USING THIS RESOURCE

> *"The Kindergarten to Grade 12 Physical Education Program contributes to the development of life skills for the personal management of health, for the use of physical activity as a strategy for managing life challenges, and for a setting within which to practise the ability to work with others."*
>
> – Alberta Learning, 2000a, p. 1

Activities in this resource are designed to facilitate student learning of the prescribed outcomes of the *K–12 Physical Education Program of Studies* and is intended for use in Physical Education 10–20–30. The aim of the physical education program is to enable individuals to develop the knowledge, skills and attitudes necessary to lead healthy, active lifestyles. This resource includes inquiry-based learning activities to address the outcomes of the physical education program and specifically focuses on:

 General Outcome B: Benefits Health

 General Outcome D: Do It Daily … for Life.

Activities may also be adapted for use in the senior high school Career and Life Management (CALM) course. See page 6 for the physical education program of studies overview, and Appendix A, page 71, for CALM's general outcomes.

Rationale for heart health learning

Research suggests that lifestyle habits adopted during youth generally extend into adulthood. Students have the opportunity to become healthy adults and reverse current physical inactivity trends.

Current data indicates the following.

- Canadians are at high risk of developing heart disease. Eight out of 10 individuals have at least one of these risk factors: physical inactivity, being overweight, smoking, high blood pressure, diabetes (Heart and Stroke Foundation of Canada, 2003).

- In 2000, 57 percent of Canadians aged 5 to 17 were not sufficiently active to meet international guidelines for optimal growth and development. For adolescents, this number grew from 64 percent in 2000 to 82 percent in 2002 (Craig and Cameron 2004).

- Canadian youth face risks for a number of chronic diseases due to increasingly sedentary lifestyles. Over the past two decades, the number of overweight and obese children nearly tripled in Canada. Obese youth have a greater occurrence of hypertension, high cholesterol and Type 2 diabetes (Canadian Institute for Health Information, 2004).

- In 1998, Canadians 15 years and older spent an average of 15 hours per week watching television compared to only 7 hours per week in active leisure pursuits. Research indicates that they also spent more time playing video games than children in most other countries. In 1998, less than 37 percent of 5- to 18-year-olds walked to school (Canadian Institute for Health Information, 2004).

Physical education and CALM provide opportunities for students to be actively engaged in seeking answers to real-world questions about their own health and fitness.

Teachers may choose to deliver the lessons in conjunction with activities associated with CPR training—a mandatory component of the Grade 10 Physical Education Program. This will encourage students to connect heart health messages to the outcomes associated with emergency care: General Outcomes B: Benefits Health and D: Do It Daily … for Life.

The activities and lessons provided in this resource will help students understand and experience the health benefits that result from physical activity.

For a Glossary of terms related to *Heart Health*, see pages 161–162.

Inquiry-based Learning

> *"Inquiry strategies help [students] answer questions, solve problems and make decisions, using process, communication and participation skills."*
>
> – Alberta Learning, 2000b, p. 4

Inquiry-based learning is a process of learning that involves students in their learning. Students formulate questions, investigate widely, and build new understandings, meanings and knowledge. Students may use this new knowledge to answer questions, develop solutions, or support positions or points of view. This knowledge is usually presented to others and may result in some type of action.

Using an inquiry model helps students internalize a process for inquiry that is transferable to everyday situations. Thinking about inquiry as a puzzle can help students relate inquiry-based learning to their lives outside school. Students gather information from many sources and piece them together to create the whole picture or puzzle. Students will find that many of their original questions are answered through the inquiry process; however, many more may arise as well.

Inquiry-based learning provides opportunities for students to:

- develop skills they will use all their lives
- learn to cope with problems that may not have clear solutions
- deal with changes and challenges to understandings
- shape their search for solutions, now and in the future.

During inquiry-based learning, the learner becomes a human laboratory in the quest for health and fitness. Physical education teachers provide the initial framework for the quest. For questions to frame this inquiry, see Appendix B, page 72.

