



# Hazardous Chemicals Inventory Teacher Reference

## Hazardous Chemicals - Mercury

**These questions explore the presence of mercury in the school and its proper removal/replacement.**

	Inventory Questions	Ideas for School Improvement	Resources	Connections to KY Core Content 4.1
1	Where is mercury found in your school (e.g. thermometers, thermostats)?	Devise a plan to make your school mercury free. Share this plan with your principal.	<p>Identification of Mercury Devices (Mass)  <a href="http://www.newmoa.org/prevention/mercury/schools/checklist_new_revised.pdf">http://www.newmoa.org/prevention/mercury/schools/checklist_new_revised.pdf</a></p> <p>9 Steps to becoming Mercury Free (Michigan)  <a href="http://www.deq.state.mi.us/documents/deq-ead-p2-mercury-mercinschools.pdf">www.deq.state.mi.us/documents/deq-ead-p2-mercury-mercinschools.pdf</a></p> <p>Where is Mercury in Schools?  <a href="http://www.mercuryinschools.uwex.edu/schools/where.htm">www.mercuryinschools.uwex.edu/schools/where.htm</a></p> <p>Mercury Free Alternatives for Schools  <a href="http://www.epa.state.il.us/green-illinois/green-schools/mercury-free-alternatives-for-schools.pdf">www.epa.state.il.us/green-illinois/green-schools/mercury-free-alternatives-for-schools.pdf</a></p> <p>Kentucky Department for Public Health Instructions for School Officials Regarding Mercury Spills  <a href="http://www.eppc.ky.gov/NR/rdonlyres/99C7E06E-ADFA-4547-857F-FBEE20D4F4D1/0/MercurySpillLtrAttachment.doc">http://www.eppc.ky.gov/NR/rdonlyres/99C7E06E-ADFA-4547-857F-FBEE20D4F4D1/0/MercurySpillLtrAttachment.doc</a></p> <p>Sample purchasing resolution  <a href="http://www.newmoa.org/Newmoa/htdocs/prevention/mercury/schools/Resolution.pdf">http://www.newmoa.org/Newmoa/htdocs/prevention/mercury/schools/Resolution.pdf</a></p> <p>Solid Waste Coordinators by county.  <a href="http://www.waste.ky.gov/branches/rla/County+Solid+Waste+Coordinators.htm">http://www.waste.ky.gov/branches/rla/County+Solid+Waste+Coordinators.htm</a></p> <p>Low risk chemistry labs  <a href="http://www.cheminfonet.org/labook.htm">www.cheminfonet.org/labook.htm</a>  <a href="http://www.metrokc.gov/hazwaste/rehab">www.metrokc.gov/hazwaste/rehab</a></p> <p>Kentucky Department for Public Health Mercury Information Page  <a href="http://chfs.ky.gov/NR/rdonlyres/1B13F229-CF9A-4B23-8EF3-7E70ED93B11E/0/MercuryInformationPage.doc">http://chfs.ky.gov/NR/rdonlyres/1B13F229-CF9A-4B23-8EF3-7E70ED93B11E/0/MercuryInformationPage.doc</a></p> <p>Elemental mercury effects  <a href="http://www.epa.gov/mercury/effects.htm">http://www.epa.gov/mercury/effects.htm</a></p>	<p>Primary</p> <p>PL-EP-3.3.02            Students will identify the available health and safety agencies in a community that provide services:</p> <ul style="list-style-type: none"> <li>• Health department</li> <li>• Fire department</li> <li>• Sanitation</li> <li>• Police</li> <li>• Ambulance services</li> </ul> <p>DOK 1</p> <p>PL-EP-1.4.01            Students will identify safety practices (e.g., use of seatbelts/helmets/life vests) for dealing with a variety of health hazards (e.g., crossing the street, talking to strangers) while at school, home, and play. DOK 1</p> <p>PL-EP-1.4.02            Students will identify proper procedures to access emergency assistance (911). DOK 1</p> <p style="text-align: center;">Fourth Grade</p> <p>PL-04-1.4.01            Students will identify safety practices (e.g., use of seatbelts/helmets/life vests) for dealing with a variety of health hazards (e.g., crossing the street, talking to strangers, dealing with threatening situations) while at home, school, and play. DOK 1</p> <p>PL-04-1.4.02            Students will identify proper procedures (calling 911, Heimlich maneuver, stop, drop &amp; roll, apply pressure) for dealing with emergency situations (choking, bleeding, burns).</p> <p>PL-04-3.3.02            Students will identify and explain the available health and safety agencies in a community that provide services:</p> <ul style="list-style-type: none"> <li>• Health department</li> <li>• Fire department</li> <li>• Sanitation</li> <li>• Police</li> <li>• Ambulance services</li> </ul> <p>DOK 2</p>
2	How are items containing mercury stored (e.g. in locked cabinets, on shelves)?	Raise money to purchase a mercury spill kit and make sure at least two people in the school are trained to use it. Design and carry out an education program to make everyone in your school aware of the dangers of mercury.		
