

Combating Climate Change in Germany and the U.S.:
Comparing Approaches to a Global Issue
Scott Noet

Unit Focus - Addressing climate change in Germany and the U.S.

Big Concepts - Global Warming, Alternative Energy Sources, Human/Environment Interaction, International Cooperation

Essential Understanding - Climate change is a vital issue with global consequences that requires action to be taken in the governmental, corporate and individual arenas on a world-wide basis.

Essential Questions

- + What is climate change? (causes and effects)
- + What are some ways climate change is being addressed by the German and U.S. governments?
- + What actions have corporations and private citizens taken to combat climate change in Germany and U.S.?
- + How has/will climate change affect the planet and its inhabitants?
- + How have human activities can contribute to or limit climate change?

Related Minnesota Standards

Strand V, Sub-strand D:

The student will give examples that demonstrate how people are connected to each other and the environment.

Strand V, Sub-strand D:

The student will describe how humans influence the environment and in turn are influenced by it.

Strand VII, Sub-strand A:

The student will understand the importance of participation in civic life and demonstrate effective civic skills.

Short Scenario for Individual Assessment - You are a customer or citizen in Germany or the U.S. You will write a letter to either a government or corporation in Germany or the U.S. regarding climate their policies regarding climate change. In your letter you should demonstrate not only the importance of the issue through a brief reference to something you learned in your research, but also indicate your knowledge of the existing policy of the government or business. You should also include suggestions you have to improve the existing policies. Finally, ask for a response to your suggestions.

Directions/Criteria for Assignment - Students will write a letter to a national government or corporation. The letter should show that the student possess an understanding of how human activities affect the planet through climate change by including references to information gleaned through research. Moreover, the letter should also demonstrate that the student not only is aware of specific governmental/corporate environmental policies, but also understands them well enough to propose improvements to those policies. Finally, the letter should invite a response and perhaps further dialogue on the subject. Follow the rubric to determine student scores.

Directions for Exceeding the Standard - The student's completed letter is such a sparkling piece of erudite logic and reasoning that it compels the target government/corporation to implement the suggestions post haste. The student writes a follow-up letter either thanking the addressee for their response or inquiring into the receipt of the original letter.

Lesson 1

- ❖ *Activities* – Pre-instruction Cluster Webbing, Journaling, Creating Understanding Chart and Discussion
- ❖ *Materials Needed* – 11 x 14 paper, lines paper, construction paper, stapler, highlighters, markers, tape, seven large pieces of paper, handouts from appendix A

Possible Procedure

1. Pre-instruction - Prior knowledge activation and baseline setting: Administer Prior Knowledge Web (web template and evaluation in appendix A) – Students are instructed to cluster web the following prompt: Everything I know or understand about Climate Change. (supplies: 11 x 14 paper)

Basic Facts and Knowledge - Introduce the students to the concept of climate change as a global problem that is being addressed all over the world by governments, corporations and private citizens. Discuss issues and topics that the students may have included in their cluster webs. A good example could be a student whose family owns a hybrid car or perhaps a student is in charge of the family's recycling etc.

Possible Procedure Continued

2. Climate Change: Creating Understanding (appendix A) – After activating prior knowledge or schema with the webbing activity, students engage in an internet search of a variety of topics related to Climate Change. (Note: Categories on chart are fluid and should be changed to focus research as deemed appropriate by teacher.) Students are reminded of internet search procedures and are given the Creating Understanding Worksheet. Though the majority of students may have access to their own computer, however, they can be allowed/encouraged to help each other locate information. (See appendix A for hard copy examples of information from potential sites.)

3. Stand Up and Deliver: Creating Understanding small group and class discussion – Students are split into small groups as determined by teacher. They could be asked to randomly choose an M & M from a bowl where equal numbers of colors have been placed. Once each student has an M & M, they are asked to form a group with others with their same color. Each group is given highlighters and in a small group discussion students are asked to highlight those things on their Creating Understanding worksheets that they find interesting, important, or noteworthy. Groups then transfer their two most important/interesting points under each category to the large category sheets hung around the classroom. Students from each group will then read their entries and explain the group's reasoning behind their choices. (Supplies: highlighters, markers, tape, seven large pieces of paper with category headings, optional: M & M candies, bowl)

Instructional Strategies - Activating prior knowledge and setting a baseline for post-unit web. Provide access to the internet allowing students to collect current information on various aspects of climate change. Students cull through information and use Creating Understanding chart to write a short description of each topic and its relation to climate change.

