



CLARIFICATION ON DISSECTION IN THE LINCOLN PUBLIC SCHOOLS

At the time of this policy's writing, no dissection of animals was taking place in classrooms, however.

- In the event that dissection is chosen by a teacher as a teaching strategy, all students and parents should be informed of their right to choose not to take part.
- Students should feel comfortable in opting not to dissect and should be treated in a non-judgmental fashion.
- Whenever possible, alternatives to physical dissection that preserve the integrity of the science program should be made available to students.
- Students who are exempted should be expected to master the appropriate content, understandings, and skills necessary to achieve success in the subject area through the alternatives offered.

Deleted: Due to concern on the part of some students and parents, the issue of dissection in the Lincoln Public Schools has been explored and the following has been concluded.¶

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Adopted July 1993
Revised at School Committee Meeting of

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In 2005, the Massachusetts Board of Education adopted a policy that gives students who do not want to dissect the right to use dissection alternatives instead.

Appendix XII

<http://www.doe.mass.edu/frameworks/scitech/2016-04/AppendixXII.pdf>

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

Introduction

This appendix, approved by the Board of Elementary and Secondary Education in October 2005 as a guidance document, is designed to help district and school personnel implement the Board's policy on dissection and dissection alternatives in science courses. It also provides a variety of alternative resources to actual dissection.

State Policy

The Board-approved policy on dissection and dissection alternatives 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.

Educators teaching life science 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 choose not to participate in actual dissections.

Further, as described in Mass. Gen. Laws c. 272, § 80G, and in Appendix XI, 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). Please refer to Appendix XI for further information concerning the treatment of animals and dissection in the classroom.

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 www.nsta.org/about/positions/animals.aspx.

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

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

The teacher, or other school authority, should specify in writing what is expected of the student participating in an alternative activity. The activity itself should allow students to gain the same content knowledge as a dissection activity and should involve a comparable investment of time and effort by the student. The students 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 at the beginning of the school year to all teachers of science courses that involve dissection. A sample school policy and sample form letter for parents/guardians are included at the end of this appendix.

3. **Schools should include information about dissection in relevant course descriptions, and should clearly specify dissection alternatives in that information.**

When the school or school district publishes descriptions of the courses that it offers in the life sciences, the description for each course should specify whether dissection is part of the standard laboratory experience in that course. 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 (2008), *Position Statement on Responsible Use of Live*

Animals and Dissection in the Science Classroom,
www.nsta.org/about/positions/animals.aspx

- Institute of Laboratory Animal Resources, Institute of Medicine, National Research Council, National Academy of Sciences, National Academy of Engineering (2004), *Principles and Guidelines for the Use of Animals in Precollege Education*,
www.nabt.org/websites/institution/File/Principles%20and%20Guidelines%20for%20the%20Use%20of%20Animals%20in%20Precollege%20Education.pdf

- National Association of Biology Teachers (2008), *Position Statement on the Use of Animals in Biology Education*, www.nabt.org/websites/institution/index.php?p=97

2. Resources on alternatives to dissection

A number of organizations will loan or donate alternatives, such as CD-ROMs (virtual dissections), models, and videos to students and schools. The following organizations have free lending libraries and will help teachers find a suitable alternative to a dissection activity. (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.) Also available are mobile apps (most requiring a purchase) that allow virtual dissection of a variety of organisms.

- The American Anti-Vivisection Society (AAVS) 800-729-2287

www.animalearn.org/

- People for the Ethical Treatment of Animals (PETA) 843-771-2394

www.peta.org/dissection

PETA donates virtual dissection software to schools and teachers and offers free professional development training in computer-based dissection.

Contact Samantha Suiter for more information: SamanthaS@peta.org

- The Ethical Science and Education Coalition (ESEC) 617-523-6020

www.neavs.org/resources/index.htm

This Boston-based organization can provide teacher training.

