2. Learning Activity Exemplars

ITLresearch
Innovative Teaching and Learning

Sponsored by

Microsoft Partners in Learning

Rubrics designed by

Rubrics developed by Joan Dalton, Hands On Educational Consultancy Pty Ltd for Microsoft Australia Pty Ltd.
Learning Activity Exemplars and associated 21CLD Dimensions

**Learning Activity Exemplars** are moderated exemplars that act as scaffolds for teacher conversation and coding practice to build common understandings of each dimension.

<table>
<thead>
<tr>
<th>LA Dimension</th>
<th>LA Exemplars</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collaboration</strong></td>
<td>House on Mango Street</td>
</tr>
<tr>
<td></td>
<td>Olympic Site Selection</td>
</tr>
<tr>
<td></td>
<td>Doing Business in Birmingham</td>
</tr>
<tr>
<td><strong>Knowledge Construction</strong></td>
<td>House on Mango Street</td>
</tr>
<tr>
<td></td>
<td>Design a Catapult</td>
</tr>
<tr>
<td></td>
<td>Indigenous Cultures</td>
</tr>
<tr>
<td><strong>Self-regulation</strong></td>
<td>Design a Catapult</td>
</tr>
<tr>
<td></td>
<td>Great Train Internet</td>
</tr>
<tr>
<td></td>
<td>Falklands War</td>
</tr>
<tr>
<td><strong>Real World Innovation and Problem-Solving</strong></td>
<td>School Change</td>
</tr>
<tr>
<td></td>
<td>House on Mango Street</td>
</tr>
<tr>
<td></td>
<td>Design a Catapult</td>
</tr>
<tr>
<td><strong>Use of ICT for Learning</strong></td>
<td>Great Train Internet</td>
</tr>
<tr>
<td></td>
<td>Falklands War</td>
</tr>
<tr>
<td></td>
<td>Munting Mungo</td>
</tr>
<tr>
<td><strong>Skilful Communication</strong></td>
<td>Indigenous Cultures</td>
</tr>
<tr>
<td></td>
<td>Design a Catapult</td>
</tr>
<tr>
<td></td>
<td>School Change</td>
</tr>
</tbody>
</table>
Title of Learning Activity & Average Age of Students

Title: House on Mango Street

Average Age of Students: 13 years

What did you hope your students would learn from this learning activity?
The goal is that students will gain an awareness of the immigrant experience and be able to communicate this to others using what they learned in our poetry lesson. They first read the book in order to gain an understanding of the challenges immigrants face. They will gather and synthesize information about a particular group of people. Interviewing a real immigrant and understanding his or her context will allow them to build a deeper connection that will help them to be more sensitive to others and give them something real to write about.

Did you have learning goals from more than one discipline (for example, literature and history, or science and math) for this learning activity?

This learning activity has learning goals in history and language arts.

The history goal for students is to synthesize information about the immigrant experience in the United States by researching online and interviewing an immigrant.

The language arts goal is for students to write a poem about the immigrant experience and build on their previous experiences with the genre of poetry.
Were students required to work in pairs or as a group on any part of this learning activity?

☐ No
☐ Working in groups was *optional*. Please describe below the work that students did together.
☐ Working in groups was *required*. Please describe below the work that students did together.

Students shared their poem with another classmate to get feedback before submitting it to me. I also allowed the students to pair up during the interviews, if they wanted to, but each one had to submit his/her own poem.

Were students allowed to work with technology (ICT) such as computers or digital cameras for any part of this learning activity? Please describe.

☐ No technology was used for this learning activity.
☐ Students *could* use technology for this activity
  • Students were *required* to use technology for this activity

Students were required to use ICT for both research and typing their final product.

What criteria did you use to judge the quality of students’ work on this learning activity? Were students aware of the criteria in advance of completing the learning activity?

I checked for grammar and made sure they followed one of the patterns of poetry that we had learned. I checked for the quality of their writing and to see if the poem included details from the reading and what they may have learned from the interview.

How long did the learning activity take?

☐ a. Completed in a single class period
☐ b. Completed in 2-4 days
  • c. Required one week or more to complete

What verbal instructions did you give to students?

I reminded students about our past lesson on poetry patterns and that they should follow one of these patterns when they write their poem.
Is there any other information you would like to include to help another educator using this learning activity be successful?

PLEASE REMEMBER TO INCLUDE:

• Instructions for the learning activity
• Handouts and materials
• Grading rubrics

*The House on Mango Street* is a memoir written by Sandra Cisneros about her experiences growing up on a street in Chicago which is populated by impoverished immigrants from Latin America.

**Step 1.**
Read the book. Reflect on this question: “What are some of the important elements of the immigrant experience?”

**Step 2.**
Find someone in your neighbourhood or family who is an immigrant to the United States. You will interview this person to ask them, "Tell me two or three of the most important problems you faced when you first immigrated to the United States." Ask them to describe what the world they lived in was like and how their community treated them.

You can conduct your interview alone or with a friend, but you will still have to submit separate poems.

**Step 3.**
Based on all that you learned from the book and interview, write a poem about a real problem that immigrants face when they come to the United States and how that impacts their life. Reflect on the following: *Why is it so hard? What can non-immigrants and others in the community do to make the transition easier for immigrants?*

Think about people in your community who might not be aware of what immigrants’ experience. *How can you communicate what you have learned to this audience?* Use vivid
language to make the experience more real to your readers. Offer suggestions that are realistic so they might be useful to the reader.

**Step 4.** Work in pairs with another student. Read your partner’s poem. Think about the following questions, and use them to provide feedback to help your partner edit and improve his or her poem:

- *Does the poem have enough detail? Is it clear what you are describing?* Mark places that are vague.
- *Is the poem written using correct conventions and grammar? Does it follow one of the patterns that we learned about in class?* Note any mistakes.
- *What would make the poem better?*

**Step 5.** Use your partner’s comments to edit your poem. Fix all mistakes and consider your partner’s suggestions for improving the poem.

**Step 6.** Put your poem into final form. It must be typed, using double spacing in Times New Roman, size 12.
21CLD Student Work Cover Sheet

*Please complete one of these sheets for EACH student work artefact you submit.*

1. **Title of Learning Activity**
   
   House on Mango Street

2. **Did students work in groups to produce this student work product?**
   
   [ ] Yes   [x] No

3. **Did the student use technology for this activity?**
   
   [x] Yes   [ ] No

4. **If yes, please describe how this student used technology.**
   
   The poems were typed and edited using Word.

5. **Is there anything else about the way this student approached the activity that was not in the instructions?**
   
   

---

**ITL Research**

Innovative Teaching and Learning

Sponsored by Microsoft’s Partners in Learning
What I Bring...

You say I came to this country with nothing; nothing

in my hands, nothing in my pockets.

You say I came to take, to burden, to bleed away what you have.

But I do not come with nothing, I come with something.

I came with knowledge, joy, hope, and peace.

I bring the knowledge of another culture, of

ancient traditions, delicious foods, of

wondrous celebrations.

I bring the joy of the heritage and colours

and smells and tastes of my

country.

I bring the hope that together we can share this bountiful country, working

as a team, building a welcoming loving place where all people are

treated equally and with respect.

I bring peace, to share in the promise that this country offers.

You say I came with nothing. I came with something. I came with my life, my dreams,

and my love for my new country.
21CLD Learning Activity Cover Sheet

1. **Title of Learning Activity & Average Age of Students**

<table>
<thead>
<tr>
<th>Title:</th>
<th>Olympics Site Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age of Students:</td>
<td>13</td>
</tr>
</tbody>
</table>

2. **What did you hope your students would learn from this learning activity?**

   The theory of plate tectonics explains the formation, movement and destruction of the Earth's surface. The Earth's geosphere interacts with other Earth systems. Geologic events can occur quickly or over a long period of time.

   I also wanted students to practice logical thinking and writing a persuasive letter.

3. **Did you have learning goals from more than one discipline (for example, literature and history, or science and math) for this learning activity?**

   This activity has learning goals in science and language arts.

   For science, students compared and contrasted the geology, seismology and volcanology of three different sites, and based on their assessment they recommended a specific site.

   For language arts, students are asked to practice their skills for writing a business letter by writing a letter to the Olympic Committee which states their reasons for recommending a specific site.
4. **Were students required to work in pairs or as a group on any part of this learning activity?**

- ☐ No
- ☐ Working in groups was *optional*. Please describe below the work that students did together.
- ☑ Working in groups was *required*. Please describe below the work that students did together.

| Each student took on a role within a small group: seismologist, volcanologist, and geologist. They had to work separately on researching their particular field and also come together to make conclusions based on the perspectives of all three scientists. |

5. **Were students allowed to work with technology (ICT) such as computers or digital cameras for any part of this learning activity? Please describe.**

- ☐ No technology was used for this learning activity.
- ☐ Students could use technology for this activity
- ☑ Students were *required* to use technology for this activity

| Students used the internet for research. |

6. **What criteria did you use to judge the quality of students’ work on this learning activity? Were students aware of the criteria in advance of completing the learning activity?**

For this activity, I developed a rubric for each one of the scientist roles, which outlined what I expected the students to accomplish in their roles, including how well their letter of recommendation (from the perspective of their scientist role) is written. I also included a rubric about their team-work efforts.
7. **How long did their learning activity take?**

- [ ] a. Completed in a single class period
- [ ] b. Completed in 2-4 days
- ☑ c. Required one week or more to complete

8. **What verbal instructions did you give to students?**

The final product will be a business letter to the International Olympic Committee recommending a site for the 2030 Winter Games. Each team will also produce a chart showing the strengths and weaknesses of each of the four given locations.
OLYMPICS SITE SELECTION

• You are a member of a team comprised of a seismologist, a volcanologist, and a geologist which has been hired by the International Olympic Committee (IOC) to help them choose a safe site with appropriate geologic features for the 2030 Winter Olympic Games. Your choices are Tokyo, Japan; Sao Paolo Brazil; Banff, Ontario, Canada; and Jacksonville, Florida.

