



September 2010

Dear Grade Six Teacher,

The Public Health Agency of Canada (PHAC) and the Canadian Coalition for Immunization Awareness & Promotion (CCIAP) are pleased to offer the **2010 National Immunization Poster Contest**. Grade Six students across Canada are invited to create posters expressing their ideas about immunization and healthy children.

To support curriculum delivery, we have developed a **Teacher's Kit** to continue lessons on this theme. It's a useful resource, offering a short narrative, lesson plans that include immunization, ideas for class or individual projects, student activities, a quiz, and more. You'll find modules for Science, Physical Education, Mathematics, Technology and Health, and Language Arts. Each lesson includes adaptations for special-needs students and further research ideas for gifted students. The kit is **free** for teachers to download and use in the classroom.

You'll find the Teacher's Kit **online** here:

**[www.publichealth.gc.ca/postercompetition](http://www.publichealth.gc.ca/postercompetition)** and  
**[immunize.ca/en/events/imm-poster-contest.aspx](http://immunize.ca/en/events/imm-poster-contest.aspx)**.

A poster contest **entry form** is attached to the enclosed pamphlet. It can be photocopied to meet your needs. You can also download an easily-photocopied 3-per-page entry form from CCIAP's web site. **Entry forms must be glued to the back of each poster**; staples ruin the poster, and tape will not hold. Please send posters so that they can be judged, reproduced accurately without crease marks or holes, and stored with the care they deserve. The judging will focus on creativity and clarity. One winner will be chosen from each participating province and territory in Canada, plus a national grand prize winner and a national runner-up. **Prizes** have been selected to appeal to young people and their teachers.

You can find online resources about immunization on PHAC's web site and on CCIAP's web site. On CCIAP's web site, you will also find winning posters from previous contests, resources for parents, a list of children's books about immunization, children's activities, information for new Canadians, immunization records, vaccine safety information, and much more.

For more information, please contact:  
**Canadian Coalition for Immunization Awareness & Promotion (CCIAP)**  
c/o Canadian Public Health Association  
1565 Carling Avenue, Suite 400, Ottawa, ON K1Z 8R1  
Tel.: 613.725.3769 x 122 / Fax: 613.725.9826  
E-mail: [immunize@cpha.ca](mailto:immunize@cpha.ca) / Website: [immunize.ca](http://immunize.ca)



## Step-by-step Action Plan for Poster Contest Entry

1. Introduce students to the poster contest and the importance of immunization.
2. Read the short narrative "Immunization Saves Lives" aloud to your students. (Also see the Teacher's Kit for lesson plans, a word puzzle and other teaching tools.)
3. Follow up with discussion on "Immunization Saves Lives".
4. Brainstorm on what makes a poster effective (e.g. clear message, bright colours).
5. Supply or specify the materials needed to draw a poster (**11x17** sheets, markers, coloured pencils, paint, glue). Posters **must be drawn horizontal/landscape** (not vertical/portrait).
6. Set a **deadline** for submission. Posters must be in the mail and postmarked by **October 18, 2010** to be eligible. As an incentive, mention the prizes that will be awarded this year.
7. Ensure that each poster has its own **entry form, glued** to the reverse side of the poster, clearly identifying the school, teacher, and student. All forms must be **signed** by a parent or guardian (giving permission to reproduce the winning posters and winners' names).
8. Posters must be **mailed flat** to:
 

*2010 National Immunization Poster Contest  
c/o Canadian Public Health Association  
1565 Carling Avenue, Suite 400, Ottawa, Ontario K1Z 8R1*
9. Participating schools will receive a confirmation of receipt and are encouraged to complete an **evaluation card**. Your comments will help us improve the contest for 2012. Please mail your completed evaluation, or e-mail your comments to [immunize@cpha.ca](mailto:immunize@cpha.ca).

Prizes will be awarded to the national winner, national runner-up, and one winner in each province and territory. (See prize flyer on PHAC's and CCIAP's web sites.) Winners will be announced on or about December 8, 2010 on PHAC's and CCIAP's web sites.

All winners will be contacted directly by the contest organizers.