3	Does your school have a policy limiting the purchase of mercury-containing devices and encouraging mercury-free alternatives?			
4	Does your community have a mercury collection program to encourage proper disposal and handling of mercury-containing items (including "burned out" fluorescent bulbs)?	Write a mercury free purchasing resolution that includes recommendations for alternatives. Share it with the District School Board.		
5	How are the environmental and health effects of mercury pollution included in each grade's curriculum? Give examples from each grade or department in your school.	Work with your local health department and solid waste coordinator to design and carry out a mercury collection program for your community.		



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				<p>Fifth Grade</p> <p>PL-05-1.4.01 Students will describe safety practices (e.g., use of seatbelts/helmets/life vests) for dealing with a variety of health hazards (e.g., crossing the street, talking to strangers, dealing with threatening situations) while at home, school, and play. DOK 2</p> <p>PL-05-3.3.02 Students will identify and describe the available health and safety agencies in a community that provide services:</p> <ul style="list-style-type: none"> <li>• Health department</li> <li>• Fire department</li> <li>• Sanitation</li> <li>• Police</li> <li>• Ambulance services</li> </ul> <p style="text-align: right;">DOK 2</p> <p>PL-05-1.4.02 Students will identify proper procedures (calling 911, Heimlich maneuver, first aid) for dealing with emergency situations (choking, bleeding, burns, broken bones). DOK 1</p> <p style="text-align: center;">Sixth Grade</p> <p>PL-06-1.4.01 Students will describe safety practices (e.g., walking in opposite direction of violence, staying calm in dangerous situations) for dealing with a variety of health hazards (e.g., firearms, motorized vehicles, or potentially unsafe or threatening situations) encountered by adolescents. DOK 2</p> <p>PL-06-1.4.02 Students will identify basic first-aid procedures for responding to a variety of life-threatening emergencies (e.g., choking, broken bones, shock, poisons, burns, allergic reactions, bleeding). DOK 1</p> <p>PL-06-3.3.02 Students will identify and describe a range of resources and services provided by community agencies:</p> <ul style="list-style-type: none"> <li>• Public health department</li> <li>• Fire department</li> <li>• Police department</li> <li>• Family resource center</li> </ul> <p style="text-align: right;">DOK 2</p> <p style="text-align: center;">Seventh Grade</p> <p>PL-07-1.4.01 Students will explain how health hazards (e.g., firearms, motorized vehicles, or potentially unsafe or threatening situations) and safety practices (e.g., walking in opposite direction of violence, staying calm in dangerous situations, wearing protective gear, notifying appropriate authority) may influence their personal health. DOK 2</p>
