

**CODE/MOE/UOIT Makerspaces Project--Lesson Planning Template**

**School Board:**

**Grade(s): 8**

**Subject(s): Geography & Science**

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| **BIG IDEAS:** **Geography Grade 8:****Issues related to inequalities in global development and quality of life can have social, environmental, political, and/or economic implications.****Quality of life and economic development around the world are influenced by various factors.****Science Grade 8:****Systems are designed to optimize human and natural resources****Curriculum Expectations:****OVERALL:** **Geography Grade 8:****A1. Application: analyse some significant interrelationships between Earth’s physical features and processes and human settlement patterns, and some ways in which the physical environment and issues of sustainability may affect settlement in the future (FOCUS ON: Interrelationships)****A2. Inquiry: use the geographic inquiry process to investigate issues related to the interrelationship between human settlement and sustainability from a geographic perspective (FOCUS ON: Geographic Perspective; Interrelationships)****A3. Understanding Geographic Context: demonstrate an understanding of significant patterns and trends related to human settlement and of ways in which human settlement affects the environment (FOCUS ON: Patterns and Trends; Spatial Significance)****Science Grade 8:****assess the personal, social, and/or environmental impacts of a system, and evaluate improvements to a system and/or alternative ways of meeting the same needs;****SPECIFIC:** **Geography Grade 8:****A2.1 formulate questions to guide investigations into issues related to the interrelationship between human settlement and sustainability from a geographic perspective****A2.2 gather and organize data and information from a variety of sources and using various technologies to investigate issues related to the interrelationship between human settlement and sustainability from a geographic perspective**  **A3.4 identify and describe significant current trends in human settlement****A3.5 describe various ways in which human settlement has affected the environment****Science Grade 8:****3.9 identify social factors that influence the evolution of a system****3.7 explain ways in which mechanical systems produce heat, and describe ways to make these systems more efficient****3.8 describe systems that have improved the productivity of various industries** |
| **Learning Goals:**“We are learning to…” explore the livability of countries, more specifically China | **Success Criteria:** “We will be successful …” When students understand the necessity of energy and power requirements to make a location attractive to live in.When students understand the need and focus on industry and its impacts on the economy and environment in China.When students understand the necessity of fishing and its role in Chinese society.When students understand the need for reforestation in China.When students understand the importance of places of worship in China. When students understand the pollution in China, specifically open dumps and lack of recycling. |
| **Lesson Overview: :** Livability of China – lesson 6 – Grade 8 - Use the game (Sprite’s Quest) and 3-D goggles (watching videos of China) to explore the Livability of China. Almost all students are proficient at video games, so most students should be able to understand the game and be able to figure out the game with minimal guidance. Students will use explicit information, such as graphics of the game, backgrounds of the game and pop-up information in the game to infer about Livability in China. Students will also use 3-D Goggles to explore in real time what China looks like and what it would look like to visit the country. Hopefully, this real time experience will give the students an explicit idea about a country that none of them have physically experienced or visited.  |
| **Materials and Technology:** Use Reflector on the iPad to give a quick lesson on how the droplet moves, jumps and flies on the Smartboard. Talk about the reason that the students will be playing the game (Playing to Learn) and the geography curriculum expectations that they will learning. Students will have 3-D goggles to explore mainland China to gain a better understanding of appearance of the country, the population density of the country, the pollution of the country and economic activity in the country. The students will use Youtube videos that are available in 3-D to explore China.  |
| **Student Accommodations/Modifications:**  | **Lesson will be differentiated by:*** **Content, specifically:**
* **Process, specifically:**
* **Product, specifically:**
* **Environment, specifically:**
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| **MINDS ON: Getting Started** |
| During this phase, the teacher may: • activate students’ prior knowledge; • engage students by posing thought-provoking questions; • gather diagnostic and/or formative assessment data through observation and questioning; • discuss and clarify the task(s).  | During this phase, students may: • participate in discussions; • propose strategies; • question the teacher and their classmates; • make connections to and reflect on prior learning.  |
| **Describe how you will introduce the learning activity to your students.** Students will use Reflector on the iPad to give a quick lesson on how the droplet moves, jumps and flies on the Smartboard. I will then talk about the reason that the students will be playing the game (Playing to Learn) and the geography curriculum expectations that they will learning. I will then show the students a few apps that have videos of China and YouTube videos that the students can look at using their phones in the 3-D goggles. **What key questions will you ask?** * Livability, what is Livability? (a term used to determine the needs of a society and measures the experience that people have living in that place)
* What makes up Livability? What is the criteria?
	+ Range of practical transportation choices
	+ Availability of equitable and affordable housing
	+ Diversity of job opportunities
	+ Availability of cultural, recreational and events services
	+ Use and protection of the natural environment

