

Physics 物理 / Combined Science (Physics Part) 組合科學 (物理部分)

Learning and Teaching Resource List 學與教資源表

教育局一站式學與教資源平台: <http://www.hkedcity.net/edbosp>

(A) Textbooks 課本

適用書目表 Recommended Textbook List <http://www.edb.gov.hk/rtl>

(B) Learning and teaching materials jointly developed by EDB 教育局參與編制的學與教資源

No. 編號	Title / Description 題目 / 內容簡介	Web link 網址
1	<b>物理科教師專業發展平台</b> 本網站為物理科教師交流經驗及專業發展平台。本網站提供教學理念，專業發展方案，新儀器和設備，教學相關的影片，物理科相關的網站和資源。	<a href="http://edblog.hkedcity.net/cdiphysics">http://edblog.hkedcity.net/cdiphysics</a>
2	<b>能源效益</b> 這個網站提供有關 (1)能量的產生、(2)家居能源效益、(3)商業/工業能源效益和(4)另類能源的全面資料，作為選修部分中「能量和能源的使用」的輔助資料。網站內有工作紙、錄像和動畫供註冊會員使用。此外，網站也具有一個互動電子學習平台，促進「能量」和「能源的使用」的網絡學習。	<a href="http://www.hk-phy.org/energy/index_c.html">http://www.hk-phy.org/energy/index_c.html</a>
3	<b>原子世界</b> 本網頁為新高中物理課程的選修課題「原子世界」而設，包含豐富且有系統的納米科學的學與教材料。教師可下載不同的材料，如學習活動資料、有關碳分子結構、透射電子顯微鏡和掃描隧穿顯微鏡運作原理的模擬片段等，作教學和自學之用。	<a href="http://www.hk-phy.org/atomic_world">http://www.hk-phy.org/atomic_world</a>
4	<b>醫學物理學</b> 本網頁為新高中物理課程的選修課題「醫學物理學」而設，提供教師互動式的學與教示例，演示較抽象的醫學影像學概念。示例利用互動式的動畫介紹概念。課題包括使用非電離輻射(例如 A-掃描和 B-掃描)和電離輻射(放射攝照圖像和 CT)。網站也提供學習目標、背景資料、學習活動及答問供教師參考。	<a href="http://cd1.edb.hkedcity.net/cd/science/physics/NSS/MedicalPhysics.zip">http://cd1.edb.hkedcity.net/cd/science/physics/NSS/MedicalPhysics.zip</a>
5	<b>探究研習</b> 本網頁為新高中物理課程的「探究研習」而設，為教師提供探究研習的真實示例，部分示例曾在一些學校的中四及中六學生作先導研究。網站備有探究研習指引、教材示例、評估工具、先導計劃的結果、工作坊及推行探究研習分享會的簡報及錄像檔案以供參考。	<a href="http://www.isphys.ust.hk/">http://www.isphys.ust.hk/</a>
6	<b>物理科專科語體答題及應用</b> 本網頁包括語體筆記、教學設計、網上互動練習，以及物理科專科語體常用的參考教材。教師可使用這些教材教授物理科專科語體，以助學生改善物理科寫作技巧。	<a href="http://cd1.edb.hkedcity.net/cd/science/physics/phygenres/zh/index.htm">http://cd1.edb.hkedcity.net/cd/science/physics/phygenres/zh/index.htm</a>