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				<p>PL-07-3.3.02 Students will identify and describe resources and services provided by community agencies:</p> <ul style="list-style-type: none"><li>• Public health department</li><li>• Fire department</li><li>• Police department</li><li>• Family resource center</li></ul> <p>DOK 2</p> <p>PL-07-1.4.02 Students will describe basic first-aid procedures for responding to a variety of life-threatening emergencies (e.g., choking, broken bones, shock, poisons, burns, allergic reactions, bleeding). DOK 2</p> <p>SC-07-1.1.1 Students will:</p> <ul style="list-style-type: none"><li>• classify substances according to their chemical/reactive properties;</li><li>• infer real life applications for substances based on chemical/reactive properties.</li></ul> <p style="text-align: center;">Eighth Grade</p> <p>PL-08-1.4.01 Students will explain how health hazards (e.g., firearms, motorized vehicles, all terrain vehicles, personal water craft, potentially unsafe or threatening situations) and safety practices (e.g., walking in opposite direction of violence, staying calm in dangerous situations, wearing protective gear, notifying appropriate authority) may influence their personal health. DOK 3</p> <p>PL-08-1.4.02 Students will explain how basic first-aid procedures for responding to a variety of life-threatening emergencies (e.g., falls, drowning, choking, bleeding, shock, poisons, burns, temperature-related emergencies, allergic reactions, broken bones) can help reduce the severity of injuries and save lives. DOK 3</p> <p>PL-08-3.3.02 Students will identify and explain the importance of resources and services provided by community agencies and how these resources benefit the overall community.</p> <ul style="list-style-type: none"><li>• Public health department</li><li>• Fire department</li><li>• Police department</li><li>• Family resource center</li></ul> <p>DOK 2</p>
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				High School
				<p>PL-HS-1.4.02 Students will explain how proper first-aid procedures (CPR/rescue breathing) for responding to emergency situations (falls, drowning, choking, bleeding, shock, poisons, burns, temperature-related emergencies, allergic reactions, broken bones, overdose, heart attacks, seizures) can help reduce the severity of injuries and save lives.</p> <p>SC-HS-4.7.2 Students will</p> <ul style="list-style-type: none"><li>• evaluate proposed solutions from multiple perspectives to environmental problems caused by human interaction;</li><li>• justify positions using evidence/data.</li></ul> <p>Human beings live within the world's ecosystems. Human activities can deliberately or inadvertently alter the dynamics in ecosystems. These activities can threaten current and future global stability and, if not addressed, ecosystems can be irreversibly affected. DOK 3</p> <p>SC-HS-1.1 8 Students will</p> <ul style="list-style-type: none"><li>• explain the importance of chemical reactions in a real-world context;</li><li>• justify conclusions using evidence/data from chemical reactions.</li></ul> <p>Chemical reactions (e.g., acids and bases, oxidation, rusting, tarnishing) occur all around us and in every cell in our bodies. These reactions may release or absorb energy. DOK 3</p>



# Hazardous Chemicals Inventory Teacher Reference

Hazardous Chemicals - Integrated Pest Management				
These questions explore the use of integrated pest management in the school.				
