Tested Studies for Laboratory Teaching
Proceedings of the Association for Biology Laboratory Education
Vol. 32, 389-390, 2011

Simple Mold Making Techniques for the Creation of Teaching Specimens

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Introduction

It is preferable to use authentic specimens for teaching demonstrations or lab activities, but such materials are often fragile, rare, prohibitively expensive or, sometimes, purely imaginary. Though there are many commercial models available, these are often very expensive or do not suit the needs of a particular laboratory exercise. Casting models using silicone molds and polyester resins allows for the creation of customized models for your classroom. With a little practice, you can create models that are as good as (or better than) those that you can buy. Originals can be either natural objects or models of your own creation. The casting materials used are fast curing, durable and relatively inexpensive, making them ideal for the creation of numerous identical teaching sets.

There are many methods and materials that can be used to make molds and casts. You need to balance the cost of materials, time to complete the project, and durability of the finished products when choosing materials and techniques. Our experience has been that using RTV silicone rubber as a mold material and quick-curing polyurethane resin for the casts has given the best results. The molds are good for making dozens of casts and some of our models have been used by over 5000 students without being damaged. There are numerous guides to materials and methods listed in the Materials section below.

Materials

TAP Plastics - **www.tapplastics.com**
Supplier of a wide variety of materials
A great series of instructional videos (http://www.tapplastics.com/info/video.php)

AeroMarine Products, Inc. - **http://www.jgreer.com/**
Supplier of wide variety of materials
Site includes a "Moldmaking 101" tutorial and video tutorials

Environmolds - **http://www.artmolds.com/**
Supplier specializing in materials that are environmentally safe

Smooth-On - **www.smooth-on.com**
Supplier of wide variety of materials
This site has a wide variety of how to pages and guides including a 19 page book on casting
http://www.smooth-on.com/howto.php

The Compleat Sculptor - **http://www.sculpt.com/**
Supplier of a wide range of molding and casting materials
The Online Tech section of their website has some useful information such as how to estimate the amount of rubber needed to make a mold

Castcraft - **http://www.castcraft.com/index.htm**
Books and videos about mold making, casting, vacuum forming, metal melting, jewelry manufacturing, and casting machines.

A technique for when you really can't have any air bubbles
www.vertpaleo.org/education/documents/Morrison_2007.pdf

Casting & Molding in Paleoanthropology and Allied Disciplines
An online guide to casting techniques by Michael Black at Duke
http://www.duke.edu/~mtb3/castingmanual/titlepage.html

The Prop Builder's Molding & Casting Handbook
Thurston James (1989), Betterway Books, Cincinnati, OH.
A great book covering lots of interesting techniques - including breakaway glass!

Disclaimer: Mention of trade names and web sites is for informational purposes only and supplied with the understanding that no discrimination is intended and no endorsement is implied

Mission, Review Process & Disclaimer

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Citing This Article

Lemke, H. 2011. Simple Mold Making Techniques for the Creation of Teaching Specimens. Pages 389-390, in *Tested Studies for Laboratory Teaching,* Volume 32 (K. McMahon, Editor). Proceedings of the 32nd Conference of the Association for Biology Laboratory Education (ABLE), 445 pages. **http://www.ableweb.org/volumes/vol-32/v32reprint.php?ch=42**