

**2011-2012 School Wellness Grant Application**  
**for**  
**Implementation of Heart Rate Monitors in**  
**Middle & High School Physical Education**

**Table of Contents**

General Information	Page 2
Completing the Application	Page 5
Cover Page	Page 6
Signature Page	Page 7
Scoring Criteria	Page 8
Narrative Questions	Page 9
Sample Objectives and Timeline	Page 11
Sample Budget	Page 13
Appendices	Page 14

## 2011-2012 Heart Rate Monitor Grant Application

### General Information

#### Problem

The Centers for Disease Control and Prevention (CDC) recommend “that children and adolescents participate in at least 60 minutes of moderate intensity physical activity most days of the week, preferably daily”<sup>1</sup>. However, according to the 2009 Vermont Youth Risk Behavior Survey only 24 percent of students in grades 8-12 report having participated in 60 minutes of physical activity per day every day<sup>2</sup>. Furthermore, a recent study found that by age 15 only 31 percent of children met the CDC recommended level of physical activity on weekdays, and 17 percent met the recommended level on weekends<sup>3</sup>.

#### Rationale

Adequate physical activity is clearly associated with improved student health but research also indicates that benefits of aerobic exercise extend to learning as well. For example, a 2005 study found that higher academic performance among students in grades five through nine was positively correlated with higher levels of student fitness<sup>4</sup>. In addition, the Vermont State Board of Education requires that schools implement standards-based assessment in high school physical education. Heart rate monitors are a sound, objective measurement tool to assess student engagement in moderate to vigorous physical activity. This technology also has the potential to increase student motivation during physical education. In the words of a Vergennes Union High School student, "the heart rate monitor keeps me from getting lazy in the middle of my workouts." Finally, as Vermont schools move toward a transformed education system this technology can advance development of students' 21<sup>st</sup> century skills.

#### Goals

The goals of this physical education heart rate monitor program are to:

1. Document and increase the amount of time students in grades 7-12 spend engaged in moderate to vigorous physical activity during physical education.
2. Develop student self-knowledge, personal goal setting and fitness planning skills for lifetime physical activity.
3. Develop students' 21<sup>st</sup> century skills of tracking, interpreting and evaluating personal physical activity effort with objective, technological measures.

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<sup>1</sup> Centers for Disease Control and Prevention, 2008

<http://www.cdc.gov/nccdphp/dnpa/physical/everyone/recommendations/children.htm>

<sup>2</sup> Vermont Department of Health, 2009 Vermont Youth Risk Behavior Survey.

[http://healthvermont.gov/pubs/yrbs2009/documents/YRBS\\_2009.pdf](http://healthvermont.gov/pubs/yrbs2009/documents/YRBS_2009.pdf)

<sup>3</sup> Nader et al. (2008) "Moderate-to-Vigorous Physical Activity From Ages 9 to 15 Years". *JAMA*. 2008;300(3):295-305.

<sup>4</sup> Grissom, James. (2005) "Physical fitness and academic achievement". *Journal of Exercise Physiology online*. v8, n1.

## 2011-2012 Heart Rate Monitor Grant Application

### Eligibility

Any Vermont public school with grades 7-12 may apply for this grant. Each school may submit only one application. Ineligible schools or consortia of schools include those who are past recipients of this grant and past recipients of the federal Carol M. White Physical Education Program (PEP) grant.

### Awards

This grant will fund the purchase and implementation of heart rate monitors in middle and high school physical education programs. Up to three schools will be awarded a maximum of \$8,200 for the purchase of heart rate monitor equipment and other implementation costs. All equipment purchases must follow conditions of grant receipt listed on page four. These are competitive grants. **Funding is contingent upon legislative budget approval.**

### Application Review

All applications will be evaluated by a diverse grant review committee according to the scoring criteria listed on page eight. The narrative questions are outlined on pages nine through ten and example grant objectives, activities and timeline are provided on pages 11-13.

### Timeline

Application deadline: The application with original signature *and five copies* must be **received by 4:30 p.m., September 16, 2011.** Faxed or e-mailed copies will NOT be accepted.