Assessment - Students cluster webs will be evaluated for factual knowledge and connections made between the factual knowledge on a 1-10 scale (appendix A). Also, the students will complete the Creating Understanding chart. As a member of a small group the students will evaluate and prioritize information and defend their reasoning.

Lesson 2

- ❖ *Activities* – H.U.G. (Highlight, Underline and Gloss) content area reading strategy, Venn Diagrams
- ❖ *Materials Needed* – H.U.G. Strategy Basics Sheet, Articles on Climate Change, Venn Diagrams (All found in appendix B)

Basic Facts and Knowledge – Introduce students to the HUG reading strategy. Have the students practice it using articles that compare and contrast German and U.S. climate change policy and activities in the areas of government, business, and private citizens. Climate change is a global problem that is being addressed by both Germany and the U.S. in all three of the aforementioned areas.

Possible Procedure

1. HUG Content Reading Strategy - Distribute the Hug Basics Sheet (appendix B) and an article detailing German governmental policies and initiatives concerning climate change. (See internet resource page for examples of articles and web sites with more information.) Explain the strategy to the students and HUG the article as a class. Pair the students and have them HUG an article regarding U.S. governmental policies and initiatives. Optional article on U.S./German cooperation on climate change. Distribute the Venn diagram and complete as a class.
2. Continue the Hug strategy with articles and Venn diagrams (appendix B) concerning climate change policies and activities of business and private citizenry in Germany and the U.S. (Note: Though a number of corporations are listed on the internet resource page, there are, no doubt, local companies that could be used to make the topic a bit more proximate and relevant to students.)

Instructional Strategies – Provide students with articles on climate change policies in Germany the U.S. and strategies for not only actively reading the text and gleaning information, but also a method to graphically organize it to be recalled with ease in the future.

Assessment – Students will complete the Venn Diagrams using information taken from the text using the HUG strategy.

Lesson 3

- ❖ *Activities:* Class Brainstorming, Choosing a Letter Topic, Organizing a Letter, Typing a Letter
- ❖ *Materials Needed:* Completed Making Meaning Chart & Venn Diagrams, “Don’t Forget to Write” step by step letter organizer.

Basic Facts and Knowledge - Climate change is a topic that has/is being addressed by governments, corporations and citizens in both Germany and the U.S. The steps taken or not taken by the aforementioned entities to curb climate change will affect natural processes across the planet and could alter life as we now know it.

Possible Procedure

1. Recall with students, using the Making Meaning Chart and Venn Diagrams, the efforts by German and U.S. governments, corporations and private citizens to curb climate change.
2. Explain the letter writing assignment to the students and pass out the step by step sheet. Brainstorm ideas as a group (target audience, concerns, evidence, suggestions etc.). It is optional to allow students access to the internet to gather more information on policies, corporations etc.

Instructional Strategies - Provide students with the assignment and time to brainstorm as a class to flesh out ideas. Also, provide the step by step letter organizer sheet (appendix C) and perhaps internet access to further research policies or corporations and access to word-processing/printing equipment.

Assessment - Use the letter to a Government or Corporation to assess each student. The letter should not only include relevant information regarding human activities and climate change, but also demonstrate a clear understanding of the government/corporate policies being addressed. The letter should also offer suggestions of ways to improve the policy and invite a response from the chosen government or corporation. Follow rubric to determine student scores. (appendix C)

Post-instruction- current knowledge demonstration: data for baseline comparison -

Administer Post Unit Web (web template and evaluation in appendix A) – Students are instructed to cluster web the following prompt: Everything I know or understand about Climate Change. (Supplies: 11 x 14 paper)

Pre/Post Web Evaluation

(Appendix A)