• Each team member is a specialist in his field, and will research the four sites to determine the advantages and the disadvantages of each location. Be sure to find current information on the internet to make sure that current environmental trends are taken into account. The team will then compile its findings and determine the best location for the Olympic Games.

• The seismologist will report on any past and present earthquake activity, and determine the risk of any possible future earthquakes at each location.

• The volcanologist will report on any past and recent volcanic activity, and determine the risk of any possible future volcanic eruptions at each location.

• The geologist will report on the types of rocks and geologic landforms found near each location.

• The final product will be a business letter to the IOC recommending one site for the Games. The letter will discuss team findings with respect to all three sciences. The team will also produce a chart showing the strengths and weaknesses of each location.
<table>
<thead>
<tr>
<th></th>
<th>Tokyo, Japan</th>
<th>Sao, Paolo, Brazil</th>
<th>Banff, Alberta, Canada</th>
<th>Jacksonville, Florida</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volcanologist</td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
</tr>
<tr>
<td></td>
<td>Disadvantages</td>
<td>Disadvantages</td>
<td>Disadvantages</td>
<td>Disadvantages</td>
</tr>
<tr>
<td></td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
</tr>
<tr>
<td></td>
<td>Disadvantages</td>
<td>Disadvantages</td>
<td>Disadvantages</td>
<td>Disadvantages</td>
</tr>
<tr>
<td>Seismologist</td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
</tr>
<tr>
<td></td>
<td>Disadvantages</td>
<td>Disadvantages</td>
<td>Disadvantages</td>
<td>Disadvantages</td>
</tr>
<tr>
<td>Geologist</td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
</tr>
<tr>
<td></td>
<td>Disadvantages</td>
<td>Disadvantages</td>
<td>Disadvantages</td>
<td>Disadvantages</td>
</tr>
<tr>
<td></td>
<td>Criteria</td>
<td>Points</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Volcanologist</strong></td>
<td>Research shows no evidence of knowledge of volcanism</td>
<td>Research demonstrates some knowledge of volcanism, but leads to an incorrect recommendation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Research demonstrates solid knowledge of volcanism, and may or may not lead to a recommendation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recommends a site than is safe according to volcanic activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Seismology</strong></td>
<td>Research shows no evidence of knowledge of seism</td>
<td>Research demonstrates some knowledge of seism, but leads to an incorrect recommendation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Research demonstrates solid knowledge of seism, and may or may not lead to a recommendation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recommends a site than is safe according to seismic activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Geology</strong></td>
<td>Research shows no evidence of knowledge of geologic landforms</td>
<td>Research demonstrates some knowledge of geologic landforms, but leads to an incorrect recommendation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Research demonstrates solid knowledge of geologic landforms, and may or may not lead to a recommendation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recommends a site than is safe according to geologic landforms</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Team Chart</strong></td>
<td>Chart is missing more than six boxes of information</td>
<td>Chart is missing between four and six boxes of information</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chart is missing no more than three boxes of information</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chart is completely and correctly filled out</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Letter is incoherent and doesn't give a recommendation</td>
<td>Letter is not well written, and the site recommendation is inappropriate</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Letter</strong></td>
<td></td>
<td>Letter is well written, but the site recommendation is inappropriate</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Letter is well written and clearly recommends a viable site</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
21CLD Student Work Cover Sheet

*Please complete one of these sheets for EACH student work artefact you submit.*

1. **Title of Learning Activity**

   | Olympics Site Selection |

2. **Did students work in groups to produce** this student work product?

   ☑ Yes          ☐ No

3. **Did the student make choices about using technology** for this activity?

   ☑ Yes          ☐ No

4. **If yes, please describe the choices that this student made.**

   - The student conducted research on the different countries.
   - This group also looked for references on geology, seismology and volcanology.
   - Students were not given a set of rules for where and how to conduct their research, but most searched the internet for relevant resources.

5. **Is there anything else about the way this student approached the activity that was not in the instructions?**

   - Students typed their letter and filled out the table using the computer.
To the members of the International Olympic Committee,

We are a team of scientists hired to research your list of finalists for the host of the 2030 Winter Olympics. We investigated each site for history of seismic waves and volcanic activity, and for the presence of desirable land form. Based on this research, we recommend that you select BANFF for the Olympics. Our discussion of the four candidate cities follows, along with reasons for selecting BANFF.

The information that we found out about Tokyo is that there was a major earthquake, magnitude 8.9, in March 2011. This ranked the fifth most powerful earthquake since 1900. Tokyo has a lot of active volcanoes. That happens to be because it is in the ring of fire, and they can erupt any day now. There are two bright sides: one is that there are mountains there but few, and it also snows.

The information that we found out about Sao Paolo is that it has no volcanic activity. That is because it isn't near the ring of fire or the edge of the plate boundary. It also has no faults or folds. That means no earthquakes which is the very good part. The bad part is that no mountains can form and there a lot of forests and tropical land.

The information that we found out about Jacksonville is that there are definitely no volcanoes. The reason is because it's nowhere near the ring of fire. In fact Jacksonville has no history of seismic waves or earthquakes. Jacksonville has very flat land that means no mountains. Here's the rest of the bad news ...it's in danger of ash dust and gases from other volcanoes in South America. It has a lot of woodland and it's very hot so it doesn't snow.

The one that we think is the best to hold the 2030 Winter Olympics is BANFF. We think that because it has no volcanic activity. Banff has mountains, it has snow, and it has no earthquakes. But one can occur. That is only because it's highly faulted and folded so it's - very possible one can happen.

Sincerely,

[Names of Students]
<table>
<thead>
<tr>
<th></th>
<th>Tokyo, Japan</th>
<th>Sao, Paolo, Brazil</th>
<th>Banff, Alberta, Canada</th>
<th>Jacksonville, Florida</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Volcanologist</strong></td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
</tr>
<tr>
<td>It snows</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are no active</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>volcanoes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It snows</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No volcanic activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No snow</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>There are no volcanoes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>in Jacksonville FL.</td>
<td></td>
</tr>
<tr>
<td>Disadvantages</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are active</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>volcanoes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It’s close to the ring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of fire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It doesn’t snow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoke and ash from near</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>volcanoes in South</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>America</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Seismologist</strong></td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
</tr>
<tr>
<td>There was a major</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>earthquake in 2011</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No faults</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Major earthquake</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>recently</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There have been no major</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>earthquakes recently</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disadvantages</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is a possibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of another earthquake to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>occur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No folds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It’s possible that an</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>earthquake can occur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No faults and folds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Geologist</strong></td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
<td>Advantages</td>
</tr>
<tr>
<td>Few mountains</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It has very few</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mountains</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highly faulted or folded</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sedimentary rock</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are many mountains</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flatlands</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disadvantages</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faulted, possible for</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>earthquake</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot, no mountains</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A lot of woodlands</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
21CLD Learning Activity Cover Sheet

Please fill in one of these sheets and attach it to EVERY learning activity you submit. Choose the learning activities that you feel provided the best learning opportunities for students.

1. Title of Learning Activity & Age of Students

Title: Doing Business in Birmingham

Average Student Age: 11 years

2. What did you hope your students would learn from this learning activity?

Students will learn:

- about sustainable practices and how to effect change within their community
- how technology tools can enable them to make authentic connections beyond the classroom
- to synthesize their learning and generate creative solutions to real world problems

Students will also create a wiki as public evidence of what they learned and their contributions to the community.

I am attaching a lesson plan that I used to guide the activities, but this was not distributed to the students. I really wanted students to shape the project so I left details open for discussion, such as the rubrics and planning the wiki.

3. Did you have learning goals from more than one discipline (for example, literature and history, or science and math) for this learning activity?

Yes. See lesson.
4. Were students required to work in pairs or as a group on any part of this learning activity?

☐ No

☐ Working in groups was optional. Please describe below the work that students did together.

☒ Working in groups was required. Please describe below the work that students did together.

Students worked in teams throughout the project. Each student had specific roles and responsibilities, and contributed to the team's work and the class wiki.

5. Were students allowed to work with technology (ICT) such as computers or digital cameras for any part of this learning activity? Please describe.

☐ No technology was used for this learning activity.

☐ Students could use technology for this activity

☒ Students were required to use technology for this activity

We used several technology products throughout the project such as Bing Maps and Photosynth. See lesson for complete list.

6. What criteria did you use to judge the quality of students’ work on this learning activity? Were students aware of the criteria in advance of completing the learning activity?

The students and I worked together to create two rubrics for evaluating student work. One was used to grade their work on the project: grading their own work, the work of their teammates, and for me to grade their work. The second rubric was used to evaluate our wiki. We took an existing wiki rubric and adopted it for our needs. These rubrics are posted on the resources page of our class.
I am also attaching them to this lesson for your convenience.

7. How long did the learning activity take?
   - [ ] Completed in a single class period
   - [ ] Completed in 2-4 days
   - [X] Required one week or more to complete

8. What verbal instructions did you give to students?
   Throughout the project we had class discussions about how to approach each task. This included assigning student roles on the team, creating a plan for visiting businesses and collecting the information (data) from the field. We had discussions to create the rubrics for evaluating the work students would do.

   Later, we developed evaluation criteria for the businesses as a way to describe their progress towards implementing sustainability practices.

   As a class, we determined how to create the wiki pages and design the entire wiki experience to be user-friendly and useful. The students have created wikis before, so we did a quick review of how to work in a wiki.

9. Is there any other information you would like to include to help another educator using this learning activity be successful?
   Students enjoyed being able to influence their community by learning about sustainability in business and sharing what they learned.

   They also liked having an opportunity to get out into the community to meet business owners, and creating a wiki to share their findings and their hard work.