Grant recipients announced: **By September 30, 2011**

Grant completion date: Activities and expenditures must be completed by June 30, 2012.  
**Final grant report due June 30, 2012.**

### Questions

If you have questions about this application, please contact Lindsay Simpson at (802) 828-1461 or [lindsay.simpson@state.vt.us](mailto:lindsay.simpson@state.vt.us)

**Applications for School Wellness Grants must be  
received no later than  
4:30 p.m., September 16, 2011.**

**Any application that does not meet this deadline  
will not be considered.**

## 2011-2012 Heart Rate Monitor Grant Application

### Conditions of Grant Receipt

#### All grantees must:

1. Have or establish a school/community-based project committee to implement the activities of this grant. This committee must include representatives from the first list of mandatory members, but preferably all of the following:

#### **Mandatory Committee Members**

- Physical education teachers
- Other content educators (ex: health, mathematics, technology, science, language arts)
- Technology specialist
- Students

#### **Additional Committee Members**

- School administration
- Parents
- Other community members

2. Send **all** school physical educators **and** a technology specialist to a two-day heart rate monitor technology training provided by the Vermont Department of Education. There is no cost for this training. The workshop will be held in December 2011. The date and location will be decided when grant recipients are identified.
3. Provide required technology to support the heart rate monitor program software (see Appendix A).
4. Implement the use of heart rate monitors during a minimum of 50% of class days for at least one physical education course. Then phase-in use of technology with other physical education classes. Awarded schools must also share aggregated student heart rate monitor data with the Vermont Department of Education. Finally, implementation must follow the Vermont Department of Education's protocol for equipment maintenance and cleaning.
5. Host one to two visits by the Vermont Department of Education's Physical Education Consultant to observe implementation of this program.
6. Complete a final program evaluation report using forms provided by the Vermont Department of Education. The final report will include:
  - Teacher feedback
  - Student heart rate monitor data
  - Student assessment results

**Awarded schools that do not comply with the above conditions of grant receipt will be required to return all equipment purchased through this grant to the Vermont Department of Education.**

## 2011-2012 Heart Rate Monitor Grant Application

### Completing the Application

1. **Complete** the Cover Page and Signature Page. (Cover Page can be handwritten.)
2. **Type** responses to all narrative questions and budget sections.
3. **Mail** or hand-deliver the application with original signature **and five copies** to the address below. **Faxed or e-mail copies of grants WILL NOT be accepted.**

	<b>School Wellness Grant</b>
<b>Application Recipient</b>	Lindsay Simpson Physical Education Consultant Vermont Department of Education 120 State Street Montpelier, VT 05620-2501 (802) 828-1461 <a href="mailto:lindsay.simpson@state.vt.us">lindsay.simpson@state.vt.us</a>
<b>Application Deadline</b>	Received by 4:30 p.m. September 16, 2011

#### All grant applications must include:

- One original copy of complete grant application with signatures plus six copies
- Cover page
- Signature page
- Narrative responses to school wellness grant questions\* (not to exceed four pages)
- Budget (one page maximum; separate page)
- Appropriate attachments (separate pages)
- All responses must be typed, 12-point font, single-spaced with 1" margins

\*Specific scoring criteria, narrative questions and application examples for objectives, timeline and budget are provided. The page numbers for these sections are listed in the table of contents.

**2011-2012 Heart Rate Monitor Grant Application**

**Cover Page**

**Programmatic Contact Information:**

Name of School	Name of Supervisory Union
Grades Served (Pre-K-12)	Number of Students (total)
Contact Name	Title
Mailing Address	
Telephone	Fax
E-mail	

**Fiscal Agent Contact Information:**

Fiscal Agent	
Contact Name	Title
Mailing Address	
Telephone	Fax
E-mail	

**2011-2012 Heart Rate Monitor Grant Application**

**Signature Page**

**Check the appropriate box regarding your school/community-based project committee:**

- It is not yet in existence.
- It has been in existence for less than one year.
- It has been in existence for more than one year.

**Indicate potential or existing members of your school/community-based project committee (must include original signatures):** If necessary, additional members may be listed on the back of this Signature Page.