***Good luck – and thank you for participating!***



## Immunization saves lives

### How vaccines work

Bacteria and viruses are all around us, but they are so small that you can only see them with a microscope. Even though we can't see them, some bacteria and viruses can make us sick. A few very nasty bacteria and viruses can cause bad diseases such as polio, measles, mumps, whooping cough, chickenpox, hepatitis, tetanus (lockjaw) and meningitis.

Bacteria and viruses can enter our bodies in three different ways:

1. through our nose when we breathe,
2. through our mouth when we eat or drink, or
3. through cuts and scrapes.

Luckily, our bodies have an immune system to protect us from bacteria and viruses. The immune system has fighter cells to break down any bacteria and viruses that get into our bodies that might cause infections or diseases. Sometimes those fighter cells need some help, and that's why we have vaccines.

Most vaccines are made from weakened viruses and bacteria. When we get immunized, vaccines teach our immune system to recognize the bacteria or viruses, and call upon our fighter cells to attack these invaders. Vaccines let our immune system practise and improve how it handles different kinds of bacteria and viruses. Then, if the real bacteria and viruses get in our body, our immune system remembers and is ready to attack them.

We can't be sure that our immune system will fight all the bacteria and viruses all the time and that we are 100% protected. Sometimes our immune system can start to forget how to fight particular bacteria or viruses. To help our immune system remember, we can get a booster shot.

If you've been immunized, then you have a very good chance of avoiding harmful viruses and bacteria.

This is how immunization saves lives.

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### Questions:

1. How do bacteria and viruses enter your body?
2. What system in your body protects you from bacteria and viruses?
3. How do vaccines teach your body to fight bacteria and viruses that cause disease?
4. True or false: Bacteria and viruses are all around us, but not all of them make us sick. (True!)
5. True or false: Vaccines work 100% of the time. If you have been immunized, there is **no** chance that you will get the disease. (False!)

### **Measles, travel and the 2010 Winter Games**

Shortly after the 2010 Winter Games, held in Vancouver, British Columbia, an outbreak of measles was detected by public health in the province. Measles is an infection of the respiratory system. It is caused by a virus, and it is highly contagious. However, outbreaks of measles are rare, because most children in Canada get 2 doses of measles vaccine before they turn two. But some people have not been immunized against measles, and others have had only one dose of vaccine.

The infection can cause a fever, runny nose and cough. Usually a rash appears around the face several days after a person is infected. The rash then spreads to the chest and limbs, while the eyes may be sensitive to light. Measles also weakens the immune system for months, leading frequently to ear infections and pneumonia. In about 1 case per 1,000, measles can cause encephalitis (inflammation of the brain), often resulting in brain damage.

Measles is often called a "childhood disease", but anyone can catch measles if he or she has not been immunized.

"Two doses of measles vaccine are 99% effective against the disease," says Dr. Monika Naus of the B.C. Centre for Disease Control.

The B.C. Centre for Disease Control believes that some visitors came to Canada for some of the events around the 2010 Olympic and Paralympic Games who were already infected with measles. According to Dr. Naus, this shows that "even a vaccine-preventable disease...is still only an airplane ride away."



## Word Find

Find the words listed below and circle each letter individually. The words can go up, down, diagonally, or backwards. The first one is already in bold for you. After you have found all of the words on the list, collect the remaining letters from left to right, top to bottom, and you will get this puzzle's message. Good luck!

S	E	L	S	A	E	M	S	A	F	E	T	Y	I	D	M
U	I	K	I	D	S	G	E	O	M	Y	U	N	V	I	R
N	I	C	E	L	L	E	R	I	I	S	P	A	Z	P	U
A	N	N	K	I	I	R	U	N	U	L	C	P	A	H	B
T	F	A	F	G	F	M	M	R	A	C	O	L	A	T	E
E	E	I	<b>A</b>	A	E	S	I	T	I	T	A	P	E	H	L
T	C	R	<b>C</b>	R	N	V	L	N	L	R	G	K	E	E	L
S	T	E	<b>E</b>	O	I	T	A	D	S	U	E	A	F	R	A
I	I	T	<b>L</b>	T	O	T	S	R	B	D	L	T	E	I	R
S	O	C	<b>L</b>	C	E	W	E	L	L	T	A	H	S	A	S
S	N	A	<b>U</b>	O	B	R	O	T	H	E	R	D	R	I	Y
U	E	B	<b>L</b>	D	D	A	L	Y	M	O	M	E	U	T	S
T	R	E	<b>A</b>	T	O	A	Z	N	E	U	L	F	N	I	T
R	A	E	<b>R</b>	A	S	H	N	E	R	D	L	I	H	C	E
E	A	D	<b>O</b>	L	E	S	C	E	N	T	S	P	M	U	M
P	O	X	<b>I</b>	M	M	U	N	I	Z	A	T	I	O	N	S

