



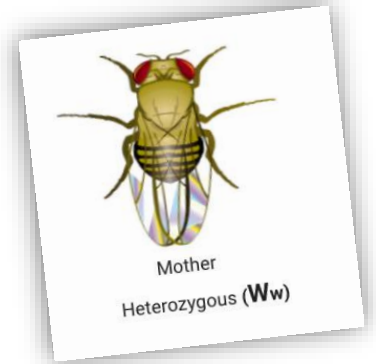
Graphing Research on Inquiry with Data in Science (GRIDS)

[Click here for a video presenting some of the units](#)

Genetics & Argumentation

Grade	7-8
Duration	7-10 hours
Language	English
Link	http://wise.berkeley.edu/project/20893

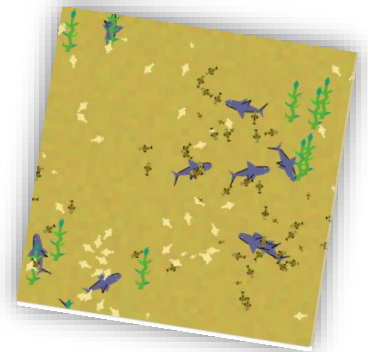
Students explore and critique explanations about mutations, probability, and simple inheritance in order to construct stronger and more coherent scientific arguments. Students use Punnett squares and interactive models to explore the basics of genetic material, allele dominance, and trait inheritance and expression. They analyze expression of some personal traits such as ear lobes. Students construct graphs showing probabilities of getting certain genotypes in different model-organism crosses. They use evidence from these graphs to draw conclusions about patterns of inheritance.



Ocean Biodiversity & Discourse

Grade	6-7
Duration	8-10 hours
Language	English
Link	http://wise.berkeley.edu/project/20905

Students collaboratively learn about the main ideas of evolution (mutations and variation, environmental pressures, natural selection, phenotype versus genotype plasticity, heredity and biodiversity, speed of evolution) through a sequence of interactive activities. These include graph-based analysis of a model simulating natural selection. To develop scientific discourse capabilities, students are guided to share ideas and arguments regarding the simulation, and collaboratively discuss science and graphing.



Solar Ovens & Design Critiques

Grade	6
Duration	10-15 hours
Language	English, Mandarin
Link	http://wise.berkeley.edu/project/19409

Students design, build, and test solar ovens. They critique and refine their own and their peers designs. Students learn about how energy is transformed from solar radiation to heat and infrared radiation. They use an interactive simulation to extend the design process. They test their ovens using heat lamps, and use a budget to constrain their design. The budgeting activity helps students consider trade-offs in the design. They evaluate each material they use with regard to their goal. Students go through two iterations of designing, building, and testing. Between the two iterations, student groups critique each other's ovens. During the second iteration, students engage in self-critique of their ovens prior to re-design.

