

Cultivate21 STEM Interdisciplinary PBL Template

Project Title:

Building Bridges

Project Developer(s):

Jescia Hopper and Kerri Westgard

Targeted Grade Level & Subject Area(s):

8th grade Global Studies and Art

Duration of the STEM PBL:

Six weeks, January-March.

Brief Explanation of the Project:

- After researching topics of American culture, immigration, African diaspora, and local current events regarding refugees, students will create a stop motion animation public service announcement that attempts to dispel myths and misinformation of refugee resettlement and create a welcoming environment for new Americans.

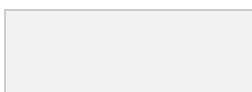
Driving Question(s) for the Project:

- How can we create a welcoming environment for refugees?
- How can you help others understand the experiences of refugees in our community?
- What is difficult for refugees when they arrive in America? What can we do to make their transition easier?
- What services or items do refugees need when they arrive in America? How can we provide or help them find those things?
- If you have refugee classmates, what can you do to make the school a more inviting place for them?
- If a family of refugees move to your neighborhood, what can you do to help make them feel welcome?

Standards for the Project (List all standards in full form assessed within the PBL):

ELA—

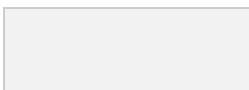
- CCSS.ELA-LITERACY.RH.6-8.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.



- CCSS.ELA-LITERACY.RH.6-8.4 Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.
- CCSS.ELA-LITERACY.RH.6-8.6 Identify aspects of a text that reveal an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts).
- CCSS.ELA-LITERACY.RH.6-8.7 Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.
- CCSS.ELA-LITERACY.RH.6-8.8 Distinguish among fact, opinion, and reasoned judgment in a text.
- CSS.ELA-LITERACY.RH.6-8.10 By the end of grade 8, read and comprehend history/social studies texts in the grades 6-8 text complexity band independently and proficiently.

Geography—

- 8.1.1.1 Exhibit civic skills, including participating in civic discussion on issues in the contemporary world, demonstrating respect for the opinions of people or groups who have different perspectives, and reaching consensus.
- 8.3.1.1.1 Obtain and analyze geographic information from a variety of print and electronic sources to investigate places or answer specific geographic questions; provide rationale for its use.
- 8.3.1.1.2 Create and use various kinds of maps, including overlaying thematic maps, of places in the world; incorporate the “TODALSS” map basics, as well as points, lines and colored areas to display spatial information.
- 8.3.1.2.1 Formulate questions about topics in geography; pose possible answers; use geospatial technology to analyze problems and make decisions within a spatial context.
- 8.3.2.3.1 Use appropriate geographic tools to analyze and explain the distribution of physical and human characteristics of places.
- 8.3.3.5.1 Describe the locations of human populations and the cultural characteristics of the United States and Canada
- 8.3.3.5.7 Describe the locations of human populations and the cultural characteristics of Africa South of the Sahara, including the causes and effects of the demographic transition since 1945.
- 8.3.3.6.7 Describe how the physical and environmental features of Africa South of the Sahara affect human activity and settlement.
- 8.3.3.7.1 Describe independence and nationalist movements in Sub-Saharan Africa and Asia, including India's independence movement.



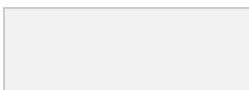
- 8.4.3.14.2 Compare and contrast the development of diasporic communities throughout the world due to regional conflicts, changing international labor demands and environmental factors. (The New Global Era: 1989 to Present)
- 8.4.3.14.5 Assess the state of human rights around the world as described in the 1948 Universal Declaration of Human Rights. (The New Global Era: 1989 to Present)
- 8.4.3.14.7 Assess the influence of television, the Internet and other media on cultural identity
- 8.4.3.14.8 Describe how groups are reviving and maintaining their traditional cultures, identities and distinctiveness in the context of increasing globalization. (The New Global Era: 1989 to Present)

