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**TOP Fellow Lesson Components**

**OBJECTIVE:**
Create an inquiry-based lesson or unit plan that will help your students learn more about contemporary Germany. Your lesson may incorporate historical context, but the topic must have a strong connection to Germany today. Use your study tour experiences for inspiration.

\*Note: **This document contains both a Completion Guide** (full instructions for how to design the unit, pages 1-8) **and a blank** **Template** (beginning on page 9).

**C3 FRAMEWORK and INQUIRY DESIGN MODEL (IDM)™:**
Choose the C3 Framework indicators relevant for the subject and grade level you teach. <https://www.socialstudies.org/sites/default/files/2017/Jun/c3-framework-for-social-studies-rev0617.pdf>

You are encouraged to use the Inquiry Design Model (IDM)™ to help structure your plans. Design your lesson around one Compelling Question, using Supporting Questions and Formative Performance Tasks (activities or graphic organizers, for example) to scaffold your students’ learning. After completing the Formative Performance Tasks, your students should feel prepared to answer the Compelling Question. <http://www.c3teachers.org/inquiry-design-model/>

**FORMATTING:**

* Submit as a Word document.
* Produce one self-contained document that includes all handouts.
* Attach a PowerPoint presentation (optional).
* You are producing a professional document. Please treat it as such in regards to font, font size, and line spacing.
* Your lesson should be of appropriate length and detail so that it can be ‘transferable’ for use and adaptation by other educators.
* Include modifications that you would recommend to help differentiate for any students with special needs, English language learners, etc.
* Provide additional resources and links so that other educators can access helpful background information.
* If any resources, artifacts, materials, etc. are not accessible to all educators, identify alternatives that would allow access to similar resources.
* All primary and secondary contributions must be properly sourced. Please consult the [**MLA Style and Formatting Guide**](https://style.mla.org/) for information on proper citation.

**TOP Fellow Lesson – Completion Guide**

Include the following information and criteria so that other educators may adapt your lesson on contemporary Germany to use with their students. (Full instructions in template.)

|  |
| --- |
| **Full Name**: |
| **School Name and Full Address**: |
| **Preferred Email Address**: |
| **Target Grade Span**: Elementary (K-5), Middle (6-8), Secondary (9-12), or Post-Secondary |
| **Target Grade Level**: Please specify the grade level if this lesson cannot be used within the entire grade span selected above. |
| **Target Course(s)**: |
| [**Compelling Question**](http://www.c3teachers.org/what-are-compelling-questions/): Helps to frame the lesson. This question will also serve as the title for your inquiry. Compelling questions address issues found in and across the academic disciplines that make up social studies. Compelling questions reflect the interests of students and the curriculum and content with which students might have little experience.[**Supporting Question #1**](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-glance.pdf): Supporting questions are intended to contribute knowledge and insights to the inquiry behind a compelling question. Supporting questions focus on descriptions, definitions, and processes about which there is general agreement within the social studies disciplines, which will assist students to construct explanations that advance the inquiry. Typically, there are 3-4 supporting questions that help to scaffold the compelling question. *Example: What were the political changes that resulted from the American Revolution?***Supporting Question #2**:**Supporting Question #3**: |
| **Lesson Overview**: Introduce the main focus of this inquiry and how it connects to contemporary Germany. Briefly describe what your students will do to engage with this content, and list the ways they will demonstrate what they have learned. |
| **Teacher Background Information**: Provide any information that would enable a teacher (perhaps unfamiliar with contemporary Germany) to facilitate this lesson. Briefly share relevant contextual information, list any prerequisite knowledge or concepts, and describe common misunderstandings that students may have about this topic. Be sure to explain how this lesson connects to current-day Germany.  |
| **Suggested Time Frame**: Time needed for conducting this inquiry. |
| **Materials Needed**: List of essential materials needed to teach the lesson and its components. If any resources, artifacts, materials, etc. are not accessible to all educators, identify alternatives that would allow access to similar resources. |
| [**NCSS Thematic Strand(s)**](https://www.socialstudies.org/standards/strands): |
| **Content Area Standards (State/Literacy)**: List relevant content area standards required in your state, with appropriate literacy standards. Example: [CCSS.ELA-LITERACY.RH.9-10.9](http://www.corestandards.org/ELA-Literacy/RH/9-10/9/) Compare and contrast treatments of the same topic in several primary and secondary sources. |
| [**C3 Framework Indicators**](https://www.socialstudies.org/sites/default/files/2017/Jun/c3-framework-for-social-studies-rev0617.pdf): The key indicator(s) forming the foundation for the inquiry. List 1-2 indicators from the C3 Framework. Example: Integrate evidence from multiple relevant historical sources and interpretations into a reasoned argument about the past (D2.His.16.9-12). |
| **Outcomes for Student Learning**: Include only key content concepts and skills from the lesson. |
| **Germany-related Learning Goals**: After students successfully complete this inquiry, describe exactly what they will be able to do (define, compare, synthesize…) in regard to a certain topic or certain information about contemporary Germany. |

