

# 1<sup>st</sup> Grade Science

**1) Introduction:** Service-learning is an excellent way to teach Science. Service-learning emphasizes a “hands-on” experiential approach as a means of connecting academic learning to real-world applications. This approach is an effective way of engaging students in scientific concepts, which can sometimes seem abstract. Service-learning brings students into direct contact with real-world community problem-solving and by framing the scientific method as a problem-solving tool itself, students can begin to see the impact science has on the world around us.

## **2) Definition of service-learning:**

Service-learning is a form of teaching and learning that engages students in meaningful service activities in their schools and communities as part of the standard academic curriculum. Integrated into (but not limited to) the school day, service-learning connects young people with structured activities that address human and community issues, and that provide opportunities for increased student academic engagement, civic responsibility, personal and social development and the acquisition of critical thinking skills.

The following concepts are central to good service-learning practice. Evidence of these elements as well as their alignment with Pennsylvania state standards and the School District’s promotion/graduation requirements are keys to model practices.

- **Student voice in choosing, developing and implementing a project:** Service-learning works best when students are involved in something relevant and meaningful to them. Encourage student participation and sharing of responsibility in all aspects of a project.
- **Identification of genuine need:** The “community” identifying the need can be the class, the school, the neighborhood, a community partner, the city, etc. Goals for addressing problem have the support of designated community and clearly defined objectives.
- **Mutual benefit for students and community partner(s):** Students acquire knowledge and skills, and in return contribute a short or long-term solution to the problem. Sensitivity to needs and/or limitations of all parties is important.
- **Sustained student involvement:** Length of project can vary but should span a minimum of 6 weeks. Projects with greater richness and complexity may last a semester or an entire school year.
- **Rigorous, multidisciplinary research:** Projects should meet content standards in at least two academic disciplines and demonstrate writing and research competence. Research can explore root causes/effects, potential solutions or public policy related to the problem.
- **Ongoing reflection:** Reflection activities should occur throughout the project. They reveal cognitive and affective learning and can incorporate speaking, writing and/or multimedia strategies.
- **Assessment of student learning and project impact:** Evaluates academic, personal and social development as well as whether stated community need has been

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met/addressed. Rubrics and other authentic assessment tools are preferred.

- **Culminating presentation:** Presentations or exhibitions of learning allow students to demonstrate what they have learned for the benefit of others, including community partners. This may occur through oral presentations, culminating events, and/or artistic expressions.
- **Final celebration:** Positive change and collaboration is hard work! Acknowledge and celebrate the contributions and accomplishments of all who were involved.

### 3) Sample Project Description

A sample project description is included for your convenience. This particular project is not required, however, it is designed to fit the core curriculum for this subject and it reflects a common issue or problem in many of Philadelphia's communities. Teachers are encouraged to transform this project and take it in new directions.

#### Proper Pet Care

For this project, students learn and teach others about how to properly care for family pets, as part of "Organisms: Similarities vs. Differences" curriculum in the third 12 weeks of the 1<sup>st</sup> grade science. Students will learn about the basic needs of family pets and other animals, and share this information with their families, classmates, and/or others in their community.

The Pennsylvania Society for the Prevention of Cruelty of Animals (PSPCA) is a wonderful community partner to consider for this project. The PSPCA Humane Education Department, with advance notice, will travel to your school to lead lessons on animal care, free of charge.

Students can provide input regarding how they would like to share important pet care information with others. Suggested ideas include drawing posters to be placed around the school and creating pet care reminder cards for the students and their classmates to take home. If there is time and interest, the class may also organize a collection for materials needed by the PSPCA to help care for animals, including blankets and pet toys.

Students should be given the opportunity to reflect on the service-learning activity, and to celebrate their success in the important task of educating others.

### 4) Sample Lessons/Activities

- Discuss the definition of a pet. Identify animals that are kept as pets, and those that are not. (3.3.4 A)
- Discuss how the pets we keep differ across climates and geographical settings, and why. (3.3.4 C)
- Understand the basic needs that all pets have (i.e. food, water, shelter, care); compare with our own needs as humans. (3.3.4 A)

### 5) Sample Rubric

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Rubrics can be used at all steps of the service-learning process. Each activity can have its own rubric, and you can use a cumulative rubric to assess student work at the end of the project. Here are two sample rubrics that assess student learning, one on developmental growth and one on task completion.

See attached

## 6) Multidisciplinary Connections

**Social studies** – Explore how pets differ across cultures and countries.

**Math** – Count the total number of pets the class has as a whole, looking at how this number is broken down into different types of pets (i.e. how many cats, how many dogs, etc.)

**English** – Write words on the posters and/or pet care reminder cards. Short thank you letters to the PSFCA (if there is a visit). Reading/listening to fiction stories about pets and pet care.

**Art** – Creating pet care posters and pet care reminder cards.

## 7) For more information:

The Animal Veterinary Medical Association: Care for Animals Kids Corner

<http://www.avma.org/careforanimals/kidscorner/>

National Association for Humane and Environmental Education

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

FEMA for Kids: Pets and Disasters

<http://www.fema.gov/kids/pets.htm>

## 8) Local resources:

Pennsylvania Society for the Prevention of Cruelty to Animals

<http://www.pspca.org>

Humane Education Department Contact:

Jennifer Richichi

215 426 6304, extension 244

[jrichichi@pspca.org](mailto:jrichichi@pspca.org)

Or you may fill out a request [here](#).

Philadelphia Animal Care and Control Association

<http://www.petfinder.org/shelters/PA235.html>

Morris Animal Refuge

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

This curriculum insert was developed by Faith Goldstein, Assistant Director of the Pennsylvania Service Learning Alliance, as part of a collaborative effort between the School District of Philadelphia and several

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local community-based service-learning organizations, designed to integrate service-learning with the new core curriculum.