

## Appendix H

### STSE Action Assignment

(Grade 11 Chemistry)

### ***Introduction***

Humans face many problems in ways that fields of **Science** and **Technology** relate to **Societies** and **Environments** (STSE). Many of these relate to chemistry. Oil-based paints, oven cleansers, household bug sprays and even shoe polish, for example, contain many possibly harmful chemicals.

In this assignment, you are asked to take action to try to overcome problems that your group finds about one kind of chemical substance or process. You also will be asked to back up your action(s) with research.



### ***Steps to STSE Action***

- a) Form a Team and Pick an Issue: Look at the list of chemistry-based STSE issues and get together with about 3 other students to form a team that has the goal of taking action to address the issue. Your team will meet several times in class and be expected to meet outside of class, too.
  
- b) Carry out Research: There are two kinds of 'research' your team must carry out:
  - 'Secondary Research': Learn more about your team's issue by getting information about it from people (e.g., scientists) who have done 'primary' research. You could use the internet, the library, local environment groups and clubs, etc. Divide up this work within your team.
  
  - 'Primary' Research: Learn more about your team's issue by getting information about it from a scientific investigation that your group designs, carries out, analyzes and reports. You could do an experiment, for example, where you test effects of increasing amounts of a chemical on plants or microbes (e.g., yeast). Or, you could do a study; where you collect data for two variables that are changing naturally - such as how students' ages seem to affect their use of a chemical.
  
- c) Study Your Class Notes: Review your notes in this course. These will have information that your team can use to make decisions about your action plan.

- d) Develop Your Team's Action Plan: From the beginning of your project, your team should be thinking ahead to the kind of action(s) you can take. Some ideas are found on the sheet, 'STSE Actions.' Your plan must include materials that are 'ready-to-use' [Note to teachers: You might edit this to require action(s)!]
  
- e) Defend Your Team's Action Plan: At the 'Action for the Planet' conference to be held at the end of the unit [Teachers: give the date], give a short presentation of your actions to others [teachers: you might specify how many] and defend your actions based on: i) your team's research and ii) what you learned in the chemistry unit.
  
- f) Give Good Feedback to Other Teams: During the 'Action for the Planet' conference, complete - in *detail* - a Peer Feedback form for [Teacher: state number of teams] teams presentations. Hand this to the teacher, who will copy it before giving it to the team to which it refers.
  
- g) Hand In Your Team's Action Plan: Hand in your team's action plan by [...Date...]. The plan should have the parts described in the 'STSE Action Plan Evaluation' sheet, attached.

**TEAM MEMBER NAMES:** \_\_\_\_\_

## STSE Action Assignment PEER FEEDBACK

Instructions

During and shortly after a group’s defense of its STSE Action plan, provide them with detailed feedback that will help them to improve the assignment. The criteria below are taken from the evaluation form for this assignment. Please consider the criteria at left, along with other points that arise from the presentation, in giving your feedback.

CRITERIA	COMMENTS & SUGGESTIONS
<p><b><i>Introduction</i></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The STSE issue is clearly described</li> <li><input type="checkbox"/> Possible causes of the issue are described</li> </ul>	
<p><b><i>STSE Action Plan</i></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Actions seem to address issue well</li> <li><input type="checkbox"/> Action materials are ‘ready-to-use’</li> <li><input type="checkbox"/> At least 3 kinds of actions are provided</li> </ul>	
<p><b><i>STSE Action Plan Analysis</i></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> They made good use of Primary Research</li> <li><input type="checkbox"/> They made good use of Secondary Research</li> <li><input type="checkbox"/> They made good use of class notes</li> </ul>	
<p><b><i>STSE Action Plan Defense</i></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> They spoke clearly</li> <li><input type="checkbox"/> They presented their information in an interesting way</li> <li><input type="checkbox"/> The speed of their presentation was appropriate</li> <li><input type="checkbox"/> The length of their presentation was about right</li> <li><input type="checkbox"/> They answered your questions well</li> </ul>	

Note: Please use the back of this sheet, if necessary, remembering to note the corresponding section name.

FEEDBACK GIVEN BY: \_\_\_\_\_  
(Team Member Names)

## STSE ACTION PLAN EVALUATION

Team Members' Names:

ITEMS	Marks/Comments/Suggestions	Totals
<p><b>Introduction</b></p> <p><input type="checkbox"/> Writing is clear and logical</p> <p><input type="checkbox"/> STSE issue is logical</p> <p><input type="checkbox"/> Possible causes of issue are logical</p> <p><input type="checkbox"/> Possible actions on issue are logical</p> <p><input type="checkbox"/> At least 200 words are used</p>	1—2—3—4----5 (X2)	/10
<p><b>STSE Action Plan</b></p> <p><input type="checkbox"/> Writing is clear and logical</p> <p><input type="checkbox"/> Action materials are 'ready-to-use'</p> <p><input type="checkbox"/> At least 3 action types are present</p> <p><input type="checkbox"/> Actions are based on STSE</p> <p><input type="checkbox"/> At least 800 words are used</p>	1—2—3—4----5 (X7)	/35
<p><b>STSE Action Plan Analysis</b></p> <p><input type="checkbox"/> Writing is clear and logical</p> <p><input type="checkbox"/> Secondary research is trustworthy</p> <p><input type="checkbox"/> Primary research is trustworthy</p> <p><input type="checkbox"/> Primary research is reported properly</p> <p><input type="checkbox"/> Use of class notes is effective</p> <p><input type="checkbox"/> At least 800 words are used</p>	1—2—3—4----5 (X7)	/35
<p><b>STSE Action Plan Defence</b></p> <p><input type="checkbox"/> Writing is clear and logical</p> <p><input type="checkbox"/> Oral presentation is clear and succinct</p> <p><input type="checkbox"/> Questions are answered well</p> <p><input type="checkbox"/> Defence takes about 20 minutes</p>	1—2—3—4----5 (X3)	/15
<p><b>Promptness of Assignment</b></p> <p><input type="checkbox"/> The assignment is handed in on time</p>	1—2—3—4----5 (X1)	/5
<b>TOTAL</b>		/100
<b>COURSE VALUE</b>		/50