educators across Colorado regarding the necessary components and desired design elements of a unit template. Initial drafts of the template were taken to the annual CASE (Colorado Association of School Executives) conference in July of 2013 and to district/Board of Cooperative Education Services (BOCES) gatherings across the state. Refinement and finalizing of the template occurred in late summer and early fall of 2013. The SIS website provides an [instructional unit template with explanation](http://www.cde.state.co.us/standardsandinstruction/curriculumoverview-instructionalunit-templatewithexplanation).

Once the template was in its penultimate form, the SIS team traveled across Colorado to work with educators in district settings to build instructional units based on select unit overviews. To produce these units, teams of educators selected one overview sample (in a particular content area) and worked together to add Learning Experiences, teacher and student resources, differentiation options, and assessment ideas. These district teams were (typically) comprised of:

* + 2 general education teachers (content specialists)
  + 1 ELL teacher
  + 1 Gifted and Talented teacher
  + 1 Special Education teacher
  + 1 Title One teacher

To conduct these workshops, the SIS team diligently pursued the participation of educators across Colorado to ensure representation of the state’s diverse teaching force and districts. Some outcomes of this phase of the District Sample Curriculum Project:

* 68 District teams represented
* 120 + unit samples produced for mathematics, reading, writing, and communicating, science, social studies, comprehensive health, visual arts, drama/theatre, dance, and music.

These [samples](http://www.cde.state.co.us/standardsandinstruction/instructionalunitsamples) provide educators with locally-created examples of instructional units that truly reflect the diversity of Colorado schools/districts. The SIS webpages provide various [resources related to the units](http://www.cde.state.co.us/standardsandinstruction/districtsamplecurrproject-resources), including recorded [webinars](http://www.cde.state.co.us/standardsandinstruction/instructionalunit-resources) that detail some of the unique aspects/components of the instructional units in each content area.

The Instructional Unit Process Guide

This remainder of this guide represents an amalgamation of the processes used by the SIS team and Colorado school-district teams during the workshops to create instructional units based on the overview samples. Future iterations of this guide will add appendices that delineate content-specific/unique considerations for this work. This initial version, then, should be seen as a “general” roadmap of the steps in the unit creation process. Two important additional caveats exist:

***First***, like the instructional unit samples themselves, this guide is not meant to be definitive or exhaustive. Instead, it reflects *one way* to map out an instructional trajectory designed to help all students achieve mastery of the concepts, content, and skills of the overview.

***Second***, though this guide is linear in layout, we know that the curriculum design process is inherently iterative. Workshop participants and facilitators routinely revisited and modified their instructional unit samples prior to successfully completing an aligned, standards-based, plan of instruction. Users of this guide may find it helpful to read through the guide fully before beginning any curriculum work and are encouraged to move back and forth between the sections during the actual curriculum writing process.

**\*\*\*Note: With those caveats in mind, we will use one unit overview sample from 4th grade social studies, *Boom and Bust*, to illuminate the specifics steps of the instructional unit-writing process. This sample is the basis of the** [**curriculum overview process guide**](http://www.cde.state.co.us/standardsandinstruction/districtsamplecurrproject-resources) **and is also the basis for a short** [**video**](http://www.cde.state.co.us/standardsandinstruction/SampleCurriculum-Resources.asp) **that provides essential background knowledge. We highly recommend reading through the curriculum overview process guide and watching this video prior to proceeding with the steps delineated in this guide.**

**Finally, a copy of the full instructional unit for *Boom and Bust* and an overview/unit template with explanations are both available in** [**Appendix**](#appendix) **B of this document\*\*\***

Starting at the End (Creating the Performance Assessment): Selecting the Key Generalization

To begin creating an instructional unit, we start with the expectations around student understandings. For these understandings, we turn to the generalizations created for the curriculum overview; in this case from Boom and Bust (See [Appendix](#appendix) B for full overview). As a reminder, generalizations connect two or more concepts in a relationship and are supported by critical content. Generalizations represent the big/deep student understandings that build as a result of the teaching of a unit; they transfer/apply across Learning Experiences***.***

The generalizations are the backwards planning point for the unit; they provide the foundation for the creation of the unit’s Performance Assessment. This foundation, however, cannot be built by using all of the unit’s big understandings; thus, it requires the identification of a key generalization.

***The KEY Generalization is the one (possibly two) big understanding that is “all encompassing” for this unit; it authentically connects and connects with all of the unit’s generalizations. It is the generalization(s) that provides a focus that represents the heart of the unit.***

It is important to emphasize here that students will be expected to achieve/master all the generalizations (understandings) across the unit (we will examine this further in the discussion of the unit’s Learning Experiences). The key generalization, however, provides a connective and focusing point for the unit’s culmination. That is what makes its identification significant; the selection of the key generalization reflects the unit authors’ beliefs about *the* understanding that threads throughout the unit connecting authentically with and to all of the generalizations.

Below are all of the generalizations from the 4th grade unit overview for Boom and Bust, highlighted in yellow is the key generalization chosen for the building of this instructional unit; it reflects the heart of this unit and its focus.

|  |  |  |
| --- | --- | --- |
| **Generalizations**  **My students will Understand that…** | **Guiding Questions**  **Factual Conceptual** | |
| Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth (SS09-GR.4-S.1-GLE.1-EO.b,c) | What were the major cycles of Boom and Bust in Colorado over the past 150 years? (SS09-GR.4-S.1-GLE.2-RA.2) | How are personal or social values represented by the economic choices we make in our daily lives? |
| Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs (SS09-GR.4-S.2-GLE.2-EO.a) | Which natural resources are typically associated with the distinct physical regions of Colorado? | How do cultural beliefs, economic forces and physical resources impact land-use decisions? |
| Every economic decision involves both potential risks and benefits (SS09-GR.4-S.3-GLE.2-EO.a,b,c,d,e)\* | What examples from Colorado history illustrate the social and personal components of economic risk/reward decision-making? (SS09-GR.4-S.3-GLE.2-EO.a,b) and (SS09-GR.4-S.3-GLE.2-N.1)\* | Which factors are most significant in determining the right risk-benefit balance in economic decision-making? |
| Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” (SS09-GR.4-S.2-GLE.1-EO.a,d) and (SS90-GR.4-S.1-GLE.2-RA.2) | What specific resources are distinctly tied to particular regions and economic “booms” in Colorado? (SS09-GR.4-S.2-GLE.1-EO.a,c) | Who decides the best ways to manage resources to the benefit of local communities and larger state or national interests? |

Starting at the End (Creating the Performance Assessment): Writing the RAFT

Once we have identified the key generalization, we can construct the capstone performance assessment for the unit. For this unit building process, we utilized the RAFT writing process to create capstone assessments that engage students in taking on particular roles and perspectives.

***RAFT is an assessment strategy that helps students understand role, audience, varied formats, and topics. By using this strategy, teachers encourage students to creatively consider a topic from a unique perspective and to gain practice writing and/or presenting for particular audiences.***

RAFTs are flexible enough to be applicable and utilized in all content areas. The process of creating a RAFT asks curriculum authors to construct a student-directed scenario that includes:

* **R**ole: Who are you? A pilgrim? A soldier? The President?
* **A**udience: To whom are you writing/speaking/presenting? A political rally? A potential employer?
* **F**ormat: In what format are you writing/speaking/presenting? A letter? An advertisement? A speech?
* **T**opic: What are you writing/speaking/presenting about?

A RAFT could be written, for example, with these prompts: **R:** Citizen; **A:** Congress; **F:** Letter; **T:** Taxation. These prompts could result in a scenario like this: You are an active citizen concerned about the condition of infrastructure in your state and nation. You have decided to craft a letter to your U.S. Senator and U.S. House Representative. In your letter you will address the specific problems as you see them (e.g., roads, schools) and propose a plan for reallocating existing tax revenue and/or raising taxes to fund improvements to infrastructure**.**

Below are the key and the RAFT as they appear in the instructional unit template. (Note: The unique language of “Claims” and “Stimulus Material” are utilized in the template to align with the performance assessment work of the [Colorado Content Collaboratives](http://www.cde.state.co.us/ContentCollaboratives))

**\*\*\*Note: In the instructional unit process, the RAFTs are intentionally connected to the key generalization.\*\*\***

|  |  |
| --- | --- |
| **Claims:**  (Key generalization(s) to be mastered and demonstrated through the capstone assessment.) | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth |

|  |  |
| --- | --- |
| **Stimulus Material:**  (Engaging scenario that includes role, audience, goal/outcome and connects with the key generalization) | As a newly hired/newly arrived worker in Colorado’s mining, fur trade, energy, or tourism industry you will be corresponding with people “back home” to let them know about your new life and career in Colorado. In your correspondence you will be documenting your reasons for relocating (the “boom” that brought you to Colorado), your concerns (or lack of concerns) for the security of your job, and your thoughts on alternative work/jobs which you could pursue if you choose to remain in the state/territory. |

Starting at the End (Creating the Performance Assessment): Determining Products

The addition of two interrelated components, product and differentiation, will complete the Performance Assessment for the instructional unit. These two selections, written to the instructor, delineate the expected products students will create during the RAFT experience.

The **product** section reflects general suggestions regarding the kinds of material evidence students could/should create to meet the expectations of the RAFT (e.g., reports, research, performance, and artwork). And, owing to the connections between the RAFT and the unit’s big understandings, these products also evince students’ mastery of the key generalization(s).

The **differentiation** section contains suggestions for multiple modes (e.g., written work, oral presentations, videos, group work, unique individual roles) by which students may meet the expectations of the RAFT. The intent is to provide the instructor with alternative ways for students to demonstrate mastery of the key generalization(s).

Below is the completed performance assessment section of the Boom and Bust instructional unit.

|  |  |
| --- | --- |
| **Unit Generalizations** | |
| **Key Generalization:** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth |
| **Supporting Generalizations:** | Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs |
| Every economic decision involves both potential risks and benefits |
| Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” |
| **Performance Assessment:** *The capstone/summative assessment for this unit.* | |
| **Claims:** (Key generalization(s) to be mastered and demonstrated through the capstone assessment.) | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth |
| **Stimulus Material:**  (Engaging scenario that includes role, audience, goal/outcome and explicitly connects the key generalization) | As a newly hired/newly arrived worker in Colorado’s mining, fur trade, energy, or tourism industry you will be corresponding with people “back home” to let them know about your new life and career in Colorado. In your correspondence you will be documenting your reasons for relocating (the “boom” that brought you to Colorado), your concerns (or lack of concerns) for the security of your job, and your thoughts on alternative work/jobs which you could pursue if you choose to remain in the state/territory. |
| **Product/Evidence:**  (Expected product from students) | Students will produce correspondence in forms that match the time period of their chosen occupation/ field. They must justify their chosen medium! The correspondence will convey the industries/jobs that have brought people to Colorado as well as the stability/maintenance of these industries/jobs. |
| **Differentiation:**  (Multiple modes for student expression) | The correspondence may take the form of:  • Written letters  • Dictated telegrams http://www.telegramsworldwide.com/send.php (Create and send, via e-mail, authentic looking telegrams)  • A video/iMovie  • A series of e-mails  • An audio recording |

Constructing the Unit’s Arc: “Chunking” out the Unit and Mapping its Trajectory

Once we know where and how the unit culminates, we can begin determining the major sections (chunks) of the unit and start mapping out the trajectory or storyline that connects these sections. There are potentially many ways to approach both the “chunking” and mapping processes but starting with the curriculum overview is important.

The overview’s big understandings (generalizations), concepts, content, and skills as well as the overview’s focusing lens and (guiding and inquiry) questions provide great entry points for determining both the content and arc of the unit’s beginning, middle and end.