|  |
| --- |
| [**Compelling Question**](http://www.c3teachers.org/what-are-compelling-questions/)**:** (Same Compelling Question as listed on page 2.) Helps to frame the lesson. This question will also serve as the title for your inquiry. Helps to frame the lesson. This question will also serve as the title for your inquiry. Compelling questions address issues found in and across the academic disciplines that make up social studies. Compelling questions reflect the interests of students and the curriculum and content with which students might have little experience. |
| **Introductory Activity/Hook:** Staging the question activities introduce students to the ideas behind the compelling question in order to generate curiosity in the topic. *Example: Discuss the question of how much change must occur for something to be considered revolutionary.* |
| [**Supporting Question**](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-glance.pdf) **#1:** (Same Supporting Question #1 as listed on page 2.) Supporting questions are intended to contribute knowledge and insights to the inquiry behind a compelling question. Supporting questions focus on descriptions, definitions, and processes about which there is general agreement within the social studies disciplines, which will assist students to construct explanations that advance the inquiry. Typically, there are 3-4 supporting questions that help to scaffold the compelling question. *Example: What were the political changes that resulted from the American Revolution?* |
| **Formative Performance Task #1:**Design one activity for each Supporting Question that helps the students build their knowledge so they can address the Compelling Question. Provide reproducible activity sheets or graphic organizers that will help students document their learning. Include evaluative criteria for each task (rubrics, sample answers).Formative Performance Tasks are activities designed to help students practice the skills and acquire the content needed to perform well on the summative task. These tasks are built around the supporting questions and are intended to grow in sophistication across the tasks. The performance tasks threaded throughout the inquiry provide teachers multiple opportunities to evaluate what students know and are able to do so that teachers have a steady loop of data to inform his/her instructional decision-making. *Example: Write a paragraph that compares the political rights of white, black, and Native American men and women before and after the American Revolution.* |
| **Featured Sources #1 (**[**MLA citations**](https://owl.english.purdue.edu/owl/resource/747/08/)**):** List possible data sources that students may evaluate for evidence that will help them address this Supporting Question and eventually the Compelling Question. Cite each source in MLA format.Each Formative Performance Task should have 1-3 disciplinary sources to help students build their understandings of the compelling and supporting questions and to practice the work of historians and social scientists. To that end, sources can be used toward three distinct, but mutually reinforcing purposes: a) to generate students’ curiosity and interest in the topic, b) to build students’ content knowledge, and c) to help students construct and support their arguments related to a compelling question. *Example: Abigail Adams letter to John Adams (1776).* |
| **Supporting Question #2:** (Same Supporting Question #2 as listed on page 2.) |
| **Formative Performance Task #2:** |
| **Featured Sources #2 (MLA citations):** |
| **Supporting Question #3:** (Same Supporting Question #3 as listed on page 2.) |
| **Formative Performance Task #3:** |
| **Featured Sources #3 (MLA citations):**  |
| [**Summative Performance Task**](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-glance.pdf) **– Argument Option (Essay or Presentation):**Each inquiry ends with students constructing an argument (e.g., detailed outline, drawing, essay) that addresses the compelling question using specific claims and relevant evidence from sources while acknowledging competing views. *Example: Construct a written argument that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views.* |
| **Summative Performance Task – Extension Option (Choice of Creative Format instead of Argument):** An extension activity offers an optional task that might be used in place of the Summative Performance Task. *Example: Create a three-part chart detailing the social, economic, and political changes that may or may not have occurred as a result of the American Revolution.* |
| **Taking Informed Action:** Design a hands-on activity that students can engage in after the lesson to address a related issue in their own school or community. The three activities described in this space represent a logic that asks students to a) understand the issues evident from the inquiry in a larger and/or current context, b) assess the relevance and impact of the issues, and c) act in ways that allow students to demonstrate agency in a real-world context. *Example: Understand--Research a proposed tax in the United States. Assess--Examine the benefits and disadvantaged to the proposed tax. Act--Write a letter to the newspaper editor that outlines support or opposition to the proposed tax.**Understand* *Assess* *Act*  |
| **Modifications for Differentiation**: Include modifications that you would recommend to help differentiate for any students with special needs, English language learners, etc. |