Art—

- **VA:Cr1.2.8a** - Collaboratively shape an artistic investigation of an aspect of present-day life using a contemporary practice of art and design.
- **VA:Cr2.1.8a** - Demonstrate willingness to experiment, innovate, and take risks to pursue ideas, forms, and meanings that emerge in the process of artmaking or designing.
- **VA:Cr2.2.8a** - Demonstrate awareness of practices, issues, and ethics of appropriation, fair use, copyright, open source, and creative commons as they apply to creating works of art and design.
- **VA:Cr2.3.8a** - Select, organize, and design images and words to make visually clear and compelling presentations.
- **VA:Pr5.1.8a** - Collaboratively prepare and present selected theme-based artwork for display, and formulate exhibition narratives for the viewer.
- **VA:Re7.2.8a** - Compare and contrast contexts and media in which viewers encounter images that influence ideas, emotions, and actions.
- **VA:Re8.1.8a** - Interpret art by analyzing how the interaction of subject matter, characteristics of form and structure, use of media, artmaking approaches, and relevant contextual information contributes to understanding messages or ideas and mood conveyed.
- **VA:Cn10.1.8a** - Make art collaboratively to reflect on and reinforce positive aspects of group identity.
- **VA:Cn11.1.8a** - Distinguish different ways art is used to represent, establish, reinforce, and reflect group identity.

Other—

ISTE: Knowledge Construction



- 3a Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.
- 3c Students curate information from digital sources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.
- 3d Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

ISTE: Creative Communicator

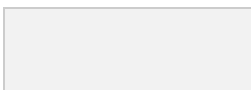
- 6a Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
- 6b Students create original works or responsibly repurpose or remix digital resources into new creations.
- 6c Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.
- 6d Students publish or present content that customizes the message and medium for their intended audiences.

ISTE: Global Collaborator

- 7c Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
- 7d Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.

Assessment Plan (Write out the various ways that you will be assessing student learning throughout the STEM PBL. Remember to use multiple forms of assessment—formative, summative and performance; self-assessment; peer feedback; teacher feedback.)

- Faces of America project - summative
- Lost Boys Quizlet- summative
- Vocabulary activity *It means What?* w.s.- formative, performance
- Peardeck vocabulary interactive - formative
- Peardeck map interactive - formative
- Lost Boys Test - summative
- God Grew Tired of Us video summary - summative
- Mapping Diaspora activity (geo tour) - formative, teacher feedback
- Mapping diaspora Schoology assignment - performance
- Displacement challenges discussion - peer and teacher feedback
- Lost Boys Cultural Identity w.s. - formative
- Global patterns of human migration - formative



- Brainstorm service-learning projects in community - peer feedback
- Reflection questions - self-assessment
- Early reflection with groups
- Mid-process peer critique - small groups
- Summative assessment using rubric and written self-reflection

21st Century Skills (List how you will use and assess each of the 4Cs during the PBL):

Critical Thinking—

*I conduct efficient research and select relevant information.

*I independently use information from multiple sources to build background knowledge.

Communication—

*I communicate using digital tools that are appropriate to task, audience and purpose. (SL.8.5)

*I communicate with learners from other cultures/perspectives, and demonstrate understanding of diverse perspectives.

Collaboration—

*I am active in my team's work, contributing significantly to creating the team's goals and deadlines.

*I respect that people have different ideas and opinions in my team. (SL.8.1c)

Creativity—

*I independently use information from multiple sources to build background knowledge.

Other Employability Skills—

- I can show empathy for others
- I am self-directed
- I am resourceful

Use The Engineering Design Process (EDP)

Define the Problem

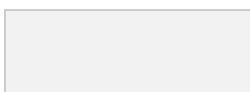
- What will your Entry Event/Hook/Launch be? Remember, this is what gets the kids excited about the project and the task.

- **Video montage-** <https://youtu.be/ill1gvSco60>

- What will your Entry Document be?

- Slideshow:

https://drive.google.com/open?id=1aQS7dr3ZSaNX8DktrbUyR_t9KZ_Si-KWDtw_fXJMT9I



- Guided Visualization:

https://drive.google.com/open?id=19aFf5Hg3m41PkHIDEfbqmgmQYerMD857k_vX_Gg8Mxg

- What is your Driving Question? Remember, everything that takes place in the project circles back to this question.
 - How can we create a welcoming environment for refugees?

Research the Problem (Include all mini-lessons/learning activities—with learning targets—to build content knowledge so that students can apply the knowledge, as well as any hands-on experiences or real-world experiences to engage students in inquiry. This step often takes several days/weeks, depending on the project.)

