

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	<p>運用 3D 打印機及 IT 工具促進物理科的學與教</p> <p>本教材套提供十個在物理科教學時與 3D 打印技術相關的資源。透過 3D 打印製作零件或實驗裝置等教學資源以輔助教授相關課題，課題包括：力學、電磁學、光學及能量和能源的使用。各課題均有不同的教學活動建議供教師參考。</p> <p>Using 3D Printers and IT tools to Enhance Learning and Teaching of Physics</p> <p>This learning and teaching package provides ten sets of 3D-printing technology related resources. With the use of 3D-printing technology, parts or experimental setups could be fabricated to enhance the learning and teaching of relevant topics such as mechanics, electromagnetism, optics, and energy and use of energy. The learning and teaching activities of different topics are provided for teachers' reference.</p>	<p>https://www.edb.gov.hk/attachment/en/curriculum-development/kla/science-edu/ref-and-resources/rtc_L_and_T.zip</p>
2	<p>運用「AP Sensor」流動應用程式及流動裝置的內置傳感器進行物理實驗</p> <p>「AP Sensor」是一個手機及平板應用程式，利用流動裝置內置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> <p>Using the “AP Sensor” Apps and build-in sensors of mobile devices to conduct Physics experiments</p> <p>“AP Sensor” is a mobile Apps 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>	<p>https://www.polyu.edu.hk/ap/services/labxra/ap-sensor/</p>

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3	<p>循序式自學與<物理相關之數學技巧>短片 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> <p>Short Video Clips for Self-Paced Learning of Physics-Related Maths Techniques</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>	<p>http://ap.polyu.edu.hk/apshchoy/qef-project_2014_0600.html</p>
4	<p>製作物理科探究研習流動應用程式 本資源旨在向教師介紹運用 App Inventor 編寫物理科探究研習流動應用程式的基本技巧。</p> <p>Writing Mobile Apps for Investigative Study of Physics</p> <p>This resource aims to introduce to teachers the basic technique of writing Mobile Apps for investigative study of Physics by using App Inventor.</p>	<p>https://www.edb.gov.hk/attachment/en/curriculum-development/kla/science-edu/ref-and-resources/Writing_Mobile_Apps_for_Investigative_Study_of_Physics.zip</p>
5	<p>醫學物理學 這個網站為高中物理課程的選修部分「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(例如：放射攝影圖像和 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。</p> <p>Medical Physics</p> <p>This website provides interactive learning and teaching exemplars for teachers to delivery abstract concepts in the elective part of “Medical Physics”. 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 (e.g. radiographic images and CT) are included. Learning objectives, background information, learning activities and questions with answers are offered by the website for teacher reference.</p>	<p>http://cd1.edb.hkedcity.net/cd/science/physics/NSS/MedicalPhysics.zip (詳情請參閱 readme file。) (Please refer to readme for details.)</p>
6	<p>物理科專科語體答題及應用 這個網站提供語體筆記、教學設計、網上互動練習，以及常用的物理科專科語體的參考教材。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。</p> <p>Writing and Application of Physics Specific Genres</p> <p>This website provides notes on genres, instructional design, on-line interactive exercises and relevant reference materials of the</p>	<p>http://cd1.edb.hkedcity.net/cd/science/physics/phygenres/zh/index.htm</p> <p>http://cd1.edb.hkedcity.net/cd/science/physics/phygenres/en/index.htm</p>

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	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.	
7	<p>運用數據收集器於物理科教學</p> <p>這個網站提供有關在物理學教學時運用數據收集器的全面教學資源，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。這個網頁亦提供各個範疇（如運用、界面、傳感器、軟件和採購）的資源。</p> <p>Using Data Logger in the Teaching of Physics</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. This website also provides various types of information such as the operation, interface, sensor, software and vendor.</p>	<p>http://data-log.hkedcity.net/physics/index.shtml</p> <p>http://data-log.hkedcity.net/physics/index.html</p>
8	<p>物理名詞</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> <p>Glossary in Physics</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>	<p>http://cd1.edb.hkedcity.net/cd/science/glossarysci.html</p>
9	<p>Educational MultiMedia – PHYSICS CHANNEL</p> <p>教育局教育教育多媒體 – 物理頻道</p>	<p>https://emm.edcity.hk/channel/%25E7%2589%25A9%25E7%2590%2586%25E9%25A0%25BB%25E9%2581%2593%2BPhysics%2BChannel/278644022</p>

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

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1	Curriculum Resources for SS Physics Curriculum	<p>http://www.edb.gov.hk/en/curriculum-development/kla/science-edu/ref-and-resources/physics-curriculum-resources.html</p>

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	高中物理科課程資源	http://www.edb.gov.hk/tc/curriculum-development/kla/science-edu/ref-and-resources/physics-curriculum-resources.html
2	<p>物理相關的活動教材套</p> <p>這套物理相關的活動教材套由香港大學教育學院高級講師梁健儀女士及其學生製作。教師可透過相關活動，提高學生學習物理的興趣和效能。</p> <p>Learning and Teaching Package of Physics-related Activities</p> <p>This learning and teaching package of Physics-related activities was developed by Ms Promail Leung and her students of the Faculty of Education, The University of Hong Kong. Teachers may make use of the package to promote students' interest and enhance their learning effectiveness in studying Physics.</p>	https://cd1.edb.hkedcity.net/cd/science/physics/NSS/QR_Codes_and_Quick_Links_of_Teaching_Package_Phy.pdf
3	<p>「參觀標準及校正實驗所」資料</p> <p>透過點擊連結，下載「標準及校正實驗所」提供有關測量標準的資料，加強教師對國際標準單位的了解。</p> <p>Materials on "Visit to The Standards and Calibration Laboratory"</p> <p>Click on the link to download the resources provided by "The Standards and Calibration Laboratory (SCL)", in order to enhance teachers' understanding about SI units.</p>	http://resources.edb.gov.hk/cd/science/physics/The_Standards_and_Calibration_Laboratory.zip
4	<p>香港天文台教學資源網頁</p> <p>Hong Kong Observatory's Educational Resources webpage</p>	https://www.hko.gov.hk/tc/education/edu.htm https://www.hko.gov.hk/en/education/edu.htm
5	<p>Astronomy</p> <ul style="list-style-type: none"> 香港太空館-網上資源 NASA STEM <p>This site in NASA is dedicated for educators and teachers. There are many well designed learning and teaching activities.</p>	https://www.lcsd.gov.hk/CE/Museum/Space/zh_TW/web/spm/resources.html https://www.nasa.gov/stem
6	<p>Physics Education Technology (PhET)</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>	http://phet.colorado.edu/zh_TW/ http://phet.colorado.edu/
7	<p>National Nanotechnology Initiative Education Centre</p> <p>The National Nanotechnology Initiative (NNI) is a program</p>	http://www.nano.gov/education-training/k12

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	established in 2001 to coordinate Federal nanotechnology research and development in U.S. The education centre provides resources of various levels.	
8	<p>Medical Physics - Obstetric Ultrasound</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>	<p>http://www.ob-ultrasound.net/</p>
9.	<p>中華電力有限公司 - 核能發電</p> <p>這個網站提供有關核能及核安全相關的資料，可作為必修部分中「放射現象和核能」的輔助資料。</p> <p>Nuclear Energy, CLP</p> <p>This website provides information related to nuclear energy and nuclear safety. This resource could be served as an alternative resource to support the learning and teaching of “Radioactivity and Nuclear Energy” of the Compulsory Part in the Physics Curriculum .</p>	<p>https://nuclearenergy.clpgroup.com</p>