Name _____

Hour _____

Pre-Unit Web

Factual Knowledge of Climate Change

1 2 3 4 5 6 7 8 9 10

Connections made between people and policies dealing with Climate Change

1 2 3 4 5 6 7 8 9 10

Post-Unit Web

Factual Knowledge of Climate Change

1 2 3 4 5 6 7 8 9 10

Connections made between people and policies dealing with Climate Change

1 2 3 4 5 6 7 8 9 10

HUG: MARKING YOUR TEXT

(APPENDIX B)

H= HIGHLIGHT MAIN IDEAS

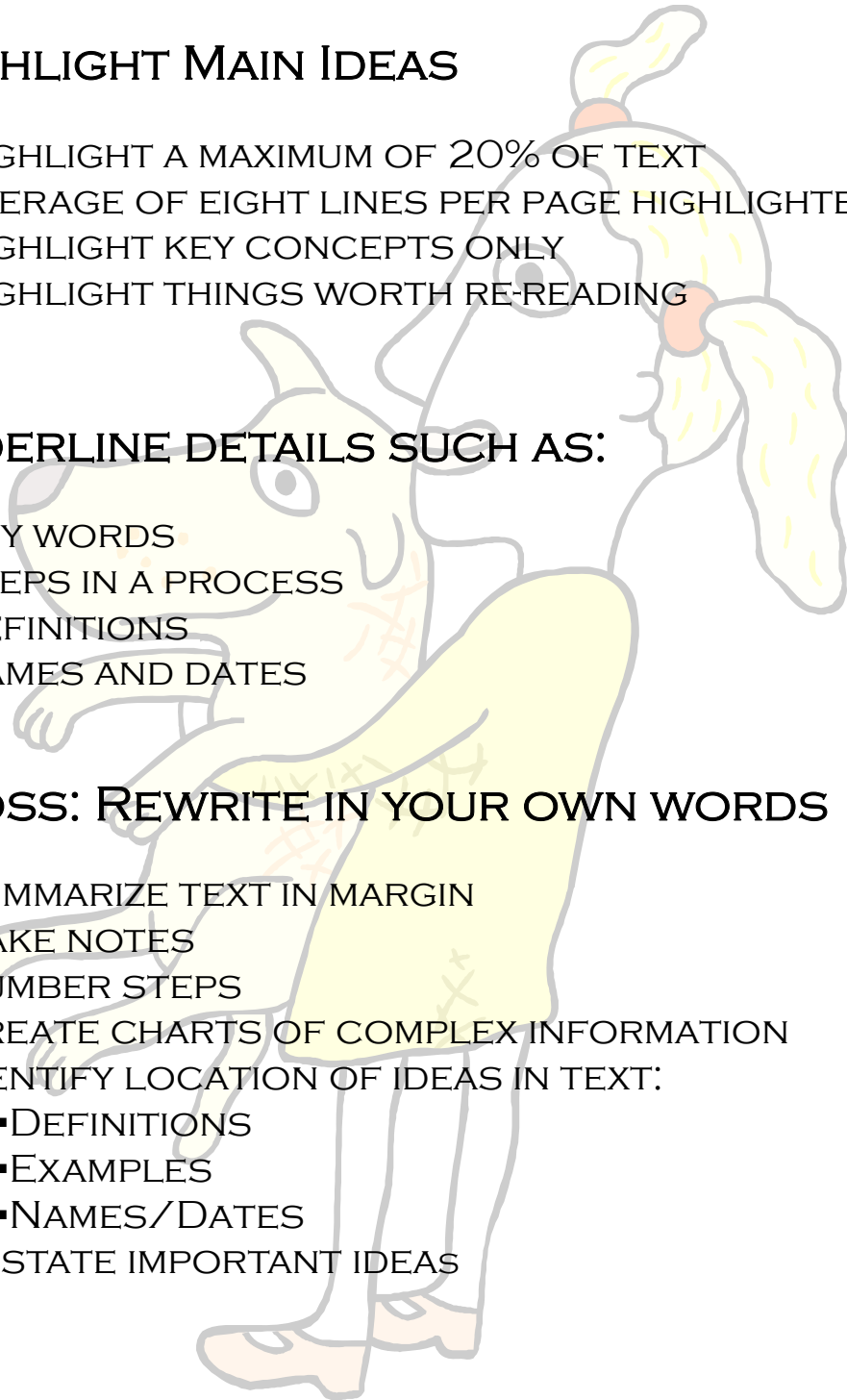
- ▶ HIGHLIGHT A MAXIMUM OF 20% OF TEXT
- ▶ AVERAGE OF EIGHT LINES PER PAGE HIGHLIGHTED
- ▶ HIGHLIGHT KEY CONCEPTS ONLY
- ▶ HIGHLIGHT THINGS WORTH RE-READING