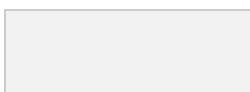
- *Extending the Link: Ger Kler - A Journey of Untold Strength: Karen refugees in Minnesota*
 - Students will identify reasons for population migration and its impact
- **Faces of America Unit** (Movement: Human Migration)
 - Students will be able to:
 - Articulate that the United States is a nation of immigrants, and that America's immigrant past is reflected in our language, culture, and traditions;
 - Identify their own countries of heritage on a world map (ingredients of me);
 - Explain motivations and rationale for immigration to the United States at various points through its history;
 - Provide specific examples of historic and contemporary immigrant experiences;
 - Compare and contrast the experiences of historic and contemporary immigrants to the United States
- **God Grew Tired of Us Case Study Unit** (diaspora, E. African geography)
 - Students will:
 - define vocabulary terms
 - explain who the Lost Boys of Sudan are and how they got that name
 - locate northern Sudan, southern Sudan, and the Dinka homeland on a world map
 - describe the experiences of the Lost Boys in Sudan and after they fled Sudan
 - map the routes the Lost Boys took on their migration journey from Sudan to the United States
 - map the routes the Lost Boys took within the United States
 - define the vocabulary term diaspora

- describe the challenges of displaced peoples
- describe American culture in their own words
- answer questions about the Lost Boys and cultural identity after watching videos
- make media-to-self connections
- prepare questions for guest speaker
- **Global Patterns of Human Migration: Lesson**-Introduce PBL (entry event)
 - Students will:
 - describe current patterns of migration across the globe
 - create their own map of human migration patterns
 - predict future patterns
 - Identify and investigate refugee populations in local region
 - Identify issues surrounding refugees: public opinion vs. personal experience
 - Greencard Voices Video activity and Clouds over Sidra VR experience
- Stop motion introduction: playlist
(<https://www.youtube.com/playlist?list=PLkZfUvn0NhSKVULeOROXzgeXT73iUivrF>)
- Social issues and art, group conversation
 - Students will:
 - discuss the use of metaphor in art as it relates to social issues
 - discuss how artists can promote positive change in society

Brainstorm Possible Solutions (Include your plan for how students will determine their solution to the problem.)

- Ask: Are you familiar with any political refugees in your own community (i.e. neighborhood, school, etc.)? If so, what reactions have those around you had to their experiences? If not, what do you think your community's reaction would be to incorporating the displaced? Compassionate? Fearful? Hesitant? Complete Google Forms survey "Brainstorm Session" - in Geography and Art. (use prompts developed in Art).
- Get involved! Learn More! How can we create a welcoming environment for refugees?
 - Ask: In what ways do artists combat problems in society? How does art play a role in promoting empathy and understanding of marginalized communities?

Choose the Best Solution (How will you facilitate your students making their choice for the solution to the problem?)



- What message do you want to say? Students to focus on product to provide a hopeful story, not just a reflection of the negative experiences of refugees.
- Provide resources and materials with which to work
- Facilitate brainstorming activities with students who are stuck

Build a Model or Prototype (How will your students show what they know or have created to solve the problem? How much time and what resources will you need to allot for this step?)

- Students will create a 20-30 second (or longer) stop motion animation video that addresses the problem. They will have roughly two weeks to complete this project.
- Students may use any media to create their set and characters, use the app iMotion to film the video, and iMovie/Windows Movie Maker to edit.

Test Your Solution (How will your students determine if their solution is viable? What tools will you need for testing? How much time and what resources will you need to allot for this step?)

- Mid-process critique between groups, then group reflection on any necessary revisions (1 class period)

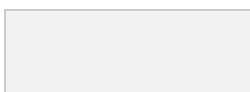
Redesign (Redesign floats in the process. It can sometimes be in the build or during the test. Always allow for several opportunities to get feedback from teachers/peers to make changes to the design so that the student's solution is more viable. What are your plans for facilitating redesign?)

- Redesign occurs throughout the process through informal discussion among group members, other classmates, and with teacher

Communicate the Solution/Culminating Event (In what way will your students share their solution to the problem? Oral presentation? Technical Writing? Model? Exhibition? How will you assess this communication? This could also be a culminating event of some sort where the students are able to share their learning in an authentic way, usually to the public.)

- Teams' stop motion videos will be presented to the 8th grade class. Videos will be judged by a local videographer, Sean Coffman. The top three videos will be played before each Keynote address at the [Building Bridges](#) conference in Fargo on March 28-29!