This inquiry-based lesson plan format was adapted from the [IDM Blueprint Template™](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-Template.docx) and [Inquiry Design Model (IDM) – At a Glance™](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-glance.pdf), which were created by [C3 Teachers](http://www.c3teachers.org/) (Grant, Lee, and Swan, 2014). Changes and additions were made by the [Transatlantic Outreach Program](https://www.goethe.de/top) (Littlefield, Manter, and Steele, 2018). All rights are reserved under a Creative Commons license Attribution-ShareAlike 4.0 International ([CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/)).

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**TOP Fellow Lesson – Template**

Include the following information and criteria so that other educators may adapt your inquiry-based lesson on contemporary Germany to use with their students. (See the **TOP Fellow Lesson – Completion Guide** for full instructions.)

|  |
| --- |
| **Full Name**: |
| **School Name and Full Address**: |
| **Preferred Email Address**: |
| **Target Grade Span**:  |
| **Target Grade Level**:  |
| **Target Course(s)**: |
| [**Compelling Question**](http://www.c3teachers.org/what-are-compelling-questions/): [**Supporting Question #1**](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-glance.pdf): **Supporting Question #2**:**Supporting Question #3**: |
| **Lesson Overview**:  |
| **Teacher Background Information**:  |
| **Suggested Time Frame**:  |
| **Materials Needed**:  |
| [**NCSS Thematic Strand(s)**](https://www.socialstudies.org/standards/strands): |
| **Content Area Standards (State/Literacy)**:  |
| [**C3 Framework Indicators**](https://www.socialstudies.org/sites/default/files/2017/Jun/c3-framework-for-social-studies-rev0617.pdf):  |
| **Outcomes for Student Learning**:  |
| **Germany-related Learning Goals**:  |

|  |
| --- |
| [**Compelling Question**](http://www.c3teachers.org/what-are-compelling-questions/)**:**  |
| **Introductory Activity/Hook:**  |
| [**Supporting Question**](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-glance.pdf) **#1:**  |
| **Formative Performance Task #1:** |
| **Featured Sources #1 (**[**MLA citations**](https://style.mla.org/)**):**  |
| **Supporting Question #2:**  |
| **Formative Performance Task #2:** |
| **Featured Sources #2 (MLA citations):** |
| **Supporting Question #3:**  |
| **Formative Performance Task #3:** |
| **Featured Sources #3 (MLA citations):** |
| [**Summative Performance Task**](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-glance.pdf) **– Argument Option (Essay or Presentation):** |
| **Summative Performance Task – Extension Option (Choice of Creative Format instead of Argument):**  |
| **Taking Informed Action:** *Understand* *Assess* *Act*  |
| **Modifications for Differentiation**:  |



This inquiry-based lesson plan format was adapted from the [IDM Blueprint Template™](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-Template.docx) and [Inquiry Design Model (IDM) – At a Glance™](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-glance.pdf), which were created by [C3 Teachers](http://www.c3teachers.org/) (Grant, Lee, and Swan, 2014). Changes and additions were made by the [Transatlantic Outreach Program](https://www.goethe.de/top) (Littlefield, Manter, and Steele, 2018). All rights are reserved under a Creative Commons license Attribution-ShareAlike 4.0 International ([CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/)).