We start with the sections/chunks of the unit. Turning to the unit overview for Boom and Bust allows us to use a “cycles” focusing lens, resource-use/misuse concepts and content, decision-making-oriented generalizations, and so forth to begin to articulate the multiple and connected foci of the unit. A concept/semantic web can often help this process. (See [Appendix A](#Arts) for additional thoughts pertaining to the writing of Arts units)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unit Title** | Boom and Bust | | **Length of Unit** | 4-5 weeks |
| **Focusing Lens(es)** | (State) Cycles | **Standards and Grade Level Expectations Addressed in this Unit** | SS09-GR.4-S.1-GLE.1  SS09-GR.4-S.1-GLE.2  SS09-GR.4-S.2-GLE.1  SS09-GR.4-S.2-GLE.2  SS09-GR.4-S.3-GLE.1  SS09-GR.4-S.3-GLE.2 | |
| **Inquiry Questions (Engaging- Debatable):** | * What examples of these demands are we currently experiencing? How are they connected to the unique resources of our region/state? What are their (potential) effects/impacts? | | | |
| **Unit Strands** | History, Geography, and Economics | | | |
| **Concepts** | Mining, natural resources, supply and demand, opportunity cost (risks and benefits), boom and bust, regions, primary and secondary sources, cycles, culture, economy, ideas, cause and effect, space, maps, physical and geographic location, human activity, place | | | |

|  |  |  |
| --- | --- | --- |
| **Generalizations**  **My students will Understand that…** | **Guiding Questions**  **Factual Conceptual** | |
| 1-Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth (SS09-GR.4-S.1-GLE.1-EO.b,c) | What were the major cycles of Boom and Bust in Colorado over the past 150 years? (SS09-GR.4-S.1-GLE.2-RA.2) | How are personal or social values represented by the economic choices we make in our daily lives? |
| 2-Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs (SS09-GR.4-S.2-GLE.2-EO.a) | Which natural resources are typically associated with the distinct physical regions of Colorado? | How do cultural beliefs, economic forces and physical resources impact land-use decisions? |
| 3-Every economic decision involves both potential risks and benefits (SS09-GR.4-S.3-GLE.2-EO.a,b,c,d,e)\* | What examples from Colorado history illustrate the social and personal components of economic risk/reward decision-making? (SS09-GR.4-S.3-GLE.2-EO.a,b) and (SS09-GR.4-S.3-GLE.2-N.1)\* | Which factors are most significant in determining the right risk-benefit balance in economic decision-making? |
| 4-Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” (SS09-GR.4-S.2-GLE.1-EO.a,d) and (SS90-GR.4-S.1-GLE.2-RA.2) | What specific resources are distinctly tied to particular regions and economic “booms” in Colorado? (SS09-GR.4-S.2-GLE.1-EO.a,c) | Who decides the best ways to manage resources to the benefit of local communities and larger state or national interests? |

The web below illustrates the ways in which we can orient overview concepts (e.g., physical resources, human activity) and content (e.g., Colorado’s major booms over the past 150 years) around a focusing lens of cycles to identify the major areas/chunks of the unit.

And once we have the major components, we can begin to determine the ways in which they connect and contribute to the unit’s storyline. This outline provides a glimpse into how we might use these “chunks” to conceptualize and plan for the beginning, middle, and end of the Boom and Bust instructional unit.

* Boom and Bust (with its focus on cycles), starts with the clearest (and most concrete) example of a delineated major boom and bust: **the fur trapping/trade industry** (mountain men). Thus the unit’s first experiences will center on understanding the social fad/fashion (beaver top hats and coats) that facilitated the boom, the Colorado resources that enabled it, and the factors, such as sustainability and decreased demand that precipitated the bust.
* From there, the unit moves on to mining and **the gold/silver booms** of the 1850s. This next cycle will include experiences around the Colorado resources that brought prospective miners to the state and the sustainability factors around the continuation of gold/silver mining. These experiences will allow comparisons between the fur and mining booms and busts-emphasizing the factors that played into the different booms and busts and the transformation of mining in the state (toward molybdenum, for example, as important to the manufacture of automobiles-a staple in contemporary culture). This segues to the next cycles and their less delineated “booms/busts. ”
* The **energy production/fuel extraction booms** are next up in the unit. The experiences in this section of the unit will focus on how the practices and products of our daily lives provide a continual demand for energy supply and new sources of fuel; a “boom” that is different from those driven by social trends and status. Here too, there will be opportunities to highlight the differences in the booms and the opportunities/risks faced in these industries.
* The unit concludes with experiences that focus on the **recreation/tourism boom** in Colorado. Keeping the same focus on origins and sustainability, these experiences will center on a 20th/21st century boom; the potential threats to its sustainability and the factors that could contribute to its bust.

The trajectory of the unit that progresses from delimited cycles (based on circumscribed demands) toward more amorphous cycles (based more or less on constant needs and wants) reflects the increasing conceptual complexity of the unit. This sequence is intended to deepen students’ thinking boom & bust cycles and about the connections between demand, sustainability, and resource usage/availability, all concepts linked to the overview’s generalizations. There is also a chronological approach to the four major chunks of the unit that honors the standards-based need for 4th students’ skill development around historical sequencing and significant events.

Crafting the Learning Experiences: Getting to Right Level

Establishing the main focal areas and general trajectory segues to the next major step in the instructional unit process: creating individual Learning Experiences that represent and flesh out the trajectory. Learning Experiences are the significant learning “events” designed to build student mastery of the generalizations/big understandings of the unit. They represent the intended student *learning*, not the activities in which they will engage.

***Learning Experience focus on learning, not activities; they are not lesson plans. They provide enough detail(s) but leave room for interpretation and decision-making regarding the ways in which teachers will bring instruction to life in their unique classroom(s). Importantly, Learning Experiences are NOT lesson plans and are not time prescriptive. Some Learning Experiences may require one lesson/class period, while others may necessitate several.***

The totality of a unit’s Learning Experiences represents the learning necessary for students to master all of the generalizations (key and supporting), while individual experiences typically address one or two generalizations. Together, all of the Learning Experiences build toward the performance assessment for the unit.

The instructional unit template provides a sentence stem (“The teacher may….so that students can…”) in order to focus the Learning Experience on what both teachers and students are doing in each learning experience to build and deepen students’ understanding

The crafting of quality Learning Experiences is perhaps one of the most difficult aspects of the instructional-unit-writing experience. Below are some (hopefully) helpful tips on getting to just the right levels of granularity and specificity in the learning experience.

**Problematic Learning Experiences**

**Too Vague**: A statement that is too abstract to provide teachers with any clear understanding or guidance.

Example - “The teacher may bring in different artifacts for students to consider”

**Too Specific**: A statement that provides too much specificity and/or leaves no room for teacher interpretation.

Example - “The teacher may use Prownian material cultural analysis to have students examine the physical attributes and potential uses of 12-15 different artifacts associated with the life of William Bent.”

**Activity based:** A statement that is *not* about learning, but, instead, revolves around a particular activity, something students will do. (Note: in the unit writing process this type of Learning Experience can be very useful as starting points for assessment ideas)

Example - “The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students can complete a graphic organizer documenting the lifestyle of traders and trappers.

**Just Right Learning Experiences**

**Clarity and flexibility**: A quality experience will focus on learning, provide enough detail, AND leave room for teachers to derive multiple (or at least a couple) ways in which to bring that experience to life in the classroom.

Example - The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state**.**

Crafting the Learning Experiences: Sequencing and Gap Analysis

Once we have mastered the art of writing quality Learning Experiences, we can revisit our sematic web and trajectory outline. These documents will provide the bases for constructing all of the unit experiences that lead up to the performance assessment.

Below are the sixteen Learning Experiences written for Boom and Bust. You will see that the Learning Experiences are color coded to correspond to the topics and trajectory we outlined in the web and storyline drafts (see pages 8-10). While true of the entire unit-writing process, nowhere is the iterative nature of the unit-writing work more apparent and important than in this step. Crafting all of the learning experiences fleshes out the trajectory and lets us evaluate the extent to which the Learning Experiences genuinely connect, each building on the learning of its predecessor, *and* ensure that we are addressing all of the understandings (generalizations) essential to the unit.

These conjoined outcomes necessitate that we continually revisit the Learning Experiences themselves, examine their connections to each other, and analyze the extent to which they are fulfilling the academic demands of the unit.

**\*\*\*Note: It is important to emphasize, again, here that, while the key generalization and correlated performance assessment are the culmination of the unit, the learning experiences and trajectory of the unit are aimed at student *mastery of all* of the unit generalizations. Thus, the Learning Experiences are not written to simply build toward the performance assessment, nor are they aimed exclusively at the understandings detailed in the key generalization.\*\*\***

1. **The teacher may have students brainstorm things/products that are currently in “fashion” for 4th graders so that students can begin thinking about social/cultural trends and the demand for and production of particular goods. (This experience segues to the examination of the demand that brought trappers/traders to Colorado).**
2. **The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state.**
3. **The teacher may use sources (letters, journals of mountain men) and data about the fur trade economy (trading forts, rendezvous) to have students document the effects of trapping on the landscape and resources of Colorado and the sustainability of this “boom”.**
4. **The teacher may use documentation of the lives of mountain men and traders to have students examine the opportunities and risks associated with economic decision-making in light of a “boom” that may or may not be sustainable.**
5. **The teacher may brainstorm with students the connections between scarcity and value, possibly using terms like “limited/special edition” to guide students’ thinking about the status that restricted supply can confer on products or resources (This experience is the segue to the examination of the Colorado Gold Rush).**
6. **The teacher may bring in (mining) artifacts and primary and secondary sources (newspaper articles, personal journals, etc.) to help students examine the demands (and dreams) that brought prospective miners to Colorado and the natural resources that facilitated initial mining efforts in the state.**
7. **The teacher may use maps and demographic data to help students analyze the effects of the gold/silver “boom” on the resources and landscape of Colorado and to consider the sustainability of early mining (and latter mining efforts) in the state.**
8. **The teacher may use historical and contemporary sources to document the lives of Colorado miners and their experiences with mining so that students can compare the economic opportunities/risks of miners and fur traders.**
9. **The teacher may brainstorm with students the natural/physical resources that Coloradoans depend on to guide student’s thinking about the necessities for sustaining lifestyles today.**
10. **The teacher may bring in artifacts and sources (news clips, articles, etc.) so that students can consider the different fuel sources located in and/or produced in Colorado.**
11. **The teacher may use contemporary maps and visuals to help students document and analyze the effects of the search for fuel/energy sources on the landscape and resources of Colorado.**
12. **The teacher may use various historical and contemporary sources (including guest speakers) to illuminate the lives of energy workers so that students can compare the economic opportunities/risks of miners, fur traders, and people working in the energy industry in Colorado.**
13. **The teacher may brainstorm with students the things people in Colorado do for recreation and sport to guide students’ thinking about the unique draws/attractions of the state.**
14. **The teacher may bring in artifacts (e.g., antique and modern ski equipment) and primary and secondary sources (advertising, letters, etc.) so that students can consider the historical roots (and “booms”) of Colorado’s tourism and the natural and physical resources that continue to support/sustain this industry.**
15. **The teacher may have students map different locations of major tourist destinations in order to document and analyze the effects of tourism on different regions and/or towns of Colorado (e.g., population growth, infrastructure expansion, etc.).**
16. **The teacher may use various historical and contemporary sources (including guest speakers) to enable students to comprehend the economic opportunities/risks of the tourism industry and to consider threats to the sustainability of the current ‘boom”.**

Building the Learning Experience: Adding the Description and Generalizations

Now that we have constructed our Learning Experiences and have ensured that all the generalizations are addressed, we can begin filling in the Learning Experience template (Remember: The iterative process of completing all of the Learning Experiences for the unit will provide ample opportunities to evaluate the extent and depth of generalization connections and to make revisions as necessary!)

Below are the first four Learning Experiences for Boom and Bust with the specific generalization-connections noted in parentheses. These are the first two steps in completing the Learning Experience template. (See [Appendix A](#RWC1) for additional thoughts pertaining to the writing of Reading, Writing, and Communicating units)

**\*\*\*Note: As you can see below, we are using the second Learning Experience from the Boom and Bust unit to highlight the construction of the Learning Experience template. For the sake of simplicity and consisitency, we will use this same Learning Experience for the remainder of this guide.\*\*\***

1. **The teacher may have students brainstorm things/products that are currently in “fashion” for 4th graders so that students can begin thinking about social/cultural trends and the demand for and production of particular goods. (This experience segues to the examination of the demand that brought trappers/traders to Colorado) (Generalization connection-1)**
2. **The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state(Generalization connection-1, 2, 4)**
3. **The teacher may use sources (letters, journals of mountain men) and data about the fur trade economy (trading forts, rendezvous) to have students document the effects of trapping on the landscape and resources of Colorado and the sustainability of this “boom” (Generalization connection-1, 4)**
4. **The teacher may use documentation of the lives of mountain men and traders to have students examine the opportunities and risks associated with economic decision-making in light of a “boom” that may or may not be sustainable(Generalization connection-1, 3)**

|  |  |  |
| --- | --- | --- |
| **Learning Experience # 2** | | |
| The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms**”** | |
| **Teacher Resources:** |  | |
| **Student Resources:** |  | |
| **Assessment:** |  | |
| **Differentiation:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
|  |  |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
|  |  |
| **Critical Content:** |  | |
| **Key Skills:** |  | |
| **Critical Language:** |  | |

Building the Learning Experience: Adding Teacher and Student Resources

Next up in the process of filling in the Learning Experience template are the teacher and student resources. Highlighted below are teacher and student resources directly connected with the Learning Experience. They are included as supports for teachers as they plan for the lessons that they will construct for each Learning Experience.