Reflect

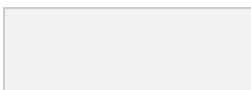


In what ways will you allow your students to engage in SELF-REFLECTION? What evaluation tool will you use? (What did they learn? How did they learn it? Why did they learn it?)

- Survey question: Thinking back to BEFORE we started studying about the Lost Boys to now, how has your view of refugees changed? How have you changed as a person?
- Discussion Question: How do you think you would adapt to life in a new country?

If a team project, in what ways will you allow team members to provide feedback to PEERS? What evaluation tool will you use?

- Informal critiques at end of project.





CLAYMATION!

MY TEAM NAME:

Director: _____

Photographer: _____

Background Artist: _____

Character Artist: _____

STEP ONE: PREPARE YOUR CONCEPT

1. Develop a **concept, setting and characters** as a group. Use the following worksheet to write and sketch your ideas. The story must contain at least 2 characters and have a beginning, middle and end.
2. Use **storyboard** sheets to plan out your shots - where will the characters be in the frame? What is the action? Will you zoom in? Pan out? How long does each action take?
3. Background artist will begin creating the **set**, using whatever materials are available (tempera, watercolor, cardboard, paper, random props, etc...). Either Director or Photographer will assist in this process.
4. Character artist will begin creating **characters**. Either Director or Photographer will assist in this process.
5. Photographer will download the application to be used for the project: “**iMotion HD**” for Apple products (iPhone/iPod/iPad), or “**Lapse It**” for Android products (Android Market/Google Play). Both are free applications, but if you want a higher quality video, you are welcome to purchase the “Pro” versions of any stop motion apps, or use a point-and-shoot camera and video-editing software (iMovie/Windows Movie Maker).

STEP TWO: BEGIN THE CLAYMATION PROCESS

1. Set up your shot: the entire set should fill the frame. Your phone/tablet/camera is set up on the tripod or block - make sure you mark where it is placed (on the table and on the block) so you can keep it in one position!
2. Take a photo. Incrementally move characters, taking a photo after each movement. Photographer - make sure Character artist's hands are out of the shot before you take the photo! Remember your movie will be set at 10 fps (10 photos = 1 second), so make very small movements in between each shot.
3. Check your progress periodically to make sure your animation is working the way you want it to. Slow down or speed up movements as necessary.
4. You must have at least 200 photos (equal to about 20 seconds of video at 10 fps)
5. When finished, export video (into photo folder, email or equivalent)

STEP THREE: FINISHING TOUCHES

1. Open your video in iMovie, Windows Movie Maker or YouTube video editor.
2. You can add titles, credits, voiceovers and music on these programs.
3. Put video on a flashdrive, CD, or email to Mrs. Hopper.



ABOVE AND BEYOND:

- Try doing a stop motion using your friends as your subjects. (You can even take out images to make it look like objects/people are hovering in the air!)
- Create a .gif with a looping image to use on social media.
- Use Legos, Post It notes, marbles or other items to create.
- Try using different shots (zoom in/zoom out/pan) to show mood and develop suspense

VOCABULARY:

Animate
Claymation
Concept
Setting
Armature
Storyboard
Frame
Frames Per Second (fps)
Sequence
Set
Foreground
Middle-ground
Background

Name: _____

Position: DIRECTOR

Duties:

- CREATE STORYBOARD WITH GROUP
- MAKE SURE ALL GROUP MEMBERS ARE DOING THEIR JOBS
- MAKE SURE STORYBOARD IS FOLLOWED
- WORK TOGETHER WITH ALL GROUP MEMBERS
- SETTLE ANY DISAGREEMENTS THAT MAY OCCUR

Name: _____

Position: PHOTOGRAPHER

Duties:

- CREATE STORYBOARD WITH GROUP
- FOLLOW STORYBOARD FOR CAMERA ANGLES
- SHOOT PHOTOS DURING SESSION
- WORK TOGETHER WITH ALL GROUP MEMBERS

Name: _____

Position: BACKGROUND ARTIST

Duties:

- WORK WITH GROUP TO DEVELOP AN IDEA FOR A BACKGROUND
- CREATE THE BACKGROUND AND PROPS
- MOVE THE BACKGROUND AND PROPS AS THE STORY DEVELOPS
- WORK TOGETHER WITH ALL GROUP MEMBERS