U= UNDERLINE DETAILS SUCH AS:

- ▶ KEY WORDS
- ▶ STEPS IN A PROCESS
- ▶ DEFINITIONS
- ▶ NAMES AND DATES

G= GLOSS: REWRITE IN YOUR OWN WORDS

- ▶ SUMMARIZE TEXT IN MARGIN
- ▶ MAKE NOTES
- ▶ NUMBER STEPS
- ▶ CREATE CHARTS OF COMPLEX INFORMATION
- ▶ IDENTIFY LOCATION OF IDEAS IN TEXT:
 - DEFINITIONS
 - EXAMPLES
 - NAMES/DATES
- ▶ RESTATE IMPORTANT IDEAS



“Don’t Forget to Write.”
A step by step letter organizer
(Appendix C)

1. I have chosen to write to:

The German Government

The American Government

A German Company
Name _____

A U.S. Company
Name _____

2. The policy/issue I want to address: _____

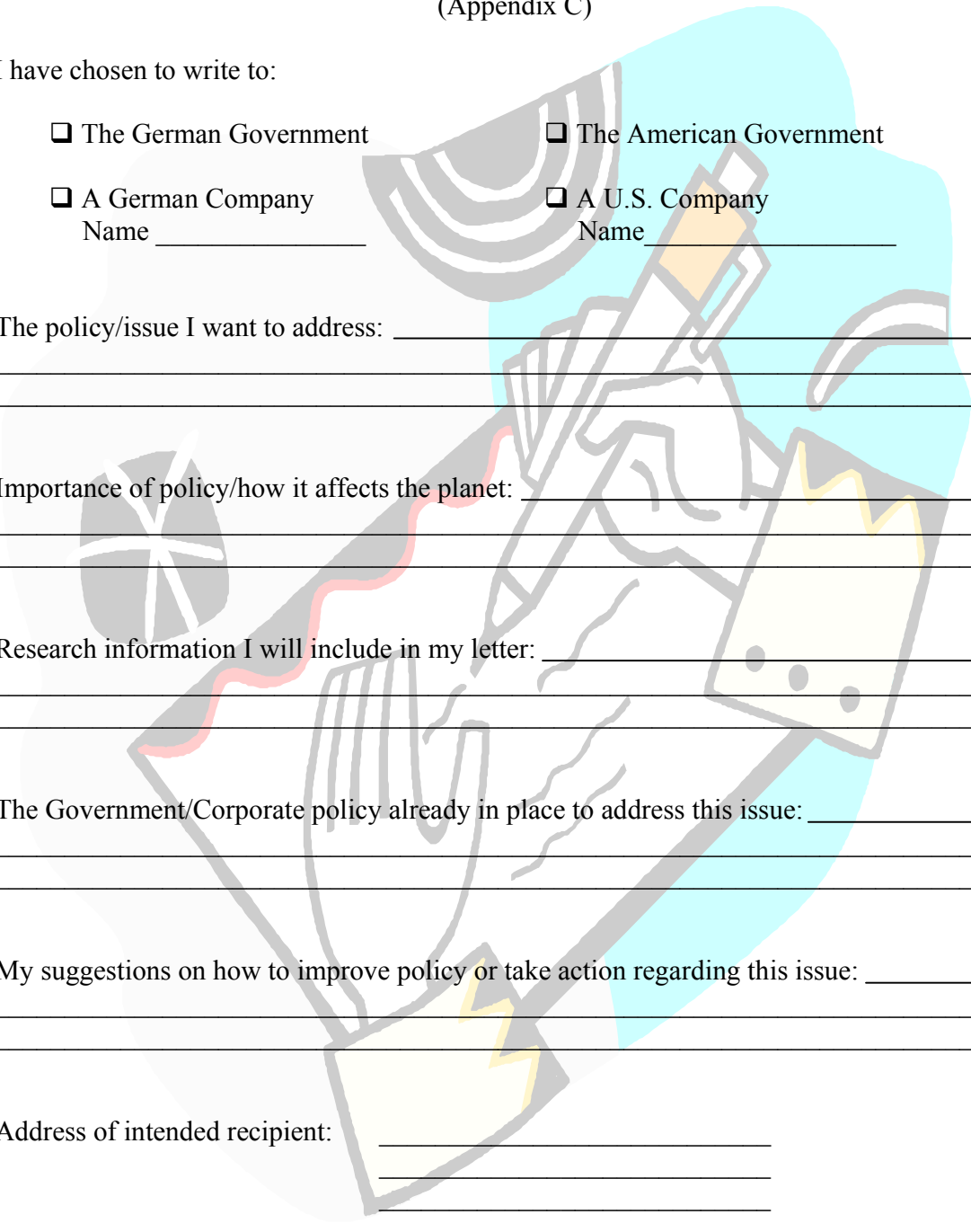
3. Importance of policy/how it affects the planet: _____