***Teacher resources can be anything used by teachers (e.g., teacher-background knowledge materials, modifiable resources for students, template/graphic organizers). Student resources, on the other hand, are appropriate resources which students can use safely and independently or in peer/teacher collaboration****.*

The parenthetical statements next to each resource provide a short description of each resource just in case links or sites fail. (See [Appendix A](#math) for additional thoughts pertaining to the writing of Mathematics units)

**\*\*\*Note: The resources included in all of the instructional unit samples written for the District Sample Curriculum Project are either easily accessible or open source materials. The authors did not include texts, sites, programs, and/or any other materials of prohibitive cost. Districts and schools, however, may wish to utilize these spaces for the specific resources utilized and available for their teachers.\*\*\***

|  |  |  |
| --- | --- | --- |
| **Learning Experience # 2** | | |
| The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.historycolorado.org/educators/mountain-man-artifact-kit> (Colorado's fur trade comes to life in this kit that includes artifacts, photos, activities, and much more)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens  *Atlas of the New West* by W. Riebsame | |
| **Student Resources:** | <http://hewit.unco.edu/dohist/trappers/themes.htm> (A journey into Colorado's history in the company of people who made that history)  <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men)  <http://www.socialstudiesforkids.com/articles/economics/supplyanddemand1.htm> (General/basic overview of the concepts of supply and demand)  <http://www.youtube.com/watch?v=XNFtlG6HsIE> (Short video-with transcription-that describes demand for and over-trapping of beavers)  *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** |  | |
| **Differentiation:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
|  |  |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
|  |  |
| **Critical Content:** |  | |
| **Key Skills:** |  | |

Building the Learning Experience: Adding Assessment

The next component of the Learning Experience template is the assessment section. In drafting the instructional unit, these assessments directly connect with the Learning Experience and the associated/relevant generalization(s). These formative assessments allow educators to determine the extent to which students are mastering the concepts, content, and skills (and to make instructional adjustments accordingly) as they progress through the teaching of the unit.

***Formative forms of assessment are those checkpoints in time that are linked to mastering the unit’s generalizations and that build toward the capstone performance assessment.***

Looking at the assessment example below you can see a blend of emphases on the concepts (physical/natural resources), content (Colorado locations, Colorado Mountain Men), and skills (mapping and event sequencing) associated with this particular Learning Experience.

**\*\*\*NOTE: Instructional unit writers can absolutely use the template to include interim forms of assessment. For this, the arc/storyline of the unit can provide the means for determining when more formal evaluations of students understandings (and gaps therein) are appropriate during the unit.**

|  |  |  |
| --- | --- | --- |
| **Learning Experience # 2** | | |
| The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.historycolorado.org/educators/mountain-man-artifact-kit> (Colorado's fur trade comes to life in this kit that includes artifacts, photos, activities, and much more)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens  *Atlas of the New West* by W. Riebsame | |
| **Student Resources:** | <http://hewit.unco.edu/dohist/trappers/themes.htm> (A journey into Colorado's history in the company of people who made that history)  <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men)  <http://www.socialstudiesforkids.com/articles/economics/supplyanddemand1.htm> (General/basic overview of the concepts of supply and demand)  <http://www.youtube.com/watch?v=XNFtlG6HsIE> (Short video-with transcription-that describes demand for and over-trapping of beavers) | |
| **Assessment:** | Students will begin mapping activities to document the Colorado locations (physical resources) for the work of the mountain men (including trapping and trading). <http://www.enchantedlearning.com/usa/label/states/colorado/> (Open-ended program for creating individual Colorado maps)  In addition, students will begin the creation of individual timelines for Colorado history <http://www.softschools.com/teacher_resources/timeline_maker/> (Open-ended program for creating individual timelines) <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly)  See “Ongoing” experiences for full description of these ongoing assessments | |
| **Differentiation:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
|  |  |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
|  |  |
| **Critical Content:** |  | |
| **Key Skills:** |  | |
| **Critical Language:** |  | |

Building the Learning Experience: Adding Processes and Products for Differentiation

Adding differentiation options to the instructional unit template involved a conscious decision regarding our approach to considering special needs. In the end, rather than calling or singling out particular populations (e.g., ELL, Special Education) we focused on the needs of learners, assuming that, at some point, all students might require alternative means for truly accessing content and additional/different modes for expressing their understandings.

***There are two aspects of the Differentiation section: access and expression. Each section contains ideas and/or resources designed to help all students connect with and demonstrate their understanding of the unit’s content.***

In constructing the units we did, however, utilize both [Universal Design for Learning](http://www.udlcenter.org/aboutudl/udlguidelines) and [WIDA](http://www.cde.state.co.us/sites/default/files/documents/coenglangprof/documents/wida_resource_guide.pdf) can-do descriptors in the process of determining multiple means of access and expression.

In the template below, the left-hand column of the differentiation section contains the strategies and/or resources that will help all students access the content. The right-hand side contains suggestions for tangible products or observable performances that will help all students express what they have learned.

|  |  |  |
| --- | --- | --- |
| **Learning Experience # 2** | | |
| The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.historycolorado.org/educators/mountain-man-artifact-kit> (Colorado's fur trade comes to life in this kit that includes artifacts, photos, activities, and much more)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens  *Atlas of the New West* by W. Riebsame | |
| **Student Resources:** | <http://hewit.unco.edu/dohist/trappers/themes.htm> (A journey into Colorado's history in the company of people who made that history)  <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men)  <http://www.socialstudiesforkids.com/articles/economics/supplyanddemand1.htm> (General/basic overview of the concepts of supply and demand)  <http://www.youtube.com/watch?v=XNFtlG6HsIE> (Short video-with transcription-that describes demand for and over-trapping of beavers) | |
| **Assessment:** | Students will begin mapping activities to document the locations (physical resources) for the work of the mountain men (including trapping and trading). <http://www.enchantedlearning.com/usa/label/states/colorado/> (Open-ended program for creating individual Colorado maps)  In addition, students will begin the creation of individual timelines for Colorado history <http://www.softschools.com/teacher_resources/timeline_maker/> (Open-ended program for creating individual timelines) <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly)  See “Ongoing” experiences for full description of these assessments | |
| **Differentiation:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| [*http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf*](http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf) *(*Printable template of a basic timeline)  Students may work in pairs or in groups to generate examples and to locate mapping sites | Students may order or sequence information on trade routes using visual or graphic organizers  Students may give examples of the lives of explorers using illustrated and/or pictorial scenes  Students may (orally) provide locations for map creation |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
|  |  |
| **Critical Content:** |  | |
| **Key Skills:** |  | |
| **Critical Language:** |  | |

Building the Learning Experience: Adding Processes and Products for Extending the Learning

We approached the inclusion of resources and products for extending students’ learning in the same way we approached differentiation; eschewing the gifted and talented label in favor of the notion that, at some point, all students might need or desire alternative means to extend connections with content and require additional modes for expressing deeper understandings.

***There are two aspects of the Extensions section: access and expression. Each section contains ideas and/or resources designed to help all students connect with and demonstrate deeper engagement with the unit’s content.***

Likewise, we utilized [gifted and talented resources](http://www.cde.state.co.us/gt/resources) in the unit writing process to help facilitate the supports here; specifically to ensure that the suggestions offered here do not simply add additional work but actually lead to deeper/more complex forms of engagement.

In the template below, the left-hand column of the extensions section contains the strategies and/or resources that provide further connections with content. The right-hand side contains suggestions for tangible products or observable performances that will help all students express their further explorations/understandings.

|  |  |  |
| --- | --- | --- |
| **Learning Experience # 2** | | |
| The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.historycolorado.org/educators/mountain-man-artifact-kit> (Colorado's fur trade comes to life in this kit that includes artifacts, photos, activities, and much more)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens  *Atlas of the New West* by W. Riebsame | |
| **Student Resources:** | <http://hewit.unco.edu/dohist/trappers/themes.htm> (A journey into Colorado's history in the company of people who made that history)  <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men)  <http://www.socialstudiesforkids.com/articles/economics/supplyanddemand1.htm> (General/basic overview of the concepts of supply and demand)  <http://www.youtube.com/watch?v=XNFtlG6HsIE> (Short video-with transcription-that describes demand for and over-trapping of beavers) | |
| **Assessment:** | Students will begin mapping activities to document the locations (physical resources) for the work of the mountain men (including trapping and trading). <http://www.enchantedlearning.com/usa/label/states/colorado/> (Open-ended program for creating individual Colorado maps)  In addition, students will begin the creation of individual timelines for Colorado history <http://www.softschools.com/teacher_resources/timeline_maker/> (Open-ended program for creating individual timelines) <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly)  See “Ongoing” experiences for full description of these assessments | |
| **Differentiation:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| [*http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf*](http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf) *(*Printable template of a basic timeline)  Students may work in pairs or in groups to generate examples and to locate mapping sites | Students may order or sequence information on trade routes using visual or graphic organizers  Students may give examples of the lives of explorers using illustrated and/or pictorial scenes  Students may (orally) provide locations for map creation |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men) | Students may create timelines and/or maps related to the lives of significant historical actors in the mountain man era  <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly) |
| **Critical Content:** |  | |
| **Key Skills:** |  | |
| **Critical Language:** |  | |

Building the Learning Experience: Adding Critical Content

Adding the critical content to the instructional unit template is a process that involves both the use of the curriculum overview and the expertise of the educators constructing the unit.

***Critical content represents the “locked in time and place” topics and factual information that will be introduced and/or reinforced through this Learning Experience that will enable students to master the unit’s essential understandings (generalizations).***

The curriculum overview provides a great starting point for adding those “locked in space/time” topics and information that are authentically linked to this Learning Experience.

Colorado educators, however, are aware that the Colorado Academic Standards are concept and skill-based. Therefore the “Content” section of the curriculum overview (which includes only the content lusted in the standards) may or may not include the essential/relevant content necessary for students to master this Learning Experience and associated generalization. In the instructional unit-writing, then, the addition of content may be necessary. This is where educators’ content knowledge is required!

Returning to the “chunking” web is helpful. We can use the categories created for the web to articulate all of the content related to that particular area of focus in the unit. We can, for example, select the first primary focus of Boom and Bust (the fur trade) and identify the relevant topics and information. Then, as we proceed with the creation of Learning Experience, this list can become both a referent and means for ensuring the inclusion of content across the unit.

* Colorado Mountain Men and the lives of fur traders/trappers (e.g., Jim Beckwourth, William Bent, Charles Bent, Kit Carson)
* Use of beaver fur
* Events/details of Colorado rendezvous
* Productive resource (natural , human, capital) allocation in Colorado history
* Regional development in Colorado
* Human interaction with the environment
* Resource depletion as a result of use/misuse
* Colorado regions/locations

**Fur Trade and Mountain Men**

Looking below at the highlighted content for Boom and Bust illustrates this process of utilizing both the overview and generated list. The content without an underline reflects the topics/information included in and taken directly from the standards-based curriculum overview. The underlined content, however, represents additional (necessary) content.

|  |  |  |
| --- | --- | --- |
| **Learning Experience # 2** | | |
| The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.historycolorado.org/educators/mountain-man-artifact-kit> (Colorado's fur trade comes to life in this kit that includes artifacts, photos, activities, and much more)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens  *Atlas of the New West* by W. Riebsame | |
| **Student Resources:** | <http://hewit.unco.edu/dohist/trappers/themes.htm> (A journey into Colorado's history in the company of people who made that history)  <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men)  <http://www.socialstudiesforkids.com/articles/economics/supplyanddemand1.htm> (General/basic overview of the concepts of supply and demand)  <http://www.youtube.com/watch?v=XNFtlG6HsIE> (Short video-with transcription-that describes demand for and over-trapping of beavers) | |
| **Assessment:** | Students will begin mapping activities to document the locations (physical resources) for the work of the mountain men (including trapping and trading). <http://www.enchantedlearning.com/usa/label/states/colorado/> (Open-ended program for creating individual Colorado maps) | |
| **Differentiation:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| [*http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf*](http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf) *(*Printable template of a basic timeline)  Students may work in pairs or in groups to generate examples and to locate mapping sites | Students may order or sequence information on trade routes using visual or graphic organizers  Students may give examples of the lives of explorers using illustrated and/or pictorial scenes  Students may (orally) provide locations for map creation |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men) | Students may create timelines and/or maps related to the lives of significant historical actors in the mountain man era  <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly) |
| **Critical Content:** | * Colorado Mountain Men and the lives of fur traders/trappers (e.g., Jim Beckwourth, William Bent, Charles Bent, Kit Carson) * Use of beaver fur * Colorado’s natural/physical resources * Events/details of Colorado rendezvous | |
| **Key Skills:** |  | |
| **Critical Language:** |  | |

Building the Learning Experience : Adding Skills

We utilize the curriculum overview again to add the key skills to the instructional unit and Learning Experience template.

***Key skills introduced and/or refined through this learning experience are the transferable skills (i.e., applicable across content areas) that will enable students to master the unit’s essential understandings (generalizations).***

Owing to the concept and skill nature of the Colorado Academic Standards, however, this is a much more straightforward step in the process.

