

TEACHING WITH TIME CAPSULES

SMITHSONIAN'S MUSEUM CONSERVATION INSTITUTE

Anniversaries, such as the millennium, are often occasions for making time capsules to preserve selected private or public collections for posterity. The exercise of putting together a time capsule trains one in principles used by many professionals, ranging from material scientists to preservation experts (such as conservators, chemists, archivists, librarians, historians, and teachers). The information included in this exercise is divided into the following 5 sections:

- I WHAT YOU NEED TO READ
- II WHAT YOU NEED TO MAKE OR BUY FOR YOUR TIME CAPSULE
- III WHAT YOU NEED TO FIND TO INCLUDE IN YOUR TIME CAPSULE
- IV WHAT YOU NEED TO EXCLUDE FROM YOUR TIME CAPSULE
- V WHAT YOU NEED TO DO TO REGISTER YOUR TIME CAPSULE

Making time capsules can be a fun and worthwhile project for children, families, neighborhoods, clubs, churches, schools, universities, and associations, etc.

WHAT YOU NEED TO READ BEFORE MAKING OR BUYING YOUR TIME CAPSULE:

WHAT IS A TIME CAPSULE?

Anything that encapsulates time! Time capsules can be as big as the Egyptian pyramids (enclosing ancient treasures), or as small as a Victorian button (trapping industrial air). Can you think of other natural or accidental examples?

(**HINT:** teeth, soda bottles, photo albums, glaciers, etc.)

The word "time capsule" is relatively new, and reportedly was first used during the 1939 World's Fair. Earlier prototypes included a "Century Safe" (1876) and the so-called "Crypt of Civilization" (1938), according to the International Time Capsule Society. Knowing when they were put together, can you guess what they included?

(**HINT:** see research done by Historian Paul Hudson and the [International Time Capsule Society](#))

WHAT IS THE PURPOSE OF TIME CAPSULES?

Today when we say "time capsule," we generally are referring to a container (such as a stainless steel capsule or a stable plastic jar) that preserves matter (such as artifacts or air) over a period of time. There are many [guidelines](#) on putting together [time capsules](#). And there are many types of time capsules available from different companies claiming to preserve objects for 5 to 5000 years for \$20 to \$20,000. But there are some important facts to consider before making or buying a time capsule.

WHAT ARE SOME IMPORTANT FACTORS TO CONSIDER WHEN MAKING OR BUYING A TIME CAPSULE?

It is important to remember that, in order to preserve matter, a time capsule container (as well as the environment and the matter within) should be as inert (unreactive) as possible. If reactive or unstable materials and environments are used, then the matter will not be preserved in a good or usable state. Instead, items may change (in color, texture, composition and strength) over time, perhaps to the point of becoming unrecognizable, unidentifiable, and unstable ([see IV](#)).

The best things to put into a time capsule are those that are the most stable, so that they won't fall apart or ruin other items in the capsule ([see III](#)). Anything that might contaminate other items, or that might need extra physical support, should be enclosed in its own inner container, which can then be put into the larger, outer container ([see II](#)).

Before starting a time capsule, you should decide what materials to select for both the capsule and its contents, based on established selection criteria. Such criteria usually require evaluation of the relative use, value and risk of materials. One technique, used by archivists to determine use, value and risk, is outlined in [Table A](#).

To determine risk, you must know the characteristics of the various materials or components of the capsule and its contents - both in the short and long term (or before and after aging or exposure to factors of deterioration such as light, humidity, temperature, pollution, and pests). Each material is a variable, and each variable should be characterized fully. This means that you should describe it, and analyze it if possible, both qualitatively (i.e. what's there) and quantitatively (how much is there). Some analytical techniques used by scientists include those in [Table B](#).

Consequently, you should gather all the information you can about the capsule and its contents, focusing on the following components:

- [objects](#) (preventive care; collection care)
- [object housings](#) (processing & storage resources; non-adhesive housing systems)
- [interior & exterior environmental controls](#)
- [capsules & caps](#)
- [sealants](#)
- [capsule housings](#)

In summary, each of these components or variables should be characterized qualitatively and quantitatively before and after aging to note original (and altered) chemical and physical properties. Chemical properties of pH, color, etc. depend on the composition of each variable, and should be identified with respect to organic and inorganic compounds and additives. Physical properties include size, shape, strength, flexibility and physical stability. To keep track, you might follow examples of data forms used by researchers, such as the one in [Table C](#).

At the least, for this project and exercise, you should determine the size, shape, life expectancy and cost of your time capsule and its components. And don't forget to register it! See what you need to do to [register](#) your time capsule.