
Massachusetts Department of Education
Guidance Document
2005

*Dissection and Dissection Alternatives in Science Courses:
Policies and Resources for Massachusetts Public Schools*

Introduction

This Guidance Document, a supplement to the *Massachusetts Science and Technology/Engineering Curriculum Framework (2001)*, is designed to assist district and school personnel in implementing the Board of Education's policy regarding dissection and dissection alternatives in science courses. This document also provides a variety of alternative resources to actual dissection.

State Policy

In October 2005, the Board of Education approved a policy on dissection and dissection alternatives. This policy states:

All public schools that offer dissection as a learning activity should, upon written request by a student's parent or guardian, permit a student who chooses not to participate in dissection to demonstrate competency through an alternative method.

The *Massachusetts Science and Technology/Engineering Curriculum Framework (2001)* includes the following reference to dissection and dissection alternatives:

Biology teachers consider dissection to be an important educational tool. But dissection should be used with care. When animal dissection is considered, teachers should recognize that there are other experiences (e.g., computer programs) for students who do not choose to participate in actual dissections.

Further, as described in Massachusetts G.L. Chapter 272, 80G, dissection should be confined to the classroom: "Dissection of dead animals or any portions thereof in . . . schools shall be confined to the classroom and to the presence of pupils engaged in the study to be promoted thereby and shall in no case be for the purpose of exhibition." This law covers treatment of animals in school settings (not just dissection).

Recommendations for School and Districts

#1: Schools should be responsible about both the use of live animals and dissection of dead animals in the classroom.

Schools and school districts should ensure that animals are properly cared for and treated humanely, responsibly, and ethically. The National Science Teachers Association's recommendations on how to include live animals and dissection of dead animals in the classroom can be found at

<http://www.nsta.org/positionstatement&psid=44&print=y>.

#2: Schools should develop clear policies on dissection and dissection alternative activities.

Schools and school districts should establish a written policy on courses including animal dissection. The school policy should state that options are available for students who object to dissection activities, and that upon written request of a student's parent or guardian, the school will permit a student who objects to dissection activities to demonstrate competency through an alternative method. The policy should specify the alternatives to dissection that are available to the student, and explain how a student may participate in an alternative to dissection, upon written request of the student's parent or guardian.

The teacher (or other school authority) should specify in writing what is expected of the student participating in an alternative activity. Alternative activities should allow students to gain the same content knowledge as a dissection activity and should allow for a comparable investment of time and effort by the student. Students participating in the alternative project should be subject to the same course standards and examinations as other students in the course.

The school's policy on dissection and dissection alternatives should be included in the student handbook. The school should also provide a copy of the policy to all teachers of science courses that involve dissection, at the beginning of the school year. A sample school policy and sample form letter for parents/guardians are included at the end of this document.

Recommendation #3: Schools should include in course descriptions information about dissection and clearly specify dissection alternatives.

When the school or school district publishes descriptions of the courses that it offers in the life sciences, the description should specify whether dissection is part of the standard laboratory experience in the course. If so, the course description should also state that alternatives to dissection are available for any student who objects to dissection and whose parent or guardian sends a written request to the school.

Information and Resources

1. *Guidance and position statements from various science organizations*

National Science Teachers Association. *Position Statement on Responsible Use of Live Animals and Dissection in the Science Classroom*. 2005.

<http://www.nsta.org/positionstatement&psid=44&print=y>.

Institute of Laboratory Animal Resources, Commission on Life Sciences, National Research Council, National Academy of Sciences, National Academy of Engineering. 1989. *Principles and Guidelines for the Use of Animals in Precollege Education*

http://dels.nas.edu/ilar_n/ilarhome/Principles_Guidelines.pdf

National Association of Biology Teachers. *Position Statement on The Use of Animals in Biology Education*. 2003.

http://www.nabt.org/sub/position_statements/animals.asp

2. *Resources on alternatives to dissection*

A number of organizations will loan alternatives, such as CD-ROMs (virtual dissections), models, and videos to students and schools. The following organizations have free lending libraries and will help you find a suitable alternative to a dissection activity. (Note: Often a security deposit is required but no charges are incurred unless the items are not returned or are returned damaged. The borrower is responsible for return shipping.)

The American Anti-Vivisection Society (AAVS)

1-800-729-2287

www.animalearn.org

The Ethical Science and Education Coalition (ESEC)

617-523-6020

<http://www.neavs.org/resources/index.htm>

(This is a Boston-based organization that can provide teacher training.)

The Humane Society of the United States (HSUS)

301-258-3046

http://www.hsus.org/animals_in_research/animals_in_education/humane_education_loan_program_help/materials_available_through_help.html

The National Anti-Vivisection Society (NAVS)

1-800-888-6287

http://www.navs.org/education/dissection_loan_program.cfm?SectionID=Education

The following web sites offer free alternatives to dissection:

- [Interactive Frog Dissection: An Online Tutorial](#)

