

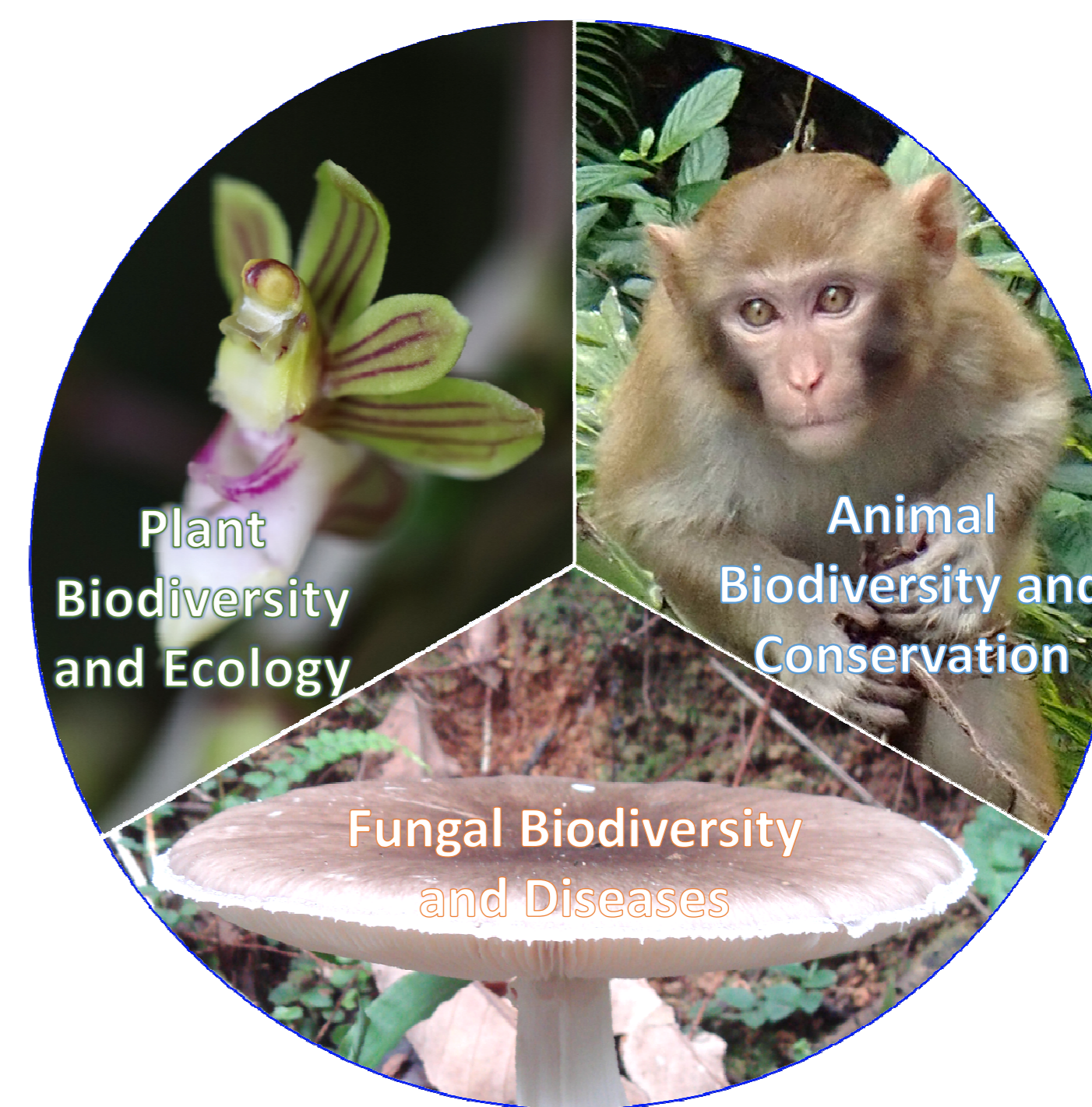
Learning Biology with “Science Mobile”: Promoting Ubiquitous Learning and Knowledge Integration in Biology