   To view the wiki and resources we created, please visit: http://doingbusinessinbirmingham.wikis.birmingham.k12.mi.us/

PLEASE INCLUDE THE FOLLOWING WITH THIS COVER SHEET:

- Instructions for the learning activity
- Handouts and materials
- Grading rubrics
Doing Business in Birmingham
A challenge to increase awareness about sustainability in our community

Objectives:

• Students will learn about sustainable practices and how to be effective change within their community
• Students will learn how technology tools can enable them to make authentic connections beyond the classroom
• Students will learn to synthesize their learning and generate creative solutions to real world problems
• Students will create a wiki as public evidence of what they learned and their contributions to the community

Materials:

• Equipment: PC, Tablet, Mobile phone, video camera etc.
• Software: Bing Maps, Microsoft Office, Microsoft Word, Photosynth, Clipart, Mobitags, Movie Maker

Standards:

• Citizenship
• Digital and Media Literacy
• Environmental Science
• Language Arts & Literacy
• Social Studies
• Technology and ICT
• 21st Century skills

Lesson Outline:

Day 1: PLANNING
1. Outline the project and lead class discussion on the goals, purpose and impact of the project.
2. Assign students to teams. Introduce roles, and brainstorm as a class how each role will contribute to the project. Students assign roles within their teams. (Some teams may require students to do two roles.)
Communications manager
Materials Manager
Photographer
Project Manager
Videographer

3. Lead a discussion to define rubrics for project grading and specify the success criteria for each role. Remind students that the rubrics will be used in 3 ways: for self-reflection on their own contribution, to rate fellow members of the team, and for your evaluation of their work.

Days 2-3: RESEARCH
1. Define “sustainability” as it relates to business practices. Students discuss within teams, then as a whole class.
2. Student teams plan and conduct their own research on sustainability practices. The teams will answer these questions:
   - What are the benefits of being a sustainable business?
   - Who are the stakeholders of sustainable business practices?
   - What is waste prevention?
   - How can a business recycle?
   - How does the use of energy and water affect sustainability?
   - How can businesses operate more sustainably?
   - How does the purchasing that a business does affect sustainability? Both for customers, and for getting materials to and from the business?

Days 4-6: PLANNING FOR DISSEMINATION
1. Facilitate a discussion on what students learned about sustainability and decide how the class can communicate their knowledge to local businesses and the
community. (Students decided to create two brochures: one about the project and one about sustainable practices, to be distributed to local businesses.)

2. Students plan and develop their materials, and plan their field trips. Some of this work is done in teams, and some is done in role groups (with all Materials Managers and Photographers working together to plan the brochure, for example).

- Materials Managers and Photographers plan the layout of the two brochures. Their goal is to create a pre-print for review. Photographers also use this time to become familiar with Photosynth so they can stitch photos together to create a 3D view of the area surrounding the business.

- Videographers plan how to obtain the photo and video equipment for every team. They also use this time to familiarize themselves with Movie Maker so they are ready to edit their footage.

- Communications Managers and Project Managers plan the field trips to the businesses. This includes using Bing maps to research the locations of the businesses.

Their plans should address the following:

- What area are we visiting? (Use Bing Maps and assign territories) o What businesses are in the team's territory?
  - List the businesses.
  - Do searches on what the businesses do and produce.
  - Each team selects two businesses within their territory to visit.
  - Begin thinking about specific sustainable processes for those businesses.

- What can we learn in advance about each business?
  - Create tables with information on businesses.
  - Possible sustainable practices.
  - Who we might speak to? (Owners? Managers?) Try to get specific names.

- What can we do during the field trip?

**Days 7-8: REVIEW AND FINALIZE MATERIALS**

1. Group members change roles: Materials Managers, Photographers and Videographers review business maps and information while Project Managers and
Communications Managers edit the two brochures. Remind students to give detailed and specific feedback for improvement.

2. Students integrate the feedback they received.
3. Brochures are printed for distribution.

Day 9: FIELD TRIP TO BUSINESSES!

Day 10: DEVELOP RUBRIC FOR RATING BUSINESSES
1. Discuss the trip in teams, and what teams learned.
2. As a class, build a rubric for rating the sustainability of businesses.
   • How can we rate the businesses?
   • What indicators and descriptors can we use that people outside of the classroom will understand?
   • How can we illustrate the ratings?
3. Teams apply the rubric to the data they gathered and rate each business they visited. Each team has to provide evidence to support their rating.

Days 11-15: PLAN & DEVELOP THE WIKI
1. The class reviews an existing rubric for evaluating wikis and adapts it to our needs.
2. The class also defines proper wiki etiquette and rules for team members to ensure successful collaboration.
3. Students plan content and layout of the wiki.
   • What do we want on the wiki?
     o Contents of pages
     o Materials collected: videos and photos taken during field trips
     o Information that will be useful to the participating businesses?
     o Information that will help others in the community learn about sustainable practices?
   • What will the “feel” or layout look like?
     o Colours
     o How we layout our materials
     o How we layout our findings
     o What attachments/links do we want?
• How can each team document their research on days 2-3? What is a standard format that can be used across all research areas?
• How can users interact with the site? How can we encourage them to use it actively?

4. Remind students that there should be at least 1 review cycle for the wiki. Every student must review at least one other page they did not create and provide concrete feedback.

5. Provide time for students’ self-reflection on their role, and evaluation of fellow team members.

6. Student volunteers from each team complete the following tasks:
   • Write letters of appreciation to the participating businesses.
   • Create invitations for the wiki launch party. Invite the businesses and parents.
   • Plan the wiki launch party.
Wiki Rubric
We took an existing wiki rubric and edited it so that we could use it to assess the pages that we made for the wiki. Please edit it to meet your needs

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>Exemplary 3</th>
<th>Proficient 2</th>
<th>Partially Proficient 1</th>
<th>Unsatisfactory 0</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Provides comprehensive insight, understanding, and useful tips for sustainability in your assigned aspect of business.</td>
<td>Provides a moderate amount of insight, understanding and useful tips for sustainability in your assigned aspect of business.</td>
<td>Provides only minimal understanding or few tips for sustainability in your assigned aspect of business.</td>
<td>Provides no understanding or useful tips for sustainability in your assigned aspect of business.</td>
<td>____/3</td>
</tr>
<tr>
<td></td>
<td>Explains all ideas clearly and concisely in a logical way.</td>
<td>Explains most ideas clearly and concisely in a logical way.</td>
<td>Incompletely explains ideas.</td>
<td>Fails to explain ideas clearly.</td>
<td>____/3</td>
</tr>
<tr>
<td></td>
<td>Presents all information in a style that is appealing and appropriate for the intended audience.</td>
<td>Presents information in a style that is generally appropriate for the intended audience.</td>
<td>Presents information in a style that is often inappropriate for the intended audience.</td>
<td>Presents information in a disjointed, unpolished style which is inappropriate for the intended audience.</td>
<td>____/3</td>
</tr>
<tr>
<td>Organization</td>
<td>Uses a consistent organizational structure that includes grouping related information.</td>
<td>Uses an organizational structure which groups some but not all related information.</td>
<td>Uses a loosely defined organizational structure which attempts to group similar items.</td>
<td>Fails to provide a consistent organizational structure, and information is difficult to locate.</td>
<td>____/3</td>
</tr>
<tr>
<td>Graphics and Multimedia</td>
<td>Includes high quality Photosynth that gives a comprehensive picture of your street.</td>
<td>Includes a good Photosynth that gives a clear picture of your street.</td>
<td>Includes a low quality Photosynth that gives an incomplete picture of your street.</td>
<td>Does not include a Photosynth and has no images of your street.</td>
<td>____/3</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td></td>
<td>Includes a high quality Cliplet that portrays a significant moment from your trip.</td>
<td>Includes a good quality Cliplet that portrays a significant moment from your trip.</td>
<td>Includes a low quality Cliplet that portrays a moment from your trip.</td>
<td>Does not include a Cliplet to portray a significant moment from your trip.</td>
<td>____/3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>Exemplary 3</th>
<th>Proficient 2</th>
<th>Partially Proficient 1</th>
<th>Unsatisfactory 0</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group/Partner Collaboration</td>
<td>Contributes equally with other group members in researching, writing and editing.</td>
<td>Assists group members with most of the researching, writing and editing.</td>
<td>Provides minimal assistance to group members in researching, writing and editing, and does not follow through with all tasks.</td>
<td>Provides no assistance to group members in any of the researching, writing and editing and does not follow through with any of the tasks.</td>
<td>____/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meets all goals and deadlines.</td>
<td>Usually meets goals and deadlines.</td>
<td>Occasionally meets goals and deadlines.</td>
<td>Does not meet goals and deadlines.</td>
<td>____/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhibits appropriate wiki etiquette when editing and respects the work of others.</td>
<td>Exhibits appropriate wiki etiquette most of the time and generally respects the work of others.</td>
<td>Exhibits a minimal knowledge of wiki etiquette and often fails to respect the work of others.</td>
<td>Exhibits no knowledge of wiki etiquette and fails to respect the work of others.</td>
<td>____/3</td>
</tr>
</tbody>
</table>
| Writing Mechanics | Edits the text with no errors in grammar, capitalization, punctuation or spelling. | Edits the text with minor additional editing required for grammar, capitalization, punctuation and spelling. | Edits the text, but errors in grammar, capitalization, punctuation and spelling distract or impair readability (3 or more errors). | Edits the text but numerous errors in grammar, capitalization, punctuation and spelling repeatedly distract the reader and major revision is required (more than 5 errors). | ____/3  
TOTAL POINTS __/30 |
Here is an example of the Star Ranking we gave to businesses:

We are sustainable leaders in our community
Student Work Rubric

We worked as a team to develop rubrics for the field trip team roles: Communications Manager, Materials Manager, Photographer, Project Manager and Videographer. Here is a rubric for the Project Manager’s role as an example.