ACELLULAR  
ADOLESCENTS  
AREA  
BACTERIA  
BROTHER  
BUG  
CELL  
CHILDREN  
DAD

DIPHTHERIA  
DOCTOR  
DOSE  
GERMS  
HAPPY  
HEALTHY  
HEPATITIS  
IMMUNIZATION  
INFANTS

INFECTION  
INFLUENZA  
KIDS  
LIFE  
MEASLES  
MOM  
MUMPS  
NURSE  
PAL

PERTUSSIS  
POLIO  
POX  
RARE  
RUBELLA  
SAFETY  
SERUM  
SICK  
SISTER

SYSTEMS  
TETANUS  
TREAT  
VACCINATE  
VIRUS  
WELL

Leftover letters:

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## Science

**Description:** Give your students a better idea of what germs look like. Display collages of pictures of germs, or assign science projects on a disease of their choice.

**Materials:** Paper, tracing paper, glue, coloured pencils or markers, encyclopedias, science magazines, computers with Internet access (optional).

### Instructions for Collages:

1. Have the students find and trace pictures of germs in reference books or magazines. If the magazines are expendable, allow students to cut and paste the images. Other images to look for are the human body as seen medically (e.g., a picture of the nervous system or the skeletal system), pictures of "healthy" people, pictures of "sick" people, pictures of medical equipment, etc. Artistically skilled students may wish to draw pictures rather than tracing or cutting them out.
2. Have the students paste the pictures onto plain pieces of cardboard. The teacher may wish to supply pieces that are cut into large letter shapes (VIRUS or VACCINE for a small class, or IMMUNIZATION for a large class) and have those letter shapes be the basis for the collage. *Please note that collages will **not** be accepted as entries for the poster contest.*

### Instructions for Projects:

Choose five or ten vaccine-preventable illnesses such as polio, measles, mumps, rubella (German measles), varicella (chicken pox), pertussis (whooping cough), tetanus (lockjaw), hepatitis A, hepatitis B, influenza, pneumococcus (bacteria that cause pneumonia, meningitis, and blood infections) or meningococcus (bacteria that cause meningitis).

1. Have the students work alone or in groups to research basic aspects of the virus they choose to study. They should look for how contagious it is, who it affects, what the symptoms are, what the complications are, where it is most commonly found, and any other interesting facts.
2. Each student or group should now create a project on a piece of Bristol board incorporating all of the facts that they have found, with appropriate pictures, photocopies, or drawings.

### Adaptations for Special Needs:

1. Encourage gifted students to do in-depth research about the history of one disease that we now immunize people against. Have them hand in reports on the way people's lives were different before the vaccine.
2. Students with fine motor skills problems may have difficulty cutting pictures out. If available, a computer art program will allow students to take graphics from the Internet and make an electronic collage. Electronic media are more forgiving of misplaced pictures than glue is.
3. Less visually-orientated students may find a collage difficult. Consider allowing in-class presentations or audio recordings as alternative products.