Cheung-Ming Chow, Pui-Yi Chui, Siu-Kwan Wong & Ka-Man Carmen Cheng
School of Life Sciences

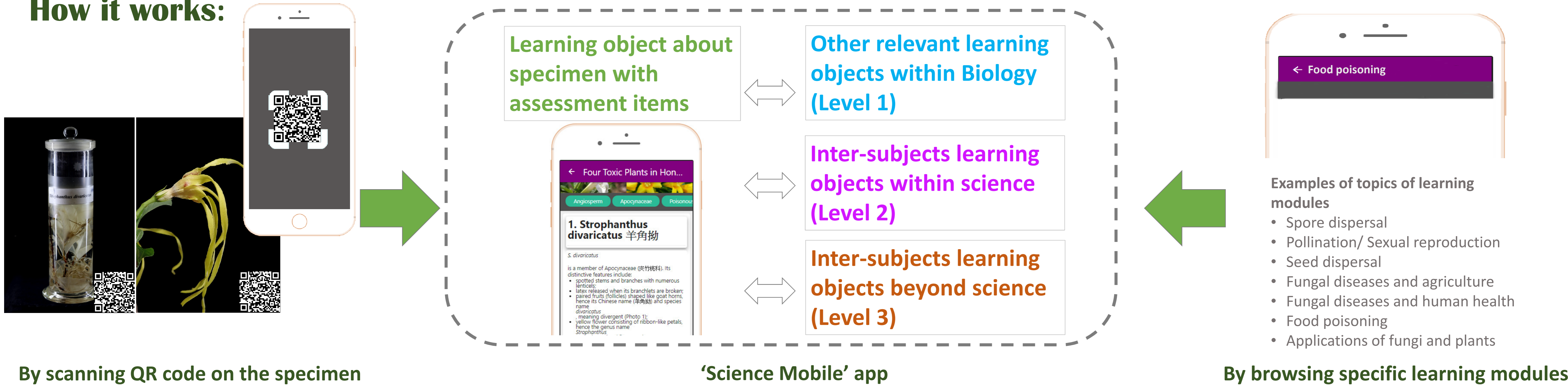
Objectives:

Our project aims to

- create more than **400 learning objects** about Biology under three main themes, namely (1) Plant Biodiversity and Ecology, (2) Animal Biodiversity and Conservation, and (3) Fungal Biodiversity and Diseases;
- enhance **knowledge integration** at different levels through **ubiquitous learning** with the app ‘Science Mobile’ by creating **learning modules**;
- promote self-learning.



How it works:

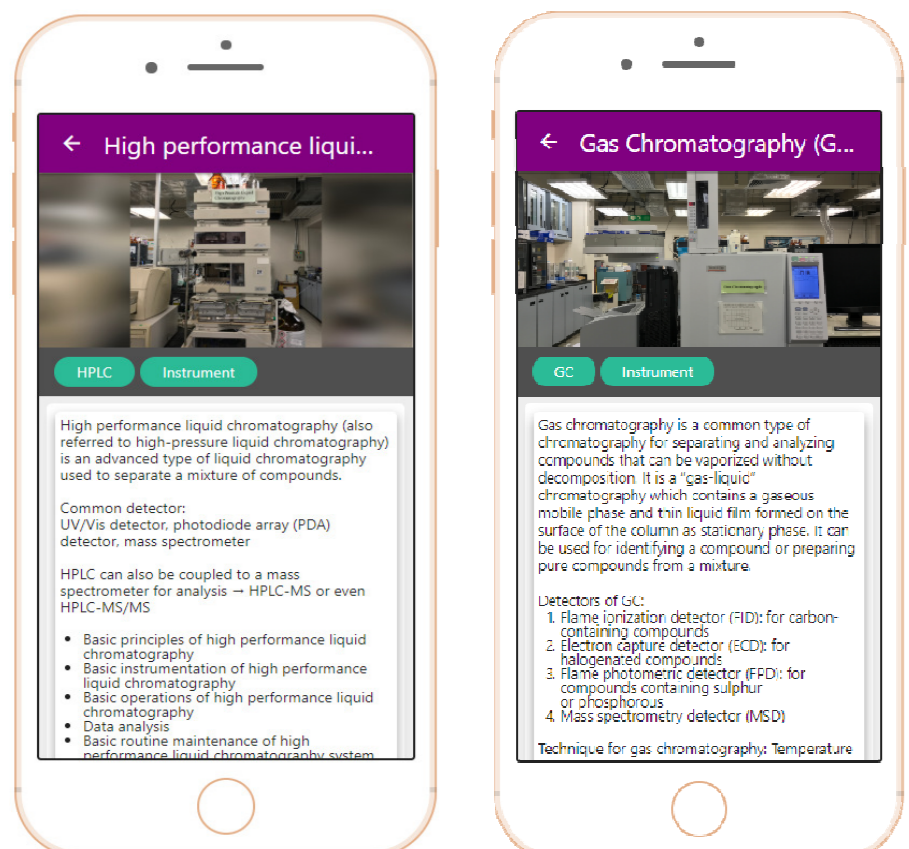


Examples of knowledge integration through ‘Science Mobile’:

Associating Inter-subjects learning objects within science (Level 2)