Students will then relate the Thunder Bay example to China: the necessity of dams (power), need and focus on industry and its impacts on China (environment), necessity of fishing and its role in Chinese society, the need for reforestation in China, places of worship in China and pollution in China (more specifically open dumps).**How will you gather diagnostic or formative data about the students’ current levels of understanding?**Students will fill out a KWL chart prior to starting the assignment to identify prior knowledge of China, what is Livability, the economy of China and the pollution levels in China. **How will students be grouped? How will materials be distributed?** Students will be working individually, 3-D goggles will be distributed to each student and all students have access to an iPad with the Sprites Quest App. Each student will be able to record the information from the iPad on the graphic organizer provided.  |
| **ACTION: Working on it** |
| During this phase, the teacher may: • ask probing questions; • clarify misconceptions, as needed, by redirecting students through questioning; • answer students’ questions (but avoid providing a solution to the problem); • observe and assess; • encourage students to represent their thinking concretely and/or pictorially; • encourage students to clarify ideas and to pose questions to other students. | During this phase, students may: • represent their thinking (using numbers, pictures, words, manipulatives, actions, etc.); • participate actively in whole group, small group, or independent settings; • explain their thinking to the teacher and their classmates; • explore and develop strategies and concepts.  |
| **Describe the task(s) in which your students will be engaged.** Students will screenshot information that appears as the students gather stars. The stars are bonus lives that have facts. Each time a star is captured, information about China (facts about population, facts about pollution etc.) pops up. Students will screenshot the information and then at the end of the adventure in China, the students will organize the facts in the following graphic organizer.Focus on the StarsExplain the necessity of dams (power) in China .Why does China need to focus on industry and what are its impacts on the (environment)?Explain the necessity of fishing and its role in and importance in Chinese society. What factors indicate a need for reforestation in China? Explain the importance in places of worship in China. Is there a pollution issue in China (more specifically, open dumps)?**What misconceptions or difficulties do you think they might experience?** The students have to activate their schema about China, other than what they may have experienced while watching a video, movie or playing a realistic video game, so background knowledge will be an issue. Hopefully the 3-D goggles and videos will help with the lack of background knowledge about China for the students.**How will they demonstrate their understanding of the concept?**They will demonstrate their understanding of the concept of Livability in China by completing the graphic organizer above.**How will you gather your assessment data (e.g., checklist, anecdotal records)?**The assessment data will be collected for the next lesson when the students create, interpret and give feedback on a population pyramid they will create based on Chinese population data. Students will be able to provide feedback with a better schema of China after using 3-D goggles and playing the game Sprite’s Quest. **What extension activities will you provide?** Extension activities will be looking at the population of Thunder Bay (by using Statistics Canada) to create a population pyramid for the City.  |
| **CONSOLIDATION: Reflecting and Connecting** |
| During this phase, the teacher may: • bring students back together to share and analyse strategies; • encourage students to explain a variety of learning strategies; • ask students to defend their procedures and justify their answers; • clarify misunderstandings; • relate strategies and solutions to similar types of problems to help students generalize concepts; • summarize the discussion and emphasize key points or concepts.  | During this phase, students may: • share their findings; • use a variety of concrete, pictorial, and numerical representations to demonstrate their understandings; • justify and explain their thinking; • reflect on their learning. |
| **How will you select the individual students or groups of students who are to share their work with the class (i.e., to demonstrate a variety of strategies, to show different types of representations, to illustrate a key concept)?** The work will be handed in individually. **What key questions will you ask during the debriefing?** Explain the necessity of dams (power) in China .Why does China need to focus on industry and what are its impacts on the environment?Explain the necessity of Fishing and its role in and importance in Chinese society. What factors indicate a need for reforestation in China? Explain the importance of places of worship in China. Is there a pollution issue in China (more specifically, open dumps)? |

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| Level 4 | Level 3 | Level 2 | Level 1 | Comments |
| Using the Game to Find information |
| Students identify and gather information from all water droplets in Sprites Quest game. | Students identify and gather information from most water droplets in Sprites Quest game. | Students identify and gather information from some of the water droplets in Sprites Quest game. | Students identify and gather very little information from water droplets in Sprites Quest game.. |  |
| Questions are answered with Support from the Game |
| Responses are completed with numerous examples from Sprites Quest | Responses are completed with an appropriate number of examples from Sprites Quest | Responses are completed with a few examples from Sprites Quest | Responses do not include enough examples from Sprites Quest |  |
| Student shows knowledge of geographic terminology  |
| Students use examples from the game, and prior knowledge to show an advanced understanding of all geographic terminology | Students use examples from the game, and prior knowledge to show an understanding of all geographic terminology | Students use some examples from the game, and some prior knowledge to show an understanding of most geographic terminology. | Students use few examples from the game and limited prior knowledge to show an understanding of geographic terminology. |  |
| Understanding the impact of Economic, Social and Political Factors |
| Students show an advancedunderstanding of Economic, Social and Political Factors in China | Students show a good understanding of Economic, Social and Political Factors in China. | Students show some understanding of Economic, Social and Political Factors in China | Students show a limited understanding of Economic, Social and Political Factors in China |  |