- (<http://curry.edschool.virginia.edu/go/frog/>)
- [Kidwings: Virtual Owl Pellet Dissection](http://www.kidwings.com) (<http://www.kidwings.com>)
- [Online Dissections: Earthworm, Frog, Sea Urchin](http://scienceman.org/dissection.html) (<http://scienceman.org/dissection.html>)
- [Virtual Dissection Site: Crayfish, Earthworm, Squid, Frog](http://biology.about.com/cs/dissections/%0D) (<http://biology.about.com/cs/dissections/%0D>)
- [Virtual Frog Dissection Kit](http://froggy.lbl.gov/) (<http://froggy.lbl.gov/>)
- [Virtual Pig Dissection \(VPD\)](http://www.whitman.edu/biology/vpd/) (<http://www.whitman.edu/biology/vpd/>)
- [Anatomically Correct: The Online Cat Dissection](http://library.thinkquest.org/15401/learn.html) (<http://library.thinkquest.org/15401/learn.html>)
- [Exploratorium's Cow's Eye Dissection](http://www.exploratorium.edu/learning_studio/cow_eye/index.html) (http://www.exploratorium.edu/learning_studio/cow_eye/index.html)
- [The Crayfish Corner](http://www.mackers.com/crayfish/) (<http://www.mackers.com/crayfish/>)
- [Dissection of a Deer Tick](http://www.ent.iastate.edu/imagegal/ticks/iscap/tickdissection/) (<http://www.ent.iastate.edu/imagegal/ticks/iscap/tickdissection/>)
- [The Heart: An Online Exploration](http://sln.fi.edu/biosci/heart.html) (<http://sln.fi.edu/biosci/heart.html>)
- [Virtual Hospital's The Human Brain: Dissections of the Real Brain](http://www.vh.org/adult/provider/anatomy/BrainAnatomy/BrainAnatomy.html) (<http://www.vh.org/adult/provider/anatomy/BrainAnatomy/BrainAnatomy.html>)
- [University of Scranton's Dissection of the Sheep Brain](http://academic.uofs.edu/departments/psych/sheep/ieframerow.html) (<http://academic.uofs.edu/departments/psych/sheep/ieframerow.html>)
- [Exploratorium's Sheep Brain Dissection: The Anatomy of Memory](http://www.exploratorium.edu/memory/braindissection/index.html) (<http://www.exploratorium.edu/memory/braindissection/index.html>)

For additional information on what is available, the following websites list numerous alternatives, but they are intended for information only. Teachers, who identify an item on one of the databases that they want to borrow or purchase, should contact the free lending libraries listed above.

- [Norina](http://oslovet.veths.no/NORINA/) (<http://oslovet.veths.no/NORINA/>)
- [InterNICHE](http://www.interniche.org/alt.html#alt) (<http://www.interniche.org/alt.html#alt>)
- [The Physicians Committee for Responsible Medicine](http://www.PCRM.org) (<http://www.PCRM.org>)
- [Alternatives in Education Database](http://avar.org/alted_database.html) (http://avar.org/alted_database.html)

A special thanks to the New England Anti-Vivisection Society (www.neavs.org) and TEACHkind (www.teachkind.org) for providing input to this list of dissection alternative resources.

3. Sample School Policy and Sample Form Letter for Parents/Guardians (see attached)

SAMPLE SCHOOL POLICY

POLICY ON DISSECTION AND DISSECTION ALTERNATIVES

In accordance with the 2005 Board of Education’s Policy on Dissection and Dissection Alternatives, our School/School District has developed the following policy.

Participation in hands-on science is important to learning science and dissections are a valuable learning experience in which all students are encouraged to participate. When dissection is used in the classroom:

- Teachers will thoroughly explain the learning objectives of the lesson and use written and audio-visual materials as appropriate to maximize the educational benefits of the experience.
- All specimens will be treated with respect.
- All students will be informed, prior to the dissection, that they have the option of discussing individual concerns about dissection with the appropriate teacher.
- Upon completion of the dissection, the remains will be appropriately disposed of as recommended by the local board of public health.

The science courses that include dissection also include dissection alternatives. Upon written request of a student’s parent or guardian, our school will permit a student who objects to dissection activities to demonstrate competency through an alternative method.

Currently our school offers the following courses that include dissection: *(name courses, such as: Biology, Honors Biology, and Anatomy and Physiology)*. Specific dissection and dissection alternative activities will be listed on the course syllabi, available to students before enrolling in these courses.

Alternative activities may include: models *(name models)* and Internet programs *(name programs)* in place of dissecting *(name organism)*.

(Note: Schools may find it easier to provide a chart such as the one below.)

Course	Dissection Activity	Dissection Alternative Activity

The procedure for a student to participate in an alternative activity in place of dissection is as follows:

- The student will notify the science teacher of the student's choice to participate in an alternative activity in place of participating in a dissection.
- The student will submit a written request from his or her parent/legal guardian to the science teacher or to the school principal.
- The student will be provided an alternative activity to be determined by the teacher who will specify in writing what is expected of the student. Alternative activities should allow students to gain the same content knowledge as a dissection activity and should allow for a comparable investment of time and effort by the student.
- The student will accept responsibility for completing the alternative activity within the assigned time and is expected to learn the same content knowledge as if the student were performing the dissection activity.
- The student will be subject to the same course standards and examinations as other students in the course.

This policy will be included in the student handbook and will also be provided to all teachers of science courses that involve dissection, at the beginning of each school year.

SAMPLE PARENT/GUARDIAN FORM LETTER

Note: A student’s parent/guardian is not required to use a particular form to request that the school provide the student with an alternative to dissection. This sample is provided for the convenience of school personnel and parents/guardians who wish to use it.

Dear _____(Principal or Teacher):

I understand that participation in hands-on science is important to learning science and that dissections are an important component of comprehensive science and life science education. I also understand that alternatives to dissection are available and that upon written request of a parent/legal guardian, the school will permit a student to demonstrate competency through an alternative method, such as computer simulations and other appropriate research activities. I further understand that students participating in alternative projects instead of dissection are subject to the same course standards and examinations as other students in the course.

I request that my child, _____, be permitted to demonstrate competency through an alternative method rather than participating in dissection.

Sincerely,

Signature of parent or legal guardian

Printed name of parent or legal guardian

Date: _____