Chemical Analysis of Toxic Chemicals in Plants

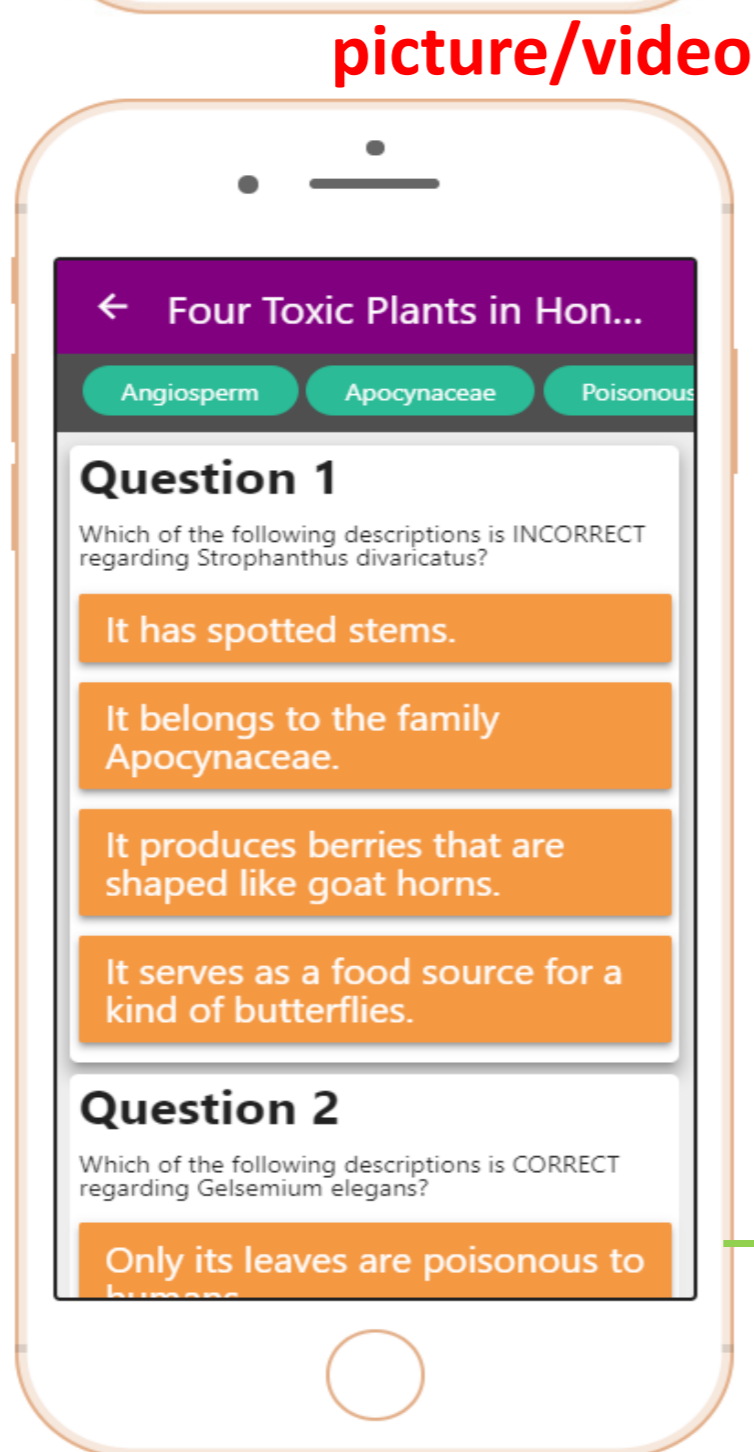
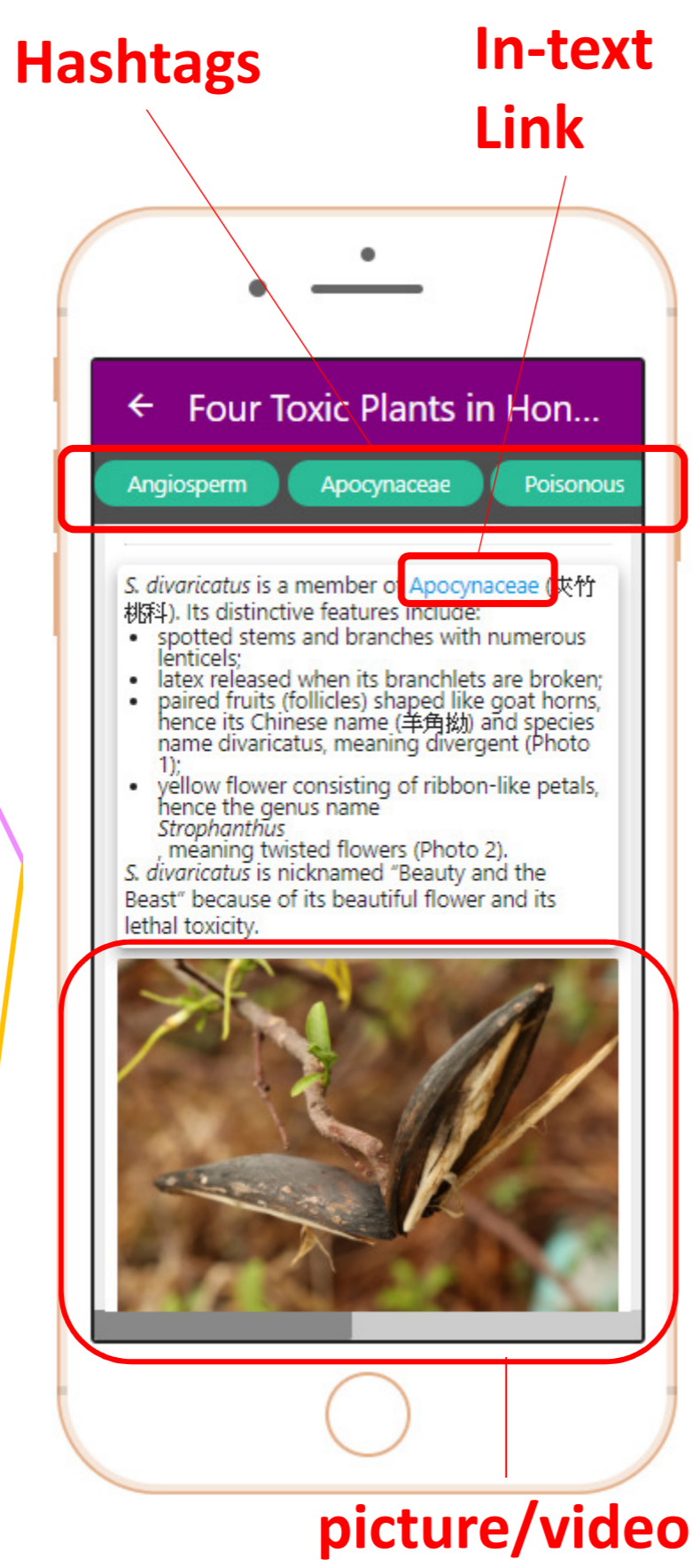
- Gas chromatography (GC)
- High Performance Liquid Chromatography (HPLC)