	Inventory Questions	Ideas for School Improvement	Resources	Connections to KY Core Content 4.1
6	How does your school use pesticides (including herbicides, fungicides, insecticides, rodenticides, germicides, sanitizers and disinfectants)? (e.g. 20 pounds of herbicides used on school grounds annually)	Help your school develop an integrated pest management program in adherence to the Department of Agriculture's <i>integrated pest management in schools regulation</i> .	A website from Illinois on how to use Integrated Pest Management in schools <a href="http://www.greeningschools.org/resources/view_cat_teacher.cfm?id=7">http://www.greeningschools.org/resources/view_cat_teacher.cfm?id=7</a>	<p style="text-align: center;">Primary</p> <p>PL-EP-3.3.02 Students will identify the available health and safety agencies in a community that provide services:</p> <ul style="list-style-type: none"> <li>• Health department</li> <li>• Fire department</li> <li>• Sanitation</li> <li>• Police</li> <li>• Ambulance services</li> </ul> <p style="text-align: center;">DOK 1</p> <p>PL-EP-1.4.01 Students will identify safety practices (e.g., use of seatbelts/helmets/life vests) for dealing with a variety of health hazards (e.g., crossing the street, talking to strangers) while at school, home, and play. DOK 1</p> <p>PL-EP-1.4.02 Students will identify proper procedures to access emergency assistance (911). DOK 1</p> <p style="text-align: center;">Fourth Grade</p> <p>PL-04-1.4.01 Students will identify safety practices (e.g., use of seatbelts/helmets/life vests) for dealing with a variety of health hazards (e.g., crossing the street, talking to strangers, dealing with threatening situations) while at home, school, and play. DOK 1</p> <p>PL-04-1.4.02 Students will identify proper procedures (calling 911, Heimlich maneuver, stop, drop &amp; roll, apply pressure) for dealing with emergency situations (choking, bleeding, burns).</p> <p>PL-04-3.3.02 Students will identify and explain the available health and safety agencies in a community that provide services:</p> <ul style="list-style-type: none"> <li>• Health department</li> <li>• Fire department</li> <li>• Sanitation</li> </ul>
7	Does your school have an integrated pest management plan?	Contract with a licensed pesticide applicator in congruence with the Department of Agriculture's <i>integrated pest management in schools regulation</i> .	The Program from the University of Kentucky Cooperative Extension Service includes contact information <a href="http://www.uky.edu/Ag/IPM/teachers/outdoorclassrm/whatisipm.html">http://www.uky.edu/Ag/IPM/teachers/outdoorclassrm/whatisipm.html</a>	
8	Does your school contract with a certified and licensed pesticide applicator? If not, who administers pesticide at your school?	Have your school maintain a pesticide application notification in congruence with the Department of Agriculture's <i>integrated pest management in schools regulation</i> .	How to more safely use pesticides <a href="http://www.greenflagaward.org.uk/manual/default.asp?n=&amp;sectionID=33&amp;parentId=46&amp;pageID=249">http://www.greenflagaward.org.uk/manual/default.asp?n=&amp;sectionID=33&amp;parentId=46&amp;pageID=249</a>	
9	Does your school maintain a pesticide application notification registry, notify those on the registry at least 24 hours before each pesticide application, and post notice of time of pesticide application for at least 72 hours following each pest application?	Develop a policy where pesticides are only purchased as needed and then are either completely used or disposed of properly.	An example of a pesticide application notification registry from the state of Maine <a href="http://www.maine.gov/agriculture/pesticides/public/registry.htm">http://www.maine.gov/agriculture/pesticides/public/registry.htm</a>	
10	What happens to unused pesticides (e.g. thrown out with other garbage, recycled, disposed of by professionals)?		Kentucky Hazardous Waste Web site According to the site, "the only acceptable disposal practice for unused or unwanted (not banned) pesticides is to use the product according to current label directions." <a href="http://www.waste.ky.gov/branches/hw/Household+Hazardous+Waste.htm">http://www.waste.ky.gov/branches/hw/Household+Hazardous+Waste.htm</a>	
			A comprehensive site for alternatives to pesticides. <a href="http://www.beyondpesticides.org/alternatives/factsheets/index.htm">http://www.beyondpesticides.org/alternatives/factsheets/index.htm</a>	