Looking at the template below, all of the skills highlighted in yellow are taken directly from the curriculum overview from Boom and Bust. These skills connect authentically with the Learning Experience; their development/usage is necessary for students to master the associated generalization(s).

|  |  |  |
| --- | --- | --- |
| **Learning Experience # 2** | | |
| The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.historycolorado.org/educators/mountain-man-artifact-kit> (Colorado's fur trade comes to life in this kit that includes artifacts, photos, activities, and much more)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens  *Atlas of the New West* by W. Riebsame | |
| **Student Resources:** | <http://hewit.unco.edu/dohist/trappers/themes.htm> (A journey into Colorado's history in the company of people who made that history)  <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men)  <http://www.socialstudiesforkids.com/articles/economics/supplyanddemand1.htm> (General/basic overview of the concepts of supply and demand)  <http://www.youtube.com/watch?v=XNFtlG6HsIE> (Short video-with transcription-that describes demand for and over-trapping of beavers)  *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** | Students will begin mapping activities to document the locations (physical resources) for the work of the mountain men (including trapping and trading). <http://www.enchantedlearning.com/usa/label/states/colorado/> (Open-ended program for creating individual Colorado maps)  In addition, students will begin the creation of individual timelines for Colorado history <http://www.softschools.com/teacher_resources/timeline_maker/> (Open-ended program for creating individual timelines) <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly)  See “Ongoing” experiences for full description of these assessments | |
| **Differentiation:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| [*http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf*](http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf) *(*Printable template of a basic timeline)  Students may work in pairs or in groups to generate examples and to locate mapping sites | Students may order or sequence information on trade routes using visual or graphic organizers  Students may give examples of the lives of explorers using illustrated and/or pictorial scenes  Students may (orally) provide locations for map creation |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men) | Students may create timelines and/or maps related to the lives of significant historical actors in the mountain man era  <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly) |
| **Critical Content:** | * Colorado Mountain Men and the lives of fur traders/trappers (e.g., Jim Beckwourth, William Bent, Charles Bent, Kit Carson) * Use of beaver fur * Colorado’s natural/physical resources * Events/details of Colorado rendezvous | |
| **Key Skills:** | * Define positive/negative economic incentives * Use maps to locate resources and regions * Analyze primary and secondary sources to place significant events in historical sequence | |
| **Critical Language:** |  | |

Building the Learning Experience: Adding Critical Language

To complete this final component of the Learning Experience template, we once again start with the curriculum overview. The Critical Language section of the overview sample contains only examples of vocabulary relevant to the unit. No attempt, however, was made to create extensive lists. Instead, the intent was to provide words that clarify/illustrate academic and technical vocabulary within the context of the unit

***Critical language reflects the Academic and Technical (Tier 2 and Tier 3) vocabulary, semantics, and discourse particular to and necessary for accessing and demonstrating understanding of the content, concepts and skills of this Learning Experience.***

Thus, as with the inclusion of necessary content, the process of selecting the relevant critical language involves both the curriculum overview and educator discretion/knowledge.

And, as we did with the content section, the critical language component of the template below reflects this (conjoined) work; with words without an underline reflecting the overview and the underlined words representing the additional (necessary) vocabulary.

|  |  |  |
| --- | --- | --- |
| **Learning Experience # 2** | | |
| The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.historycolorado.org/educators/mountain-man-artifact-kit> (Colorado's fur trade comes to life in this kit that includes artifacts, photos, activities, and much more)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens  *Atlas of the New West* by W. Riebsame | |
| **Student Resources:** | <http://hewit.unco.edu/dohist/trappers/themes.htm> (A journey into Colorado's history in the company of people who made that history)  <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men)  <http://www.socialstudiesforkids.com/articles/economics/supplyanddemand1.htm> (General/basic overview of the concepts of supply and demand)  <http://www.youtube.com/watch?v=XNFtlG6HsIE> (Short video-with transcription-that describes demand for and over-trapping of beavers) | |
| **Assessment:** | Students will begin mapping activities to document the locations (physical resources) for the work of the mountain men (including trapping and trading). <http://www.enchantedlearning.com/usa/label/states/colorado/> (Open-ended program for creating individual Colorado maps) | |
| **Differentiation:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| [*http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf*](http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf) *(*Printable template of a basic timeline)  Students may work in pairs or in groups to generate examples and to locate mapping sites | Students may order or sequence information on trade routes using visual or graphic organizers  Students may give examples of the lives of explorers using illustrated and/or pictorial scenes  Students may (orally) provide locations for map creation |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men) | Students may create timelines and/or maps related to the lives of significant historical actors in the mountain man era  <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly) |
| **Critical Content:** | * Colorado Mountain Men and the lives of fur traders/trappers (e.g., Jim Beckwourth, William Bent, Charles Bent, Kit Carson) * Use of beaver fur * Colorado’s natural/physical resources * Events/details of Colorado rendezvous | |
| **Key Skills:** | * Define positive/negative economic incentives * Use maps to locate resources and regions * Analyze primary and secondary sources to place significant events in historical sequence | |
| **Critical Language:** | Incentives, rendezvous, traders, trapper, physical resources, natural resources, economic incentive, regions | |

Building the Ongoing Learning Experience: Adding Cross-Unit Learning Experiences

During the instructional-unit-writing process skills and skill development are included in each separate Learning Experience. Indeed, we have already considered this step in the process with respect to second Learning Experience for Boom and Bust. There are often, however, additional skills and skill development that must occur across the entire unit. To address this necessity, the instructional unit template includes an on-going Learning Experience component.

***Unlike discrete Learning Experiences which are sequenced at specific times, the ongoing learning experiences, true to their name, occur across the unit.***

The Learning Experiences included here are those that build students’ disciplinary literacy; what it looks like to work, think, read, write, speak like a mathematician, scientist, historian, and so on. These skills are relegated to one particular Learning Experience. Rather, they are embedded across the unit; their development occurs throughout. (See [Appendix A](#RWC2) for additional thoughts pertaining to the writing of Reading, Writing, and Communicating units)

Boom and Bust, as a social studies unit, includes ongoing Learning Experiences related to the work of both historians and geographers.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ongoing Discipline-Specific Learning Experiences** | | | | |
| 1. | Description: | Think/work like a historian- Categorizing, using, and interpreting primary and secondary sources | Teacher Resources: | [http://teachinghistory.org/digital-classroom/ask-a-digital-historian/24664\](http://teachinghistory.org/digital-classroom/ask-a-digital-historian/24664\\) (General background on primary and secondary sources and their defining features) |
| Student Resources: | <http://www.kidscomputerlab.org/index.php/research-skills/primary-vs-secondary-sources/> (General background on primary and secondary sources and their defining features) |
| Skills: | ***Analyze primary and secondary sources*** to place significant events in historical sequence | Assessment: | Historical Sources Wall  Students will add resources to the wall according to their category (primary or secondary) and defend their categorization of the resource. |
|  | | | | |
| 2. | Description: | Think/work like a historian- Creating whole-class and individual timelines | Teacher Resources: | <http://www.colorado.gov/dpa/doit/archives/history/histchron.htm> (Broad timeline of significant events in CO History) |
| Student Resources: | <http://www.softschools.com/teacher_resources/timeline_maker/> (Open-ended program for creating individual timelines)  <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly) |
| Skills: | Analyze primary and secondary sources to ***place significant events in historical sequence*** | Assessment: | Individual Colorado History Timelines  Students will update their individual (online or physical) timelines daily/weekly. Class can also keep a larger visual timeline, with students adding (significant) events on a regular basis |

Emphasizing Literacy Connections: Adding Informational and Fiction Texts

An additional and important component of the instructional unit is the section dedicated to independent/read-aloud texts. While many Learning Experiences will list/highlight texts in the teacher and/or student resource sections, this aspect of the template draws attention to additional materials that support the content, concepts, and skills of the entire unit.

***A book, article or piece of text gets a Lexile text measure when it's analyzed by*** [***MetaMetrics***](https://lexile.com/about-lexile/lexile-overview/)***. For example, the first "Harry Potter" book measures 880L, so it's called an 880 Lexile book. A Lexile text measure is based on the semantic and syntactic elements of a text.***

The section includes spaces for both informational and fiction texts and denotes the Lexile levels when available/appropriate.

Looking at the texts below, we can see the inclusion of a variety of texts that represent a very wide Lexile range. This is significant as the goal is to provide a selection that will allow readers of all levels/abilities the opportunity to use additional texts to explore the content of the unit.

|  |  |
| --- | --- |
| **Texts for independent reading or for class read aloud to support the content** | |
| **Informational/Non-Fiction** | **Fiction** |
| *Birchbark Brigade: A fur trade history*- Cris Peterson (1250 Lexile level)  *When the Beaver was King*-Doug Golden  *Oil and Gas (Rocks, Minerals, and Resources)-*John Paul Zronik (1100 Lexile level)  *Wind Power (Energy for Today*)-Tea Benduhn (750 Lexile level)  *Generating Wind Power*-Niki Walker (1070 Lexile level) | *Gold! Gold from the American river*-Don Brown (1010 Lexile level)  *Gold Rush Fever*- Barbara Greenwood (840 Lexile level)  *The Gold Rush Kid*-Mary Waldorf (1010 Lexile level)  *I Witness: Hard Gold: The Colorado gold rush of 1859*-Avi (740 Lexile level) |

Ending at the Start: Adding the Unit Description and Instructional Considerations

Two final sections complete the instructional unit template and writing process; unit description and considerations. First up, the description. This section of the template is where we provide a short description of the storyline and trajectory of the unit, including mention of the culminating performance assessment. Constructing this section provides yet another authentic “check” on the unit itself. That is, as we consider the description, we can also reflect on the extent to which we stayed true to and fully developed the beginning, middle, and end of this particular instructional unit.

***Unit descriptions offer 3-5 sentences that capture the essence and direction of the unit.***

Below is the unit description for Boom and Bust that captures the storyline of this unit and its Learning Experiences.

|  |  |
| --- | --- |
| **Unit Description:** | This unit focuses on the human and social phenomenon of cycles of boom and bust. Colorado’s dynamic history, unique physical geography, and diverse natural and human resources provide the content and context for the unit. Across the unit’s 4-6 week duration, students will consider the social/cultural forces and resources that drive and/or sustain particular economic “booms.” Likewise they will examine the factors (including limitations of physical resources/geography and the effects of human activity) that can facilitate economic “busts.” |

Finally, we end with the considerations section. This section allows the unit authors to communicate with educators who may wish to teach/utilize this particular instructional unit. Any thoughts, advice, cautions, and so forth deemed important by the authors are added here.

***Considerations provide the guiding of the instructional unit authors designed to help educators understand, utilize, and consider the unique attributes of this individual unit and/or its relationship to other units***

Looking at the considerations for Boom and Bust, we can see that they authors included a shortened version of the trajectory outline and justification of the “cycles” included and sequenced in the unit (See [Appendix A](#science) for additional “Consideration” thoughts pertaining to the writing of Science units)

|  |  |
| --- | --- |
| **Considerations:** | This unit starts with the clearest (and most concrete) example of a delineated major boom and bust –the fur trapping/trade industry (mountain men). From there, the unit moves on to mining and the gold/silver booms of the 1850s, which allows students to consider demand that is based on status (and scarcity). Consideration of the energy production/fuel extraction booms, up next in the unit, helps students understand how practices and products of our daily lives provide a continual demand for energy supply and new sources of fuel. The unit concludes with Learning Experiences that focus on the recreation/tourism boom in order to have students consider a boom obvious in their lifetime and to contemplate potential threats to its sustainability and factors that could contribute to its bust |

**Unit Review Checklist**

|  |
| --- |
| **Questions to Guide the Review** |
| * **The Performance Assessment:**   + **Is the Key Generalization included in the Claims section?**   + **Does the Stimulus Material section connect with the Key Generalization?**   + **Do the Products and/or Evidence explicitly match the Stimulus Material?**   + **Does the Differentiation section outline possible options for students to express their understanding of the assessment?**   + **Are there links and resources included as needed?** * **The Learning Experience Section:**   + **Is the Task description written in the format of *The teacher may so the students can*…?**   + **Does it read at the “just right” level, allowing for teacher judgment and interpretation?**   + **Is there a clear alignment between the task and the content, skills, critical language listed from the sample?**   + **Do the teacher/student resources include enough information to understand what the resource is and where it may be located/accessed?**   + **Does the assessment include an overview of what the assessment is (type of product-essay, list, presentation, etc.) and connect directly with the Learning Experience?**   + **Do the differentiation options facilitate alternative means to access content and express understanding?**   + **Do the extensions deepen the task itself rather than just require extra work?** * **The Ongoing Learning Experiences**   + **Do these experiences reflect discipline-specific skill-building?**   + **Do these experiences genuinely thread across the instructional unit (i.e., are they evident in and required for multiple Learning Experiences)?** |

**Appendix A- Additional Notes for Unit Writing**

Authors of Arts units may wish to consult the [Visual and Performing Arts webinar](http://www.cde.state.co.us/standardsandinstruction/instructionalunit-resources) on the Instructional Units Resources page of the Standards and Instructional Support website for specific details pertaining to the ways in which the creative process and the inclusion of arts standards were addressed by unit authors.

