



Action Packet for Teachers

A guide to help teachers
make the switch to
humane dissection alternatives



Introduction

This packet is designed to give easy step-by-step instructions to teachers who want to make the switch to humane dissection alternatives. We have provided you with the tools you need to convince administrators, parents, and other teachers that this is the best move for your students!

Thank you for taking the time to make the world a better place for animals.

Good luck!

The NAVS Team

How To Switch to Alternatives

1

Establish where
you stand

2

Build support

3

Make your case

- Promote students' rights
- Present the benefits
- Address common concerns

Step 1:

Establish where you stand

Knowing your school's current stance on dissection can help you identify what points you need to make in your case.

Some questions you may want to ask are:

- Is dissection explicitly mentioned as a required part of your curriculum?
- Does your school already give students the option to opt out of dissection (or other classroom activities) if they choose?
- Does your school already have preferred dissection alternatives available?

Step 2:

Build support

- **Ask your colleagues** if they have considered the use of dissection alternatives before
 - It's important to know who might stand with you (or against you) when you make your case.
- **Ask your students**
 - It can be helpful to have demonstrable student interest when making your case.
 - A 2015 study by NAVS indicated that more than half of students surveyed either had no opinion regarding alternative use or they expressed a preference for using alternatives.

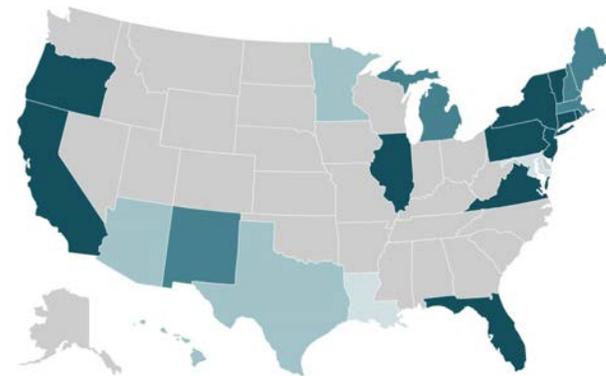
Step 3:

Make your case

Promote your students' rights

- Depending on what state you teach in, your students may already have the right to access dissection alternatives. Visit navs.org to explore students' rights laws and policy.
- No help at the state level? Check your school district website or policy manual for information about requirements for dissection.

Did you know that 21 states and Washington, DC, have laws that allow students to opt-out of classroom activities?



Step 3:

Make your case

Promote your students' rights

Even if there are no specific laws protecting your students' right to dissection alternatives you can still argue that:

- Your students have a right to learn in an environment where they feel comfortable and safe.
- Your students have a right not to dissect on moral, personal or religious grounds.

Step 3:

Make your case

Presenting the benefits of dissection alternatives

- No harmful chemical preservatives
 - The specimen preservative formalin produces a noxious smell and can cause irritation to the eyes, nose and throat.
 - Chemicals from improperly disposed specimens can taint the groundwater.
- Environmentally friendly
 - Many alternatives are reusable year to year.
 - Pond ecosystems are protected from collapse caused by overharvest of frogs for dissection (Rosenberger 1998).
- High student engagement
 - Alternatives are highly realistic but remove the "ick" factor that keep students from fully engaging.

Step 3:

Make your case

Address common concerns

Use the following slides to prepare for some of the points a parent, administrator or fellow teacher might raise against using dissection alternatives.

Common concerns: cost

Administrators may question the cost of dissection alternatives.

- There are a multitude of dissection alternatives on the market allowing administrators to choose the option that best suits your school's budget
- Many alternatives are free or less expensive in the long run because they do not have to be purchased every year like preserved animals do

See the following slides for examples

Cost comparison: fetal pig

For three classes of 30 students each working in pairs each year (90 students, 45 specimens) for three years

Fetal Pig Dissection: Animal Specimen and Alternative Options

Animal Specimen

Dissection kits (\$12.15 each)	\$546.75
Dissection pans (\$11.95 each)	\$537.75
Specimens (\$29 each)	\$3,915.00
Total	\$4,999.50

Humane Alternatives – Examples

Whitman College Virtual Fetal Pig Dissection	Free	Saves \$4,999.50
eMind Pig Site License (\$199 per year)	\$597.00	Saves \$4,402.50
Scienstructable Fetal Pig Paper Dissection kits (\$16.96 each)	\$763.20	Saves \$4,236.30

Pricing information retrieved from Carolina Biological supplies catalog October 5, 2020. Pricing reflects group discounts and one-time fee for dissection kits and pans.

Cost comparison: frog

For three classes of 30 students each working in pairs each year (90 students, 45 specimens) for three years

Frog Dissection: Animal Specimen and Alternative Options

Animal Specimen

Dissection kits (\$12.15 each)	\$546.75
Dissection pans (\$11.95 each)	\$537.75
Specimens (\$7.25 each)	\$978.75

Total	\$2,063.25
--------------	-------------------

Humane Alternatives – Examples

eMind Frog Site License (\$199 per year)	\$597.00	Saves \$1,466.25
Scienstructable Frog Paper Dissection kits (\$16.96 each)	\$763.20	Saves \$1,300.05
Virtual Anatomy 3D App – Frog (\$3.50 per student per year)	\$945.00	Saves \$1,118.25

Pricing information retrieved from Carolina Biological supplies catalog October 5, 2020. Pricing reflects group discounts and one-time fee for dissection kits and pans.

Common concerns: efficacy

Fellow teachers may question if using alternatives allows students to meet learning goals.

One peer-reviewed analysis of 50 published articles compared student learning outcomes with traditional animal specimens and humane alternatives for activities including animal dissection.

It revealed that 60% of authors reached the conclusion that there was **no real difference** in the student learning experience between traditional animal specimens and humane alternatives, while 30% of authors concluded that **alternatives provided a better experience** for students (Zemanova 2021).

Common concerns: experience

Parents may express concern that, without dissection, students who wish to pursue biology and medical school may not be prepared.

Many top performing nations in medicine and science, such as the Netherlands, Denmark, India and Switzerland, have completely done away with dissection in schools.

Common concerns: experience

Fellow teachers may say that students will lose hands on experience.

Dissection alternatives take many different forms, some of which include physical models that can be cut open using a scalpel, just like a real specimen.

Common concerns: curriculum

Administrators may question if the use of dissection alternatives meets curriculum standards.

- Most public schools now follow the Next Generation Science Standards (NGSS) teaching framework, which makes no reference to dissection as a necessary part of a well-rounded education.
- Even if your state does not follow NGSS standards, it is rare for dissection to be mentioned in state science standards for K-12 students.

Keep Trying!

If you have exhausted all these avenues and are still unable to use a humane dissection alternative, don't get discouraged. Animal dissection has a long tradition in American classrooms, and change takes time.

For additional resources or advice, please contact NAVS at bioleap@navs.org.

We will do our best to help you make the switch to dissection alternatives in your classroom.

References

Osenkowski, P., C. Green, A. Tjaden, and P. Cunniff. 2015. "Evaluation of Educator and Student Use of and Attitudes toward Dissection and Dissection Alternatives." *American Biology Teacher*, 77(5); 340-346.

Rosenberger, J. 1998. "Harvest of shame: Dissection's deadly toll hits frogs hardest." *E Magazine*. 9(4), 26-27.

Zemanova, M. and Knight, A. 2021. "The Educational Efficacy of Humane Teaching Methods: A Systematic Review of the Evidence." *Animals*. 11, 114.