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11	<p>What techniques are used to eliminate or discourage pests without the use of chemicals? (e.g. humane traps, dogs, cats)?</p>			<ul style="list-style-type: none"> <li>• Police</li> <li>• Ambulance services</li> </ul> <p style="text-align: center;">DOK 2</p> <p style="text-align: center;">Fifth Grade</p> <p>PL-05-1.4.01 Students will describe safety practices (e.g., use of seatbelts/helmets/life vests) for dealing with a variety of health hazards (e.g., crossing the street, talking to strangers, dealing with threatening situations) while at home, school, and play. DOK 2</p> <p>PL-05-3.3.02 Students will identify and describe the available health and safety agencies in a community that provide services:</p> <ul style="list-style-type: none"> <li>• Health department</li> <li>• Fire department</li> <li>• Sanitation</li> <li>• Police</li> <li>• Ambulance services</li> </ul> <p style="text-align: center;">DOK 2</p> <p>PL-05-1.4.02 Students will identify proper procedures (calling 911, Heimlich maneuver, first aid) for dealing with emergency situations (choking, bleeding, burns, broken bones). DOK 1</p> <p style="text-align: center;">Sixth Grade</p> <p>PL-06-1.4.01 Students will describe safety practices (e.g., walking in opposite direction of violence, staying calm in dangerous situations) for dealing with a variety of health hazards (e.g., firearms, motorized vehicles, or potentially unsafe or threatening situations) encountered by adolescents. DOK 2</p> <p>PL-06-1.4.02 Students will identify basic first-aid procedures for responding to a variety of life-threatening emergencies (e.g., choking, broken bones, shock, poisons, burns, allergic reactions, bleeding). DOK 1</p> <p>PL-06-3.3.02 Students will identify and describe a range of resources and services provided by community agencies:</p> <ul style="list-style-type: none"> <li>• Public health department</li> <li>• Fire department</li> <li>• Police department</li> <li>• Family resource center</li> </ul> <p style="text-align: center;">DOK 2</p> <p style="text-align: center;">Seventh Grade</p> <p>PL-07-1.4.01 Students will explain how health hazards (e.g., firearms, motorized vehicles, or</p>
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				<p>potentially unsafe or threatening situations) and safety practices (e.g., walking in opposite direction of violence, staying calm in dangerous situations, wearing protective gear, notifying appropriate authority) may influence their personal health. DOK 2</p> <p>PL-07-3.3.02 Students will identify and describe resources and services provided by community agencies:</p> <ul style="list-style-type: none"> <li>• Public health department</li> <li>• Fire department</li> <li>• Police department</li> <li>• Family resource center</li> </ul> <p style="text-align: right;">DOK 2</p> <p>PL-07-1.4.02 Students will describe basic first-aid procedures for responding to a variety of life-threatening emergencies (e.g., choking, broken bones, shock, poisons, burns, allergic reactions, bleeding). DOK 2</p> <p>SC-07-1.1.1 Students will:</p> <ul style="list-style-type: none"> <li>• classify substances according to their chemical/reactive properties;</li> <li>• infer real life applications for substances based on chemical/reactive properties.</li> </ul> <p style="text-align: center;">Eighth Grade</p> <p>PL-08-1.4.01 Students will explain how health hazards (e.g., firearms, motorized vehicles, all terrain vehicles, personal water craft, potentially unsafe or threatening situations) and safety practices (e.g., walking in opposite direction of violence, staying calm in dangerous situations, wearing protective gear, notifying appropriate authority) may influence their personal health. DOK 3</p> <p>PL-08-1.4.02 Students will explain how basic first-aid procedures for responding to a variety of life-threatening emergencies (e.g., falls, drowning, choking, bleeding, shock, poisons, burns, temperature-related emergencies, allergic reactions, broken bones) can help reduce the severity of injuries and save lives. DOK 3</p> <p>PL-08-3.3.02 Students will identify and explain the importance of resources and services provided by community agencies and how these resources benefit the overall community.</p> <ul style="list-style-type: none"> <li>• Public health department</li> <li>• Fire department</li> <li>• Police department</li> <li>• Family resource center</li> </ul> <p style="text-align: right;">DOK 2</p>