<table>
<thead>
<tr>
<th>Responsibilities</th>
<th>Needs Improvement (0-1)</th>
<th>Satisfactory (2-3)</th>
<th>Excellent (4-5)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Rarely checked with the team to offer help and support</td>
<td>• Checked with the team to offer some help and support</td>
<td>• Checked constantly with the team to offer help and support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Rarely checked work for quality</td>
<td>• Checked some work for quality</td>
<td>• Checked all work for quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Rarely encouraged or supported the team</td>
<td>• Was a supportive leader who helped guide the team</td>
<td>• Was a strong, encouraging leader who helped guide the team successfully</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Workload</th>
<th>Needs Improvement (0-1)</th>
<th>Satisfactory (2-3)</th>
<th>Excellent (4-5)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Often dominates, sits passively, or gets distracted.</td>
<td>• Sometimes dominates, sits passively, or gets distracted.</td>
<td>• Usually shares the workload equally, encourages others as needed, offers help as needed, and accepts direction from team members.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Usually follows role assignments.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Listening</th>
<th>Needs Improvement (0-1)</th>
<th>Satisfactory (2-3)</th>
<th>Excellent (4-5)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Talks most of the time, rarely allowing input from others</td>
<td>• Usually balances talking and listening, though tends a little more to one than the other</td>
<td>• Listens attentively to others’ ideas, asks questions when needed, offers ideas and encourages others’ input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Or –</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Rarely talks, requiring partner(s) to do most of the talking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Occasionally able to read and manage their own motivations and behaviours</td>
<td>• Able to read and manage their own motivations and behaviours.</td>
<td>• Able to read and manage their own and others’ emotions, motivations and behaviours.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Decision Making</th>
<th>Needs Improvement (0-1)</th>
<th>Satisfactory (2-3)</th>
<th>Excellent (4-5)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Dominates decision making</td>
<td>• Sometimes seeks to reach a consensus, but often goes with just a majority rule</td>
<td>• Seeks to reach a consensus for all decisions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Or –</td>
<td></td>
<td>• Uses appropriate conflict resolution skills as necessary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Allows others to dominate decision making</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdependence</td>
<td>Flexibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>----------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Rarely builds solutions or decisions from ideas of other team members.</td>
<td>• Has difficulty considering all others’ ideas, synthesizing, or compromising</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Sometimes builds solutions or decisions from ideas of other team members.</td>
<td>• Generally considers all ideas, sometimes seeks to synthesize, and sometimes makes compromises.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Frequently builds solutions or makes decisions synthesizing ideas from all team members</td>
<td>• Carefully and respectfully considers all ideas, seeks to synthesize, and compromises when needed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Gives some thought to similarities and differences of members’ ideas.</td>
<td>• Works to be part of the solution, not part of the problem.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments:**

**Overall**
21CLD Student Work Cover Sheet

Please complete one of these sheets for EACH student work artefact you submit.

1. Title of Learning Activity
   
   Doing Business in Birmingham

2. Did students work in groups to produce this student work product?

   X Yes  □ No

3. Did the student use technology for this activity?

   X Yes  □ No

4. If yes, please describe how this student used technology.

   This group created the Waste Prevention page, 
   http://doingbusinessinbirmingham.wikis.birmingham.k12.mi.us/Waste+Prevention. They 
   used Movie Maker and Photosynth to edit the photos and videos posted on this page. 
   They also contributed to the creation of the class wiki overall, including writing, designing 
   and editing the space.

5. Is there anything else about the way this student approached the activity that was not in 
   the instructions?

   Members of this group participated in the creation of the recruitment brochures, and the 
   class wiki.

   More specifically, the group worked with the local company, Tactical Allocation 
   Group, which they featured on their Waste Prevention page, 

   They highlight this business on the Honour Roll and use the commitments made by the 
   company as evidence for the 
   rating,  
   http://doingbusinessinbirmingham.wikis.birmingham.k12.mi.us/Tactical+Allocation+Group
1. Title of Learning Activity & Average Age of Students

**Title:** Design a Catapult  
**Average Age of Students:** 14 years

2. What did you hope your students would learn from this learning activity?

- Understand science terms such as fulcrum, effort, load and lever arm.  
- Build a scientific model and conduct an experiment that tests specific variables.  
- Consider how elements of design affect performance.

3. Did you have learning goals from more than one discipline (for example, literature and history, or science and math) for this learning activity?

No.

4. Were students required to work in pairs or as a group on any part of this learning activity?

- No  
- Working in groups was *optional*. Please describe below the work that students did together.  
  - Working in groups was *required*. Please describe below the work that students did together.

Students worked in groups to design and test the catapult, and to discuss their design improvements. Each student wrote a separate report to turn in for grading.

5. Were students allowed to work with technology (ICT) such as computers or digital cameras for any part of this learning activity? Please describe.

- No technology was used for this learning activity.  
- Students *could* use technology for this activity  
- Students were *required* to use technology for this activity
They used it for writing results of the experiments and making suggestions for future changes.

6. **What criteria did you use to judge the quality of students’ work on this learning activity? Were students aware of the criteria in advance of completing the learning activity?**

   I graded students on the completeness of their experimental trials (4 redesigns, 3 tests each), their drawings, and the comprehensiveness of their analysis/final report. Written rubric not available.

7. **How long did the learning activity take?**
   - [ ] a. Completed in a single class period
   - [ ] b. Completed in 2-4 days
   - [X] c. Required one week or more to complete

8. **What verbal instructions did you give to students?**

   Before students began designing, the entire class discussed what students would learn from this activity and how it fit with the unit about motion that they had just completed. We talked about what a catapult is and how changes in the design can change the distance an object will travel when launched. We discussed possible designs, and groups had some time to look up samples on the internet. I gave them instructions for their first model, and provided the materials they would use. Next they created their models and ran their tests.

   Before they started work, I told students what I expected from them and showed them the rubric for their grade. I explained that they had to carefully track their design changes, as well as log the results of the experiments.

9. **Is there any other information you would like to include to help another educator using this learning activity be successful?**

   Students love this assignment, and it gets them thinking and learning without them even realizing how much science is involved!
Design a Catapult

Each group must build a catapult, test it to see how far it makes the load fly, and then create new catapult designs that will make it fly even farther. Your group will be graded on how far your catapult can launch the ball, and on your explanations of the science of how a catapult works.

**Step 1:** Follow the pattern to create a catapult similar to the one shown in the picture.

![Catapult Image]

**Step 2:** At a launching station, test your catapult 3 times. Measure how far your object travelled by measuring from the tape to the spot where your object originally landed. Measure in centimetres and record the results below. Calculate the average measurement for the three launch attempts.

<table>
<thead>
<tr>
<th></th>
<th>Launch #1</th>
<th>Launch #2</th>
<th>Launch #3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Step 3:** Redesign your catapult so that your object will travel even further. Build and test 4 redesigns before deciding which one is the best. Record measurement results of each design below.

<table>
<thead>
<tr>
<th></th>
<th>Launch #1</th>
<th>Launch #2</th>
<th>Launch #3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redesign #1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Redesign #2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Redesign #3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Redesign #4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Draw a picture of your best catapult design.

Label the fulcrum, effort, load, and lever arm on your drawing.
What class lever is it?

How far, on average, did your object travel?

Explain, in scientific terms, why the changes you made work. Use your science journal and the facts about levers to help you with this.
21CLD Student Work Cover Sheet

Please complete one of these sheets for EACH student work artefact you submit.

1. Title of Learning Activity

Design a Catapult – Sample 1

2. Did students work in groups to produce this student work product?

• Yes

• No (they worked in groups but completed worksheets individually)

3. Did the student make choices about using technology for this activity?

• Yes

• No

4. If yes, please describe the choices that this student made.

The student decided to type up her responses and use the computer to draw the diagram of the catapult.

5. Is there anything else about the way this student approached the activity that was not in the instructions?
Design a Catapult

Each group must build a catapult, test it to see how far it makes the load fly, and then create new catapult designs that will make it fly even farther.

Step 1: Follow the pattern to create a catapult similar to the one shown in the picture.

![Catapult Image]

Step 2: At a launching station, test your catapult 3 times. Measure how far your object travelled by measuring from the tape to the spot where your object originally landed. Measure in centimetres and record below. Calculate the average measurement for the three launch attempts.

<table>
<thead>
<tr>
<th>Launch Measurement</th>
<th>Launch #1</th>
<th>Launch #2</th>
<th>Launch #3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>cm</td>
<td>167 cm</td>
<td>184 cm</td>
<td>210 cm</td>
<td>187 cm</td>
</tr>
</tbody>
</table>

Step 3: Redesign your catapult so that your object will travel even further. To do this you must decide what materials you’ll need and get them from the back table. Build and test 4 redesigns before deciding which one is the best. Record measurement results of each design below.

<table>
<thead>
<tr>
<th>Redesign #1</th>
<th>Launch #1</th>
<th>Launch #2</th>
<th>Launch #3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>cm</td>
<td>300 cm</td>
<td>320 cm</td>
<td>332 cm</td>
<td>317 cm</td>
</tr>
</tbody>
</table>
Draw a picture of your best catapult design.

Label the fulcrum, effort, load, and lever arm on your drawing.

What class lever is it? **Class 1**

How far, on average, did your object travel? **317 cm**

Explain, in scientific terms, why the changes you made work. Use your science journal and the facts about levers to help you with this.

**Making the load far away from the fulcrum is bad, so we made it closer. We made the design so it was opposite of the original design. From our information in our journals, it says we would have improved our design if the load was even closer to the fulcrum. It kept at a balance at an angle that made the load fly higher. Before, it made the thing making the effort need more strength.**
21CLD Student Work Cover Sheet

*Please complete one of these sheets for EACH student work artefact you submit.*

1. Title of Learning Activity

   Design a Catapult – Sample 2

2. Did students work in groups to produce this student work product?

   • Yes  
   • No (they worked in groups but completed worksheets individually)

3. Did the student make choices about using technology for this activity?

   • Yes  
   • No

4. If yes, please describe the choices that this student made.

5. Is there anything else about the way this student approached the activity that was not in the instructions?

   This student used examples of other catapults to help inform her design for the assignment.

   This student did an excellent job of working with her group.
Design a Catapult

Each group must build a catapult, test it to see how far it makes the load fly, and then create new catapult designs that will make it fly even further.

**Step 1:** Follow the pattern to create a catapult similar to the one shown in the picture.

![Catapult Image](image)

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Launch #1</th>
<th>Launch #2</th>
<th>Launch #3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>135 cm</td>
<td>154 cm</td>
<td>147 cm</td>
<td>145 cm</td>
<td></td>
</tr>
</tbody>
</table>

**Step 3:** Redesign your catapult so that your object will travel even further. Build and test 4 redesigns before deciding which one is the best. Record measurement results of each design below.