## Physical Education

**Description:** Through exercise, students learn how effective immunization can be.

**Materials:** A large clear area such as a gymnasium or field.

### Instructions for "Contagious Disease":

1. Have two students face each other and join their hands to form a small circle. They are the "disease". The disease must chase other members of the class and try to catch them. A person "catches the disease" when the "disease" students capture him or her within the circle of their arms by lifting their joined hands over the "victim's" head. The students being the disease may not let go of each other's hands during the chase or the capture.
2. When a student is captured, he or she joins the disease by entering the circle, making it three students holding hands in an inward-facing circle. They then try to capture another student. The last student free of the disease is "healthy" and wins the game.
3. Play the game again, but this time, choose a second pair of students to be "immunizers". The second pair competes with the first to capture students. Any student caught by the second pair of students joins the immunizer group. There should be no students remaining at the end of the game. Count the number of students in each group and see if the "disease" or the "immunizers" won.
4. Play the game again, choosing three pairs of students to be the "disease". Explain that all of the students have been immunized except for one secret "victim". Only the "victim" should know who he or she is. They do NOT have to join the group that caught them. The game ends when the one "unimmunized" student (i.e. the "victim") is caught by a group and the disease can not grow anymore.
5. Play one more round of the game, by the same rules as last time, but without a "victim". Allow the students acting the disease to switch with others who haven't had a chance to play if the runners seem to be over-tired.
6. Afterwards, discuss how much harder it is for the disease to grow when some people are immunized against it, and how it is close to impossible for the disease to grow if everyone is immunized. Point out that when no one was immunized, almost the whole class was caught by the disease. While people were getting immunized, only half of the class was caught. When all but one person were immunized, the disease could grow by that one person; and when everyone was immunized, the disease could not grow at all.

### Adaptations for Special Needs:

If this game is played in wheelchairs, use only one person as the "disease", and use a tag method rather than constant contact. After three or four students have been tagged, they may encircle their "victims".



## Math

**Description:** Introduce the basic concepts of series or powers using simple and more complex word problems.

**Materials:** Chalkboard, chalk, paper, pencils, coloured pencils or markers (optional).

### Instructions:

1. Have the students start with simple problems and work up to harder ones.  
Examples:
  - (a) If I had mumps, and I gave it to 2 friends, how many people did I infect?
  - (b) If I had mumps, and I gave it to 2 friends, and they each gave it to 2 friends, how many people did I infect?
  - (c) If I had mumps and gave it to 2 friends, who gave it to 2 friends, and so on, how many people were infected by me when we are five layers down?  
(First-level friends = 2; second = 4; third = 8; fourth = 16; fifth = 32. Answer = 62.)
2. Use several problems of this nature written out the long way to introduce the idea of powers. Teach notation  $2^3 = 2 \times 2 \times 2 = 8$ .
3. If this notation is too advanced, use the original "levels" concept, and vary the number of people infected at each level. Note how quickly one small illness could spread.

### Adaptations for Special Needs:

1. For students with problems in math, allow each level of multiplication to be drawn in a different colour. Thus "I" would be yellow, "my 2 friends" orange, their 2 friends each in red, etc. Students then count physical objects rather than relying on mental math.
2. Consider allowing special-needs students to learn how to use the powers button on a calculator.
3. For students who excel in math, add a time limit, or a population limit.  
Example: Every time a sixth level of infection is reached, the first level (smallest, uppermost level) is cured. How many are infected at any one time? In a population of  $x$ , how many levels does it take before everyone has been infected? If there is a population of 100, and the people recover after two levels, but half of them can be re-infected, how many levels before the number of infected people drops to 1?



## Technology & Health

**Description:** Through exercise, students learn how effective immunization can be.

**Materials:** None.

### Instructions:

1. Ask students if they understand what a computer virus is.
2. Discuss how computer viruses can harm your computer. A virus can "infect" a computer and cause it to not work properly anymore. For example, a virus can leave a computer unable to accept input, unable to print, or unable to access its own files. The virus may cause the computer to work sporadically, or it may "infect" other computers.
3. Ask students to name the human viruses they have heard about.
4. Compare the effects of human viruses to computer viruses. For example, a virus that leaves the computer unable to accept input from the keyboard is like measles, which can leave victims blind, without the sensory input from their eyes. A virus that leaves a computer unable to perform simple tasks is like polio, a crippling disease.
5. Emphasize that there are a variety of viruses, and that computers need a variety of protective anti-virus software. People need a variety of vaccines to keep them protected from viruses.
6. Take this opportunity to suggest that having regular immunizations and boosters is like running an updating your anti-virus programs.