Authors of Reading, Writing, and Communicating units may wish to include, as the authors of the [units on the CDE website](http://www.cde.state.co.us/standardsandinstruction/instructionalunits-rwc) did, a statement to denote which of the four “literacy modes” are emphasized in the Learning Experience (*understanding text, responding to text, critiquing text, producing text)*. Some Learning Experiences may be focused on a single literacy mode; others may provide opportunities for students to practice more than one. ***Understanding text*** includes concepts and skills students must understand for a deep understanding of the text; for example, the Learning Experience may emphasize inferring, analyzing text structure, or exploring author’s craft. ***Responding to text*** includes the skills for readers to generate a thoughtful response to the text; for example, responses may be individually constructed or with collaborative partners; or students may reflect on and make personal connections to the text. ***Critiquing text*** asks students to be discerning about the text. They may compare multiple texts to critique arguments; they may evaluate the quality of research in the text or the use of graphics. Critiquing also contributes to students’ appreciation for the author’s craft. Finally, ***producing text*** indicates that students will craft a text of their own and allow students to develop mastery of the writing process and their own craft as a writer.

Authors of Reading, Writing, and Communicating units should use the Ongoing Learning Experiences in grades k-5 to focus on addressing reading foundational skills. Because of the importance of building a strong foundation in reading, these Ongoing Learning Experiences span the entire Instructional Unit. Furthermore, these foundational skills should be addressed in *each unit* in the grade level to (re)emphasize frequent opportunities to develop the skills of proficient readers: print concepts, phonological awareness, phonics and word recognition, and fluency. These skills, along with ongoing attention to vocabulary development in the Learning Experiences, lay the foundation for comprehending more complex materials.

Authors of Mathematics units may wish to consider the use of Jerome Bruner’s three stages of representations (Enactive, Iconic and Symbolic) in their unit-development process. The [mathematics units on the CDE website](http://www.cde.state.co.us/standardsandinstruction/instructionalunits-math) describe student work in each of these stages that builds understandings of key concepts. One, two, or all three stages may pertain to one learning experience. Other times, the stages may unfold over several leaning experiences related to the same or related concept(s)

The **enactive** stage is sometimes called the concrete stage; the key parts of this stage are the strong connections to real-world or realistic contexts. There is a strong connection between this stage and experiential learning models. During this stage, student’s strategies are usually informal and idiosyncratic. This stage is an important step in the learning process for all students; it provides the foundation and scaffolding for the next two stages.

The **iconic** stage is sometimes called the representational stage; however, it may be more helpful to thinking of this stage as the pictorial stage. Students during this stage are developing images to represent the actions of the enactive stage. This is an important part of the mental process of developing mathematics knowledge. The iconic stage too often skipped when learning mathematics, students move from the enactive straight to the symbolic/abstract stage. Iconic representations are inherently visual and help reveal the structure of mathematics. Common iconic representations include number lines, bar models, dot patterns, ten frames, array models, algebra tiles and graphs. These images are often explicitly taught. The goal in the iconic stage is two-fold: to help students develop visual mental imagery that supports the how and why of mathematics and to make explicit connections between the actions of the enactive stage and the iconic images. These connections prevent or limit fragmentation when learning mathematics.

The **symbolic** or abstract stage builds upon the previous two stages. (Note: Bruner’s stages are not associated with ages; students cycle though the stages continuously as they develop more and more mathematical knowledge). The symbolic/abstract stage has been privileged in mathematics but it needs the support of the previous two stages. The symbolic/abstract stage is more efficient and reduces the cognitive load on students. As students learn symbolic abstractions (e.g., algorithms, equations) they are supported by their earlier work in the enactive and iconic stage but only when they make *explicit* connections between each stage.

Authors of Science units may wish to use the Considerations section to highlight misconceptions that teachers and/or students may have around key scientific concepts. For example, the authors of the high school physical science unit, “[Forms and Transformations of Energy](http://www.cde.state.co.us/standardsandinstruction/schs-formsandtransformationsofenergy-pdf),” used this section to articulate two common misconceptions around energy. Placing these in the Considerations box draws attention to these misconceptions which can enable teachers to better prepare for helping students master the unit’s larger conceptual understandings.

|  |  |
| --- | --- |
| **Considerations:** | **Possible misconceptions**:  Energy that is renewable is efficient.  Energy is lost not transformed. |

**Appendix B**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Content Area** | Social Studies | | | **Grade Level** | 4th Grade | | |
| **Course Name/Course Code** |  | | | | | | |
| **Standard** | **Grade Level Expectations (GLE)** | | | | | | **GLE Code** |
| 1. History | 1. Organize a sequence of events to understand the concepts of chronology and cause and effect in the history of Colorado | | | | | | SS09-GR.4-S.1-GLE.1 |
| 1. The historical eras, individuals, groups, ideas, and themes in Colorado history and their relationships to key events in the United States | | | | | | SS09-GR.4-S.1-GLE.2 |
| 1. Geography | 1. Use several types of geographic tools to answer questions about the geography of Colorado | | | | | | SS09-GR.4-S.2-GLE.1 |
| 1. Connections within and across human and physical systems are developed | | | | | | SS09-GR.4-S.2-GLE.2 |
| 1. Economics | 1. People responded to positive and negative incentives | | | | | | SS09-GR.4-S.3-GLE.1 |
| 1. The relationship between choice and opportunity cost (PFL) | | | | | | SS09-GR.4-S.3-GLE.2 |
| 1. Civics | 1. Analyze and debate multiple perspectives on an issue | | | | | | SS09-GR.4-S.4-GLE.1 |
| 1. The origins, structure, and functions of the Colorado government | | | | | | SS09-GR.4-S.4-GLE.2 |
| **Colorado 21st Century Skills**    **Critical Thinking and Reasoning:** *Thinking Deeply, Thinking Differently*  **Information Literacy:** *Untangling the Web*  **Collaboration:** *Working Together, Learning Together*  **Self-Direction:** *Own Your Learning*  **Invention:** *Creating Solutions* | |  | | | | | |
| **Unit Titles** | | | **Length of Unit/Contact Hours** | | | **Unit Number/Sequence** | |
| Boom and Bust | | | 4-5 weeks | | | 4 | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Unit Title** | Boom and Bust | | | **Length of Unit** | 4-5 weeks |
| **Focusing Lens(es)** | (State) Cycles | **Standards and Grade Level Expectations Addressed in this Unit** | SS09-GR.4-S.1-GLE.1  SS09-GR.4-S.1-GLE.2  SS09-GR.4-S.2-GLE.1  SS09-GR.4-S.2-GLE.2  SS09-GR.4-S.3-GLE.1  SS09-GR.4-S.3-GLE.2 | | |
| **Inquiry Questions (Engaging- Debatable):** | * How do the decisions we make and the values we hold affect people around us and the state in which we live? (Or, *Who wore their Beaver Hat to school today*)? (SS09-GR.4-S.3-GLE.1-EO.c, S.3-GLE.1-IQ.1) * Why are some demands “passing fads” while others remain constant? (SS09-GR.4-S.3-GLE.1-EO.b) * What examples of these demands are we currently experiencing? How are they connected to the unique resources of our region/state? What are their (potential) effects/impacts? | | | | |
| **Unit Strands** | History, Geography, and Economics | | | | |
| **Concepts** | Mining, natural resources, supply and demand, opportunity cost (risks and benefits), boom and bust, regions, primary and secondary sources, cycles, culture, economy, ideas, cause and effect, space, maps, physical and geographic location, human activity, place | | | | |

|  |  |  |
| --- | --- | --- |
| **Generalizations**  **My students will Understand that…** | **Guiding Questions**  **Factual Conceptual** | |
| Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth (SS09-GR.4-S.1-GLE.1-EO.b,c) | What were the major cycles of Boom and Bust in Colorado over the past 150 years? (SS09-GR.4-S.1-GLE.2-RA.2) | How are personal or social values represented by the economic choices we make in our daily lives? |
| Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs (SS09-GR.4-S.2-GLE.2-EO.a) | Which natural resources are typically associated with the distinct physical regions of Colorado? | How do cultural beliefs, economic forces and physical resources impact land-use decisions? |
| Every economic decision involves both potential risks and benefits (SS09-GR.4-S.3-GLE.2-EO.a,b,c,d,e)\* | What examples from Colorado history illustrate the social and personal components of economic risk/reward decision-making? (SS09-GR.4-S.3-GLE.2-EO.a,b) and (SS09-GR.4-S.3-GLE.2-N.1)\* | Which factors are most significant in determining the right risk-benefit balance in economic decision-making? |
| Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” (SS09-GR.4-S.2-GLE.1-EO.a,d) and (SS90-GR.4-S.1-GLE.2-RA.2) | What specific resources are distinctly tied to particular regions and economic “booms” in Colorado? (SS09-GR.4-S.2-GLE.1-EO.a,c) | Who decides the best ways to manage resources to the benefit of local communities and larger state or national interests? |

|  |  |
| --- | --- |
| **Critical Content:**  **My students will Know…** | **Key Skills:**  **My students will be able to (Do)…** |
| * The realities and impact of the Colorado Fur Trade and the Colorado Mining Industry (SS09-GR.4-S.1-GLE.1-EO.c,d; RA.1) and (SS09-GR.4-S.3-GLE.1-EO.b) * The definition of natural resources and its specific application to the physical regions and associated populations in Colorado and neighboring states (SS09-GR.4-S.2-GLE.1-EO.a,c) * The opportunity-cost relationship that exists in any economic decision (SS09-GR.4-S.3-GLE.2-EO.a,b; N.1) \* | * Analyze cause and effect relationships between societal values/needs and individual lives, the physical environment, and the economy (SS09-GR.4-S.1-GLE.1-EO.c) and (SS09-GR.4-S.2-GLE.1-EO.d) * Define positive/negative economic incentives (SS09-GR.4-S.3-GLE.1-EO.a) * Use maps to locate resources and regions (SS09-GR.4-S.2-GLE.1-EO.a,b,c) * Analyze primary and secondary sources to place significant events in historical sequence (SS09-GR.4-S.1-GLE.1-IQ.3) |

|  |  |  |
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| **Critical Language:** includes the Academic and Technical vocabulary, semantics, and discourse which are particular to and necessary for accessing a given discipline.  EXAMPLE: A student in Language Arts can demonstrate the ability to apply and comprehend critical language through the following statement: *“Mark Twain exposes the hypocrisy of slavery through the use of satire.”* | | |
| **A student in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ can demonstrate the ability to apply and comprehend critical language through the following statement(s):** | | *Using diaries and other primary sources from the era of the mountain men, the cause and effect relationship of the fur trade boom is easy to see.* |
| **Academic Vocabulary:** | Cause and effect, relationships, resources | |
| **Technical Vocabulary:** | Primary and secondary sources, boom, bust, regions | |

**\*Denotes a connection to Personal Financial Literacy (PFL)**

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| **Unit Description:** | This unit focuses on the human and social phenomenon of cycles of boom and bust. Colorado’s dynamic history, unique physical geography, and diverse natural and human resources provide the content and context for the unit. Across the unit’s 4-6 week duration, students will consider the social/cultural forces and resources that drive and/or sustain particular economic “booms.” Likewise they will examine the factors (including limitations of physical resources/geography and the effects of human activity) that can facilitate economic “busts.” |
| **Considerations:** | This unit starts with the clearest (and most concrete) example of a delineated major boom and bust –the fur trapping/trade industry (mountain men). From there, the unit moves on to mining and the gold/silver booms of the 1850s, which allows students to consider demand that is based on status (and scarcity). Consideration of the energy production/fuel extraction booms, up next in the unit, helps students understand how practices and products of our daily lives provide a continual demand for energy supply and new sources of fuel. The unit concludes with Learning Experiences that focus on the recreation/tourism boom in order to have students consider a boom obvious in their lifetime and to contemplate potential threats to its sustainability and factors that could contribute to its bust |
| **Unit Generalizations** | |
| **Key Generalization:** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth |
| **Supporting Generalizations:** | Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs |
| Every economic decision involves both potential risks and benefits |
| Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” |