Name: _____

Position: CHARACTER ARTIST (1-2)

Duties:

- WORK WITH GROUP TO DEVELOP AN IDEA FOR CHARACTERS
- CREATE CHARACTERS
- MOVE CHARACTERS FOR EACH SHOT
- WORK TOGETHER WITH ALL GROUP MEMBERS

STOP-MOTION ANIMATION

Names: _____

Video Name: _____

PERSONAL INSIGHT/ PREPARATION	Advanced - 4 (Goes above and beyond stated criteria.)	Proficient - 3 (Achieved criteria; average.)	Partially Proficient - 2 (Minimum attempt to achieve criteria; needs more work.)	Novice - 1 (Criteria not met; little or no effort.)
Final work exhibits intention and unique concept	Characters, background and plot are unique and imaginative, different from all others. Title is attention-grabbing.	Characters, background and plot are mostly different from others, with few similarities. Title works with story.	Characters, background and plot are cliché or similar to others. Title is cliché or doesn't fit the plot.	Characters, background and/or plot are identical to other works. Identical or missing title.

MEDIA USE	Advanced - 4	Proficient - 3	Partially Proficient - 2	Novice - 1
Narrative - Animation process - Narrative	Thoroughly understands the animation process. At least 200 photos were taken. Understanding of the process allows for clear narrative.	Mostly understands the animation process. Close to 200 photos were taken. Understanding of the process allows for a mostly clear narrative.	Has trouble understanding the animation process. Less than 200 photos were taken. Narrative is disjointed and hard to follow.	No understanding of the animation process. Under 100 photos taken. No evidence of a narrative.
Use of Technology - Camera - Video editing	Outstanding. Camera shots are dynamic and consistent in focus and color. Video editing is smooth. Sound effects and music complement the plot and follow the action of the video.	Camera shots are mostly consistent with few changes in focus or color. Video has some sudden or jerky movements. Sound effects and music mostly fit with the video.	Camera shots are inconsistent with numerous changes in angle, focus and color. Video is jerky and inconsistent. Sound effects and music do not match the plot or action in the video.	Camera shots are poorly composed with many changes in angle, focus and color. Video does not flow together. Poor choice or no music added. Little to no effort apparent.
Setting & Character Creation - Foreground, middle-ground, background - Definition of characters	Exceptional. Background is original and very well-constructed. Foreground, middle-ground and background are apparent in design. Characters and their actions are well-defined, clean and unique.	Background is somewhat original and well-constructed. Foreground, middle-ground and background are apparent in design. Characters and their actions are mostly well-defined, clean and unique.	Background has some elements of originality. Some construction problems apparent. Difficulty understanding back-, middle- and foreground. Characters are not well-defined with inconsistencies in their construction and actions.	Little to no effort in background construction. No understanding of back-, middle- or foreground. Characters and their actions are unoriginal and not defined.

WORK PROCESS	Advanced - 4	Proficient - 3	Partially Proficient - 2	Novice - 1
Craftsmanship: - Neat, accurate, clean - Control of tools	Title and end credits are free of errors. Clay and set remain clean throughout filming. Exceptional use of tools and techniques for clay and set construction.	Title and end credits are free of errors. Clay and set remain mostly clean throughout filming. Good use of tools and techniques for clay and set construction.	Some errors in title and end credits. Clay and set get dirty or damaged during filming. Use of tools and techniques for clay and set construction need more work.	Multiple errors in title and end credits. Clay and set became damaged or unusable during filming. No effort shown during clay or set construction.
Teamwork: - Freely shares and accepts ideas and insight with others - Shares work with others equally	Exceptional collaborative skills. Each member shares the workload and contribute to the making of the video. Each member freely shares and accepts ideas with other members. Remains on task throughout entirety of lesson.	Good collaborative skills. Each member mostly shares the workload and contribute to the making of the video. Each member usually shares and accepts ideas with others. Remains on task for the majority of the lesson, with minor distractions.	Collaborative skills need more work. Some members do most of the work, leaving others out. Issues with compromising are apparent. Difficulty remaining on task. Easily distracted.	Little to no collaborative skills. Group does not work together. Inability to compromise, resulting in numerous arguments and little work completed. Consistently off task and distracted.