4. Research information I will include in my letter: _____

5. The Government/Corporate policy already in place to address this issue: _____

6. My suggestions on how to improve policy or take action regarding this issue: _____

7. Address of intended recipient: _____



Internet Resources

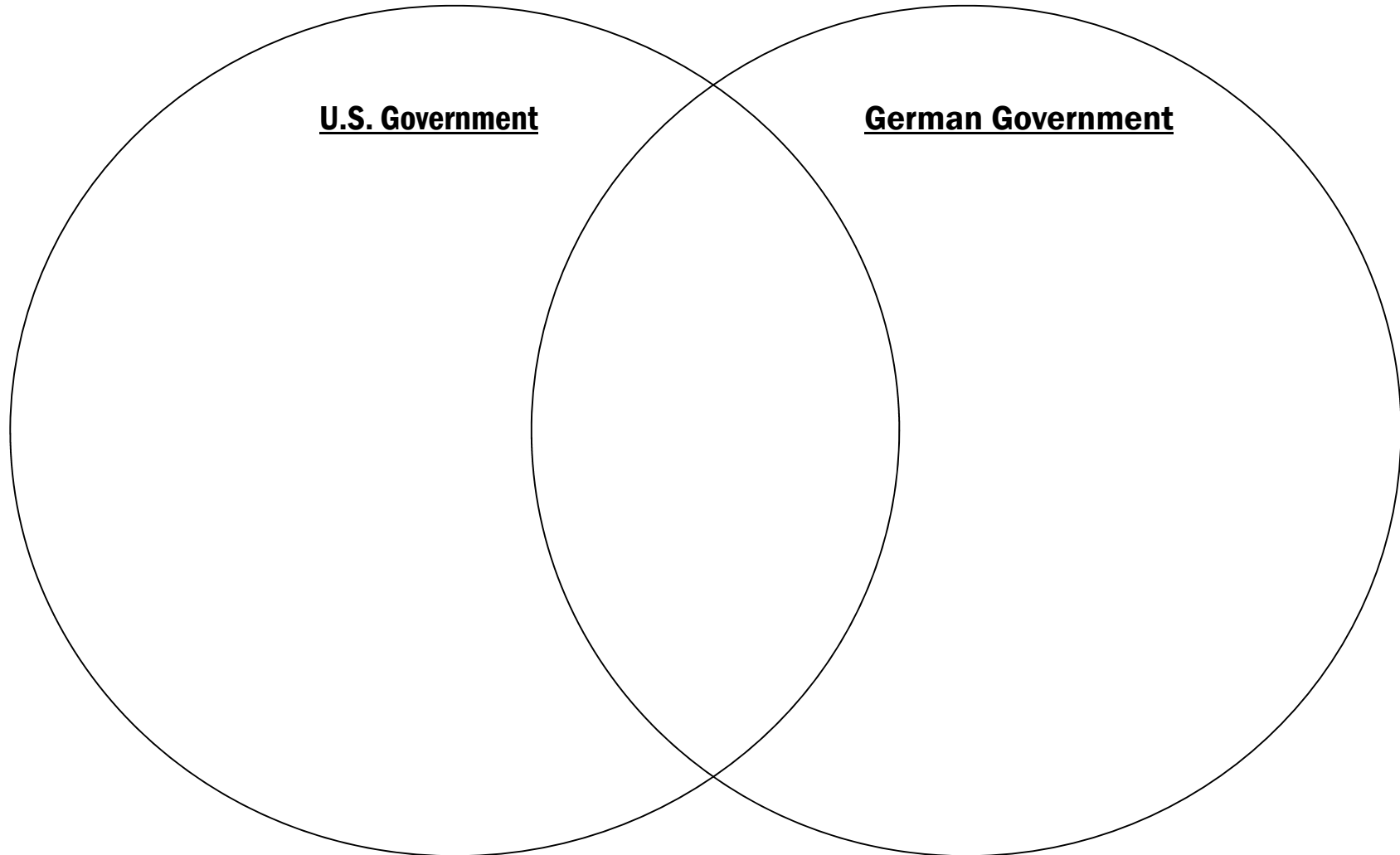
Sites dealing with climate change issues in Germany and the U.S. in English:

- ❖ www.awea.org - The American wind energy Association has a listing of all wind power projects in the U.S. by state.
- ❖ www.biodiesel.org - The official site of the National Bio-diesel Board has the basics on what bio-diesel is and how it is made etc.
- ❖ www.bmu.de - This is the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety site. You can click “English” and go to town.
- ❖ www.bsr.org - Businesses for Social Responsibility covers a number of German companies and their policies regarding global warming.
- ❖ www.dw-world.de - Deutsche Welle news service
- ❖ www.excelenergy.com - Power company that has a good number of educational activities related to energy conservation and efficiency.
- ❖ www.fresh-energy.org - Alternative energy site
- ❖ www.gruener-punkt.com - Information regarding recycling in Germany.
- ❖ www.howtogermany.com - Recycling in Germany
- ❖ www.kidwind.org - This site is dedicated to teaching about all aspects of wind power/farming.
- ❖ www.state.gov - U.S. State Department has a number of pages dedicated to U.S. climate change policy.
- ❖ www.theclimategroup.org - A collection of businesses and governmental entities dedicated to climate friendly operations with links to all of their homepages.
- ❖ www.umweltbundesamt.de - German Federal Environment Ministry site. Click on “English version”.
- ❖ www.usembassy.state.gov - How to on Recycling in Germany for Americans.
- ❖ www.whrc.org - Woods Hole Research Center has a number of data/science driven pages on causes and effects of climate change.