- The National Anti-Vivisection Society (NA VS) 312-427-6065

Dissection hotline: 800-922-FROG (3764)

Overview of BioLEAP, NAVS' Biology Education Advancement Program:

www.navs.org/education/animals-in-education

Free online dissection resources: www.navs.org/education/free-online-dissection-resources

Dissection alternatives lending library: www.navs.org/document.doc?id=5

The following websites offer free alternatives to dissection:

- Various simulations, experiments, and animals

(www.animalearn.org/sbDownloads.php#.VqaMIvkrLGg)

- Frog

○ Virtualfrogdissectionkit(froggy.lbl.gov/)

○ Netfrog(frog.edschool.virginia.edu/Frog2/)

○ Virtual frog lab (www.mhhe.com/biosci/genbio/virtual_labs/BL_16/BL_16.html) ○ Biology Junction (www.biologyjunction.com/frog_dissection.htm)

• Fish

- Perchdissection(www.bio200.buffalo.edu/labs/tutor/Perch/Perch.html)
- Perchdissectionimages
(jb004.k12.sd.us/MY%20WEBSITE%20INFO/BIOLOGY%202/ANIMAL%20KINGDOM/PERCH%20DISSECTION/PERCH%20DISSECTION%20HOMEPAGE.htm)
- Bluemackereldissection(australianmuseum.net.au/Dissection-of-a-Blue-Mackerel-Scomber-australasicus)
- Virtual shark lab (www.pc.maricopa.edu/Biology/ppepe/BIO145/lab04.html) • **Rat**
- Ratanatomyreview(www.utm.edu/staff/rirwin/public_html/ratanat.htm)
- KansasStateUniversity(www.k-state.edu/organismic/rat_dissection.htm)
- UniversityofManitoba(umanitoba.ca/science/biological_sciences/BIOL1030/Lab4/biolab4_2.html#Rat1)

• Pigeon

- Vertebrateanatomypigeondissection(www.savalli.us/BIO370/Anatomy/7.Pigeon.html)
- Pigeondissectionimages
(jb004.k12.sd.us/MY%20WEBSITE%20INFO/BIOLOGY%202/ANIMAL%20KINGDOM/PIGEON%20DISSECTION/PIGEON%20DISSECTION%20HOMEPAGE.htm)
- SUNY Buffalo's virtual pigeon dissection (www.bio200.buffalo.edu/labs/tutor/Pigeon/Pigeon.html)

• Fetal pig

- WhitmanCollege(www.whitman.edu/biology/vpd/)
- ZeroBio (www.execulink.com/~ekimmel/fetal0.htm)
- BiologyCorner(www.biologycorner.com/pig/fetal.html)
- Interactivescienceactivity
(carolinascienceonline.com/index.php/resources/fetal_pig_anatomy_interactive_science_activity.html#.Vpa9CPkrLIX0)

• Cat

- AnatomyCorner(anatomycorner.com/main/virtual-cat-dissection/)
- Catdissectionimages(http://www.3dtoad.com/dissections_cat.php)
- D.R. Adams interactive programs for veterinary anatomy (www.tabanat.com/)

• Invertebrates

- Dissection of a deer tick (www.ent.iastate.edu/imagegal/ticks/iscap/tickdissection/)

- SUNYBuffalo's virtual crayfish dissection (www.bio200.nsm.buffalo.edu/labs/tutor/Crayfish/)
- The Crayfish Corner (www.mackers.com/crayfish/)
 - **Owl pellet**
 - Kidwings virtual owl pellet dissection (kidwings.com/nests-of-knowledge/virtual-pellet/)
 - **Cow eye**
 - Exploratorium's cow eye dissection (www.exploratorium.edu/learning_studio/cow_eye/index.html)
 - **Brain and heart**
- Exploratorium's sheep brain dissection: the anatomy of memory (www.exploratorium.edu/memory/braindissection/index.html) ○ Michigan State University atlas of the sheep brain (www.msu.edu/~brains/brains/sheep/index.html)
- Comparative mammalian brain collections (www.brainmuseum.org)
- Veterinary gross anatomy online lab (cal.vet.upenn.edu/projects/neurology/lab2/lab2.htm) ○ The Virtual Heart's cardiac anatomy (thevirtualheart.org/anatomyindex.html)

The websites below list many dissection alternatives but are intended for information only. Teachers who identify an item in one of these databases that they want to borrow or purchase should contact the free lending libraries listed above.

