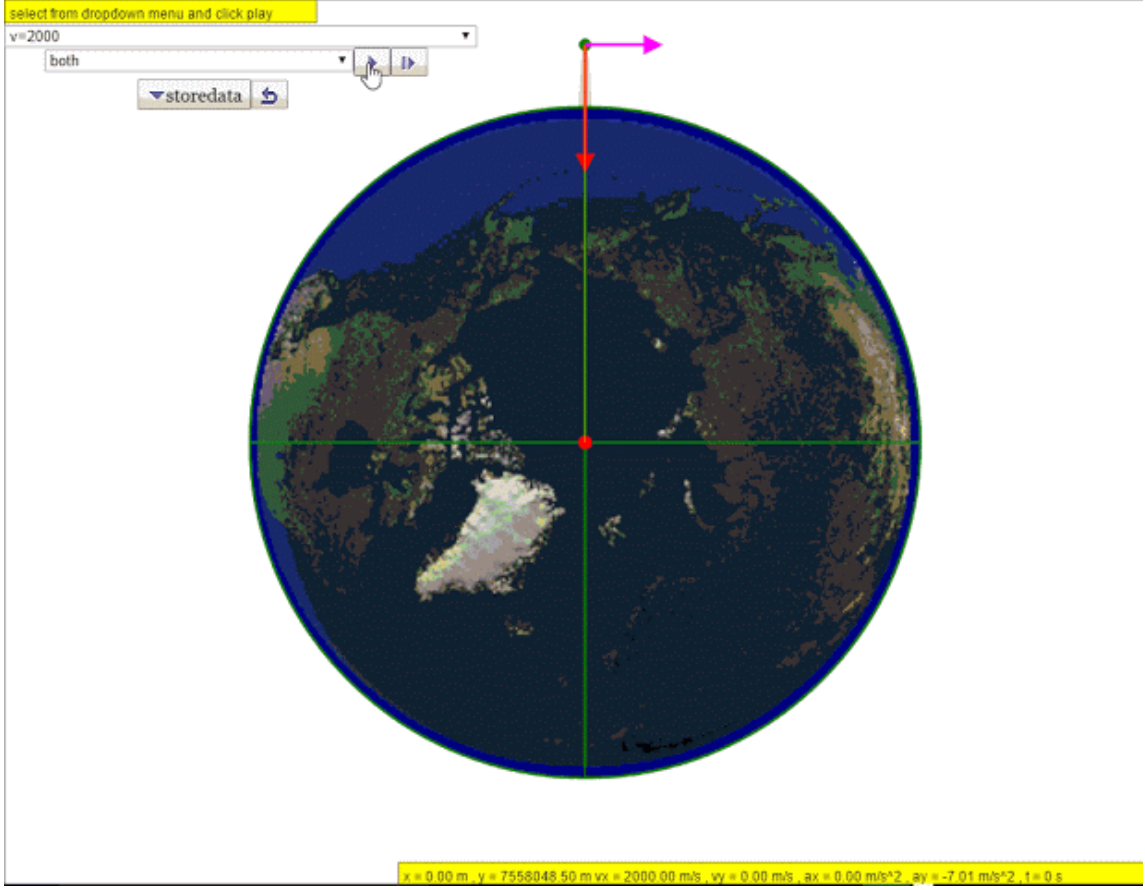
edulab 21 Gravity interactive Chapter by guided inquiry by River Valley High

Specific Instructional Objectives	Students should be able to: show an understanding of the concept of a gravitational field as an example of field of force and recall and use Newton's law of gravitation in the form |F|=GM1M2/r^2 recall and apply the equation g=GM/r^2 for the gravitational field strength of a point mass to new situations or to solve related problems. show an understanding that near the surface of the Earth g is approximately constant and equal to the acceleration of free fall. analyse circular orbits in inverse square law fields by relating the gravitational force to the centripetal acceleration it causes. show an understanding of geostationary orbits and their application.
Lesson Outline	The lesson was tested & carried out with JC1 as a research edulab21 Modelling-Inquiry Enabled Interactive Textbook http://edulab.moe.edu.sg/edulab-programmes/existing-projects/nrf2015-edu001-el021 In this lesson, P09 – Gravitational Field Inquiry-based and Simulation-based Lesson, students are guided to access, download the resources on their computing devices, and work through the simulations and worksheet, thinking like scientists. Activities encouraged include: ask questions, use the simulations plan the investigation (teacher worksheet guided) collect data think using mathematics/computers argue using evidence (peer group discussion) explain using evidence communicate understanding (worksheet) More info can be found on http://ictconnection.moe.edu.sg/professional-learning/edulab-1/communities/ict-in-science actual resources are available here. http://iwant2study.org/ospsg/index.php/interactive-resources/physics/02-newtonian-mechanics/08-gravity



ebook link
http://iwant2study.org/lookangejss/epub3/20160707gravity.epub

Assessment of Students' Learning	Students work were captured in the worksheet.
Year of Implementation	2016
Subjects	Science, Physics, Gravitational Fields, Acceleration of free fall, Centripetal acceleration, Geostationary satellite, Gravitational field strength, Gravitational fields, Gravitational vs electric field, Inverse square law, Newton's Law of gravitation, Potential, geostationary orbit, equation for potential, equation for gravitational field strength
Keywords	inquiry, modeling

Language	EN
Education Level	Post-Sec,Tertiary
Cluster	W7
Used By	All,EO,AED,Student
Creator	Lim Ai Phing / lim_ai_phing@moe.edu.sg / River Valley High Sch
Owner	Lim Ai Phing / lim_ai_phing@moe.edu.sg / River Valley High Sch
Name of Co-Creator(s)	Leong Tze Kwang/ LEONG_Tze_Kwang@moe.gov.sg/ Curriculum Planning & Devt Div 1 Lim Ai Phing/ Lim_ai_phing@moe.edu.sg/ River Valley High Sch Xu Weiming/ Xu_weiming@moe.edu.sg/ River Valley High Sch Wee Loo Kang/ WEE_Loo_Kang@moe.gov.sg/ Technologies For Learning
Publisher	River Valley High School
Source	MOE Singapore
Licensor/Rights Holder	Copyright © MOE, Singapore
Rights URL	http://opal.moe.edu.sg/general/terms-of-use
Expiry Date (YYYY-MM-DD)	0000-00-00
Develop Competencies In	Curiosity and Creativity,Effective Communication,Global Awareness,Management of Information,Managing Complexities and Ambiguities,Metacognition
Project (If Any)	eduLab,ICT in Science Learning Community

P09 Gravity ebook (st).docx

Lesson Plan

P09 Gravity ebook (tr).docx with solutions

Worksheets

worksheet answered by students

Worksheets