Corporations with Climate Change policies on the Internet

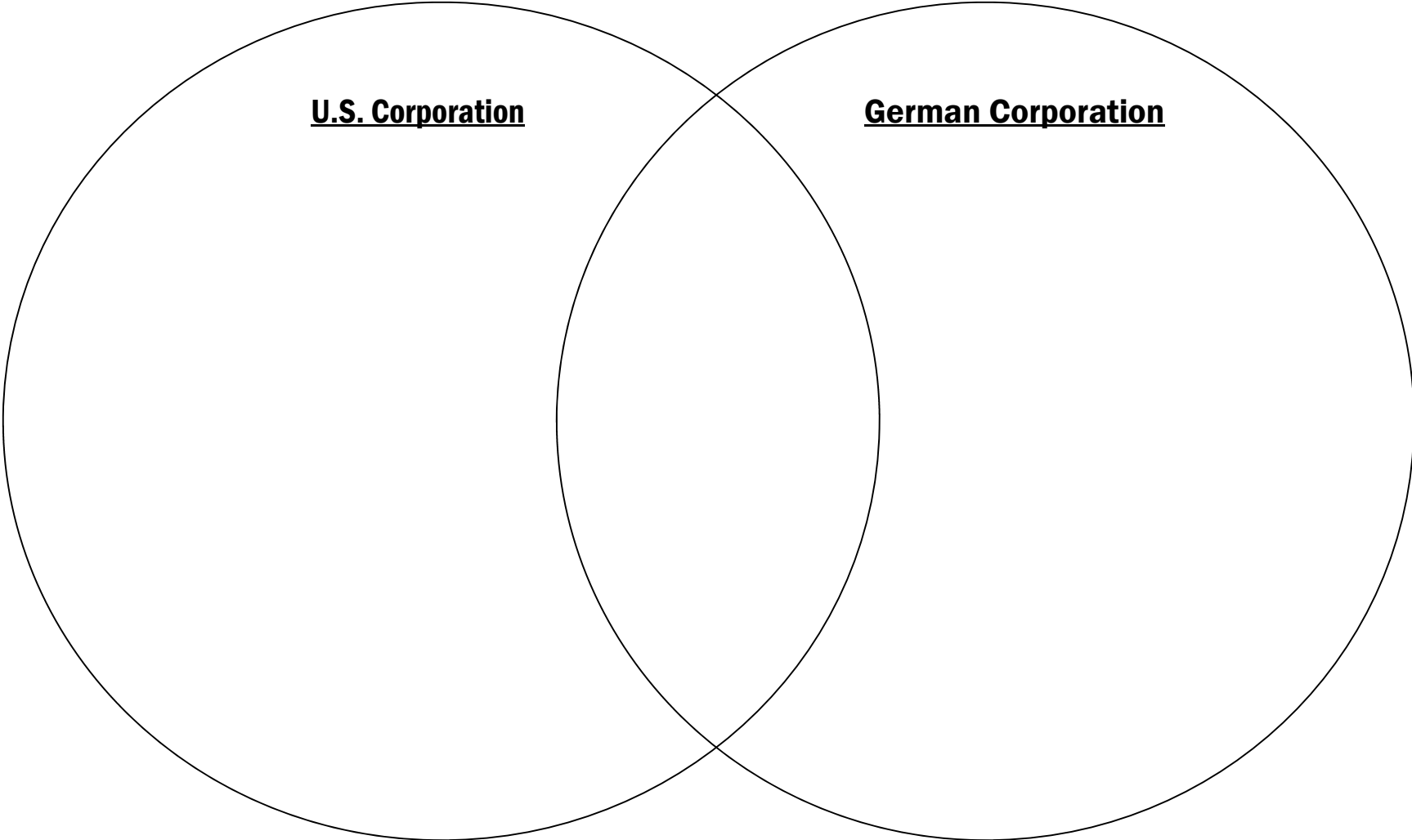
- ❖ www.about.puma.com - This is the Puma shoe corporation in Germany. Click on the document entitled “Momentum”.
- ❖ www.adidas-group.com - This is the German athletic company that includes not only Adidas, but also Reebok.
- ❖ www.apple.com/investor - U.S. based computer corporation most students know as the makers of the iPod.
- ❖ www.bmwgroup.com - The Munich based manufacturer of BMW and Mini Cooper.
- ❖ www.jnj.com - This U.S. based health products company houses its environmental information under “social responsibility”.
- ❖ www.nikebiz.com - All of the environment information concerning the Oregon based athletic corporation can be found here under “sustainability”.
- ❖ www.starbucks.com - This coffee colossus is very proud of its environmental policy and initiatives placing them in a pop-up on its main page.
- ❖ www.timberland.com - Environmental information about this Boston based shoe company can be found by clicking on “About Timberland”.
- ❖ www.3m.com - This U.S. based multi-national maker of post-it notes has information under “Corporate News”.
- ❖ www.ti.com - Texas Instruments, a name seen in most math classes, has pertinent information posted under “Company Information”.