- Norina (oslovet.veths.no/NORINA/)
- InterNICHE (www.interniche.org/en)
- The Physicians Committee for Responsible Medicine (www.pcrm.org/)

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- Humane Society Veterinary Medical Association: Alternatives in Education database (www.hsvma.org/alternatives#.VkuBn_mrQUO)
 - Froguts Inc. (www.froguts.com/)
- A special thanks to the New England Anti-Vivisection Society (www.neavs.org) and PETA (www.peta.org) for providing input to this list of dissection alternative resources.*

1. Sample School Policy and Sample Form Letter for Parents/Guardians

A sample school policy and a sample form letter for parents/guardians are provided on the following pages.

Sample School Policy

POLICY ON DISSECTION AND DISSECTION ALTERNATIVES

In accordance with the 2005 Board of Elementary and Secondary 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 offer 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 applications (*name Internet, computer, or mobile device programs*) in place of dissecting (*name organism[s]*).

(*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 will allow students to gain the same content knowledge as the dissection activities and will require 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 is included in the student handbook and is also provided at the beginning of each school year to all teachers of science courses that involve dissection.

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 activities 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 alternative activities rather than participating in dissection.

Sincerely,

_____ Signature of parent or legal guardian

_____ Printed name of parent or legal guardian

Date: _____

NSTA Position Statement

<https://www.nsta.org/about/positions/animals.aspx>

Responsible Use of Live Animals and Dissection in the Science Classroom

Introduction

NSTA supports the decision of science teachers and their school or school district to integrate live animals and dissection in the K–12 classroom. Student interaction with organisms is one of the most effective methods of achieving many of the goals outlined in the *National Science Education Standards (NSES)*. To this end, NSTA encourages educators and school officials to make informed decisions about the integration of animals in the science curriculum. NSTA opposes regulations or legislation that would eliminate an educator's decision-making role regarding dissection or would deny students the opportunity to learn through actual animal dissection.

NSTA encourages districts to ensure that animals are properly cared for and treated humanely, responsibly, and ethically. Ultimately, decisions to incorporate organisms in the classroom should balance the ethical and responsible care of animals with their educational value.

While this position statement is primarily focused on vertebrate animals, NSTA recognizes the importance of following similar ethical practices for all living organisms.

Including Live Animals in the Classroom

NSTA supports including live animals as part of instruction in the K-12 science classroom because observing and working with animals firsthand can spark students' interest in science as well as a general respect for life while reinforcing key concepts as outlined in the *NSES*.

NSTA recommends that teachers

- Educate themselves about the safe and responsible use of animals in the classroom. Teachers should seek information from reputable sources and familiarize themselves with laws and regulations in their state.
- Become knowledgeable about the acquisition and care of animals appropriate to the species under study so that both students and the animals stay safe and healthy during all activities.
- Follow local, state, and national laws, policies, and regulations when live organisms, particularly native species, are included in the classroom.
- Integrate live animals into the science program based on sound curriculum and pedagogical decisions.
- Develop activities that promote observation and comparison skills that instill in students an appreciation for the value of life and the importance of caring for animals responsibly.
- Instruct students on safety precautions for handling live organisms and establish a plan for addressing such issues as allergies and fear of animals.
- Develop and implement a plan for future care or disposition of animals at the conclusion of the study as well as during school breaks and summer vacations.
- Espouse the importance of not conducting experimental procedures on animals if such procedures are likely to cause pain, induce nutritional deficiencies, or expose animals to parasites, hazardous/toxic chemicals, or radiation.
- Shelter animals when the classroom is being cleaned with chemical cleaners, sprayed with pesticides, and during other times when potentially harmful chemicals are being used.
- Refrain from releasing animals into a non-indigenous environment.

Dissection

NSTA supports each teacher's decision to use animal dissection activities that help students

1. develop skills of observation and comparison,
2. discover the shared and unique structures and processes of specific organisms, and
3. develop a greater appreciation for the complexity of life.

It is essential that teachers establish specific and clear learning goals that enable them to appropriately plan and supervise the activities.