<b>Member Name</b>	<b>Title</b>	<b>Signature</b>
<b>1</b>		
<b>2</b>		
<b>3</b>		
<b>4</b>		
<b>5</b>		
<b>6</b>		
<b>7</b>		
<b>8</b>		
<b>9</b>		
<b>10</b>		

**Administrator’s Pledge of Support:**

I certify that, to the best of my knowledge and belief, this application is accurate and complete. I agree to support the activities conducted for which this funding is intended, including all conditions of grant receipt listed on page four. Finally, I agree to support the long-term maintenance of the heart rate monitor technology (ex: cleaning and battery replacement).

<b>Principal’s name</b> (please print):	<b>Principal’s signature:</b>
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**2011-2012 Heart Rate Monitor Grant Application**  
**School Wellness Grant Application Scoring Criteria**

Category	Reader's Score		
	Low	Med	High
<b>Grant Application Requirements: 5 points</b> <ul style="list-style-type: none"> <li>• Application received by deadline with 5 copies (1 pt.)</li> <li>• Grant committee named with all required members (1 pt.)</li> <li>• Principal signature provided (1 pt.)</li> <li>• Application sections complete (2 pts.)</li> </ul>	<b>0-1</b>	<b>2-3</b>	<b>4-5</b>
<b>Physical Education Program Description: 15 points</b> <ul style="list-style-type: none"> <li>• Number of students and grade levels (2 pts.)</li> <li>• School course or graduation requirement for physical education (1 pt.)</li> <li>• Physical education schedule (2 pts.)</li> <li>• Number of physical education teachers (2 pts.)</li> <li>• Content of physical education courses (8 pts.)</li> </ul>	<b>0-5</b>	<b>6-10</b>	<b>11-15</b>
<b>Need and Readiness: 10 points</b> <ul style="list-style-type: none"> <li>• Heart rate monitor experience (2 pts.)</li> <li>• Fitness concepts in the PE program (8 pts.)</li> </ul>	<b>0-4</b>	<b>5-7</b>	<b>8-10</b>
<b>Collaboration and Coordination: 10 points</b> <ul style="list-style-type: none"> <li>• Project coordination with existing school, supervisory union and/or community-based initiatives (4 pts.)</li> <li>• Collaboration with other content area specialists (6 pts.)</li> </ul>	<b>0-4</b>	<b>5-7</b>	<b>8-10</b>
<b>Implementation Objectives and Timelines: 40 points</b> <ul style="list-style-type: none"> <li>• Objectives identified for each project goal including assessment of student learning (30 pts., 10 pts. per goal)</li> <li>• Achievable timeline proposed (5 pts.)</li> <li>• Persons responsible identified (5 pts.)</li> </ul>	<b>0-15</b>	<b>16-30</b>	<b>31-40</b>
<b>Overcoming Barriers: 10 points</b> <ul style="list-style-type: none"> <li>• 2-3 barriers described (4 pts.)</li> <li>• Solutions to barriers proposed (6 pts.)</li> </ul>	<b>0-4</b>	<b>5-7</b>	<b>8-10</b>
<b>Proposed Project Budget: 10 points</b> <ul style="list-style-type: none"> <li>• Costs are essential to the project (5 pts.)</li> <li>• In-kind donations are identified (5 pts.)</li> </ul>	<b>0-4</b>	<b>5-7</b>	<b>8-10</b>
<b>Total: (100 points possible)</b>			

## 2011-2012 Heart Rate Monitor Grant Application

### Narrative Questions

#### 1. Physical Education Program Description: 15 points

- a) How many students are enrolled in each physical education course? What grade levels do these students represent?
- b) What is the school course or graduation requirement for physical education?
- c) How often and for how many minutes do physical education classes meet?
- d) How many physical education teachers make up the physical education department?
- e) Describe the content of your school physical education courses. Describe how your program is working toward a contemporary model of physical education.

#### 2. Need and Readiness: 10 points

- a) Describe if and how members of your physical education department have used heart rate monitors either as instructional tools or for personal reasons. Which models and how many heart rate monitors are currently being used? If your department does not have experience with heart rate monitors please state this.
- b) Describe how fitness concepts are currently integrated into the physical education program. Do you assess student fitness? If so, how? Which specific fitness assessments are implemented and when? How do you currently use these fitness assessment data?