<table>
<thead>
<tr>
<th>Redesign #1</th>
<th>Launch #1</th>
<th>Launch #2</th>
<th>Launch #3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>121 cm</td>
<td>128 cm</td>
<td>107 cm</td>
<td>119 cm</td>
<td></td>
</tr>
<tr>
<td>Redesign #2</td>
<td>210 cm</td>
<td>267 cm</td>
<td>268 cm</td>
<td>248 cm</td>
</tr>
<tr>
<td>Redesign #3</td>
<td>293 cm</td>
<td>317 cm</td>
<td>303 cm</td>
<td>304 cm</td>
</tr>
<tr>
<td>Redesign #4</td>
<td>336 cm</td>
<td>307 cm</td>
<td>322 cm</td>
<td>322 cm</td>
</tr>
</tbody>
</table>

Draw a picture of your best catapult design.
Label the fulcrum, effort, load and lever arm on your drawing.

What class lever is it? **Class One**

How far, on average, did your object travel? **322 cm**

Explain, in scientific terms, why the changes you made worked. Use your science journal and the facts about levers to help you with this.

When we first designed our catapult, we followed the sample catapult. Our load did not travel very far. To fix that, we thought about the formula (Speed = Distance/Time). We realized that in order to launch our load further, we had to increase the speed, so that the distance that the load travelled would increase as well.

We redesigned our catapult to try to gain speed by increasing the distance of the load from the fulcrum. We did this by increasing the length of the lever, thinking that a longer distance would increase the speed, but we found instead that this decreased the distance.

Next we decided that we needed the effort to help us apply more force to the load, so we added weight to the effort. We did this by adding duct tape to our effort, and making it heavier. By increasing the weight and maintaining the extra distance from the fulcrum to the load, we were able to increase the distance somewhat.

For our next try, we increased the weight of the effort more, by adding small weights and taping them to the effort with duct tape. The distance travelled by our load increased. We
realized that the two key factors influencing the distance that our load would travel were weight of effort and distance of the load from the fulcrum. Too much distance from the fulcrum, and we think the lever would have been too heavy to launch the load. Too much weight on the effort and the load would fly up too high, and not launch far enough to gain distance. We adjusted our design to play with the balance, moving the lever up and down the fulcrum a bit, and making the effort a bit more rounded and smooth. We had our best results with our last design, and we increased the average distance from our first design by 177 cm.
21CLD Learning Activity Cover Sheet

1. Title of Learning Activity & Average Age of Students

Title: Indigenous Cultures Assignment

Average Age of Students: 11 years

2. What did you hope your students would learn from this learning activity?

Students will learn to find information on the internet.

Students will learn about indigenous cultures and how they lived.

Students will practice their artistic/creative skills. Students will practice writing.

3. Did you have learning goals from more than one discipline (for example, literature and history, or science and math) for this learning activity?

This activity has learning goals in history and language arts.

The goal for history is for students to learn about indigenous cultures through internet research and describe how indigenous peoples lived.

For language arts, student will demonstrate their oral speaking abilities during their presentation.

4. Were students required to work in pairs or as a group on any part of this learning activity?

☐ No
☐ Working in groups was optional. Please describe below the work that students did together.
☐ Working in groups was required. Please describe below the work that students did together.

Students worked in groups to think about their region and to make their posters.
5. **Were students allowed to work with technology (ICT) such as computers or digital cameras for any part of this learning activity? Please describe.**

- No technology was used for this learning activity.
- Students could use technology for this activity
- Students were required to use technology for this activity

Students needed computers to help them search for information.

6. **What criteria did you use to judge the quality of students' work on this learning activity? Were students aware of the criteria in advance of completing the learning activity?**

I had a rubric scale for every aspect: the completeness of their descriptions of indigenous cultures, the group work, and the individual presentation.

7. **How long did the learning activity take?**

- a. Completed in a single class period
- b. Completed in 2-4 days
- c. Required one week or more to complete

8. **What verbal instructions did you give to students?**

I will grade you on accuracy and how well you work as a team. I expect you to be hard working and to use your time wisely. If you think you’re done, you can always add more details.
**Indigenous Cultures Assignment:**

You will work in groups of six. Within your group, you will select a region of the world (such as South America, the Pacific Islands, or Africa).

**Day 1:**

In your group, think together about what you already know about this region of the world. Then decide: if you were planning to visit this region, what do you think you should bring with you?

**Days 2-3:**

Looking at the lists on the whiteboard, each student in the group will select a different indigenous culture in your region.

Individually, use the internet to research your indigenous culture and the area where the people live. You have 3 kinds of information you need to find:

1) What are the features of the land and the climate the people live in?

2) What type of house or dwelling do the people use? 3) What kind of dress is typical for the people?

**Day 4:**

Make drawings of the land, the houses, and the style of dress of the people you are studying. Then make your drawings come to life by decorating them with the materials available in the art bin. Write a short paragraph about land, houses and dress.

**Day 5:**

Together with your group mates, find a map of your region on the internet. Put all your drawings on a poster board, together with the map. Draw a line from each drawing to the part of the region that it is from.

**Day 6:**

Each person in the group will present for 2-3 minutes on their chosen indigenous culture.
21CLD Student Work Cover Sheet

Please complete one of these sheets for EACH student work artefact you submit.

1. Title of Learning Activity

Indigenous Cultures – Marshall Islands

2. Did students work in groups to produce this student work product?
   • Yes  • No

3. Did the student make choices about using technology for this activity?
   • Yes  • No

4. If yes, please describe the choices that this student made.

The student chose which internet sites she used to find facts about the people she chose to study.

5. Is there anything else about the way this student approached the activity that was not in the instructions?


Indigenous Cultures—Individual Contribution

Marshall Islands

Clothes

House
Native Peoples of the Marshall Islands
by [Redacted]

Land and Climate
The Marshall Islands are in Micronesia in the Pacific Ocean. The whole country is made of lots of islands. Some of these islands are called atolls. They are in rings and are usually small. Some are too small for people to live on! Each group of atolls has a lagoon, which is like a lake. It is hot in the Marshall Islands because it is near the Equator. I researched people who live on the atolls.
Dress
People in the Marshall Islands wear loose clothing. I didn't find out more.

Houses
I found out that people's houses are small. They like to have solid roofs. People sleep on mats. People put their houses near the lagoon, not near the ocean. People put stones around their houses.

THE END
Native Peoples of the Marshall Islands

Land and Climate
The Marshall Islands are in Micronesia in the Pacific Ocean. The whole country is made of lots of islands. Some of these islands are called atolls. They are in rings and are usually small. Some are too small for people to live on! Each group of atolls has a lagoon, which is like a lake. It is hot in the Marshall Islands because it is near the equator. I researched people who live on the atolls.

Dress
People in the small islands in the Marshall Islands wear loose clothing. I didn’t find out more.

Houses
I found out that people’s houses are small. They like to have solid roofs. People sleep on mats. People put their houses near the lagoon, not near the ocean. People put stones around their houses.
21CLD Learning Activity Cover Sheet

Please fill in one of these sheets and attach it to EVERY learning activity you submit. Choose the learning activities that you feel provided the best learning opportunities for students.

1. Title of Learning Activity & Average Age of Students
   Title: Great Train Internet
   Average Age of Students: 14 years

2. What did you hope your students would learn from this learning activity?
   Students will conduct research about the Victorian era in England and report their findings. Students will learn about the historical background of a piece of literature. Students will create and deliver oral presentations to improve their public speaking skills.

3. Did you have learning goals from more than one discipline (for example, literature and history, or science and math) for this learning activity?
   Yes. Students had learning goals in both history and language arts.

   In history students will investigate and report their findings about the Victorian Era in England through searching on the internet. In language arts, students will analyse a piece of literature keeping in mind the historical context in which the literature is situated.

   As students integrate the information from their findings, they will need to interpret how the writing from the Victorian era reflects the ways that people from that time saw the world.
4. Were students required to work in pairs or as a group on any part of this learning activity?
   □ No
   □ Working in groups was optional. Please describe below the work that students did together.
   • Working in groups was required. Please describe below the work that students did together.
   Students did this project in pairs and they did their presentations together in pairs.

5. Were students allowed to work with technology (ICT) such as computers or digital cameras for any part of this learning activity? Please describe.
   □ No technology was used for this learning activity.
   □ Students could use technology for this activity
   • Students were required to use technology for this activity
   Students used the computer to research information online. I allowed them to use any software to create their presentations, e.g. PowerPoint, Movie Maker, AutoCollage.

6. What criteria did you use to judge the quality of students’ work on this learning activity? Were students aware of the criteria in advance of completing the learning activity?
   I used a public-speaking rubric which the students have seen many times. I also graded students on the content of the presentations – depth and accuracy of the information presented.

7. How long did the learning activity take?
   □ a. Completed in a single class period
   □ b. Completed in 2-4 days
   • c. Required one week or more to complete

8. What verbal instructions did you give to students?
   Refer to the rubric as you prepare your presentation. Use the internet, PowerPoint, Word, and other technology tools of your choice.
   
   As you read through the information, be thinking about how people in the Victorian era saw the world. Choose a topic which is interesting to you, but also shows what life was like in the Victorian era.
   
   I will give you five class days to complete all your work. Make sure you plan your time wisely, and assign yourselves homework if there are tasks you can do at home. Use your time in class to coordinate your work.
9. Is there any other information which you would like to include to help another educator using this learning activity to be successful?

PLEASE REMEMBER TO INCLUDE:

- Instructions for the learning activity
- Handouts and materials
- Grading rubrics
Before reading *The Great Train Robbery* by Michael Crichton, you will embark upon a “web quest” (internet research project) about Victorian England. This is the era in which the novel is set. This project will help you to know more about the Victorian Era, to help you interpret the story. You will learn how to do historical research, and you will present what you learned in a presentation to the class so you develop public speaking skills.

Working in pairs on the computers, your task is to research one of the topics below about Victorian England on sites like [www.thevictorianweb.com](http://www.thevictorianweb.com) or [www.victorianlondon.org](http://www.victorianlondon.org). Decide what is most important for the class to understand about the topic, and work together to develop a PowerPoint presentation to teach them those things. You and your partner are responsible for creating a workplan that will outline who is doing what tasks in order to do the research and create your presentations over the next five days.