NSTA recognizes science educators as professionals. As such, they are in the best position to determine when to use—or not use—dissection activities. NSTA encourages teachers to be sensitive to students' views regarding dissection, and to be aware of students' beliefs and their right to make an informed decision about their participation. Teachers, especially those at the primary level, should be especially cognizant of students' ages and maturity levels when deciding whether to use animal dissection. Should a teacher feel that an alternative to dissection would be a better option for a student or group of students, it is important that the teacher select a meaningful alternative. NSTA is aware of the continuing development and improvement of these alternatives.

Finally, NSTA calls for more research to determine the effectiveness of animal dissection activities and alternatives and the extent to which these activities should be integrated into the science curriculum.

Regarding the use of dissection activities in school classrooms, NSTA recommends that science teachers

- Be prepared to present an alternative to dissection to students whose views or beliefs make this activity uncomfortable and difficult for them.
- Conduct laboratory and dissection activities with consideration and appreciation for the organism.
- Plan laboratory and dissection activities that are appropriate to the maturity level of the students.
- Use prepared specimens purchased from a reputable and reliable scientific supply company. An acceptable alternative source for fresh specimens (i.e., squid, chicken wings) would be an FDA-inspected facility such as a butcher shop, fish market, or supermarket. The use of salvaged specimens does not reflect safe practice.
- Conduct laboratory and dissection activities in a clean and organized work space with care and laboratory precision.
- Conduct dissections in an appropriate physical environment with the proper ventilation, lighting, furniture, and equipment, including hot water and soap for cleanup.
- Use personal safety protective equipment, such as gloves, chemical splash goggles, and aprons, all of which should be available and used by students, teachers, and visitors to the classroom.
- Address such issues as allergies and squeamishness about dealing with animal specimens.
- Ensure that the specimens are handled and disposed of properly.
- Ensure that sharp instruments, such as scissors, scalpels, and other tools, are used safely and appropriately.
- Base laboratory and dissection activities on carefully planned curriculum objectives.

—Adopted by the NSTA Board of Directors, June 2005

Revised: March 2008

References

National Research Council. (1996). *National science education standards*. Washington, DC: National Academy Press.

Additional Resources

Cross, Tina R. 2004. Scalpel or mouse: A statistical comparison of real and virtual frog dissections. *The American Biology Teacher*, 66(6): 408-411.

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*. dels.nas.edu/ilar/prin_guide.asp.

Kinzie, M. B., R. Strauss, and J. Foss. 1993. The effects of an interactive dissection simulation on the performance and achievement of high school students. *Journal of Research in Science Teaching* 30(8): 989-1000.

Kwan, T., and J. Texley. National Science Teachers Association. 2002. *Exploring safely; A guide for elementary teachers*. Arlington, VA: NSTA Press.

Kwan, T., and J. Texley. National Science Teachers Association. 2003. *Inquiring safely; A guide for middle school teachers*. Arlington, VA: NSTA Press.

Madrazo, G. 2002. The debate over dissection: Dissecting a classroom dilemma. *The Science Educator*(NSELA). EJ64162.

National Science Teachers Association. 2000. *Safety and School Science Instruction, an NSTA Position Statement*. www.nsta.org/about/positions/safety.aspx.

Texley, J., T. Kwan, and J. Summers. National Science Teachers Association. 2004. *Investigating safely; A guide for high school teachers*. Arlington, VA: NSTA Press.



LINCOLN PUBLIC SCHOOLS
Lincoln, Massachusetts

CLARIFICATION ON DISSECTION IN THE LINCOLN PUBLIC SCHOOLS

Due to concern on the part of some students and parents, the issue of dissection in the Lincoln Public Schools has been explored and the following has been concluded.

- No dissection of animals is currently taking place in classrooms.
- In the event that dissection is chosen by a teacher as a teaching strategy, all students and parents should be informed of their right to choose not to take part.
- Students should feel comfortable in opting not to dissect and should be treated in a non-judgmental fashion.
- Whenever possible, alternatives to dissection which preserve the integrity of the science program should be made available to students.
- Students who are exempted should be expected to master the appropriate content, understandings, and skills necessary to achieve success in the subject area through the alternatives offered.
- Implementation procedure of this practice should be developed at the school level with the participation of staff and the principal.