Associating Inter-subjects learning objects beyond science (Level 3)

Chinese Culture & Plants

- Social issues: Poisoning incidents and food safety in Hong Kong
- Literature: *Gelsemium elegans* in the fiction by Jin Yong
- Folklore: *Gelsemium elegans* and the death of Shennong
- History: Origin of Rhesus monkeys in Hong Kong



Assessment

- Multiple-choice questions to test students' understanding

Associating Learning modules & learning objects within Biology (Level 1)

Interaction between Plants and Animals

- Blue-spotted Crow (藍點紫斑蝶, *Euploea midamus*) and *Strophanthus divaricatus*

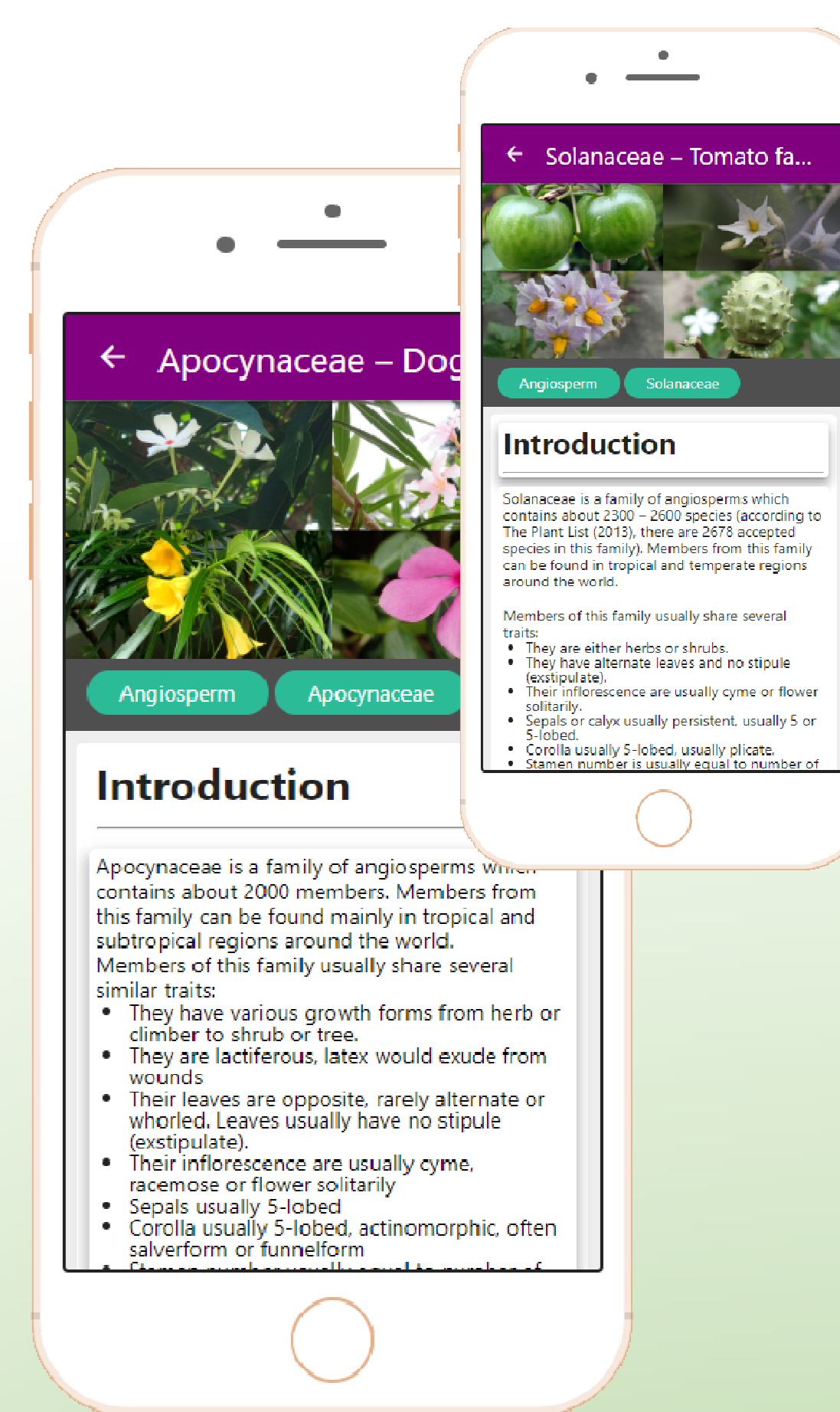


Plants and Daily Life

- Food poisoning
- Medical use of plants

Family Information of Plant Species

- Loganiaceae 馬錢科 for *Gelsemium elegans* 钩吻, 断肠草 and *Strychnos angustiflora* 牛眼马钱
- Solanaceae 茄科 for *Datura metel* 洋金花
- Apocynaceae 夹竹桃科 for *Strophanthus divaricatus* 羊角拗



Progress & Future Works

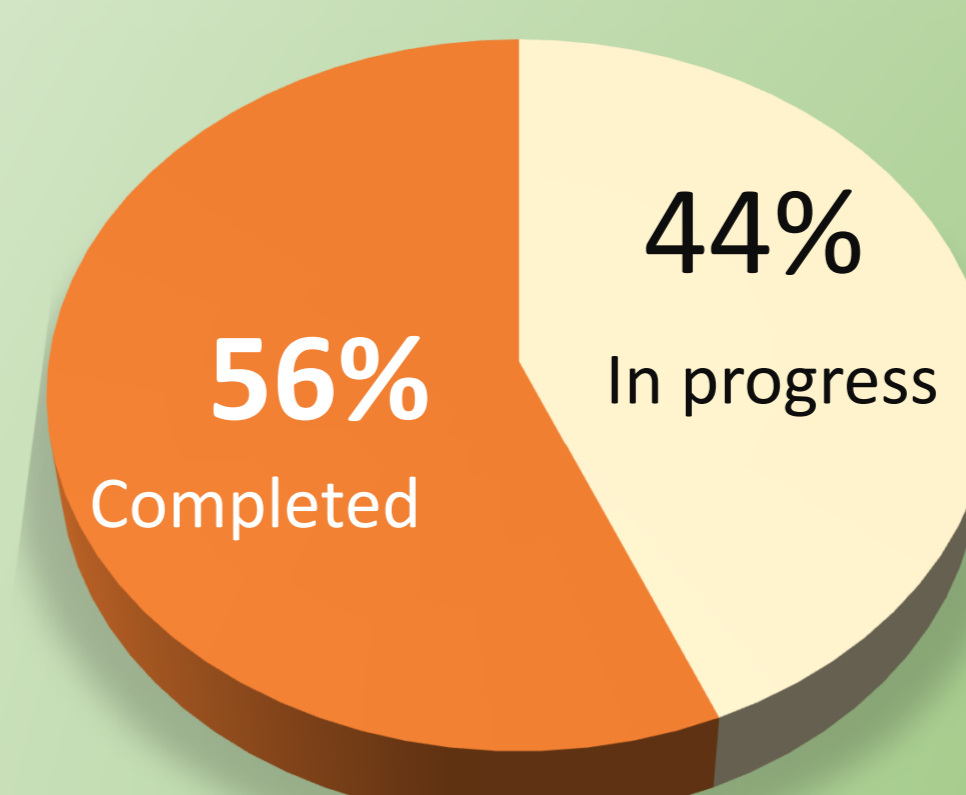
More than 400 biology-related learning objects would be added to the app ‘Science Mobile’.