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**TOP Fellow STEM Unit Components**

**OBJECTIVE:**
Create a problem-based unit plan that will help your students learn STEM content alongside information about contemporary Germany. Your hands-on activities may incorporate historical context, but the Main Problem must have a strong connection to Germany today. Use your study tour experiences for inspiration.

\*Note: **This document contains both a Completion Guide** (full instructions for how to design the unit, pages 13-19) **and a blank** **Template** (beginning on page 20).

**FORMATTING:**

* Submit as a Word document.
* Produce one self-contained document that includes all handouts.
* Attach a PowerPoint presentation (optional).
* You are producing a professional document. Please treat it as such in regards to font, font size, and line spacing.
* Your lesson should be of appropriate length and detail so that it can be ‘transferable’ for use and adaptation by other educators.
* Include modifications that you would recommend to help differentiate for any students with special needs, English language learners, etc.
* Provide additional resources and links so that other educators can access helpful background information about the STEM content and about current-day Germany.
* If any resources, artifacts, materials, etc. are not accessible to all educators, identify alternatives that would allow access to similar resources. This is particularly important if technology is involved. Make sure that teachers who do not have access to those resources can also successfully facilitate this lesson with free or low-cost alternatives.
* All primary and secondary contributions must be properly sourced. Please consult
[APAStyle**®**](http://www.apastyle.org/)or the [Purdue OWL: APA Formatting and Style Guide](https://owl.english.purdue.edu/owl/resource/560/1/) for information on proper citation.

Adapted June 2018 by Lori Chen and Jan Marie Steele from the work of Jackie Littlefield & Constance Manter for TOP, May 2014. Goethe-Institut Washington – 1990 K Street NW, Suite 03 – Washington, DC 20006 – [www.goethe.de/top](http://www.goethe.de/top)

**TOP Fellow STEM Unit – Completion Guide**

Include the following information and criteria so that other educators may adapt your STEM unit on contemporary Germany to use with their students. (Full instructions in template.)

|  |
| --- |
| **Full Name**: |
| **School Name and Full Address**: |
| **Preferred Email Address**: |
| **Target Grade Span**: Elementary (K-5), Middle (6-8), Secondary (9-12), or Post-Secondary |
| **Target Grade Level**: Please specify the grade level if this lesson cannot be used within the entire grade span selected above. |
| **Target Course(s)**: |
| **Unit Plan: (Title)** |
| **Scenario/Phenomenon:** |
| **Lesson Overview**: Introduce the main focus of this inquiry and how it connects to contemporary Germany. Include the specific phenomenon or scenario for the lesson. Briefly describe what your students will do to **engage** with this content, how your students will **explore** the concept, how your students will **explain** the concepts they explored, what students will do to **elaborate** on the concept, and finally how you will **evaluate** student learning. List specific evidence of student learning including types of assessments and modifications. |
| **Teacher Background Information**: Provide any information that would enable a teacher (perhaps unfamiliar with contemporary Germany or particular STEM disciplines) to facilitate this lesson. Briefly share relevant contextual information, list any prerequisite knowledge or concepts, and describe common misunderstandings that students may have about this topic. Be sure to explain how this lesson connects to current-day Germany.  |
| **Suggested Time Frame**: Time needed for conducting this unit. |
| **Materials Needed**: List of essential materials needed to teach the lesson and its components. If any resources, artifacts, materials, etc. are not accessible to all educators, identify alternatives that would allow access to similar resources. This is particularly important with regard to technology. Suggest low-cost alternatives wherever possible. |
| [**Next Generation Science Standards**](https://www.nextgenscience.org/three-dimensions) **(NGSS) / State Content Area Standards**: List relevant content area standards required for your curriculum. |
| [**Key Literacy Connections**](http://ngss.nsta.org/documents/AppendixM-ConnectionsToTheCCSSForLiteracy.pdf)**:** List corresponding literacy standards. *Example:* [*CCSS.ELA-LITERACY.RH.9-10.9*](http://www.corestandards.org/ELA-Literacy/RH/9-10/9/) *Compare and contrast treatments of the same topic in several primary and secondary sources.* |
| **Relevant Domain(s) of** [**Disciplinary Core Ideas**](https://www.nextgenscience.org/three-dimensions)**:** Physical Sciences, Life Sciences, Earth and Space Sciences and/or Engineering, Technology and Applications of Science |
| [**Science and Engineering Practices**](https://www.nap.edu/read/13165/chapter/7)**:** |
| [**Crosscutting Concepts**](https://www.nap.edu/read/13165/chapter/8)**:** |
| **Outcomes for Student Learning**: Include only key content concepts and skills from the lesson. |
| **Germany-related Learning Goals**: After students successfully complete this unit, describe exactly what they will be able to do (define, compare, synthesize…) in regard to a certain phenomenon or certain information about contemporary Germany. |

