

Preserving Paper

The Declaration of Independence, the Bill of Rights, and the Constitution have been on display for well over 150 years. Now a new case has been constructed to preserve these important symbols of democracy. In this activity, you will experiment with different ways of preserving documents from sunlight damage.

Procedure

- 1 Use the examples on the “Sample Charts” handout to make a chart in your journal that lists your treatment methods. Predict which of your preservation techniques will best prevent fading of (or yellowing) and damage to whichever paper you have been assigned (colored paper or newspaper clippings). Record your prediction and reasons in your journal.
- 2 Work with your team to prepare the four samples and two controls. Place newspaper over your workspace. Cut six 2 cm x 2 cm pieces of each color of construction paper or 8 cm x 8 cm newspaper depending upon which kind of paper your team is testing. (If you are using colored paper, make sure your samples are in the same location and same order on each sample.)
- 3 Label the four treatment samples. Label one control “light-exposed control” and one “dark control.”
- 4 Put on your goggles. Cover the four samples—each with a different treatment. Use a thin layer of treatment. Allow samples to dry entirely before attaching them to white background paper.
- 5 Tape the labeled samples and the “light-exposed control” onto white background paper. Keep the pieces in a vertical line and make sure they are not touching one another.
- 6 Place the “dark control” in an envelope or a dark place such as a drawer. Tape your samples to the window (image facing out) so that, if possible, they all receive about the same amount of sunlight each day. Note in your journal if there are differences in the amount of sunlight each receives. Leave the samples there for seven days. Check them daily and record your observations in your chart.



- 7 At the end of seven days, carefully gather your samples and your controls. As a team, compare your samples, discuss your results, and share your findings with the class.

Questions

Write your answers on a separate sheet of paper.

- 1 Analyze your data chart and your samples. Reexamine the two controls. Compare the dark control to the sunlight-exposed control. Note any fading (colored paper) or yellowing (newspaper) differences. Compare the sunlight-exposed control to the treated samples. What, if any, differences do you see? Rank each treatment method in order of how well it prevented the colored paper from fading or the newspaper from yellowing.
- 2 Describe the effect sunlight had on materials.
- 3 Describe any damage caused by the different treatment methods on the colored paper or the newspaper.
- 4 Compare your predictions to the results. How accurate were your predictions?
- 5 Which of your treatment methods was most effective in preserving the sample and preventing fading or yellowing? Why do you think it worked? If one or more treatment methods did not work to prevent fading, why do you think it/they did not work?