Comparing National Climate Change Policies



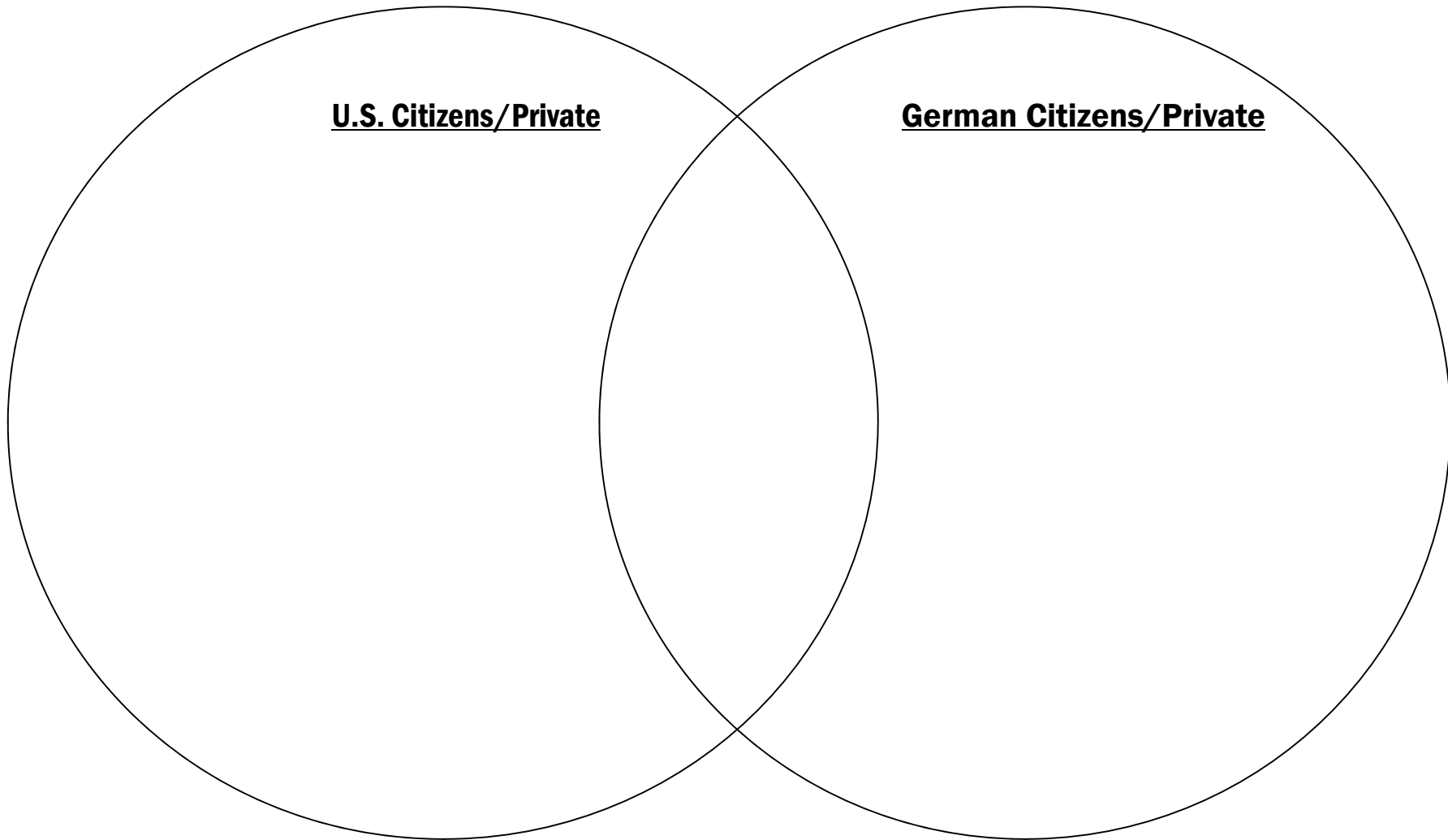
Venn Diagram 1

Comparing Corporate Climate Change Policies



Venn Diagram 2

Comparing Citizens/Private Climate Change Policies



Venn Diagram 3

Climate Change ~ Creating Understanding

We will be doing an internet search today using <GOOGLE.COM>. Investigate the topics below. Do a general search in GOOGLE by typing the topic in and searching. Jot down interesting or important things that you find out. You will be presenting your information to the class in a general discussion.

Greenhouse Effect	Solar Power	Kyoto Protocols	Polar Ice Cap/ Rising Sea Level	Wind Farming	Ethanol/E-85	CO2 Emissions

Climate Change ~ Creating Understanding

We will be doing an internet search today using <GOOGLE.COM>. Investigate the topics below. Do a general search in GOGGLE by typing the topic in and searching. Jot down interesting or important things that you find out. You will be presenting your information to the class in a general discussion.

German Climate Change Policy	Loyalty Oath	Odori Dance	Kabuki Theater	442 nd Combat Regiment	Executive Order 9066	Abbott & Costello Charlie Chaplin