Use the [**Engineering Design Process**](http://www.gettingsmart.com/2017/10/integrating-edp-and-cbl-in-stem/) to frame your lesson.

|  |
| --- |
| **Main Problem**: Identify and Define the Problem. Why is this problem important? (Make sure this problem/phenomenon is in some way connected to or relevant in current-day Germany.) |
| **Engage - Introductory Activity/Hook:** Introduce students to the Main Problem in a way that generates curiosity in the topic. |
| **Explore - Gathering Information:** How will students investigate the problem? What information will need to be gathered? Design an activity that helps students investigate the problem. Provide reproducible activity sheets or graphic organizers that will help students document their learning. Include evaluative criteria for each task (rubrics, sample answers). |
| **Featured Sources (APA citations):** List possible data sources that students may evaluate for evidence that will help them master the content. Each Formative Assessment should have 1-3 disciplinary sources to help students build their understandings. Cite each source in APA format. |
| **Explain - Identify Possible Solutions**: What are 2-3 possible solutions, including primary and alternative solutions, and the pros and cons of each? |
| **Create a Prototype / Investigating Solutions**: Does investigating the solution involve creating a prototype? If so, describe possible prototypes as well as procedures for creating and evaluating prototypes. |
| **Evaluate - Test, Refine** |
| **Explain - Summative Performance Task (Solution Demonstration or Creative Extension Option):**Each investigation ends with students successfully *communicating* and demonstrating their proposed solution to the Main Problem. Students are to provide specific *evidence* and *reasoning* for their proposed solution. |
| **Elaborate - Taking Informed Action:** Design a hands-on activity that students can engage in after the lesson to address a related issue in their own school or community. The three activities described in this space represent a logic that asks students to a) understand the issues evident from the inquiry in a larger and/or current context, b) assess the relevance and impact of the issues, and c) act in ways that allow students to demonstrate agency in a real-world context.*Understand* *Assess* *Act*  |
| **Virtual Exchange:** Propose extensions to this lesson that would enable it to be taught in a “virtual exchange” setting with a class of STEM (MINT) students in Germany.  |
| **Career Connection Exploration:** Propose activities that would enable students to connect their investigation and solution to relevant career paths. Students should incorporate self- and peer-guided KSA (Knowledge, Skills, and Abilities) and/or SWOT (Strengths, Weaknesses, Opportunities, Threats) analyses into their career explorations. Where possible, students should include documentation of communication / interviews with community members who work in relevant fields. Explore whether job shadowing or 1-5 day mini internships might be possible in a relevant career field. |
| **Modifications for Differentiation**: Include modifications that you would recommend to help differentiate for any students with special needs, English language learners, etc. |

**Evaluate - Scoring Rubrics**

**Content Standard**

|  |  |  |  |
| --- | --- | --- | --- |
| 4Advanced | 3Proficient | 2Partially Proficient | 1Beginning |
|  |  |  |  |

**Science and Engineering Practice**

|  |  |  |  |
| --- | --- | --- | --- |
| 4Advanced | 3Proficient | 2Partially Proficient | 1Beginning |
|  |  |  |  |

 **Crosscutting Concept**

|  |  |  |  |
| --- | --- | --- | --- |
| 4Advanced | 3Proficient | 2Partially Proficient | 1Beginning |
|  |  |  |  |



Parts of this problem-based unit plan format were adapted from the [IDM Blueprint Template™](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-Template.docx) and [Inquiry Design Model (IDM) – At a Glance™](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-glance.pdf) (both by C3 Teachers’ Grant, Lee, and Swan, 2014) and the [Engineering Design Process](http://www.gettingsmart.com/2017/10/integrating-edp-and-cbl-in-stem/). Changes and additions were made by the [Transatlantic Outreach Program](https://www.goethe.de/top) (Chen, Littlefield, Manter, and Steele, 2018). All rights are reserved under a Creative Commons license Attribution-ShareAlike 4.0 International ([CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/)).

