

# Flathead Pursue Diversity: Beyond the Phases of Meiosis

Janet Vigna

Department of Biology, Grand Valley State University, 325 Henry Hall, Allendale MI 49428 USA  
([vignaj@gvsu.edu](mailto:vignaj@gvsu.edu))

Labs teaching meiosis often depend on students viewing cells suspended in their various static phases. As a result, students tend to remember the names of the phases, but not always the importance of what the phases accomplish. In addition, it is difficult for students to connect the molecular process of meiosis to the diversity of physical traits we see in populations. To engage students in the dynamic process of meiosis we developed a lab activity where students become members of a fictional Flathead population. As members of the population students go through the process of meiosis to produce gametes and reproduce offspring bearing various inherited traits. The model “Flathead” organism is a great visual tool to demonstrate the relationship of genotype to phenotype, and also to demonstrate how independent assortment and fertilization result in diversity within populations. The content complexity of this lab activity can be adjusted for use in both non-majors and majors biology and genetics labs. Genes, alleles and physical traits can be easily altered to incorporate different modes of inheritance and gene expression.

**Link to Original Poster:** [www.ableweb.org/volumes/vol-32/poster?art=73](http://www.ableweb.org/volumes/vol-32/poster?art=73)

## Mission, Review Process & Disclaimer

The Association for Biology Laboratory Education (ABLE) was founded in 1979 to promote information exchange among university and college educators actively concerned with teaching biology in a laboratory setting. The focus of ABLE is to improve the undergraduate biology laboratory experience by promoting the development and dissemination of interesting, innovative, and reliable laboratory exercises. For more information about ABLE, please visit <http://www.ableweb.org/>.

Papers published in *Tested Studies for Laboratory Teaching: Peer-Reviewed Proceedings of the Conference of the Association for Biology Laboratory Education* are evaluated and selected by a committee prior to presentation at the conference, peer-reviewed by participants at the conference, and edited by members of the ABLE Editorial Board.

## Citing This Article

Vigna J. 2011. Flatheads pursue diversity: beyond the phases of meiosis. Article 73 In: McMahon K, editor. *Tested studies for laboratory teaching*. Volume 32. *Proceedings of the 32<sup>nd</sup> Conference of the Association for Biology Laboratory Education (ABLE)*. <http://www.ableweb.org/volumes/vol-32/?art=73>  
Compilation © 2011 by the Association for Biology Laboratory Education, ISBN 1-890444-17-0. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the copyright owner.

ABLE strongly encourages individuals to use the exercises in this proceedings volume in their teaching program. If this exercise is used solely at one's own institution with no intent for profit, it is excluded from the preceding copyright restriction, unless otherwise noted on the copyright notice of the individual chapter in this volume. Proper credit to this publication must be included in your laboratory outline for each use; a sample citation is given above.