You will present your topic to the class on Friday. Remember the qualities of public speaking: eye contact, volume, rate, pronunciation, poise and maturity. Your presentation will be rated on the public speaking rubric we have used since last year. You will also be rated on the content of your presentation, including the depth and the accuracy of the information in your report.

You will choose one of the following topics to research:

- Queen Victoria
- Science
- The Workhouse
- Child Labour
- the Role of Women
- the Gentleman
- Fashion
- Crime
- Education
- Art
- Religion
- Poor Laws
- Health
- Manners
- Literature

Remember that you can use what you have learned in other classes in doing this project. What important historical events happened in the Victorian Era (1837 to 1901)?
21CLD Student Work Cover Sheet

*Please complete one of these sheets for EACH student work artefact you submit.*

1. Title of Learning Activity

   Great Train Internet – Workhouse

2. Did students work in groups to produce this student work product?

   - Yes  
   - No

3. Did the student make choices about using technology for this activity?

   - Yes  
   - No

4. If yes, please describe the choices that this student made.

   The students chose how to use PowerPoint (not whether to use it) and also what sites to visit to do their research.

5. Is there anything else about the way this student approached the activity that was not in the instructions?

   SLIDES UPDATED
THE WORKHOUSE

The workhouses of Victorian England were set up as homes for poor families, widows, unwanted orphans, and tramps. They were also for people who could not work — old people, sick people, and the mentally ill. It was a cruel way for the government to deal with the poor people in the 19th Century.

LIFE INSIDE

Life was tough inside the workhouse.
- Buildings looked like prisons, and residents were called “inmates”
- It was cramped inside so there was a lot of illness and disease.
- New entrants were stripped, searched and washed.
- Everybody looked the same — cropped hair and wearing a prison-style uniform.
- Families torn apart as men, women and children were kept in separate areas.

HARD LABOR

Work was meant to keep everyone busy. Donors wanted inmates to “pay” for the “free living” they get in the workhouse.
- Inmates worked from 7:00 AM to 12:00 PM and then again from 1:00 to 6:00 PM
- It was difficult and hard. They were very tired.
- There was gardening, cooking, sewing, corn milling, sack making, oakum picking and stone crushing.

MEAL TIME

- Until 1842, all meals were taken in silence.
- Inmates had to use their fingers to eat.
- Meals were kept dull, predictable, and tasteless

DISCIPLINE

- Fighting and riots often broke out.
- Masters and matrons were mean and cruel.
- Whipping was common.
- Punishments were done in public to teach a lesson to everyone.
21CLD Student Work Cover Sheet

Please complete one of these sheets for EACH student work artefact you submit.

1. Title of Learning Activity

Great Train Internet – Victorians

2. Did students work in groups to produce this student work product?

• Yes  • No

3. Did the student make choices about using technology for this activity?

• Yes  • No

4. If yes, please describe the choices that this student made.

These students visited the websites I gave them to find their information.

5. Is there anything else about the way this student approached the activity that was not in the instructions?
Victorian England

English Class
January 8, 2006

Religion

- Victorian England was a deeply religious country. A great number of people were habitual church-goers, at least once or maybe twice every Sunday. The Bible was frequently and widely read by people of every class.

Education

- Education in nineteenth-century was not equal—not between the sexes or the classes. Gentlemen would be educated at home by a governess or tutor until they were old enough to attend a school. Women's education was taken. There were boarding schools.

Literature & Science

- Literature played an important role in the Victorian England era. There were many great authors from this era. British scientist had Charles Darwin, who laid the foundation of modern evolutionary theory.

Child Labor

- Child labor in Victorian England was crucial. Children were chained, belted, harnessed like dogs, and saturated with wet, and more than half-naked while crawling on their hands and knees, dragging their heavy loads behind them.

Men...Women...Children...

- The father was the head of the household. He was always obeyed by all without question.
- The mother would often spend their time planning dinner parties, visiting their dressmaker, or calling on friends.
- The children in a middle class family saw very little of their parents and would spend most of their time in the nursery, and would be brought up by their nanny.
Servants

- All households except the very poorest had servants to do their day to day work. The cook and butler were the most important.
21CLD Learning Activity Cover Sheet

Please fill in one of these sheets and attach it to EVERY learning activity you submit. Choose the learning activities that you feel provided the best learning opportunities for students.

Title of Learning Activity & Average Age of Students

Title: Falklands War

Average Age of Students: 14 years

1. What did you hope your students would learn from this learning activity?
I wanted students to learn about the war and the larger issues surrounding it so that they could think critically and form opinions, using methods that historians use.

It was also important for them to learn to compare and evaluate a variety of news sources.

I wanted students to make a class wiki, to learn how to present information for a broader audience than the educator or their classmates. By creating and launching the wiki for use by students in other countries, they will be thinking about users that have different needs than their own.

2. Did you have learning goals from more than one discipline (for example, literature and history, or science and math) for this learning activity?
Yes. Students are learning how to research and report like historians. They are also learning how to create a webpage to be part of a class wiki, where they can present their findings to a broad audience.

3. Were students required to work in pairs or as a group on any part of this learning activity?

☐ No

☐ Working in groups was optional. Please describe below the work that students did together.

☐ Working in groups was required. Please describe below the work that students did together.
Students worked in groups to discuss the questions about the war, and then students worked in groups to do research their topics. Each group created a webpage on their topics. All pages were integrated into one class wiki.

4. **Were students allowed to work with technology (ICT) such as computers or digital cameras for any part of this learning activity? Please describe.**
   - No technology was used for this learning activity.
   - Students could use technology for this activity
     - Students were required to use technology for this activity
   Students used the internet to find news articles and then they created a wiki in the final stage of the project. Some students used Skype to communicate with classrooms in the UK and Argentina.

5. **What criteria did you use to judge the quality of students’ work on this learning activity? Were students aware of the criteria in advance of completing the learning activity?**
   - I graded my students on whether they had completed each step of the assignment, and on the quality of their research and written work. For their group work, students were asked to comment on their team members’ contributions.

6. **How long did the learning activity take?**
   - a. Completed in a single class period
   - b. Completed in 2-4 days
   - c. Required one week or more to complete

7. **What were verbal instructions did you give to students?**
   - I encouraged them to talk to their parents and other people outside of school while working on the project.

8. **Is there any other information you would like to include to help another educator using this learning activity be successful?**
   - Throughout the year, several of our big projects culminate in a classroom wiki.

**PLEASE REMEMBER TO INCLUDE:**

- Instructions for the learning activity
- Handouts and materials
- Grading rubrics
The Falklands War

On April 2, 1982, Argentina invaded and occupied the Falklands Islands. Both the Argentine Republic and the United Kingdom claimed ownership over these islands. The Argentine Republic characterized the offensive as the re-occupation of its own territory, but the UK saw it as an invasion on a British dependent territory. Margaret Thatcher, the Prime Minister of the UK at the time, launched a naval task force to engage the Argentine forces and retake the islands. The war lasted 74 days, and finally ended with the surrender of Argentine troops on June 14, 1982.

Our class will conduct a research project about the Falklands War. We will gather information about the conflict between the UK and the Argentine Republic and debate the question of whether Argentina’s actions were justified. Once we have compiled our facts and developed our arguments, we will put everything in a wiki (an interactive website) that will be linked to the class homepage.

1) Whole Class Discussion

- What are we going to learn about?
- What do we know so far about doing historical research? About this conflict?
- How can we evaluate each group’s contribution to the wiki? What criteria can we use? (Create a rubric for this project.)
- Who is the audience for the website? (It would be particularly interesting to get feedback and postings from people in Argentina and the UK.) How can we reach people in that audience?
- What design features for the website should we agree on?

2) Background: Reading and Discussion

On the internet, locate four newspaper articles from different international sources that might have different perspectives about the conflict between the UK and the Argentine Republic in the Falklands. As you read the articles, think about the following questions. Discuss the questions in your group.

a. What was Margaret Thatcher’s strategy and what were her goals?

b. How was Prime Minister Thatcher’s plan received by British citizens? How was it received by the international community?

c. Do you think Prime Minister Thatcher’s plan was a good one? Why or why not?

3) Group Research
Each group will research a specific topic that relates to the war in the Falklands, and develop the information into a webpage. Consider including in your research a conversation with someone in our target audience. It is your responsibility to assign tasks within your groups. The topics are:

- The history of the Falklands
- Events leading to the war in the Falklands
- The effects of the war in the Falklands
- The effects of the war in the UK
- Should the Argentine Republic have invaded the Falklands?
- Should the UK have retaliated?

4) As a group, build a webpage on your topic.

5) Ask another group to visit your webpage and review it based on the evaluation criteria we came up with as a class. If you contacted people in our target audience, you can also seek feedback from them.

6) All group pages will be integrated into one class wiki about the Falklands War. Make any changes to your webpage before integrating it into our class wiki.
21CLD Student Work Cover Sheet

*Please complete one of these sheets for EACH student work artefact you submit.*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Title of Learning Activity</td>
<td>Falklands War</td>
</tr>
<tr>
<td>2. Did students work in groups to produce this student work product?</td>
<td>Yes</td>
</tr>
<tr>
<td>3. Did the student make choices about using technology for this activity?</td>
<td>Yes</td>
</tr>
<tr>
<td>4. If yes, please describe the choices that this student made.</td>
<td>Students decided as a class what the website was going to look like. In their groups, students planned the use of images and text for their own pages.</td>
</tr>
<tr>
<td>5. Is there anything else about the way this student approached the activity that was not in the instructions?</td>
<td>This group of students emailed students in Argentina and solicited their comments, which the Argentinians posted on this group’s webpage.</td>
</tr>
</tbody>
</table>

Please go to http://falklands-class-wiki.wikispaces.com/
A screenshot of the homepage for the class wiki is below.

The screenshot below is the product of Group 6's work.