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| **Performance Assessment:** *The capstone/summative assessment for this unit.* | |
| **Claims:**  (Key generalization(s) to be mastered and demonstrated through the capstone assessment.) | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth |
| **Stimulus Material:**  (Engaging scenario that includes role, audience, goal/outcome and explicitly connects the key generalization) | As a newly hired/newly arrived worker in Colorado’s mining, fur trade, energy, or tourism industry you will be corresponding with people “back home” to let them know about your new life and career in Colorado. In your correspondence you will be documenting your reasons for relocating (the “boom” that brought you to Colorado), your concerns (or lack of concerns) for the security of your job, and your thoughts on alternative work/jobs which you could pursue if you choose to remain in the state/territory. |
| **Product/Evidence:**  (Expected product from students) | Students will produce correspondence in forms that match the time period of their chosen occupation/ field. They must justify their chosen medium! The correspondence will convey the industries/jobs that have brought people to Colorado as well as the stability/maintenance of these industries/jobs. |
| **Differentiation:**  (Multiple modes for student expression) | The correspondence may take the form of:  • Written letters  • Dictated telegrams http://www.telegramsworldwide.com/send.php (Create and send, via e-mail, authentic looking telegrams)  • A video/iMovie  • A series of e-mails  • An audio recording |

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| **Texts for independent reading or for class read aloud to support the content** | |
| **Informational/Non-Fiction** | **Fiction** |
| *Birchbark Brigade: A fur trade history*- Cris Peterson (1250 Lexile level)  *When the Beaver was King*-Doug Golden  *Oil and Gas (Rocks, Minerals, and Resources)-*John Paul Zronik (1100 Lexile level)  *Wind Power (Energy for Today*)-Tea Benduhn (750 Lexile level)  *Generating Wind Power*-Niki Walker (1070 Lexile level) | *Gold! Gold from the American river*-Don Brown (1010 Lexile level)  *Gold Rush Fever*- Barbara Greenwood (840 Lexile level)  *The Gold Rush Kid*-Mary Waldorf (1010 Lexile level)  *I Witness: Hard Gold: The Colorado gold rush of 1859*-Avi (740 Lexile level) |

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| **Ongoing Discipline-Specific Learning Experiences** | | | | |
| 1. | Description: | Think/work like a historian- Categorizing, using, and interpreting primary and secondary sources | Teacher Resources: | [http://teachinghistory.org/digital-classroom/ask-a-digital-historian/24664\](http://teachinghistory.org/digital-classroom/ask-a-digital-historian/24664\\) (General background on primary and secondary sources and their defining features) |
| Student Resources: | <http://www.kidscomputerlab.org/index.php/research-skills/primary-vs-secondary-sources/> (General background on primary and secondary sources and their defining features) |
| Skills: | ***Analyze primary and secondary sources*** to place significant events in historical sequence | Assessment: | Historical Sources Wall  Students will add resources to the wall according to their category (primary or secondary) and defend their categorization of the resource. |
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| 2. | Description: | Think/work like a historian- Creating whole-class and individual timelines | Teacher Resources: | <http://www.colorado.gov/dpa/doit/archives/history/histchron.htm> (Broad timeline of significant events in CO History) |
| Student Resources: | <http://www.softschools.com/teacher_resources/timeline_maker/> (Open-ended program for creating individual timelines)  <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly) |
| Skills: | Analyze primary and secondary sources to ***place significant events in historical sequence*** | Assessment: | Individual Colorado History Timelines  Students will update their individual (online or physical) timelines daily/weekly. Class can also keep a larger visual timeline, with students adding (significant) events on a regular basis |
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| 3. | Description: | Think/work like a geographer- Creating various maps to document resources, routes, and residences | Teacher Resources: | N/A |
| Student Resources: | <http://www.enchantedlearning.com/usa/label/states/colorado/> (Open-ended program for creating individual Colorado maps) |
| Skills: | Use maps to locate resources and regions | Assessment: | Colorado Resource Maps  Using blank Colorado maps, students will create maps at strategic points in the unit (Fur trade, gold mining, energy resources, tourism sites, energy resources, etc.). |
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| **Prior Knowledge and Experiences** |
| These ongoing Learning Experiences build upon a presumed (student) working knowledge of the basic components and purposes of maps and an understanding of the key differences between primary and secondary sources. Thus, there are no Learning Experiences that introduce this knowledge or these definitions. Teachers may, however, wish to revisit/reinforce these understandings at the beginning of the unit. |

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| **Learning Experience # 1** | | |
| The teacher may have students brainstorm things/products that are currently in “fashion” for 4th graders so that students can begin thinking about social/cultural trends and the demand for and production of particular goods. (This experience segues to the examination of the demand that brought trappers/traders to Colorado). | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth | |
| **Teacher Resources:** | http://www.crazyfads.com/ (Images and descriptions of “modern day” fads/trends)  http://www.badfads.com/ (Images and descriptions of “modern day” fads/trends) | |
| **Student Resources:** | N/A | |
| **Assessment:** | Students generate a classroom definition of a “fad,” considering what distinguishes a fad from basic necessities and/or longstanding social traditions or “staples” | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| Photos and/or pictorial representations of fads/trends particularly relevant to students today  Students may work with a partner or in small groups to determine/select visuals | Students may create (and orally defend) a visual mosaic that presents the differences between social fads/trends and staples |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.softschools.com/teacher_resources/timeline_maker/> (Open-ended program for creating individual timelines) | Students may create an individual timeline of a fad or several fads they have experienced |
| **Critical Content:** | * N/A | |
| **Key Skills:** | * Analyze cause and effect relationships between societal values/needs and individual lives | |
| **Critical Language:** | Cause and effect, values, demand | |

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| **Learning Experience # 2** | | |
| The teacher may bring in (trapping/trading) artifacts and primary and secondary sources (letters, advertisements, etc.) so that students may consider the “demands” and social trends that brought traders and trappers (mountain men) to Colorado and the natural resources that facilitated their work in the state. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.historycolorado.org/educators/mountain-man-artifact-kit> (Colorado's fur trade comes to life in this kit that includes artifacts, photos, activities, and much more)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens  *Atlas of the New West* by W. Riebsame | |
| **Student Resources:** | <http://hewit.unco.edu/dohist/trappers/themes.htm> (A journey into Colorado's trapping/trading history in the company of people who made that history)  <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men)  <http://www.youtube.com/watch?v=1ceJak98RF0> (Short video on beaver top hats-with transcription)  *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** | Students will begin mapping activities to document the locations for the work of the mountain men (including trapping and trading). In addition, students will begin the creation of individual timelines for Colorado history- See “Ongoing” experiences for description of tech tools to facilitate the mapping and timeline work | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf> (Printable template of a basic timeline)  Students may work in pairs or in groups to generate examples and to locate mapping sites | Students may order or sequence information on trade routes using visual or graphic organizers  Students may give examples of the lives of explorers using illustrated and/or pictorial scenes  Students may (orally) provide locations for map creation |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men) | Students may create timelines and/or maps related to the lives of significant historical actors in the mountain man era  <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly) |
| **Critical Content:** | * Colorado Mountain Men and the lives of fur traders/trappers (e.g., Jim Beckwourth, William Bent, Charles Bent, Kit Carson) * Use of beaver fur * Colorado’s natural/physical resources * Events/details of Colorado rendezvous | |
| **Key Skills:** | * Define positive/negative economic incentives * Use maps to locate resources and regions * Analyze primary and secondary sources to place significant events in historical sequence | |
| **Critical Language:** | Incentives, rendezvous, traders, trapper, physical resources, natural resources, economic incentive, regions | |

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| **Learning Experience # 3** | | |
| The teacher may use sources (letters, journals of mountain men) and data about the fur trade economy (trading forts, rendezvous) to have students document the effects of trapping on the landscape and resources of Colorado and the sustainability of this “boom”. | | |
| **Generalization Connection(s):** | Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.historycolorado.org/educators/mountain-man-artifact-kit> (Colorado's fur trade comes to life in this kit that includes artifacts, photos, activities, and much more)  <http://coloradomountainman.us/> (Details of the lives and work of Colorado mountain men)  <http://coloradoforts.weebly.com/> (Locations and description of the trading activities in and around Colorado forts)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens  *Atlas of the New West* by W. Riebsame | |
| **Student Resources:** | *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** | Students will use primary sources and maps to create visual representations of the success and/or decline of the fort/rendezvous trading economy. Students could also synthesize the historical arguments for trapping regulations/laws in relation to the over-trapping of beavers (see various state websites for discussions of laws instituted in the early 20th century- <http://en.wikipedia.org/wiki/Animal_trapping>) | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| *Colorado* (Rookie Read-About Geography) by C. Walker  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry  Students may work in pairs or in groups to generate/create descriptions | Students may describe (orally or in writing) the activities and appearances of communities and regions depicted in pictures and maps of the mountain man era |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://hewit.unco.edu/dohist/trappers/trappers/beaver/six.htm> (A starting point for researching visuals related to Colorado beaver trapping and habitats) | Students may create visual representations (pictographs, bar graphs, etc.) of the changes to beaver population in Colorado that resulted from trapping/trade |
| **Critical Content:** | * Productive resource (natural , human, capital) allocation in Colorado history * Regional development in Colorado * Human interaction with the environment * Resource depletion as a result of use/misuse * Colorado Mountain Men and the lives of fur traders/trappers (e.g., Jim Beckwourth, William Bent, Charles Bent, Kit Carson) * Use of beaver fur * Colorado’s natural/physical resources * Events/details of Colorado rendezvous | |
| **Key Skills:** | * Use maps to locate resources and regions * Analyze primary and secondary sources to place significant events in historical sequence | |
| **Critical Language:** | Natural and physical resources, regions, sustainability, depletion | |

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| **Learning Experience # 4** | | |
| The teacher may use documentation of the lives of mountain men and traders to have students examine the opportunities and risks associated with economic decision-making in light of a “boom” that may or may not be sustainable. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Every economic decision involves both potential risks and benefits | |
| **Teacher Resources:** | <http://www.historycolorado.org/educators/mountain-man-artifact-kit> (Colorado's fur trade comes to life in this kit that includes artifacts, photos, activities, and much more)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens  *Atlas of the New West* by W. Riebsame | |
| **Student Resources:** | <http://hewit.unco.edu/dohist/trappers/themes.htm> (A journey into Colorado's history in the company of people who made that history)  <http://coloradomountainman.us/mountainman.php> (Names and bios of significant mountain men)  <http://www.socialstudiesforkids.com/articles/economics/supplyanddemand1.htm> (General/basic overview of the concepts of supply and demand)  <http://www.youtube.com/watch?v=XNFtlG6HsIE> (Short video-with transcription-that describes demand for and over-trapping of beavers)  *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** | Students will construct a diary entry as a “Mountain Man” describing/analyzing the changes to and decline of their trade. They may choose to describe the lack of beavers (due to over trapping) OR they may choose to describe the diminished demand for beaver top hats (i.e. the growth in the ‘silk top hat’ trend) | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/sequence.pdf> (Printable template for documenting cause-effect relationships)  <http://www.telegramsworldwide.com/send.php> (Create and send, via e-mail, authentic looking telegrams)  Students may “dictate” to a fellow student or to the teacher | Students may use the graphic organizers and maps created so far to document cause and effect relationships in the beaver trade  Students may “dictate” a telegram home about the changes to their work as either a result of the lack of beaver (over trapping) or lack of demand for beaver top hats |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.unexpectedwildliferefuge.org/Waterways.htm> (Arguments for sustaining beaver habitats and populations) | Students may construct a written argument for sustaining the beaver population in an alternative history where the demand for beaver fur continues and threatens beaver populations |
| **Critical Content:** | * Productive resource (natural , human, capital) allocation in Colorado history * Regional development in Colorado * Human interaction with the environment * Resource depletion as a result of use/misuse * Colorado Mountain Men and the lives of fur traders/trappers (e.g., Jim Beckwourth, William Bent, Charles Bent, Kit Carson) * Use of beaver fur * Colorado’s natural/physical resources * Events/details of Colorado rendezvous | |
| **Key Skills:** | * Analyze cause and effect relationships between societal values/needs and individual lives, the physical environment, and the economy * Define positive/negative economic incentives * Use maps to locate resources and regions * Analyze primary and secondary sources to place significant events in historical sequence | |
| **Critical Language:** | Incentives, rendezvous, traders, trapper, economic incentive, supply and demand, opportunity costs | |

