

Rationale

Students entering a research laboratory are confronted with an environment containing a mix of objects common to any academic setting, specialized scientific equipment, and familiar items repurposed for experimental protocols. To become a productive researcher, students must become comfortable in this environment and adept at both using and communicating about these objects. The difficulty of this process is exacerbated when a student is functioning in a non-native language. Most items in the first category, and some in the third, will have been covered as basic vocabulary in language courses, but not the specialized items. To support English-speaking students who will be carrying out research in Japanese laboratories, we are developing a visual dictionary of laboratory items. Although these will be the initial users, we hope to develop the dictionary into a resource that could be used by both native English and Japanese speakers.

Sample dictionary entries

Pipettor
Micropipettor
Pipetteman
ピペットマン
ピペットマン
pipetto man



Timer
タイマー
taima-



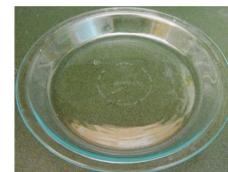
Erlenmeyer flask
三角フラスコ
サンカク フラスコ
sankaku furasuko



1.5 mL tube
Eppendorf tube/eppi tube
1.5 mL チューブ
イッテン ゴ ミリリットル
チューブ
itten go miririttoru chu-bu



Water bath
恒温槽
コウオン ソウ
kouon sou



Pie plate
パイ皿
パイ ザラ
Pai zara

Making the dictionary publically available

To make the dictionary freely available from any location, the entries have been moved to ArtStor's Shared Shelf environment. This platform allows browsing by category or searching in English and Japanese (Kanji, furigana, or romanji). The Shared Shelf platform can also support the eventual inclusion of sound and video files, allowing the dictionary to be expanded to include verbs and demonstrations of protocols.

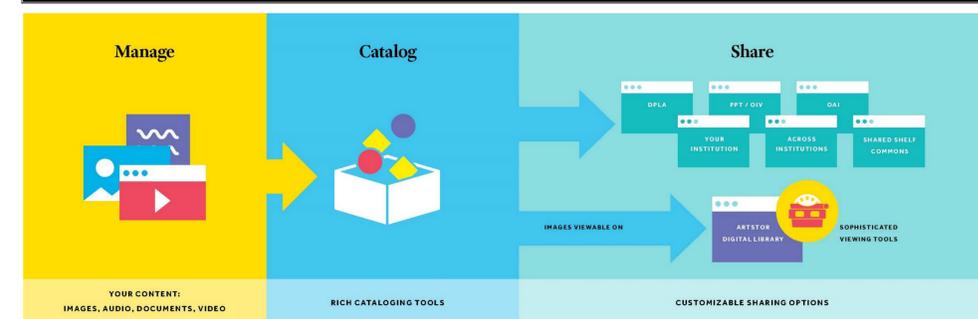
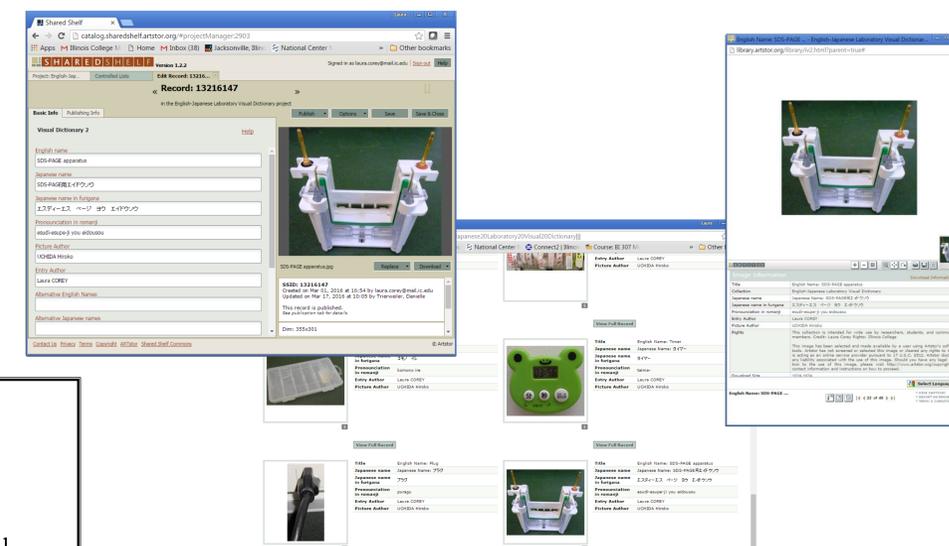


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Left to right: Shared Shelf cataloging environment, asset display view, and individual entry.

The sample entries above represent typical issues that arise with building a laboratory vocabulary. Clockwise from the green timer:

- The names of some objects in Japanese are loan words from English, such as the timer/タイマー.
- The pipettor shown above it is an example of a brand name being used as a general name: the device shown is not a Gilson brand PIPETMAN®, but the term pipetman/ピペットマン is commonly used by workers using either language.
- The English name of the flask honors its inventor, German chemist Emil Erlenmeyer, while the Japanese name reflects the shape of the flask ('sankaku' = triangle).
- The small plastic tube is sometimes described by size (e.g., 1.5 mL), but may also be identified by either the full or abbreviated name of a common manufacturer, Eppendorf AG, even if the tubes are purchased from a different manufacturer.
- Pie plates are a common household item to many native English speakers, and an inexpensive soaking tray used for a variety of procedures in the laboratory instead of a more expensive, specialized container. However, home baking is uncommon in Japan, and the object may be unfamiliar.
- The English name 'water bath' describes the physical characteristics of the instrument, whereas the Japanese name refers to its function and translates as 'thermostat'.

Acknowledgements

We gratefully acknowledge the following funding sources:

- Henry Luce Foundation's Luce Initiative on Asian Studies and the Environment (LIASE)
- Japan Foundation
- Alice Margaret Engelbach Memorial Endowment for Asian Studies
- Richard T. Fry Faculty Collaboration Fund

We gratefully acknowledge the help of many people at Illinois College and Ritsumeikan University including: Andy Stice, Melissa Pantier, and Shizuyo Asai.



Above: typical research lab.