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				<p style="text-align: right;">High School</p> <p>PL-HS-1.4.02 Students will explain how proper first-aid procedures (CPR/rescue breathing) for responding to emergency situations (falls, drowning, choking, bleeding, shock, poisons, burns, temperature-related emergencies, allergic reactions, broken bones, overdose, heart attacks, seizures) can help reduce the severity of injuries and save lives.</p> <p>SC-HS-4.7.2 Students will</p> <ul style="list-style-type: none"><li>• evaluate proposed solutions from multiple perspectives to environmental problems caused by human interaction;</li><li>• justify positions using evidence/data.</li></ul> <p>Human beings live within the world's ecosystems. Human activities can deliberately or inadvertently alter the dynamics in ecosystems. These activities can threaten current and future global stability and, if not addressed, ecosystems can be irreversibly affected. DOK 3</p> <p>SC-HS-1.1.8 Students will</p> <ul style="list-style-type: none"><li>• explain the importance of chemical reactions in a real-world context;</li><li>• justify conclusions using evidence/data from chemical reactions.</li></ul> <p>Chemical reactions (e.g., acids and bases, oxidation, rusting, tarnishing) occur all around us and in every cell in our bodies. These reactions may release or absorb energy. DOK 3</p>
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## Hazardous Chemicals Inventory Teacher Reference

**Hazardous Chemicals - Chemical Safety** NOTE: **This section is only for schools that have chemistry laboratories.**

**These questions explore chemical safety in the school.**

Inventory Questions	Ideas for School Improvement	Resources	Connections to KY Core Content 4.1
12	Does your school have a chemical management plan that takes into consideration: a. purchasing b. storage c. use d. spills e. disposal of hazardous chemicals f. Appropriate teachers and staff are trained on this plan.	Developing a chemical management plan <a href="http://www.cheminfonet.org/chem.htm">www.cheminfonet.org/chem.htm</a>  Chemical safety manual <a href="http://membership.acs.org/c/ccs/pubs/Chemical_Safety_Manual.pdf">http://membership.acs.org/c/ccs/pubs/Chemical_Safety_Manual.pdf</a>  Toxic chemical fact sheet <a href="http://dhfs.wisconsin.gov/eh/ChemFS/index.htm">http://dhfs.wisconsin.gov/eh/ChemFS/index.htm</a>  Ky. Handbook for Hazardous Waste Generators <a href="http://www.waste.ky.gov/NR/rdonlyres/B29F24F8-A67E-496E-A23C-FC03ECF7281F/0/GeneratorHandbook.pdf">http://www.waste.ky.gov/NR/rdonlyres/B29F24F8-A67E-496E-A23C-FC03ECF7281F/0/GeneratorHandbook.pdf</a>	Sixth Grade  PL-06-1.4.02 Students will identify basic first-aid procedures for responding to a variety of life-threatening emergencies (e.g., choking, broken bones, shock, poisons, burns, allergic reactions, bleeding).  Seventh Grade
13	Does your school have spill response kits located in easily accessible locations?	Slide show of common chemical mismanagement in schools <a href="http://www.cheminfonet.org/slide.htm">www.cheminfonet.org/slide.htm</a>	Seventh Grade  SC-07-1.1.1 Students will: • classify substances according to their chemical/reactive properties; • infer real life applications for substances based on chemical/reactive properties.
14	Are school staff that use or handle hazardous chemicals properly trained?	Chemical inventory steps <a href="http://www.cheminfonet.org/invent.htm">http://www.cheminfonet.org/invent.htm</a>  Ky. Occupational Safety and Health Hazard Communication Program Booklet—this includes information about chemicals, material safety data sheets, sample training program, sample hazard communication program. <a href="http://www.labor.ky.gov/NR/rdonlyres/20BE7120-C8D6-45CB-8EF4-82CA858344CE/0/pubHazardCommunication05.pdf">http://www.labor.ky.gov/NR/rdonlyres/20BE7120-C8D6-45CB-8EF4-82CA858344CE/0/pubHazardCommunication05.pdf</a>	Seventh Grade  PL-07-1.4.02 Students will describe basic first-aid procedures for responding to a variety of life-threatening emergencies (e.g., choking, broken bones, shock, poisons, burns, allergic reactions, bleeding).
15	Conduct a chemical inventory. Did you identify any safety violations and/or disposal needs?	Link to MSDS—MSDS include guidance on storage and labeling among other things. <a href="http://www.cheminfonet.org/msds.htm">http://www.cheminfonet.org/msds.htm</a>	Eighth Grade  PL-08-1.4.02 Students will explain how basic first-aid procedures for responding to a variety of life-threatening emergencies (e.g., falls, drowning, choking, bleeding, shock, poisons, burns, temperature-related emergencies, allergic reactions, broken bones) can help reduce the severity of injuries and save lives.