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| **Learning Experience # 5** | | |
| The teacher may brainstorm with students the connections between scarcity and value, possibly using terms like “limited/special edition” to guide students’ thinking about the status that restricted supply can confer on products or resources (This experience is the segue to the examination of the Colorado Gold Rush). | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth | |
| **Teacher Resources:** | <http://en.wikipedia.org/wiki/Special_edition> (Definition statements for special and limited edition) | |
| **Student Resources:** | N/A | |
| **Assessment:** | Students will generate a class statement about the ways in which scarcity relates the status, value, significance and/or desire for particular products or resources (statement may also include distinctions between wants and needs) | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| Magazines and advertisements with examples of “scarce/limited” items and products  Students may work individually or with a partner to select appropriate visuals | Students may to create (and orally defend) a visual representation of contemporary products that are “limited” in availability and highly sought after |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/venn.pdf> (Printable template for documenting Venn diagrams) | Students may create a Venn diagram of items with imposed limitations (e.g., limited editions) vs. resources/products that are inherently limited in nature |
| **Critical Content:** | * N/A | |
| **Key Skills:** | * Analyze cause and effect relationships between societal values/needs and individual lives | |
| **Critical Language:** | N/A | |

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| **Learning Experience # 6** | | |
| The teacher may bring in (mining) artifacts and primary and secondary sources (newspaper articles, personal journals, etc.) to help students examine the demands (and dreams) that brought prospective miners to Colorado and the natural resources that facilitated initial mining efforts in the state. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://memory.loc.gov/cgi-bin/query/r?ammem/calbk:@field%28DOCID+@lit%28calbk096div7%29%29> (Primary source material-miner letters from Colorado)  <http://www.westernmininghistory.com/articles/11/page1/> (General and background information on the Colorado gold and silver rush)  <http://www.historycolorado.org/educators/check-out-artifact-kits> (Like the Mountain Man Kit, this kit contains artifacts, photos, and activities oriented around Colorado mining )  <http://www.mininghalloffame.org/> (Nation Mining Museum- Leadville) | |
| **Student Resources:** | <http://www.youtube.com/watch?v=dVpoURZxCus> (General Colorado Gold Rush movie-with transcription)  <http://hewit.unco.edu/dohist/mining/themes.htm> (A journey into Colorado's mining history in the company of people who made that history)  *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** | Students will continue mapping activities to document the locations of the mines and mining towns (including placer and hard rock locations). In addition, students will continue individual timelines for Colorado history- See “Ongoing” experiences for description of tech tools to facilitate the mapping and timeline work | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf> (Open-ended program for creating individual timelines)  <http://www.miningbureau.com/> (Colorado mining  history in text, photographs and images)  *Colorado* (Rookie Read-About Geography) by C. Walker  Students may work in pairs or in groups to generate examples and to locate mapping sites | Students may order or sequence information on gold and silver discoveries using visual or graphic organizers  Students may give (oral or written) examples of the lives of miners using illustrated and/or pictorial scenes  Students may provide (orally) locations for maps |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.miningbureau.com/> (Colorado mining  history in text, photographs and images)  <http://www.mininghalloffame.org/inductee.asp?i=185&b=inductees%2Easp&t=n&p=H&s>= (Example biography of Nathaniel Hill- prominent Colorado miner. One of many Colorado inductees in the Mining Hall of Fame)  <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly) | Students may create timelines and/or maps related to the lives of significant historical actors in Colorado’s gold and silver mining booms |
| **Critical Content:** | * Placer mining work * Hhard-rock mining work * Major Gold Mines in Colorado: Cripple Creek, Cherry Creek, Idaho Springs * Miners and 59ers: Zebulon Pike, William Green Russell, Levi Russell, George Jackson, John Gregory * Rush slogans:“Pikes Peak or Bust” | |
| **Key Skills:** | * Define positive/negative economic incentives * Use maps to locate resources and regions * Analyze primary and secondary sources to place significant events in historical sequence | |
| **Critical Language:** | Incentives, supply, demand, mining, regions, human activity, natural resources, physical resources, prospectors | |

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| **Learning Experience # 7** | | |
| The teacher may use maps and demographic data to help students analyze the effects of the gold/silver “boom” on the resources and landscape of Colorado and to consider the sustainability of early mining (and latter mining efforts) in the state. | | |
| **Generalization Connection(s):** | Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.historycolorado.org/educators/check-out-artifact-kits> (Like the Mountain Man Kit, this kit contains artifacts, photos, and activities oriented around Colorado mining )  <http://hhengineering.com/COLORADOGOLD.htm> (Maps of contemporary gold mining in Colorado)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens  <http://www.colorado.gov/cs/Satellite?c=Page&childpagename=DOLA-Main%2FCBONLayout&cid=1251593346867&pagename=CBONWrapper> (Census data for Colorado counties dating back to 1870) | |
| **Student Resources:** | <http://www.youtube.com/watch?v=txUjNxLUY20> (Colorado Gold Rush movie with maps/locations and names of important miners-with transcription)  *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** | Students will create visual representations (pictographs, bar graphs, etc.) to analyze the changes to (and locations of) the population in Colorado that resulted from the gold and silver booms and/or the provide visual documentation of the consequences/side effects of the mining industry | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://hewit.unco.edu/dohist/mining/themes.htm> (A journey into Colorado's mining history in the company of people who made that history)  <http://www.miningartifacts.org/Colorado-Mines.html> (Great visuals/pictures of Colorado mines and mining)  Students may work in pairs or in groups to generate/brainstorm descriptions | Students may describe (orally or in written form) the activities and appearances of communities and regions depicted in pictures and maps |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.westernmininghistory.com/state/colorado/> (Maps and visuals of Colorado mining towns) | Students may document the growth (and demise) of a selected town that resulted from either the gold and silver booms and busts |
| **Critical Content:** | * Placer mining work * Hhard-rock mining work * Hydraulic mining work * Major Gold Mines in Colorado: Cripple Creek, Cherry Creek, Idaho Springs * Miners and 59ers: Zebulon Pike, William Green Russell, Levi Russell, George Jackson, John Gregory * Rush slogans:“Pikes Peak or Bust” * Productive resource (natural , human, capital) allocation in Colorado history * Regional development in Colorado * Human interaction with the environment * Resource depletion as a result of use/misuse | |
| **Key Skills:** | * Use maps to locate resources and regions * Analyze primary and secondary sources to place significant events in historical sequence | |
| **Critical Language:** | Natural and physical resources, regions, sustainability, depletion, veins | |

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| **Learning Experience # 8** | | |
| The teacher may use historical and contemporary sources to document the lives of Colorado miners and their experiences with mining so that students can compare the economic opportunities/risks of miners and fur traders. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Every economic decision involves both potential risks and benefits | |
| **Teacher Resources:** | <http://www.coloradomining.org/mc_miningfacts.php> (Facts and statistics on Colorado mining)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens | |
| **Student Resources:** | <http://www.coloradomining.org/mc_miningfacts.php> (Facts and statistics on Colorado mining)  *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** | Students will construct two Venn diagrams to critically examine and defend answers to the following questions: What are the similarities and differences between the fur trade/trapping boom and the gold and silver booms in Colorado? And, what are the similarities and differences between the risks associated with the fur trade/trapping and gold and silver mining in Colorado? <http://www.eduplace.com/graphicorganizer/pdf/venn.pdf> (Printable template for documenting Venn diagrams) | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/sequence.pdf> (Printable template for documenting cause-effect relationships)  <http://www.telegramsworldwide.com/send.php> (Create and send, via e-mail, authentic looking telegrams)  Students may “dictate” to a fellow student or to the teacher | Students may use the graphic organizers and maps created so far to document cause and effect relationships in the mining booms (e.g., the growth of mining towns, tourism)  Students may “dictate” a telegram describing life as a miner and in a mining town |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://pbskids.org/dontbuyit/advertisingtricks/createyourownad_flash.html> (Program that scaffolds the creation of an advertising campaign) | Students may create an advertising campaign (associated with a particular Colorado mining town) designed to attract miners (historical or contemporary) |
| **Critical Content:** | * Supply and demand (mining in Colorado) * Placer mining work * Hard-rock mining work * Hydraulic mining work * Major Gold Mines in Colorado: Cripple Creek, Cherry Creek, Idaho Springs * Miners and 59ers: Zebulon Pike, William Green Russell, Levi Russell, George Jackson, John Gregory * Rush slogans: “Pikes Peak or Bust” * Productive resource (natural , human, capital) allocation in Colorado history * Regional development in Colorado * Human interaction with the environment * Resource depletion as a result of use/misuse | |
| **Key Skills:** | * Analyze cause and effect relationships between societal values/needs and individual lives, the physical environment, and the economy * Define positive/negative economic incentives * Use maps to locate resources and regions * Analyze primary and secondary sources to place significant events in historical sequence | |
| **Critical Language:** | Incentives, rendezvous, miners, economic incentive, supply and demand, opportunity costs | |

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| **Learning Experience # 9** | | |
| The teacher may brainstorm with students the natural/physical resources that Coloradoans depend on to sustain lifestyles today (This brainstorm session will include many topics but it will ultimately provide the segue to the examination of Colorado’s energy production and the state’s gas and oil industry). | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth | |
| **Teacher Resources:** | <http://www.kidzworld.com/article/1423-fossil-fuel-energy> (General, kid-friendly site for explaining fossil fuels)  <http://www.ecokids.ca/pub/eco_info/topics/energy/ecostats/> (General, kid-friendly site for explaining energy sources) | |
| **Student Resources:** | N/A | |
| **Assessment:** | Students will create a classroom visual depiction/mural of the ways in which energy production connects with various aspects of our daily lives and existence (teacher may choose to have students designate energy sources as renewable or non-renewable) | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| Magazines and advertisements with depictions of different types of fuels/energy and of every day contemporary American life  Students may work in pairs or groups to locate appropriate pictorial representations | Students select a particular aspect of the mural for which they will contribute pictorial representations (e.g., the need for and type of energy/fuel necessary for transportation) |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.ehow.com/about_5374489_fuels-used-daily-life.html> (Background on different fuel sources and their usage) | Students may analyze and document the kind and/or amount of energy needed to produce a common item or fuel an activity |
| **Critical Content:** | * N/A | |
| **Key Skills:** | * Analyze cause and effect relationships between societal values/needs and individual lives | |
| **Critical Language:** | N/A | |

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| **Learning Experience # 10** | | |
| The teacher may bring in artifacts and sources (news clips, articles, etc.) so that students can consider the different fuel sources located in and/or produced in Colorado. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://thehill.com/blogs/e2-wire/e2-wire/276755-fracking-success-sparks-talk-of-oil-shale-boom> (Editorial on the Colorado’s shale oil and its possible connections to natural gas extraction)  <http://video.rmpbs.org/video/2324870241/> (Teacher background on natural gas extraction and issues)  <http://www.eia.gov/state/?sid=CO> (Facts on fuel extraction and consumption in Colorado)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens | |
| **Student Resources:** | <http://www.kidzworld.com/article/1423-fossil-fuel-energy> (Explanations of fossil fuels with visuals and text)  <http://www.scholastic.com/browse/article.jsp?id=3753647> (Article on wind energy in Colorado)  *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** | Students will continue mapping activities to document the locations of fossil fuels (extraction and mining locations) in Colorado which could, again, emphasize or delineate renewable and non-renewable forms. In addition, students will continue individual timelines for Colorado history- See “Ongoing” experiences for description of tech tools to facilitate the mapping and timeline work | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf> (Open-ended program for creating individual timelines)  Students may work with partners or in small to determine locations | Students may order or sequence information on Colorado fuel production/exploration using visual or graphic organizers  Students may (orally) provide energy production/fuel extraction locations for map creation |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.denverpost.com/opinion/ci_16711142> (editorial on the history of the potential boom and eventual bust of Colorado’s shale oil exploration)  <http://www.timetoast.com/> (Free, web-based timeline program that is user friendly) | Students may create a timeline of the historic (shale oil) energy boom and bust in Colorado |
| **Critical Content:** | * Colorado fuel sources * Oil extraction processes * Natural gas (hydxraulic fracturing) processes | |
| **Key Skills:** | * Define positive/negative economic incentives * Use maps to locate resources and regions * Analyze primary and secondary sources | |
| **Critical Language:** | Incentives, supply, demand, mining, regions, human activity, natural resources, physical resources | |