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7	<p><b>運用數據紀錄於物理學教學</b></p> <p>這個網站提供有關在物理學教學時運用數據紀錄儀的全面教學資源，課題包括：力學、電磁學、光學與波動狀態，以及熱與能量。各課題均有一系列的實驗和建議教學活動。這個網頁提供各個範疇（如運用、界面、傳感器、軟件和採購）的資源。</p>	<a href="http://data-log.hkedcity.net/physics/index.shtml">http://data-log.hkedcity.net/physics/index.shtml</a>
8	<p><b>物理名詞</b></p> <p>這個網站為教師和學生提供一個互動網絡平台，讓他們可搜尋在中學教授物理學時常用的英漢名詞。網站提供關鍵字搜尋和讀音。</p>	<a href="http://cd1.edb.hkedcity.net/cd/science/glossarysci.html">http://cd1.edb.hkedcity.net/cd/science/glossarysci.html</a>
9	<p><b>情境物理</b></p> <p>這個網頁提供有關教學、試教、課程指引和參考資料資源的連結，提倡物理情境教學法，並為教師提供討論園地和共享園地。運動、力、動量、能量、溫度、熱、熱的傳遞和物態變化等課題是情境教學法的主題。</p>	<a href="http://www.hk-phy.org/contextual/">http://www.hk-phy.org/contextual/</a>
10	<p><b>循序式自學與&lt;物理相關之數學技巧&gt;短片</b></p> <p>這個網站提供網上短片及學與教資源，以提升學生學習物理科所需的數學概念。</p>	<a href="http://ap.polyu.edu.hk/apshchoy/qef_project_2014_0600.html">http://ap.polyu.edu.hk/apshchoy/qef_project_2014_0600.html</a>
11	<p><b>AP Sensor</b></p> <p>「AP Sensor」是一個手機及平板應用程式，利用流動裝置內建的各種傳感器作物理測量，使物理實驗更流動、更簡便，讓學生可以隨時隨地進行探究。這個網站提供「AP Sensor」應用程式相關的教材包括使用手冊、實驗手冊及示範短片。</p>	<a href="http://apsensor.ap.polyu.edu.hk/ap-sensor-chi.html">http://apsensor.ap.polyu.edu.hk/ap-sensor-chi.html</a>
12	<p><b>Physics Edblog</b></p> <p>This website provides platform for teachers' experience sharing and professional development. Teaching ideas, professional development programmes, new instruments and equipment, video clips, physics related websites and resources are included in this platform.</p>	<a href="http://edblog.hkedcity.net/cdiphysics">http://edblog.hkedcity.net/cdiphysics</a>
13	<p><b>Energy Efficiency</b></p> <p>This site provides a very comprehensive information related to (1) power production, (2) domestic energy efficiency, (3) commercial / industrial energy efficiency and (4) alternative sources of energy to support the “Energy and Use of Energy” of the Elective Part in the Physics Curriculum. Worksheets, video clips and Flash animation programmes are provided for registered users. It also includes an interactive e-learning platform to foster cyber-learning for energy and use of energy.</p>	<a href="http://www.hk-phy.org/energy/index_e.html">http://www.hk-phy.org/energy/index_e.html</a>

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14	<p><b>Atomic World</b></p> <p>The web site consists of comprehensive and organized materials on the part of nano science in the elective topic Atomic World of the NSS Physics Curriculum. Ready-made materials, e.g. learning activities and animations of different carbon molecule structures, working principles of transmission electronic microscope and scanning tunneling microscope atoms, can be downloaded for teaching and self-directed learning.</p>	<a href="http://www.hk-phy.org/atomic_world">http://www.hk-phy.org/atomic_world</a>
15	<p><b>Medical Physics</b></p> <p>This website provides interactive learning and teaching exemplars for teachers to delivery abstract concepts in medical imaging. Exemplars are presented in a graphic format with interactive animations. Topics such as medical imaging using non-ionization radiation (e.g. A-scan and B-scan) and ionization radiation (radiographic images and CT) are included. Learning objectives, background information, activities and questions with answers are offered by the website for teacher reference.</p>	<a href="http://cd1.edb.hkedcity.net/cd/science/physics/NSS/MedicalPhysics.zip">http://cd1.edb.hkedcity.net/cd/science/physics/NSS/MedicalPhysics.zip</a>
16	<p><b>Investigative Study</b></p> <p>The homepage of this website provides teachers with authentic exemplars for Investigative Study. A pilot-study of exemplars was conducted in S4 and S6 students of a number of schools. At this website, guideline, exemplars, assessment tools, results of school trials, PowerPoint files and video files of workshop and sharing seminar on the implementation of Investigative Study are also included.</p>	<a href="http://www.isphys.ust.hk/">http://www.isphys.ust.hk/</a>
17	<p><b>Writing and Application of Physics Specific Genres</b></p> <p>This website contains notes on genres, instructional design, on-line interactive exercises and relevant reference materials of the commonly-used physics specific genres. Teachers can make use of these materials to teach students the physics specific genres and ultimately help them improve their writing skills in physics.</p>	<a href="http://cd1.edb.hkedcity.net/cd/science/physics/phygenres/en/index.htm">http://cd1.edb.hkedcity.net/cd/science/physics/phygenres/en/index.htm</a>
18	<p><b>Using of Data Logging in the Teaching of Physics</b></p> <p>This website provides a comprehensive collection of teaching resources materials for using data logger in the teaching of physics. Topics include “Mechanics”, “Electricity and Magnetism”, “Optics and Waves”, and “Heat and Energy”. Within each topic there is collection of experiments and suggested teaching activities. From the homepage access is</p>	<a href="http://data-log.hkedcity.net/physics/index.html">http://data-log.hkedcity.net/physics/index.html</a>