---

**Falklands Project**

**Should Argentina Have Invaded?**

**Group 6 Writeup**

Even if they lost, we think that Argentina should still invade Falklands because they were tired of Britain owning countries that don't belong to them. Britain discovered the island but they left it in 1774 because of the war with the rebels in America. Then Spain took over but they left also in 1811. That means that Argentina took it over in 1820. People from Argentina started living there. But then in 1833 Britain changed their minds because they wanted to use the islands as a strategy center for war. The history that we just wrote shows that Britain stole the island back. Because they stole it, and it is very far away from Britain and closer to Argentina they should have to give it back. But they didn't so Argentina should have invaded. Britain should not be allowed to be an Empire everywhere in the world.

---

**Discussion**

Dear visitors to the site: Please comment on our writeup by using the discussion button at the top.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Author</th>
<th>Replies</th>
<th>Views</th>
<th>Last Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>hola</td>
<td>ginnvai</td>
<td>0</td>
<td>1</td>
<td>just now by ginnvai</td>
</tr>
</tbody>
</table>

---

**hola**

**ginnvai** just now

Hello I am Javier of Argentina. You have interesting article, but I no agree because this is the decade of 1900, not 1800. People should no use weapons in modern times. Sorry for my english :)

---
Group 6 Write-up (The researcher typed this copy based on the student work on the wiki page above)

Even if they lost, we think that Argentina should still invade Falklands because they were tired of Britain owning countries that don't belong to them. Britain discovered the island but they left in 1774 because of the war with the rebels in America. Then Spain took over but they left also in 1811. That means that Argentina took it over in 1820. People from Argentina started living there. But then in 1833 Britain changed their minds because they wanted to use the islands as a strategy centre for war. The history that we just wrote shows that Britain stole the island back. Because they stole it, and it is very far away from Britain and closer to Argentina, Britain should have to give it back. But they didn't so Argentina should have invaded. Britain should not be allowed to be an Empire everywhere in the world.

Comment posted on the Group 6 page. (The researcher typed the comment posted on the webpage and corrected the English.)

Hello, my name is Javier from Argentina. You have an interesting opinion, but I don't agree because we are talking about the 1900s and not the 1800s. People should not use weapons in modern times.
21CLD Learning Activity Cover Sheet

1. **Title of Learning Activity & Average Age of Students**

<table>
<thead>
<tr>
<th>Title: School Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age of Students: 11</td>
</tr>
</tbody>
</table>

2. **What did you hope your students would learn from this learning activity?**

Students are learning how to write a persuasive essay. They are learning how to frame an argument about something they think is important. I want students to learn that writing has power, so we are mailing our letters to the school leader.

3. **Did you have learning goals from more than one discipline (for example, literature and history, or science and math) for this learning activity?**

No.

4. **Were students required to work in pairs or as a group on any part of this learning activity?**

- No
- □ Working in groups was optional. Please describe below the work that students did together.
- □ Working in groups was required. Please describe below the work that students did together.

No.

5. **Were students allowed to work with technology (ICT) such as computers or digital cameras for any part of this learning activity? Please describe.**

- No technology was used for this learning activity.
- □ Students could use technology for this activity
- □ Students were required to use technology for this activity

No technology was used for this learning activity.

6. **What criteria did you use to judge the quality of students’ work on this learning activity? Were students aware of the criteria in advance of completing the learning activity?**
I used the six point writing rubric to grade their letters. This rubric was given to students prior to them submitting work.

7. **How long did the learning activity take?**
   - □ a. Completed in a single class period
   - □ b. Completed in 2-4 days
   - □ c. Required one week or more to complete

8. **What verbal instructions did you give to students?**

   Think about your audience: make sure the reasons you describe for making the change you propose will be compelling to the school leader. Start by creating pre-writing notes to organize your thoughts. Check carefully to be sure your sentences are complete, and your spelling and punctuation are correct.

9. **Is there any other information you would like to include to help another educator using this learning activity be successful?**

   For Part 1, I provided a set of letters to the editor that have been published in the local newspaper. Students analysed the letters, but I did not collect their work. Rather, the whole class discussed the strengths and weaknesses of each sample and came up with a list of the most important features.

   I ask students to use the six point rubrics to score their own work before I give them my score. I’m helping them to understand how the six points are applied, and how they can improve their own writing.
School Change: What Are Your Ideas?

PART 1. Analysing

Compare any two (2) sample letters from the set I provided. Does each letter convince you?

List the strengths and weaknesses of each. Try to develop two principles of good persuasive writing based on your analysis. Be prepared to share your answers during our class brainstorm.

PART 2. Letter Writing

The school leader is looking for ways to improve our school, without increasing cost. He has asked our class for ideas.

Choose something about the school that you would like to change, and figure out what you could say to the school leader to persuade him to make the change you want. Write a letter to the school leader explaining the change and giving three reasons to make that change. Write neatly and be careful with spelling and punctuation because we will give the letters to him so he can consider our ideas when he decides what to do.

Process:

1. Decide on a change you would like to make.

2. Generate reasons why the change you want would benefit the school.

3. Decide which 3 reasons would be most likely to persuade the school leader to do what you want.

4. Write a persuasive letter to the school leader using the principles of persuasive writing we generated as a class. You should devote one paragraph to each of your three reasons.
21CLD Student Work Cover Sheet

*Please complete one of these sheets for EACH student work artefact you submit.*

1. Title of Learning Activity

2. Did students work in groups to produce this student work product?
   • Yes  • No

3. Did the student make choices about using technology for this activity?
   • Yes  • No

4. If yes, please describe the choices that this student made.

5. Is there anything else about the way this student approached the activity that was not in the instructions?

---

Our school is located in Chicago's inner city, where gang violence and crime are prevalent. Safe passage to and from school is an issue, especially for these younger students. Some high school kids have victimized the younger ones on the streets.
Dear Ms. [Redacted],

I think school should get out an hour earlier, because it would give us more time for homework, study, chores in the house, and getting out late may be dangerous.

When we get out of school at 15:30, some bad teenagers are around and could beat us up. The first reason to get out early is that it’s dangerous. Another reason is that some of our parents start work at 15:30 and can’t pick us up.

The next reason for letting us out early is that kids don’t have time to do homework and studying.

The third reason is that many children have chores to do around the house. The kids don’t have enough time to do the work.

In conclusion, I implore you to let school out an hour earlier. I think school is too long, and that we learn enough especially the people who want to learn. Please shorten the school day for the reasons that I have stated, we don’t have time for homework, we have chores, and it may be dangerous.

Sincerely,
Dear Ms. NAME OF PRINCIPAL,

I think school should get out an hour earlier, because it would give us more time for homework, study, chores in the house. And getting out late may be dangerous.

When we get out of school at 15:30 some bad teenagers are around and could beat us up. The first reason to get out early is that it’s dangerous. Another reason is that some of our parents start work at 15:30 and can't pick us up.

The next reason for letting us out early is that kids don't have time to do homework and studying.

The third reason is that many children have chores to do around the house. The kids don’t have enough time to do the work.

In conclusion, I implore you to let the school out an hour earlier. I think school is too long. And that we learn enough, especially the people who want to learn. Please shorten the school day for the three reasons that I have stated, we don’t have time for homework, we have chores, and it may be dangerous.

Sincerely,
NAME OF STUDENT
21CLD Learning Activity Cover Sheet

*Please fill in one of these sheets and attach it to EVERY learning activity you submit. Choose the learning activities that you feel provided the best learning opportunities for students.*

1. **Title of Learning Activity & Average Age of Students**
   
   **Title:** SCIENCE LAB #8 - MUNTING MUNGO (tiny mung bean)
   
   **Average Age of Students:** 11 years

2. **What did you hope your students would learn from this learning activity?**
   
   Students would learn to (a) conduct a simple experiment, (b) make and record observations, and (c) describe their results. They will do this experiment as preparation for our lesson on seed germination and the effects of liquids on the process.

3. **Did you have learning goals from more than one discipline (for example, literature and history, or science and math) for this learning activity?**
   
   No.

4. **Were students required to work in pairs or as a group on any part of this learning activity?**
   
   □ No
   
   □ Working in groups was *optional*. Please describe below the work that students did together.
   
   □ Working in groups was *required*. Please describe below the work that students did together.

   **At the beginning of the school year, students choose a lab partner. All the experiments in our science lab are conducted with their partner. They submit one worksheet per pair – like they did in this experiment.**
5. Were students allowed to work with technology (ICT) such as computers or digital cameras for any part of this learning activity? Please describe.

- No technology was used for this learning activity.
- Students could use technology for this activity
- Students were required to use technology for this activity

I allowed students to type their answers to the final worksheet that they submit so it is neater.

6. What criteria did you use to judge the quality of students’ work on this learning activity? Were students aware of the criteria in advance of completing the learning activity?

I checked to make sure that they completed the entire worksheet. I gave more credit for the completion of part B where they record their daily observations.

7. How long did the learning activity take?

- a. Completed in a single class period
- b. Completed in 2-4 days
- c. Required one week or more to complete

8. What verbal instructions did you give to students?

I reminded students that they should visit their stations every day to record their observations even if it is not a lab day.

9. Is there any other information you would like to include to help another educator using this learning activity be successful?

I let students choose their partners at the start of the school year so they will like working with them. It has been working well in the last 3 months, and they are used to conducting their experiments together. They know that I will not give them credit if only 1 of them is doing all the work.

PLEASE REMEMBER TO INCLUDE:

- Instructions for the learning activity
- Handouts and materials
- Grading rubrics
Science Lab #8 – Munting Mungo

Objective:
To observe how liquids affect the growth (germination) of the mung bean

Materials:
Mongo beans, plastic cups, tissue paper, marker, water, vinegar, ruler.

Procedure:
1. Brainstorm the similarities and differences between water and vinegar. Write the answers in your worksheet part A.

2. Set up your two growth stations.
   a. Take a plastic cup, 5 mung beans and tissue paper for each one.
   b. For the water station, dip 3 sheets of tissue paper in 3 tablespoons of water from the faucet. Put this at the bottom of the cup. Place the mung beans on top of the wet paper. Label the cup “water.” Write your group number also.
   c. For the vinegar station, dip 3 sheets of tissue paper in 3 tablespoons of vinegar. Put this at the bottom of the cup. Place the mung beans on top of the wet paper. Label the cup “vinegar.” Write your group number also.
   d. Put both stations side-by-side along the window of our lab room to make sure it gets enough sunlight.