The sign of a successful inquiry project is that students finish the project with more questions than when they started, so the inquiries go on and lead to further learning. Physical education provides opportunities for students to pursue personal inquiries related to health and fitness. The outcome of these inquiries instills a lifelong desire to perpetuate healthy, active lifestyles.

Inquiry-based Learning in Physical Education

Heart Health is grounded in the skill of learning to listen to the language of the heart … the heart beat. *Heart Health* connects students to their heart-rate data, and offers insights into what these numbers mean using the framework of Heart Zones Training.™ Students may listen to their hearts by manually taking their pulse (carotid or radial palpation), by learning to perceive their own exertion levels or by using heart-rate monitors to collect heart-rate numbers. For more information related to Heart Zones Training,™ see http://www.heartzones.com.

The suggested technologies to be integrated in physical education to enhance learning of General Outcomes B and D may include pedometers, heart-rate monitors, Web sites and online training journals. Educators can also capture student performance via digital and video cameras.

Pedometers
See Appendix C, page 73, for more on pedometers.

There are eight learning opportunities in this resource that originate from the following questions.

1. How does heart health information apply to my life?
   - Students make personal connections to active-living concepts through written logs. They demonstrate goal setting and personal progress over time.
2. What are my heart-rate numbers?
   - Students determine personal heart-rate numbers in order to monitor heart health and fitness.
3. What do my heart-rate numbers mean?
   - Students use various activities to interpret heart-rate numbers that contribute to setting fitness and performance goals.
4. How does my body feel at various levels of intensity?
   - Students describe their bodies' responses during times of exertion, connecting them to heart-rate data in order to better gauge the health, fitness and performance benefits of physical activity.
5. Am I getting cardiovascular benefits in physical education class?
   - Students suggest and implement strategies to ensure cardiovascular benefits are achieved in physical education class.

6. Am I active enough each day to receive health/fitness benefits?
    - Students assess the frequency and intensity of current physical activity profiles to determine if cardiovascular benefits are provided.
7. How do I create my own physical activity program?
    - Students evaluate personal fitness levels to better understand and maintain all components of fitness as part of an active lifestyle.

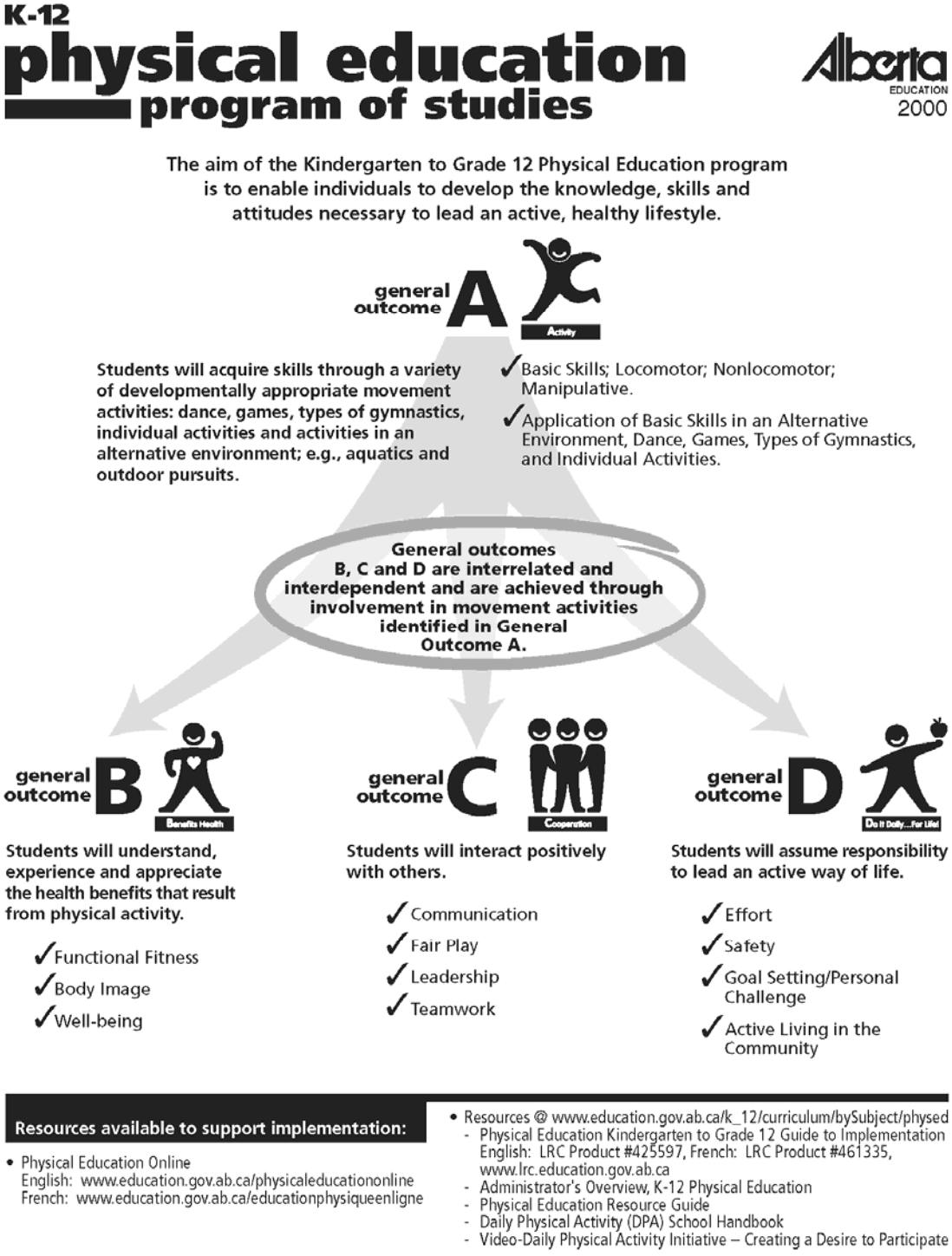
8. How can we share our understanding of heart health with the community?
    - Students share knowledge of personal lifestyle practices to make a societal change in health behaviours.

