

# Digital Microscopy Workflow

Authors: Caroline Roberts and Suzanne Davis, Kelsey Museum of Archaeology, University of Michigan  
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## About Microscopy

Examining an object under the microscope allows us to search an artifact's surface for traces of pigment (Figure 1) and to look closely at how textile threads are dyed. Microscopy can be used to look at artifacts at high levels of magnification with the aid of a monitor and to capture digital images at that magnification.



**Figure 1.** Transition from yellow zone to pink zone on stomach of terracotta dog (KM 6909)—individual red pigment particles can be seen in the pink area on the bottom right

At the Kelsey Museum, we use two different digital microscopes. (Note: The workflow below describes how to use a handheld digital microscope):

- A simple handheld Dino-Lite digital USB microscope to explore the surfaces of artifacts for traces of color—this is really useful for technical survey, especially where the subjects are a range of artifact types and sizes, because you can bring the microscope to the object. We tether the instrument to a computer to visualize the surface at around 100x magnification and to take photos at points of interest
- A Leica S9i binocular microscope with a built-in camera tethered to a computer

## Equipment

- Dino-Lite Premier AD4113TL(R4) digital microscope (others are available with different resolutions, magnifications, depths of field, and light sources), with DinoCapture 2.0 software
- Gooseneck clip stand

## Helpful Hints

- Sticky notes can be cut into arrows to help locate points of interest on an artifact
- A stand is a must—it's really tricky to hold the microscope steady enough with your hand to capture a focused image
- Think about the kind of objects you're looking at—if three-dimensional, consider purchasing a microscope with an extended depth of field option

## Examination Steps

1. Plug Dino-Lite digital microscope into USB port on your computer; attach scope to stand, if using (recommended as it is very difficult to hold the scope steadily in your hand).
2. Open DinoCapture software. The scope's LED light will turn on.
3. Position scope roughly 7" from the surface of the object; bring surface into focus using the dial at base of arm; adjust fine focus using the wheel on the front of the scope.
  - a. Note: The depth of field is pretty low on some Dino-Lite cameras, so try to position the camera as close as you can to a 90° angle to the object's surface
4. Click the Sun icon at upper right and adjust brightness of the camera light as needed.
5. Click the Camera icon at left to capture an image.
6. Right click on image thumbnail and save in Dino-Lite image folder. Include object number and a brief description of your image in the file name.