16	Does your school have a proper chemical storage system in place that includes components A through I listed below?  A. In locked storage rooms or closets? B. In areas using the OSHA diamond identification system? C. By the chemical family or Flinn chemical inventory system? D. With labels showing the date of receipt or preparation? E. With labels clearly noting chemical as well as common names? F. With labels indicating the concentration of solutions? G. With the updated inventory list posted? H. With the Poison Control Center	Flinn suggested chemical storage patterns <a href="http://www.flinnsci.com/Sections/Safety/chemicalSafety/sevenStepPlan.asp">http://www.flinnsci.com/Sections/Safety/chemicalSafety/sevenStepPlan.asp</a>  Solid Waste Coordinators by county. <a href="http://www.waste.ky.gov/branches/rla/County+Solid+Waste+Coordinators.htm">http://www.waste.ky.gov/branches/rla/County+Solid+Waste+Coordinators.htm</a>  Greener Education Materials (GEM) for Chemists <a href="http://greenchem.uoregon.edu/gems.html">http://greenchem.uoregon.edu/gems.html</a>  Washington's Rehab the Lab program: provides least-toxic chemistry labs, list of high risk chemicals and information on reducing chemical stockpiles <a href="http://www.metrokc.gov/hazwaste/rehab">www.metrokc.gov/hazwaste/rehab</a>	Eighth Grade  PL-08-1.4.02 Students will explain how basic first-aid procedures for responding to a variety of life-threatening emergencies (e.g., falls, drowning, choking, bleeding, shock, poisons, burns, temperature-related emergencies, allergic reactions, broken bones) can help reduce the severity of injuries and save lives.  High School  PL-HS-1.4.02 Students will explain how proper first-aid procedures (CPR/rescue breathing) for responding to emergency situations (falls, drowning, choking, bleeding, shock, poisons, burns, temperature-related emergencies, allergic reactions, broken bones, overdose, heart attacks, seizures) can help reduce the severity of injuries and save lives.  SC-HS-1.1.8 Students will • explain the importance of chemical reactions in a real-world context; • justify conclusions using evidence/data from chemical reactions.



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	<p>telephone number nearby for emergencies? I. With the local fire department aware of locations of all chemical storage areas?</p>	<p>report with you principal.</p> <p>Personal protective equipment is available for those that handle or could be exposed to hazardous materials.</p>	<p>Low waste labs <a href="http://www.cheminfonet.org/labook.htm">http://www.cheminfonet.org/labook.htm</a></p> <p>Hazardous Chemical Alternatives (Ohio State University) <a href="http://www.ehs.ohio-state.edu/docs/envaff/hazchemalt.pdf">http://www.ehs.ohio-state.edu/docs/envaff/hazchemalt.pdf</a></p> <p>Proper personal protective equipment <a href="http://www.cheminfonet.org/ppe.htm">www.cheminfonet.org/ppe.htm</a></p>	<p>Chemical reactions (e.g., acids and bases, oxidation, rusting, tarnishing) occur all around us and in every cell in our bodies. These reactions may release or absorb energy. DOK 3</p>
17	Are chemicals stored as outlined by their Material Safety Data Sheet?			
18	Are hazardous chemicals disposed of as outlined by their Material Safety Data Sheet (MSDS)?			
19	Are chemicals or chemical-based substances purchased in large quantities or in small quantities on an "as needed" basis?			
20	Are less hazardous or environmentally friendly chemical substitutions considered when purchasing chemicals?			
21	What safety equipment related to chemical handling is found in classrooms and labs (e.g., labeled gas valve and electric panel, shut-off valves, exhaust fans, fume hood, safety showers, eyewash station)?			
22	Who conducted the Hazardous Chemicals Inventory (e.g., Mr. Lead's chemistry classes with assistance from Mr. Clean, head custodian, and Mrs. Nightingale, school nurse)?			