



BIOEYES REPLICATION FLOW CHART

Thank you for your interest in the BioEYES zebrafish program! If you are a teacher wanting to do BioEYES with your students, below are the steps to getting this program started.

Here is what you will gain...

- ✓ *Learn how to deliver an evidence-based model of hands-on science*
- ✓ *An opportunity to have your students model the practice of being a scientist*
- ✓ *Become more comfortable and confident working with live animals and scientific equipment in your classroom*
- ✓ *Create a student-driven, engaging science experience*
- ✓ *Enhancement of your curriculum via implementation of NGSS*
- ✓ *An increase in students' knowledge and attitude towards science*

Here is how we support you...

- ✓ *Provide a hands-on classroom based teacher training*
- ✓ *Assist you in building the program and piloting it*
- ✓ *Continue to provide support after the pilot*
- ✓ *Share resources for disseminating the program and sustaining it*
- ✓ *Provide evaluation data*
- ✓ *Adapt our curriculum for your needs*
- ✓ *Work with your administration to ensure all requirements are met*
- ✓ *All sites work together to develop new curricula, teaching materials, and overall program goals*

*Note: This lab works best as a supplement to lessons already being taught on either genetics/inheritance, life cycles/development, the Scientific Method, or model organisms. It requires 4-5 consecutive days of class time, approx. 50-60 min per class. This can be done in a traditional classroom, after-school program, or summer camp. We have an additional version of the lab, our "Temperature Unit", which incorporates Math skills such as graphing.



Think about **partnering with a nearby fish facility** to borrow/obtain the materials listed below. Start by seeing if any universities or research centers in your area have a fish facility. Are you willing to travel to this fish facility to obtain the supplies?

You can search www.zfin.org to locate one. Click on the tab “General Information”, then search under “Labs”. We can help you with this. If a facility is identified, please share that with us and we will establish a connection with them and take care of the technical details. If you don’t partner with a fish facility, then you will have to obtain these materials yourself from a source such as Carolina Biological.

Fish facility materials:

6-8 adult mating pairs of zebrafish (depending on class size)
mating tanks
water
embryos
embryo medium



Raise funds and purchase remaining materials. Schedule your BioEYES training.

The total cost (not including the fish facility materials listed above) breaks down to about \$10/student (for supplies) plus the cost for the teacher training. Please note there is no on-going fee for being part of BioEYES.

Training Information:

You must provide travel & accommodations (& a stipend if one of our educators comes to you) for either yourself to come to one of our hubs in Philadelphia, Baltimore, or Salt Lake City to get trained, or for one of our staff to travel to your location. Training typically consists of a week-long, all day co-teaching experience with one of our educators. If we come to your school then you are welcome to invite other teachers to take part, or this can be done in the summer as professional development.

We are thinking of running a 2 day summer training, in Philadelphia, in July or August 2017. If you are interested in attending, please complete this SurveyMonkey. (Click here...<https://www.surveymonkey.com/r/GF78H7X>)

Materials:

- Microscopes- 2 minimum, 8 maximum. We use Accuscope stereoscopes but compound microscopes typically found in schools work just fine.
- BioEYES student journals (purchase from us)
- Petri dishes
- Pipettes
- Fish nets
- Fine mesh strainer for embryo collection
- Reptile heating pad
- Cookie cooling rack
- Plastic bin for storage
- Light and timer

Fund raising:

We can help you explain/justify this program to your administration, who may be able to provide you with some or all of the funds to get it going.

On our website we have listed the academic standards that our program covers.

(<http://www.bioeyes.org/teachers/standards/standards-home.php>)

We also evaluate students' knowledge of and attitudes towards science before and after they participate in the week-long lab.

See the results in our recent paper published in PLOS.

(<http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.2000520>)



There will ultimately be some **paperwork** to sign as well, such as the Memorandum of Understanding.



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