So far, over half of text items of the learning objects have been prepared. For specimen-associated items, they typically cover subtopics like features of taxonomic groups, life cycle, survival strategies, applications, etc.

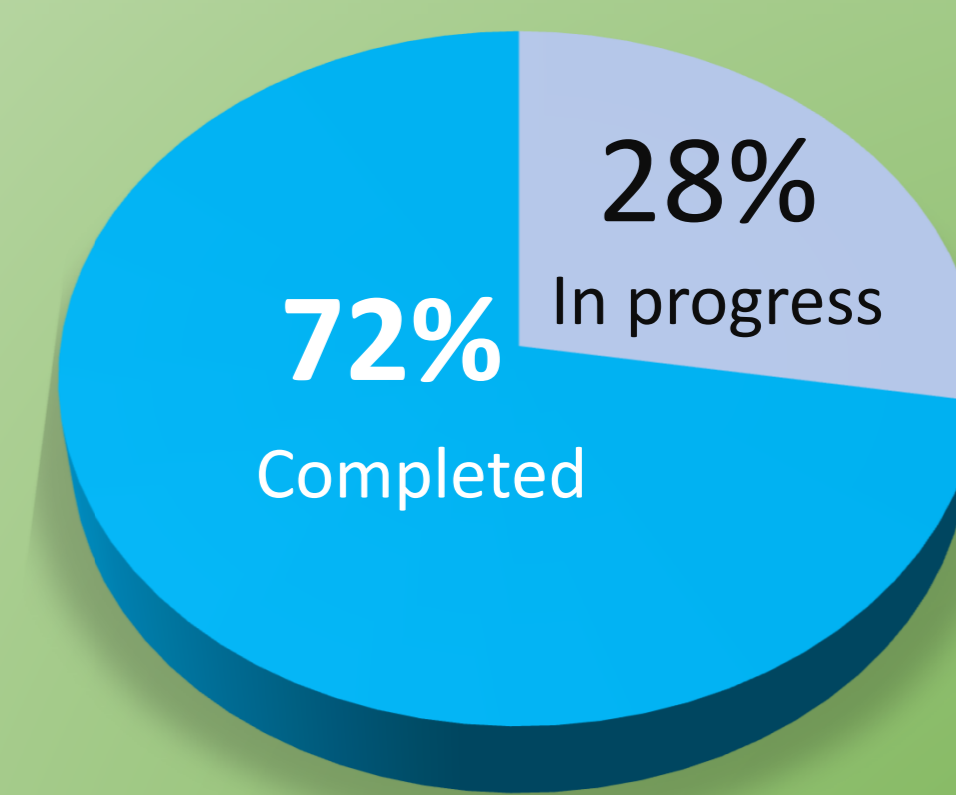
These text items would be further enriched with **over 900 media items** (photos, diagrams or videos), linked to related topics, and supplemented with **assessment items**. The next step is to build learning modules/objects for level 1 to level 3 integration. The content will be gradually updated and learning modules the app is expected to be launched in 2019 - 2020 academic year.

Components of Learning objects

	Total	Completed	In progress
Text items	426	240	186
Media items	930	674	256



Progress of text items



Progress of media items