### Adaptations for Special Needs:

1. Ensure that students do not accidentally associate computer viruses with human viruses. Instead, concentrate on how immunizations and proper care can keep you healthy, rather than on the hazards of being ill.



## Language Arts

**Description:** Focus on the stories in which a vaccine-preventable\* disease plays a central role in the story.

**Materials:** Books\*\*, short stories, newspaper clippings, or websites.

### Instructions:

1. Encourage students to read stories in which disease or outbreaks influence the story. Historical novels, such as the *Little House on the Prairie* series, are more likely to have examples of such diseases than more modern novels. Newspaper clippings or grandparents' stories about influenza epidemics, polio and so on are also useful.
2. Ask students to describe the disease, how it affected the story, and whether the impact was permanent or temporary.
3. Have students write a newspaper article about the disease that they looked at, explaining to the public its dangers and whether or not it can be prevented by vaccine.

### Adaptations for Special Needs:

1. Offer the option of writing diary entries or a short story from the point of view of the virus as it makes people ill.
2. Creative students may prefer doing a radio show about germs with commercials for immunization and "interviews" with prominent germs and even "missing persons" bulletins for extinct viruses such as smallpox, or endangered ones like wild poliovirus, which has been eliminated in the Americas.
3. Students with fine motor skills problems may use the Internet (if available) to compile a list of reputable pages with information on immunization, such as: [immunize.ca](http://immunize.ca) (Canadian Coalition for Immunization Awareness & Promotion), <http://www.phac-aspc.gc.ca/im/index-eng.php> (Public Health Agency of Canada)

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\* Vaccine-preventable diseases:

chickenpox, diphtheria, haemophilus influenza (Hib), hepatitis A, hepatitis B, HPV (human papilloma virus), influenza, measles, meningococcal disease, mumps, pertussis (whooping cough), pneumococcal disease, polio, rubella, tetanus (lockjaw)

\*\* The CCIAP website ([immunize.ca](http://immunize.ca)) provides a list of books recommended for children, including:

- *Achoo! The Most Interesting Book You'll Ever Read About Germs*, by Trudee Romanek, Kids Can Press, 2003
- *Choosing Health*, by Alan Collinson, in the Facing the Future series, Steck-Vaughan Library, 1991
- *Everything You Need to Know About: Measles and Rubella*, by Trisha Hawkins, The Need to Know Library, The Rosen Publishing Group, Inc., 2001
- *Germ Killers: Fighting Disease*, by Sally Morgan, Science at the Edge Series, Reed Educational & Professional Publishing, 2002
- *The Miracle of Immunity*, by William Donnellan, from the "Story of Science" series by Benchmark Books, 2003
- *My Health: Vaccinations*, by Alvin Silverstein and Virginia Silverstein, Franklin Watts, 2002
- *My Health: What Are Germs?* by Laura Silverstein-Nunn, Alvin Silverstein and Virginia Silverstein, Franklin Watts, 2003
- *Outbreak: Disease Detectives at Work*, by Mark Friedlander Jr., Lerner Publications, 2003
- *Small Steps: The Year I Got Polio*, by Peg Kehret, Albert Whitman, 2006



## Healthy Living Lesson Plan: Creating a Poster

- Subject:** Health & Physical Education - Healthy Living  
Personal Safety and Injury Prevention
- Estimated Time:** 50 minutes
- Objective:** Students will:
1. Understand how vaccines work.
  2. Create posters about the benefits of immunization.
- Materials needed:** 11"x17" paper  
markers and/or pencil crayons  
Internet

### BACKGROUND INFORMATION:

- Public Health Agency of Canada website: <http://www.phac-aspc.gc.ca/im/vs-sv/vs-faq-eng.php>
- Canadian Coalition for Immunization Awareness & Promotion website: <http://immunize.ca/en/diseases-vaccines.aspx>

- Overview:** Students will explore what vaccines are and how they work.
- Students will create posters for the National Immunization Poster Contest for Grade 6 students. More information on prizes, rules and poster submission can be found here: <http://immunize.ca/en/events/imm-poster-contest.aspx>

- Procedure:**
1. Ask students:
    - What is immunization?
    - How does immunization work?
 Write answers on board.
  2. Review how vaccines work with the class.