

Integrating Map Interpretation and IT into the Learning and Teaching of Geography

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MAP and IT

- 1. Google Earth**
- 2. Satellite images**
- 3. Google maps**
- 4. GeoInfo Map(地理資訊地圖)**
- 5. Aerial photos**
- 6. Statistics on Map(統計地圖)**
- 7. Weather Charts**

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- A. Natural harzards
 - B. Manufacturing Industries
 - C. Sustainable Cities
 - D. Weather and Climate

A.

Natural hazards

S.1- S.6

Google Earth

- Download Google Earth.
- Download Google Earth files from websites, e.g.
 - USGS
 - NOAA
 - My website
 - Download "*Plates and Hazards.kmz*".
- Google Earth in Education



Satellite Images (衛星圖像)



Satellite Images

a. Earth Observatory (NASA)

- Earthquake near Chengdu in 2008
- Floods in Central China in 2007
- Typhoon Morakot in Taiwan in 2009 (颱風莫拉克)

b. UNOSAT

- Satellite images with thematic maps
- Example:
 - Overview of Tangjiashan Quake Lake, Beichuan, China from 3 - 8 June 2008 (唐家山堰塞湖)

- Legend
- Contours
 - Relief features
 - Vertical interval (V.I.)
 - Gradient
- → **Interpretation** of the map

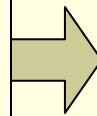
Map-reading VS Map Interpretation

地圖閱讀

地圖闡釋

Map-reading skills

- Gradient
- Direction
- Length/ distance
- Area
- Features & relief
- Location.....



Map interpretation skills

- Spatial patterns
- Relationships
- Evaluation & decision making
 - Land use conflict?
 - Risk?
 - Control?.....

天地圖 (Map World)

- 國家測繪局監製
- 全國災情
 - 全國最新災情分佈；
 - 詳細災情文本資訊與地理背景資訊；
 - 按時間、按地域、按災情類型的災情資訊查詢；
 - 按類型、按地域、按時間對災情資訊進行分門別類的查詢及其統計圖表展示；
 - 某一時段內的全國災情分佈情況流覽。

Source: <http://www.tianditu.cn/>



B.
Manufacturing
Industries (S.1- S.6)

Google maps

Google maps

(<http://maps.google.com.hk/>)

a. “Street View” (街景服務)

- Map + Photos
 - ➔ Virtual fieldtrips
- Street View tutorial
- For example,
 - **search** “Tai Po Industrial Estate” and **Zoom in**.
Click and **drag** to the location you want.

Google maps

b. “My Maps” (我的地圖)

- Creating your own map, e.g. a land use map, by using “*My Maps*”.
- Go to my website to view the sample.



GeoInfo Map (地理資訊地圖)

- GeoInfo Map is a geospatial information service provided by the Lands Department of the HKSAR.
- Map Tools:
 - Measuring tool:
 - 1.coordinates
 - 2.distance
 - 3.area

GIS ✓

GeoInfo Map

■ Drawing tool

- You can draw your own land use map.
- Here is an example.

Aerial Photos

1. Click “**Photo Map (影像地圖)**” on GeolInfo Map.

Aerial Photos

2. Or buy them from **Hong Kong Map Service** of the Lands Department of the HKSAR.

- Click “***Map Search***”.
- Map price list

Download maps from the Internet

- On the official web site of Hong Kong Science & Technology Parks, you can download
 - the site map of Tai Po Industrial Estate and
 - the location map of the three industrial estates and the Hong Kong Science Park.

Download maps from the Internet

- REPORT ON AREA ASSESSMENTS 2009 OF INDUSTRIAL LAND IN THE TERRITORY
- Area Assessments of Industrial Land in "I" and "OU(B)" Zones (Metro Area)
- Area Assessments of Industrial Land in "I" and "OU(B)" Zones (Non-Metro Area)

C. Sustainable Cities

S.1- S.6

For teaching land use types (S.1)

For teaching land use types (S.1)

1. Google maps

- Search “Sham Shui Po Sports Ground”.
- Use various functions (e.g. Street View) to identify different types of land use.
- Example: my website

For teaching land use types

2. E都市

- Three-dimensional urban simulation
- Urban land uses



For teaching land use types

3. Google Earth

- Search “IFC”.
- View 3D buildings.
- Go to my website to download a tour file “*CBD of Hong Kong by YYW.kmz*”.

Maps & urban geography



Maps & urban geography

1. Centamap (中原地圖)

- Centamap Company Limited provides Population By-census data on map.
- Map positioning → Sham Shui Po Sports Ground → Zoom 4 → Census



Maps & urban geography

2. Census and Statistics Department of the HKSAR

a. Statistics on Map (統計地圖)

- It shows **thematic maps** and **interactive charts** using census data.

GIS ✓

Maps & urban geography

b. Interactive Data Dissemination System (IDDS) (互動數據發布系統)

- You can create **graphs** and **thematic maps** using the Population By-census data.

GIS ✓

For teaching reclamation



Feb 09

For teaching reclamation

- Download the map “Reclamation & Development in Hong Kong” from the Lands Department (HKSAR).

Google Earth – Historical Imagery

2002

2007

2010

Suggested activities

1. Map urban land use in the field and construct a **land use map**.
2. Re-design the development of a selected area based on the sustainable indicators and construct a land use map.

(from curriculum guide)

Map + Satellite image

- Eastings & northings

Q: Find the location of the satellite image in the 1:50000 map (HKALE 2006).

Ans:

- It is between 04 to 00 eastings and 85 to 93 northings.


Map + Aerial Photo

- Grid squares
- Conventional signs

**Q: Name the grid squares
where _____ are found.**



D.
Weather and Climate



S.1- S.6

Google Earth – Weather layer

- The Weather layer displays current weather conditions.

Google Earth

-- to show distribution patterns

- Use **placemarks**

 (新增地標) to mark location on the planet.

- Download “*Annual rainfall distribution in Hong Kong by YYW.kmz*” on my website.

Google Earth

-- Elevation profile (高度剖面)

- Explore the elevations of a particular path through the Elevation Profile.
- → Map interpretation


Hong Kong Observatory

<http://www.weather.gov.hk>



HK Observatory on YouTube

- www.youtube.com/hkweather
- Infrared satellite pictures of Typhoon Koppu
(颱風巨爵的紅外線衛星圖像)



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<https://sites.google.com/site/geographyroom>