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NGSS Lead States & Pimentel, S. (2013) *APPENDIX M – Connections to the Common Core State*

*Standards for Literacy in Science and Technical Subjects.* Retrieved from http://ngss.nsta.org/documents/AppendixM-ConnectionsToTheCCSSForLiteracy.pdf

**TOP Fellow STEM Unit – Template**

Include the following information and criteria so that other educators may adapt your problem-based STEM unit on contemporary Germany to use with their students. (See the **TOP Fellow STEM Unit - Completion Guide** for full instructions.)

|  |
| --- |
| **Full Name**: |
| **School Name and Full Address**: |
| **Preferred Email Address**: |
| **Target Grade Span**:  |
| **Target Grade Level**:  |
| **Target Course(s)**: |
| **Unit Plan: (Title)** |
| **Scenario/Phenomenon:** |
| **Lesson Overview**:  |
| **Teacher Background Information**:  |
| **Suggested Time Frame**:  |
| **Materials Needed**:  |
| [**Next Generation Science Standards**](https://www.nextgenscience.org/three-dimensions) **(NGSS) / State Content Area Standards**:  |
| [**Key Literacy Connections**](http://ngss.nsta.org/documents/AppendixM-ConnectionsToTheCCSSForLiteracy.pdf)**:**  |
| **Relevant Domain(s) of** [**Disciplinary Core Ideas**](https://www.nextgenscience.org/three-dimensions)**:**  |
| [**Science and Engineering Practices**](https://www.nap.edu/read/13165/chapter/7)**:** |
| [**Crosscutting Concepts**](https://www.nap.edu/read/13165/chapter/8)**:** |
| **Outcomes for Student Learning**:  |
| **Germany-related Learning Goals**:  |

Use the [**Engineering Design Process**](http://www.gettingsmart.com/2017/10/integrating-edp-and-cbl-in-stem/) to frame your lesson.

|  |
| --- |
| **Main Problem**:  |
| **Engage - Introductory Activity/Hook:**  |
| **Explore - Gathering Information:**  |
| **Featured Sources (APA citations):**  |
| **Explain - Identify Possible Solutions**:  |
| **Create a Prototype / Investigating Solutions**:  |
| **Evaluate - Test, Refine** |
| **Explain - Summative Performance Task (Solution Demonstration or Creative Extension Option):** |
| **Elaborate - Taking Informed Action:**  |
| **Virtual Exchange:**  |
| **Career Connection Exploration:**  |
| **Modifications for Differentiation**:  |

**Evaluate - Scoring Rubrics**

**Content Standard**

|  |  |  |  |
| --- | --- | --- | --- |
| 4Advanced | 3Proficient | 2Partially Proficient | 1Beginning |
|  |  |  |  |

**Science and Engineering Practice**

|  |  |  |  |
| --- | --- | --- | --- |
| 4Advanced | 3Proficient | 2Partially Proficient | 1Beginning |
|  |  |  |  |

 **Crosscutting Concept**

|  |  |  |  |
| --- | --- | --- | --- |
| 4Advanced | 3Proficient | 2Partially Proficient | 1Beginning |
|  |  |  |  |



Parts of this problem-based unit plan format were adapted from the [IDM Blueprint Template™](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-Template.docx) and [Inquiry Design Model (IDM) – At a Glance™](http://www.c3teachers.org/wp-content/uploads/2015/06/Inquiry-Design-Model-glance.pdf) (both by C3 Teachers’ Grant, Lee, and Swan, 2014) and the [Engineering Design Process](http://www.gettingsmart.com/2017/10/integrating-edp-and-cbl-in-stem/). Changes and additions were made by the [Transatlantic Outreach Program](https://www.goethe.de/top) (Chen, Littlefield, Manter, and Steele, 2018). All rights are reserved under a Creative Commons license Attribution-ShareAlike 4.0 International ([CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/)).

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