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| **Learning Experience # 11** | | |
| The teacher may use contemporary maps and visuals to help students document and analyze the effects of the search for fuel/energy sources on the landscape and resources of Colorado. | | |
| **Generalization Connection(s):** | Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.eia.gov/state/?sid=CO> (Facts on fuel extraction and consumption in Colorado)  <http://geosurvey.state.co.us/energy/Pages/Energy%20Welcome.aspx> (Data and quick facts on energy resources in Colorado)  <http://www.colorado.gov/cs/Satellite?c=Page&childpagename=DOLA-Main%2FCBONLayout&cid=1251593346867&pagename=CBONWrapper> (Census data for Colorado counties dating back to 1870) | |
| **Student Resources:** | <http://geosurvey.state.co.us/energy/Pages/Energy%20Welcome.aspx> (Data and quick facts on energy resources in Colorado)  <http://www.res-americas.com/en/portfolio/wind/constructed/cedar-point-wind-energy-project.aspx> (Information on Colorado’s wind farms)  <http://www.scholastic.com/browse/article.jsp?id=3753647> (Article on wind energy in Colorado)  *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** | Students will create visual representations (pictographs, bar graphs, etc.) of the different types and amounts of fuel extracted and/or produced in Colorado (wind farms, natural gas drilling, coal mining, etc.) and/or provide visual representation of the downsides (cautions/threats, limitations, etc.) to the extraction or production of various resources | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.coopext.colostate.edu/WR/windbooklet.pdf> (Wind energy images)  <http://www.shutterstock.com/s/natural+gas+drilling/search.html> (Natural gas drilling images)  Students may work in pairs or in groups to generate/brainstorm descriptions | Students may describe (orally or in written form) the activities and appearances of communities and regions depicted in pictures and maps |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://blog.skytruth.org/2008/06/colorado-all-natural-gas-and-oil-wells.html> (Data on Colorado natural gas and drilling) | Students may document (map, visually depict, etc) the growth of natural gas extraction in Colorado (and/or in their community) over the past decade |
| **Critical Content:** | * Colorado fuel sources * Oil extraction processes * Natural gas (hydxraulic fracturing) processes * Colorado regions * Productive resource (natural , human, capital) allocation in Colorado history * Regional development in Colorado * Human interaction with the environment * Resource depletion as a result of use/misuse | |
| **Key Skills:** | * Use maps to locate resources and regions * Analyze primary and secondary sources to place significant events in historical sequence | |
| **Critical Language:** | Natural and physical resources, regions, sustainability, depletion | |

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| **Learning Experience # 12** | | |
| The teacher may use various historical and contemporary sources (including guest speakers) to illuminate the lives of energy workers so that students can compare the economic opportunities/risks of miners, fur traders, and people working in the energy industry in Colorado. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Every economic decision involves both potential risks and benefits | |
| **Teacher Resources:** | <http://www.rockymountainenergyforum.com/topics/colorado-revenue> (Data on state revenue generated by energy in Colorado)  <http://www.xcelenergy.com/Safety_&_Education/Educational_Resources/Classroom_Resources/Speakers_Bureau> (Guest speakers on energy topics, listed under classroom resources)  *Historical Atlas of Colorado* by T. Noel, P. Mahoney & R. Stevens | |
| **Student Resources:** | <http://www.scholastic.com/browse/article.jsp?id=3753647> (Article on wind energy in Colorado)  <http://www.res-americas.com/en/portfolio/wind/constructed/cedar-point-wind-energy-project.aspx> (Information on Colorado’s wind farms) | |
| **Assessment:** | Students will construct two Venn diagrams to critically examine and defend answers to the following questions: What are the similarities and differences between the fur trade/trapping boom, the gold and silver booms, and the energy boom in Colorado? And, what are the similarities and differences between the risks associated with the fur trade/trapping, gold and silver mining, and energy exploration in Colorado? <http://www.eduplace.com/graphicorganizer/pdf/venn.pdf> (Printable template for documenting Venn diagrams) | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/sequence.pdf> (Printable template for documenting cause-effect relationships) | Students may use the graphic organizers and maps created so far to document the difference between past Colorado booms and the energy boom |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/tchart_eng.pdf> (Printable template for T charts) | Students construct T charts that detail the advantages/disadvantages of renewable and non-renewable energy sources in Colorado |
| **Critical Content:** | * Supply and demand of fuels and energy resources in Colorado * Colorado fuel sources * Oil extraction processes * Natural gas (hydxraulic fracturing) processes * Colorado regions * Productive resource (natural , human, capital) allocation in Colorado history * Regional development in Colorado * Human interaction with the environment * Resource depletion as a result of use/misuse | |
| **Key Skills:** | * Analyze cause and effect relationships between societal values/needs and individual lives, the physical environment, and the economy * Define positive/negative economic incentives * Use maps to locate resources and regions | |
| **Critical Language:** | Natural and physical resources, regions, sustainability, depletion, opportunity costs | |

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| **Learning Experience # 13** | | |
| The teacher may brainstorm with students the things people in Colorado like to do for recreation and sport (this brainstorm session will provide the segue to the examination of Colorado’s tourism booms). | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth | |
| **Teacher Resources:** | <http://www.colorado.com/> (Data, graphics, and visuals on Colorado lifestyles, activities, events, etc.)  <http://www.colorado.gov/play/indoors-outdoors/index.html> (Data, graphics, and visuals on Colorado recreational activities) | |
| **Student Resources:** | <http://www.youtube.com/user/VisitColorado/videos> (Channel with multiple videos-with transcription- dedicated to Colorado lifestyles/activities) | |
| **Assessment:** | Students will create a classroom visual depiction/mural of the ways in which Coloradoans (and visitors) utilize the state’s natural resources for recreational/sporting activities | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.coloradolifemagazine.com/> Visuals of different Colorado lifestyles  Students may work in pairs or groups to locate appropriate visuals | Students may select a particular aspect of the mural for which they will contribute pictorial representations |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf> (Open-ended program for creating individual timelines) | Students document a common/popular recreational activity and its history in Colorado |
| **Critical Content:** | * N/A | |
| **Key Skills:** | * Analyze cause and effect relationships between societal values/needs and individual lives | |
| **Critical Language:** | N/A | |

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| **Learning Experience # 14** | | |
| The teacher may bring in artifacts (e.g., antique and modern ski equipment) and primary and secondary sources (advertising, letters, etc.) so that students can consider the historical roots (and “booms”) of Colorado’s tourism and the natural and physical resources that continue to support/sustain this industry. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.coloradoskihistory.com/history/timelines/1900.html> (Colorado ski history facts, pictures, and timeline)  <http://www.coloradoinfo.com/wintervacationplanner/history-of-skiing> (Evolution of skiing in Colorado)  <http://www.vail.com/summer/activities/colorado-ski-museum.aspx?page=viewall> (Ski and snowboard museum)  <http://www.historycoloradocenter.org/families/coloradostories> (Colorado History museum- exhibits on the history of lifestyles and activities in Colorado)  <http://www.nytimes.com/2006/03/10/travel/escapes/10ski.html?_r=0> (Background of the U.S. Army's 10th Mountain Division, and its relationship to the post-World War II skiing boom) | |
| **Student Resources:** | <http://www.colorado.gov/dpa/doit/archives/tour/> (The Tourism Collection at the Colorado State Archives is an assemblage of yearbooks, documents, photographs, and postcards from the various state agencies that dealt with the tourist industry in Colorado from 1872-1993)  *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** | Students will continue mapping activities to document the locations of tourism/recreational activity sites. In addition, students will continue individual timelines for Colorado history- See “Ongoing” experiences for description of tech tools to facilitate the mapping and timeline work | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/timeline.pdf> (Open-ended program for creating individual timelines) | Students may order or sequence information on Colorado tourism trends using visual or graphic organizers  Students may work with partners or in small groups to provide popular tourism locations for maps |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.inspirational-quotes-short-funny-stuff.com/colorado-state-motto.html> (Colorado slogans and state nicknames) | Students may create a contemporary (or historic) slogan for Colorado, designed to spotlight a particular state feature/resource |
| **Critical Content:** | * Colorado ski industry events and history * Colorado tourism highlights and history * 10th Mountain Division’s role in WWII | |
| **Key Skills:** | * Define positive/negative economic incentives * Use maps to locate resources and regions * Analyze primary and secondary sources to place significant events in historical sequence | |
| **Critical Language:** | Incentives, supply, demand, mining, regions, human activity, natural resources, physical resources | |

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| **Learning Experience # 15** | | |
| The teacher may have students map different locations of major tourist destinations in order to document and analyze the effects of tourism on different regions and/or towns of Colorado (e.g., population growth, infrastructure expansion, etc.). | | |
| **Generalization Connection(s):** | Humans alter and adapt to existing natural resources to meet personal, cultural, and economic needs  Physical characteristics and human activity (availability and allocation of resources) within different regions and locations contribute to the sustainability of “booms” | |
| **Teacher Resources:** | <http://www.youtube.com/user/VisitColorado/videos> (Channel with multiple videos-with transcription-dedicated to Colorado lifestyles/activities)  <http://www.colorado.gov/cs/Satellite?c=Page&childpagename=DOLA-Main%2FCBONLayout&cid=1251593346867&pagename=CBONWrapper> (Census data for Colorado counties dating back to 1870) | |
| **Student Resources:** | *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry  <http://pbskids.org/dontbuyit/advertisingtricks/createyourownad_flash.html> (Interactive program that scaffolds the creation of an advertising campaign) | |
| **Assessment:** | Students will choose a tourist location in Colorado and design an advertising campaign designed to attract new (and returning) tourists. The campaign will highlight specific attractions as well as the various amenities that enhance the location (travel ease, accommodations, costs, etc.). | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.youtube.com/user/VisitColorado/videos> (Channel with multiple videos dedicated to Colorado lifestyles/activities)  <http://www.eduplace.com/graphicorganizer/pdf/venn.pdf> (Printable template for documenting Venn diagrams)  Students may work in pairs to determine visuals, documents, and websites to use for comparisons | Students may compare and contrast the tourist offerings, infrastructure, and amenities of diverse communities/regions |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.cobbk12.org/Cheathamhill/LFS%20Update/Graphic%20Organizers.htm> (Template for question/prediction organizer) | Students may create a presentation to answer this question: Based on what you know about Colorado’s climate, geography, resources, etc., what do you predict, believe or wish the next big recreational activity in the state will be? |
| **Critical Content:** | * Colorado ski industry events and history * Colorado tourism highlights and history * Colorado regions * Productive resource (natural , human, capital) allocation in Colorado history * Regional development in Colorado * Human interaction with the environment | |
| **Key Skills:** | * Use maps to locate resources and regions * Analyze primary and secondary sources to place significant events in historical sequence | |
| **Critical Language:** | Natural and physical resources, regions, sustainability, depletion | |

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| **Learning Experience # 16** | | |
| The teacher may use various historical and contemporary sources (including guest speakers) to enable students to comprehend the economic opportunities/risks of the tourism industry and to consider threats to the sustainability of the current ‘boom”. | | |
| **Generalization Connection(s):** | Changing (or constant) values often bring about boom and bust economic cycles that shape/determine the future and direction of a state’s growth  Every economic decision involves both potential risks and benefits | |
| **Teacher Resources:** | <http://www.coloradoskihistory.com/history/timelines/1900.html> (Colorado ski history facts, pictures, and timeline)  <http://www.coloradoinfo.com/wintervacationplanner/history-of-skiing> (Evolution of skiing in Colorado)  <http://www.colorado.com/> (Guest Speakers-local welcome centers)  <http://www.longwoods-intl.com/wp-content/uploads/2010/11/The_Rise_and_Fall_of_Colorado_Tourism.pdf> (Paper on the connections between advertising and tourism)  <http://www.foxnews.com/us/2012/06/25/wildfires-threaten-summer-rocky-mtn-tourism/> (Video-with transcription-on fire and tourism downturns-good piece for beginning exploration of threats to tourism) | |
| **Student Resources:** | <http://www.coloradoskihistory.com/history/timelines/1900.html> (Colorado ski history facts, pictures, and timeline)  *Colorado: Crossroads of the west* by F. Metcalf and M. Downey  *A Rendezvous with Colorado History* by D. Dutton and C. Humphries  *A Kids Look at Colorado* by P. Perry | |
| **Assessment:** | Students will create a visual representation (Voicethread <http://voicethread.com/>, collage, or pictograph) documenting and synthesizing the sustainability (opportunities and cautions/threats) of Colorado tourism and the ways in which the unique geography and physical resources help the state reap the economic benefits of this boom | |
| **Differentiation:**  (Multiple means for students to access content and multiple modes for student to express understanding.) | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/sequence.pdf> (Printable template for documenting cause-effect relationships) | Students may use the graphic organizers and maps created so far to document the difference between past Colorado booms and the tourism boom |
| **Extensions for depth and complexity:** | **Access** (Resources and/or Process) | **Expression** (Products and/or Performance) |
| <http://www.eduplace.com/graphicorganizer/pdf/tchart_eng.pdf> (Printable template for T charts)  <http://wiki.answers.com/Q/What_are_the_advantages_and_disadvantages_of_tourism> | Students may construct a T chart that delineates the advantages/disadvantages of tourism and create a class presentation on defending the need to increase or decrease tourism in Colorado |
| **Critical Content:** | * Colorado ski industry events and history * Colorado tourism highlights and history * Colorado regions * Productive resource (natural , human, capital) allocation in Colorado history * Regional development in Colorado * Human interaction with the environment | |
| **Key Skills:** | * Analyze cause and effect relationships between societal values/needs and individual lives, the physical environment, and the economy * Define positive/negative economic incentives * Use maps to locate resources and regions | |
| **Critical Language:** | Natural and physical resources, regions, sustainability, depletion, opportunity costs | |