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	available to such area as the operation, interface, sensor, software and vendor.	
19	<p><b>Glossary in Physics</b></p> <p>This website provides an interactive web-based platform for teachers and students to find English-Chinese glossary of terms commonly used in the teaching of physics in secondary schools. Key words search and pronunciation are offered.</p>	<a href="http://cd1.edb.hkedcity.net/cd/science/glossarysci.html">http://cd1.edb.hkedcity.net/cd/science/glossarysci.html</a>
20	<p><b>Contextual Physics</b></p> <p>The homepage of this website offers an extensive collection of links to resources in teaching, tryouts, curriculum and references to advocate contextual approach in physics teaching. Forum and sharing area for teachers are also provided. Topics include “Motion”, “Force”, “Momentum”, “Energy”, “Temperature”, “Heat”, “Heat Transfer” and “Change of States” to support the contextual approach.</p>	<a href="http://www.hk-phy.org/contextual/">http://www.hk-phy.org/contextual/</a>
21	<p><b>Short Video Clips for Self-Paced Learning of Physics-Related Maths Techniques</b></p> <p>This website provides short video clips and learning and teaching materials to facilitate students in learning fundamental mathematics concepts pertinent to physics learning.</p>	<a href="http://ap.polyu.edu.hk/apshchoy/qef_project_2014_0600.html">http://ap.polyu.edu.hk/apshchoy/qef_project_2014_0600.html</a>
22	<p><b>AP Sensor</b></p> <p>“AP Sensor” is a mobile app that enables mobile and easily accessible physical measurement for Physics experiments, with the use of built-in sensors in mobile devices, such as smart phones and tablets. It enables students to conduct investigations at anytime and anywhere. This website provides related teaching materials of the "AP-Sensor" application, which include user manual, laboratory manual and demonstration video clips.</p>	<a href="http://apsensor.ap.polyu.edu.hk/">http://apsensor.ap.polyu.edu.hk/</a>

**(C) Other useful resources / web links 其他有用資源 / 網上資源**

No. 編號	Title 題目	Web Link 網址
1	<ul style="list-style-type: none"> <li>• <b>Curriculum Resources for SS Physics Curriculum</b></li> <li>• 高中物理科課程資源</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="http://www.edb.gov.hk/en/curriculum-development/kla/science-edu/ref-and-resources/physics-curriculum-resources.html">http://www.edb.gov.hk/en/curriculum-development/kla/science-edu/ref-and-resources/physics-curriculum-resources.html</a></li> <li>• <a href="http://www.edb.gov.hk/tc/curriculum-development/kla/science-edu/ref-and-resources/physics-curriculum-resources.html">http://www.edb.gov.hk/tc/curriculum-development/kla/science-edu/ref-and-resources/physics-curriculum-resources.html</a></li> </ul>

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		<a href="http://m-development/kla/science-edu/ref-and-resources/physics-curriculum-resources.html">m-development/kla/science-edu/ref-and-resources/physics-curriculum-resources.html</a>
2	<p><b>Astronomy</b></p> <ul style="list-style-type: none"> <li>• 香港太空館-天文資訊</li> <li>• NASA - Educators This site in NASA is dedicated for educators and teachers. There are many well designed learning and teaching activities.</li> <li>• National Cheng Kung University, Taiwan This site (國立成功大學) contains a tour over astronomy. Course materials are presented in Traditional Chinese.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="http://www.lcsd.gov.hk/CE/Museum/Space/zh_TW/web/spm/starshine.html">http://www.lcsd.gov.hk/CE/Museum/Space/zh_TW/web/spm/starshine.html</a></li> <li>• <a href="http://www.nasa.gov/audience/foreducators/index.html">http://www.nasa.gov/audience/foreducators/index.html</a></li> <li>• <a href="http://www.phys.ncku.edu.tw/~astrolab/e_book/">http://www.phys.ncku.edu.tw/~astrolab/e_book/</a></li> </ul>
3	<p><b>Physics Education Technology (PhET)</b></p> <p>這個網站的目的是為科學教育的學與教提供範圍廣泛的電腦模擬活動。使用者可透過網站運作模擬活動，或下載全部內容後直接在電腦運作模擬活動。如需要運作這些模擬活動，則必須安裝 Java。</p>	<ul style="list-style-type: none"> <li>• <a href="http://phet.colorado.edu/zh_TW/">http://phet.colorado.edu/zh_TW/</a></li> <li>• <a href="http://phet.colorado.edu/">http://phet.colorado.edu/</a></li> </ul>
4	<p><b>National Nanotechnology Initiative Education Centre</b></p> <p>The National Nanotechnology Initiative (NNI) is a program established in 2001 to coordinate Federal nanotechnology research and development in U.S. The education centre provides resources of various levels.</p>	<a href="http://www.nano.gov/education-training/k12">http://www.nano.gov/education-training/k12</a>
5	<p><b>Medical Physics - Obstetric Ultrasound</b></p> <p>This site is maintained by Dr Joseph Woo in Hong Kong and it contains an extremely detailed description of the history, theory and application of ultrasound in medical diagnosis. A lot of resources are hidden in the bullets. It is highly recommended to read the introduction which contains the history of the use of ultrasound.</p>	<a href="http://www.ob-ultrasound.net/">http://www.ob-ultrasound.net/</a>
6	<p><b>Resources Depository - ETV, EDB</b></p> <p>教學資源庫 - 教育局教育電視</p>	<a href="http://resources.hkedcity.net/etv/">http://resources.hkedcity.net/etv/</a>