#### 3. Collaboration and Coordination: 10 points

Wellness-enhancing initiatives have greater impact when implemented in a coordinated and collaborative fashion within the whole school community.

- a) Discuss how the project will be coordinated with existing school, supervisory union and/or community-based initiatives.
- b) Describe how the project will be coordinated with other content areas specialists (ex: health, mathematics, technology, science, language arts) to develop and implement cross-content lessons related to the use of heart rate monitors in physical education. Attach sample lesson plans as appropriate.

## 2011-2012 Heart Rate Monitor Grant Application

### 4. Implementation Objectives and Timeline: 40 points

Using the format shown on page 11, describe how your school physical education program will support the overall goals of this project. (Goals are listed on page two.) Detail specifically how student knowledge and skills will be assessed. Select objectives that will lead to achievement of each goal then identify personnel responsible for each objective and a deadline for task completion. The timeline for this grant project is relatively short, so select objectives that can be completed by June 30, 2012.

- a) Identified objectives should directly link to each goal and should describe how student knowledge and skills will be assessed.
- b) The timeline should include anticipated dates of completion for objectives and personnel responsible for each task.

### 5. Overcoming Barriers: 10 points

- a) Describe two to three potential barriers which could limit or prevent implementation of heart rate monitors in your physical education program.
- b) Propose solutions to each barrier.

### 6. Proposed Project Budget: 10 points (Not counted as part of the four-page limit.)

Provide an itemized budget. Costs should be directly linked to the project goals and objectives. **Total funding request of the grant shall not exceed \$8,200.** Applicants may replicate the sample budget table shown on page 13. In order to regularly document student heart rate data, it is suggested that applicants budget for one complete class set of Polar E-600 downloadable heart rate monitors, plus necessary support technology. For product and pricing information, please contact Lindsay Simpson at [lindsay.simpson@state.vt.us](mailto:lindsay.simpson@state.vt.us) or (802) 828-1461. In addition, proposals will be enhanced by the inclusion of in-kind support listed as part of the budget.

## 2011-2012 Heart Rate Monitor Grant Application

### Sample Objectives and Timeline

The sample objectives and timeline below outline a potentially fundable project. This is not necessarily an ideal proposal.

#### Sample: Objectives and Timeline

It is our intention to spend the 2011-2012 school year developing and piloting a heart rate monitor program in one tenth grade physical education class. Then, after careful program evaluation and adjustment we hope to expand the program to other grades in future years.

*Please use the below table format for the objectives and timeline.*

**Goal 1: Document and increase the amount of time high school students spend engaged in moderate to vigorous physical activity during physical education.**

Objectives	Person(s) responsible	Date of Completion
a) Set up computer and software for heart rate monitor data collection.	One physical educator and technology specialist	11/30
b) Review and select/develop heart rate monitor lessons and assessments for one tenth grade PE class.	Physical education dept.	11/30
c) Collect baseline data on student achievement of moderate to vigorous physical activity.	Physical education dept.	12/20
d) Adjust tenth grade PE curriculum to include more moderate to vigorous physical activity.	Physical education dept.	1/31
e) Attend heart rate monitor training provided by the Vermont Department of Education.	Physical education dept.	TBD

*Sample Objectives and Timeline continued on page 12.*

## 2011-2012 Heart Rate Monitor Grant Application

**Goal 2: Develop student self-knowledge, personal goal setting and fitness planning skills for lifetime physical activity.**

Objectives	Person(s) responsible	Date of Completion
a) Design and set up a standards-based assessment system using PE Manager.	Physical education dept.	1/31
b) Implement FITNESSGRAM pre-assessments including PACER, curl-ups, trunk lift, modified pull-up, & back-saver sit and reach.	Physical educator	9/30
c) Implement lesson(s) on goal setting.	Health educator	10/31
d) Implement lesson(s) on fitness plan development.	Physical educator	11/30
e) Implement lesson(s) on circulatory and respiratory system structures and functions.	Tenth grade biology teacher	1/31
f) Implement FITNESSGRAM post-assessments.	Physical educator	4/30
g) Implement final student assessment of goal setting and personal fitness plan development based on individual student heart rate monitor data and FITNESSGRAM results.	Students and physical educator	6/1

