Engage	Explore	Explain	Elaborate/Extend	Evaluate
The purpose for the ENGAGE stage is to pique student interest and get them personally involved in the lesson, while pre-assessing prior understanding.	The purpose for the EXPLORE stage is to get students involved in the topic; providing them with a chance to build their own understanding.	The purpose for the EXPLAIN stage is to provide students with an opportunity to communicate what they have learned so far and figure out what it means.	The purpose for the EXTEND stage is to allow students to use their new knowledge and continue to explore its implications.	The purpose for the EVALUATION stage is for both students and teachers to determine how much learning and understanding has taken place.
✓ What grade were you about to enter in September, 2005? On August 29, 2005, a devastating hurricane named Katrina made landfall in the Gulf of Mexico region of the United States. ✓ What areas of the United States sustained major damage from Hurricanes Katrina? Florida, Louisiana, Mississippi, Alabama ✓ Why are certain coastal areas more vulnerable to rising sea levels than others? The communities are built on land that is below sea-level.	1. Open Google Earth and locate New Orleans, Louisiana. Discuss Gulf Coast. 2. Visit the US Army Corp of Engineers National Levee Database and use the Find Levees Near Me for New Orleans' zip code 70113 within 100 miles. Make a note of levee rating column. 3. Review the resulting charts and click on the map icon to view leveed areas. 4. Read National Geographic Article on Levees. 5. View New Orleans "The Times-Picayune" Flash Flood Interactive Graphic of Hurricane Katrina.	1. What does it mean when a city is "below sea level"? - Sea level is the base level for measuring elevation and depth on earth. - "Local mean sea level" is the average height of the ocean's surface at a specific place, measured over a certain period of time. - "Mean" is the term used in statistics to denote the average of a group of numbers. 2. Review the NOAA website on sea-level trends. Click on Products button, choose water levels and examine data from one Gulf of Mexico State station. 3. Assessment: For chosen station: **Identify** and **graph** highest level data for 8/22/05 to 8/29/05 and 8/22/14 to 8/29/14. (Rubric: Spreadsheet Assignment)	1. Open Google Earth and locate Antarctica. 2. Review NY Times article Scientists Warn of Rising Oceans From Polar Melt 3. View video of West Antarctic Glacier Ice Flows. 4. Review this scientific article documenting the Antarctic Polar Melt paying special attention to the Conclusion paragraph	1. Code a webpage in HTML documenting your analysis and conclusions to answer the following question: "Is there a correlation between the irreversible melting of the Antarctic Ice Sheet, rising sea level trends and the devastating water damage incurred in the aftermath of Hurricane Katrina in 2005 and Hurricane Sandy in 2012?" The students will share their conclusions by presenting their webpage to the class. (Rubric: Webpage Assignment) 2. Visit the links to Urban Green-Blue Grids Website 3. Visit the design tool of possible solutions for urban environments to sustain citizens during significant weather events. 4. **Draw conclusions** about sea-levels and blog about the **design** of proposed solution. (Rubric: Blog Assignment)