3. Record your observations for the next 4 days. Write this on worksheet part B. If you see any growth, measure it using a ruler. Also check if the tissue paper is still moist. If it is dry, add a little water or vinegar. Add the same amount of liquid to each station.

4. At the end of Day 4, summarize what happened to the mung bean in each station. By Friday, submit your worksheet to your lab educator.
GROUP NUMBER: ______

STUDENT NAMES: _________________ + _________________

A. SIMILARITIES & DIFFERENCES OF WATER & VINEGAR

<table>
<thead>
<tr>
<th>WATER</th>
<th>VINEGAR</th>
</tr>
</thead>
</table>

B. OUR OBSERVATIONS

<table>
<thead>
<tr>
<th>WATER</th>
<th>VINEGAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td></td>
</tr>
<tr>
<td>Day 2</td>
<td></td>
</tr>
<tr>
<td>Day 3</td>
<td></td>
</tr>
</tbody>
</table>

C. SUMMARY
21CLD Student Work Cover Sheet

*Please complete one of these sheets for EACH student work artefact you submit.*

10. Title of Learning Activity

| SCIENCE LAB #8 – MUNTING MUNGO (tiny mung bean) |

11. Did students work in groups *to produce* this student work product?

- Yes  
- No

12. Did the student *use technology* for this activity?

- Yes  
- No

13. If yes, please describe how *this student* used technology.

| This student pair typed their answers in the worksheet that they submitted |

14. Is there anything else about the way *this student* approached the activity that was not in the instructions?

| No |

|   |
A. SIMILARITIES & DIFFERENCES OF WATER & VINEGAR

<table>
<thead>
<tr>
<th>WATER</th>
<th>VINEGAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>- No taste; no smell</td>
<td>- Tastes and smells sour</td>
</tr>
<tr>
<td>- Our mommies use it to cook</td>
<td>- Our mommies use it to cook</td>
</tr>
<tr>
<td>- We use it to take a bath and clean things</td>
<td>- We do not use it to take a bath. But I think my mommy uses it to clean</td>
</tr>
<tr>
<td>- Easy to spell</td>
<td>sometimes</td>
</tr>
<tr>
<td></td>
<td>doesn’t know how to spell it</td>
</tr>
</tbody>
</table>

B. OUR OBSERVATIONS

<table>
<thead>
<tr>
<th>DAY</th>
<th>WATER</th>
<th>VINEGAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There is a small hole in the seed; white stuff is peeking out but it is too small to measure</td>
<td>No Change</td>
</tr>
<tr>
<td>2</td>
<td>1 cm of white. We added 2 Tbsp water.</td>
<td>It’s stinky. We added 1 Tbsp vinegar.</td>
</tr>
<tr>
<td>3</td>
<td>3 cm of white. It’s getting dry. We added 2 Tbsp water.</td>
<td>No change. We think it’s dead. But we need to add 2 more Tbsp of vinegar because we are adding water to the other station.</td>
</tr>
<tr>
<td>4</td>
<td>6 cm of white</td>
<td>No change. It is dead.</td>
</tr>
</tbody>
</table>

C. SUMMARY

The munggo grew 6 cm in only 4 days. The munggo likes water because it grew longer when we added water. Celine says her grandma puts the munggo beans in water 2 days before she cooks chop suey so they have fresh bean sprouts! Her grandma cooks well.

The munggo did not grow in vinegar. The vinegar killed the other munggo station. Maybe it died from the bad smell. We would not like it if we had to swim in that bad smell for 4 days.

Like us, water helps the munggo grow.
### LA Examples Coding

#### Collaboration

<table>
<thead>
<tr>
<th>TITLE</th>
<th>code</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>House on Mango Street</td>
<td>1</td>
<td>Students work in pairs to give each other feedback, but there is no shared ownership of the task: one student still “owns” the poem that the other student is helping to improve.</td>
</tr>
<tr>
<td>Olympics Site Selection</td>
<td>4</td>
<td>Students work together in groups to do this activity, and they share responsibility for the work. The students are making substantive decisions together that require negotiation: in particular, the “seismologist,” “volcanologist,” and “geologist” must integrate what they learned to reach a group decision about which country to recommend. Information from each group member is required to make their letter to the IOC complete.</td>
</tr>
<tr>
<td>Doing Business in Birmingham</td>
<td>4</td>
<td>Students work together in groups, and share responsibility for their work. The students make substantive decisions together throughout the project (e.g., to plan their visit to the businesses, or negotiate which of the evidence collected can best illustrate key ideas about sustainability on the class wiki). Each student also assumes a specific role (e.g., photographer, communications manager) that is essential for the team to complete its work together.</td>
</tr>
<tr>
<td>TITLE</td>
<td>RATIONALE</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Indigenous Cultures</td>
<td>This activity required some knowledge construction on Day 1 when students used their prior knowledge of the region to decide what to bring with them. However, the main requirement of the activity is to find information on the Internet and paraphrase it without any requirement to interpret, analyse, synthesize, or evaluate the information they found.</td>
<td></td>
</tr>
<tr>
<td>Design a Catapult</td>
<td>Students are learning about the law of levers. Their lab experiment requires them to complete multiple trials within the same context. They write down findings from each trial and draw conclusions, but they do not apply it to a different context.</td>
<td></td>
</tr>
<tr>
<td>House on Mango Street</td>
<td>Students synthesize their knowledge from multiple sources (novel, online research, and interviews). They analyse general principles about the immigrant experience then apply them when they write a poem about an element of the immigrant experience for a non-immigrant audience (which requires further analysis). The work is interdisciplinary because it has learning goals in history and language arts.</td>
<td></td>
</tr>
</tbody>
</table>
## Self-Regulation

<table>
<thead>
<tr>
<th>TITLE</th>
<th>code</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design a Catapult</td>
<td>2</td>
<td>The students received the learning goals and associated grading criteria in advance, but they did not have the opportunity to plan their own work. The teacher provided detailed instructions.</td>
</tr>
<tr>
<td>Great Train Internet</td>
<td>3</td>
<td>Students received the grading rubric in advance and had to plan their own timeline for accomplishing the work. The activity did not provide students the opportunity to revise their work based on feedback.</td>
</tr>
<tr>
<td>Falklands War</td>
<td>4</td>
<td>The class discussed the learning goals and developed grading criteria on the first day. Students were required to plan their approach and assign roles among group members. Groups exchanged drafts of their webpages to collect feedback. Then, they integrated revisions before pages were compiled into the class wiki.</td>
</tr>
<tr>
<td>TITLE</td>
<td>code</td>
<td>RATIONALE</td>
</tr>
<tr>
<td>--------------------</td>
<td>------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Design a Catapult</td>
<td>0</td>
<td>Students investigate which catapult design makes the load fly farthest as an academic exercise. They are not solving a real-world problem with a particular audience.</td>
</tr>
<tr>
<td>House on Mango Street</td>
<td>3</td>
<td>Students work on two real-world problems. First, they conceptualize the immigrant experience by interviewing an immigrant in their community (in addition to reading the novel). Then they write a poem aimed at increasing awareness of people in their community. But they do not share the poem outside the classroom.</td>
</tr>
<tr>
<td>School Change</td>
<td>4</td>
<td>The main part of the activity was problem solving: students thought of ways to improve the school without adding costs, and ways to persuade the school leader that this would be a good decision. This was a real-world problem; they were making suggestions about a real school (their own). Finally, the students' letters were actually sent to an authentic audience—a school leader who would consider the students' ideas.</td>
</tr>
</tbody>
</table>
## Use of ICT for Learning

<table>
<thead>
<tr>
<th>TITLE</th>
<th>code</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Munting Munggo/ Tiny Mung Bean</td>
<td>1</td>
<td>Students typed the final worksheet that they submitted, but the ICT was not used to construct knowledge.</td>
</tr>
<tr>
<td>Great Train Internet</td>
<td>1</td>
<td>Students used ICT (websites and other computer resources) to learn about the Victorian era. They had to analyse the information found in order to decide what was most important to present to their classmates, so the activity counts as knowledge building. However, ICT was not pedagogically necessary because students could have built the same knowledge using books in a library or a print encyclopaedia.</td>
</tr>
<tr>
<td>Falklands War</td>
<td>3</td>
<td>The activity required students to use the Internet to collect and review multiple international sources of information about the Falklands War. Since this is a very specialized topic, it would have been difficult to access the content needed for knowledge construction without ICT use. Students created an interactive website to disseminate their learning to a specific audience.</td>
</tr>
</tbody>
</table>

## Skilful Communication

<table>
<thead>
<tr>
<th>TITLE</th>
<th>Code</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigenous Cultures</td>
<td>1</td>
<td>Coherent communication is required and students use a range of modes. They do not have to design their work for a particular audience.</td>
</tr>
<tr>
<td>Design a Catapult</td>
<td>1</td>
<td>The laboratory report requires coherent thinking and students use a range of modes of communication. There is no specified audience other than the teacher as assessor.</td>
</tr>
<tr>
<td>School Change</td>
<td>2</td>
<td>The letter requires coherent thinking and communication. They design this for a specific audience - the principal.</td>
</tr>
</tbody>
</table>
## Summary of LA Examples

<table>
<thead>
<tr>
<th>Title</th>
<th>AGE</th>
<th>Collaboration</th>
<th>Knowledge Construction</th>
<th>Self-Regulation</th>
<th>RWPSI</th>
<th>Use of ICT</th>
<th>Skilful Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Train Internet</td>
<td>14</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Indigenous Cultures</td>
<td>12</td>
<td>1</td>
<td></td>
<td>3</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>House on Mango Street</td>
<td>13</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Falklands War</td>
<td>14</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>School Change</td>
<td>11</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Erosional Landforms</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design a Catapult</td>
<td>14</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tree Word Scramble</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Sun E. Day</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olympics Site Selection</td>
<td>13</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Munting Munggo/ Tiny Mung Bean</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Doing business in Birmingham</td>
<td>11</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>