**Goal 3: Develop students' 21<sup>st</sup> century skills of tracking, interpreting and evaluating personal physical activity effort with objective technological measures.**

Objectives	Person(s) responsible	Date of Completion
a) Implement daily student use of heart rate monitors in one tenth grade PE class.	Physical educator	1/1 – 6/1
b) Download student heart rate data after each lesson.	Students and physical educator	1/1 – 6/1
c) Implement lesson(s) and assessment on analysis of heart rate data.	Mathematics teacher	2/28
d) Share aggregated student heart rate data and final program evaluation with Vermont Department of Education.	Physical educator	6/30

## 2011-2012 Heart Rate Monitor Grant Application

### Sample Budget

Please use the below table format for the budget which will not be counted as part of the four-page limit.

See appendix C for the 2009 Polar Electro Inc. Education Price List.

Category	Description of Expense	Cost
<b>Itemized supplies, such as:</b> <ul style="list-style-type: none"> <li>• Heart rate monitor equipment</li> <li>• Educational resources</li> <li>• Other - describe</li> </ul>	24 Polar E-600 heart rate monitors (\$250 each)	<b>\$6000</b>
	48 additional straps (\$5 each)	<b>\$240</b>
	1 E600 PC interface unit (\$28 each)	<b>\$28</b>
	2 Classroom Management Systems	<b>\$140</b>
	2 E-200/600 Instructional Banners (2)	<b>\$59</b>
	NASPE Heart Rate Assessment Book	<b>\$13</b>
	PE Manager Software (single PC license)	<b>\$515</b>
	1 laptop computer	<b>\$700</b>
	Shipping	<b>\$100</b>
	<b>Total</b>	
<b>Personnel costs, such as:</b> <ul style="list-style-type: none"> <li>• Substitute teacher payment to release committee members from classes</li> <li>• Other - describe</li> </ul>	2 x 2-day substitute teacher pay (\$70 per day) to release PE team to attend required heart rate monitor (HRM) training	<b>\$280</b>
<b>In-kind donations, such as:</b> <ul style="list-style-type: none"> <li>• Printing supplies</li> <li>• Teacher release time</li> <li>• Mileage</li> <li>• Other - describe</li> </ul>	100 miles x 2 PE teachers x \$0.505/mile to attend HRM training  1 gallon Simple Green d pro 5 disinfectant (\$25)	<b>\$0</b>
<b>Total</b>		<b>\$8075</b>

# 2011-2012 School Wellness Grant Application

## Appendix A

The minimum hardware system requirements for the Polar E series software are:

- Windows 98se or later
- Pentium 200 MHz processor
- Super VGA or higher resolution monitor
- 64 MB RAM
- CD-Rom Drive
- PC with sound card (compatible with Sound Blaster) and dynamic loud speakers or headphones
- Polar IR Interface (for the E600 downloading, USB)

# 2011-2012 School Wellness Grant Application

## Appendix B

Resources:

Vermont Physical Education Grade Expectations:

[http://education.vermont.gov/new/html/pgm\\_curriculum/physical\\_ed.html](http://education.vermont.gov/new/html/pgm_curriculum/physical_ed.html)

Vermont Nutrition and Fitness Policy Guidelines:

[http://education.vermont.gov/new/pdfdoc/pgm\\_nutrition/school\\_nutrition/policy/nutrition\\_policy\\_guidelines\\_1008.pdf](http://education.vermont.gov/new/pdfdoc/pgm_nutrition/school_nutrition/policy/nutrition_policy_guidelines_1008.pdf)

Polar USA, Schools and Educators:

<http://education.polarusa.com/education/>

NASPE Position Statement: Appropriate Use of Instructional Technology in Physical Education:

<http://www.aahperd.org/naspe/standards/upload/Appropriate-Use-of-Instructional-Technology-in-PE-2009-2.pdf>

FITNESSGRAM, fitness assessment resources:

<http://www.fitnessgram.net/home/>

Fitness for Life, physical education curricular resources:

<http://www.fitnessforlife.org/>

SPARK, evidence-based physical education programs:

<http://www.sparkpe.org/>