The learning opportunities in this resource provide inquiry-based activities that can be used in a variety of ways to increase student knowledge about healthy hearts.

Each learning opportunity contains:

- physical education learning outcomes—links to Physical Education 10 outcomes (although activities can be modified to reach similar outcomes in Physical Education 20 or 30)
- learning activity—an overview of activity expectations
- key understanding—a statement of the concept addressed through the activity
- background information—information that supports the learning activity
- equipment/materials—equipment needed for the activities, as well as related worksheets and handout materials
- procedures—steps to follow to achieve the stated outcome
- heart healthy tips—suggestions on how to improve effectiveness of the learning activity
- student inquiries—sample student questions that may arise as a result of the learning activity.

K–12 Physical Education Program of Studies



The learning opportunities in this resource connect to the K–12 physical education program. Achievable outcomes for each learning opportunity are identified by the icons above.

Heart Zones Training™

Heart Zones Training™ (Edwards 1993) is a methodology for calculating and using heart-rate data. Heart Zones™ involves:

- an individualized, personalized approach to health and fitness training
- multiple zones that provide multiple benefits
- a wellness continuum from health to fitness to performance.

To calculate heart-rate numbers for each of the five training zones, students must first determine their maximum heart rates—the highest number the heart can contract in one minute. See Learning Opportunity 3, pages 22–31, for more on maximum heart rates.

Planning for Inquiry-based Learning Experiences

Time spent being physically active during physical education classes should be maximized in order to provide opportunities for heart-healthy physical challenges.

Teachers may ask:

- how can my physical education classes be organized to increase the health/fitness benefits to my students
- how can I integrate activities that help students inquire into and challenge their personal heart health and fitness?

For strategies to promote cardiovascular benefits in physical education classes, see Appendix D, page 74.

Students can become part of a solutions-orientated team approach in physical education. Teachers are encouraged to communicate the desired learning outcome, and encourage students to share their ideas and solutions.

In a solutions-oriented classroom, students are actively engaged in exploring inquiries related to their own heart health. Physical education log books allow students to compile information and data to assist student learning. It is reasonable to assign activity time beyond the class as well as appropriate investigations that involve links to the home and community.

Note: Some inquiries may take several classes to complete.