

Gû-leng-thng-á Chhák Phòà Iâ-chí-khak

Physics

Liân-chong

Chhun-kiau kap Chì-bêng 2 lâng beh khi hō pêng-iú chhiáⁿ. Chhun-kiau seⁿ-chò lâng iau-kiau bí-lē, chhēng-chhah koh ko-sióng. Chē jip chhia-lāi chiah kóng i bô beh hâ an-chôan-tòa, in-ūi an-chôan-tòa hâ tiàm seng-khu, ē kā hiah súi-tang-tang ê chng-thāⁿ phò-hāi liáu-liáu. Kàu chia, Chì-bêng kám-kak tãi-chì tōa-tiâu--loh! Nā-sī bô hâ an-chôan-tòa khi hō kau-thong..ê cháh--loh--lâi, chiū ài hóat-kim 1,500 khor, bô phah-sng nā kap lâng sio chông, khióng-kiaⁿ ū siⁿ-miā ê gûi-hiám. Só-í in ang-á-bó tī chhia-lāi chiū oan-ke sio-mē, hoah kah tōa-sè siaⁿ. Hit-tiáp ke-pô-sîn tài chin tâng ê Chong..a chiū óa-khi kā in chiàm. Chhun-kiau súi tâu kóng Chì-bêng kan-ta ē-hiáu gû-tiâu lâi tak gû-bó nā-tiāⁿ. Chì-bêng..a chiok bô-nāi kóng lóng mā-sī ūi-tiòh an-chôan. Chong..a iā kā i chàn-chhùi kóng an-chôan-tòa it-tēng ài hâ, nā-bô, gû-leng-thng-á sī ē chhák phòà iâ-chí-khak. Thiaⁿ kàu chia in ang-á-bó sòa hiông-hiông gāng--khi, sa bô liâu-á-mng, m̄-chai chit-ê ke-pô Chong..a sī teh kóng sím-mih.



Eng-kok ê Bút-lí hák-ka Niú-thùn (Isaac Newton) ē-sái kóng sī Bút-lí-hák ê khai-ki-chó, tī 1686-nī i só hoat-piáu ê Bān-iú ín-lék tēng-lút (Law of universal gravitatial) khai-thiah “lát” ê tō-lí. Phông-kó ùi chhiū-téng ka-láuh, siak lóh lái thô-kha, Niú-thùn kóng phông-kó hō tē-kiū khip-ín, chiah ē pòah--lòh--lái, gòeh-niū it-tit seh tē-kiū teh ūn-chóan, iā-sī siū-tiòh tē-kiū ê khip-ín lát só tì..ê. Chhin-chhiūⁿ iá-kiū pí-sài, kiū hō bat-tah(bat) hmh--tiòh, kiū ē poe chiok hng, á-sī bok-sìn-guh (boxing) pí-sài, láng hō kún-thâu-bú bok--tiòh, bīn ē chéng oaiⁿ-oaiⁿ, sīm-chì hō láng cheng 1 ê tó--lòh--khi, che lóng sī “ lát ” teh chok-iōng. Sím-mih hō-chò “ lát ”? Niú-thùn tī i hoat-piáu ê Ūn-tōng tēng-lút (Newton's law of motion) án-ni kái-soeh: Lát chiū-sī mih-kiāⁿ ê tōng-liōng(moment) tùi sī-kan ê piàn-hòa-lút. Iōng sò-hák-sek lái piáu-sī chiū-sī ē-kha án-ni,

$$F = \frac{\Delta p}{\Delta t}$$

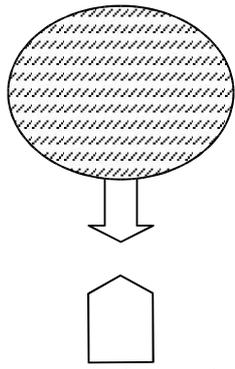
P sī tōng-liōng, iā chiū-sī mih-kiāⁿ ê chit-liōng sêng sok-tō, siá chò $p=MV$, M sī chit-liōng, V sī sok-tō. Δp chiū sī tōng-liōng ê piàn-hòa, Δt sī sī- Issac Newton (1642-1727)

F chiū-sī “lát”, mih-kiāⁿ ê tōng-liōng piàn-hòa lái hō sī-kan pun. Chhin-chhiūⁿ po-lê-poe-á ùi toh-téng pòah--lòh--khi, tiāⁿ-tiāⁿ ē siak phò. Chit ê in-toaⁿ chiū-sī poe-á kap thô-kha chiap-chhiok ê sī-kan chin té, tì-sú thô-kha chok-iōng tī poe-á ê lát piàn chiāⁿ chiok tōa, lái kā po-lê-poe-á lòng phò. Nā-sī tiàm thô-kha phơ 1 niá mī-chioh-phōe, po-lê-poe-á ùi toh-téng pòah--lòh--khi, chiū siak bē phò. Sui-bóng poe-á pòah--lòh ê tōng-liōng piàn-hòa sio-siāng, m̄-kú mī-phōe kā poe-á kap thô-kha sio lòng ê sī-kan iân-tng, hō in ê chok-iōng lát piàn sè. Tī ūn-tōng-tiāⁿ ê thiàu-kōan pí-sài, ūi-tiòh ūn-tōng-ôan ê an-chôan, it -tēng ài phơ 1 tè kâu-kâu-kâu ê hái-mī-tiam, i ê bók-tek chiū-sī beh iân-tng sio lòng ê sī-kan, lái hō chok-iōng lát piàn sè, pó-hō ūn-tōng-ôan.

Chit-má lâi chhi-giām gû-leng thng-á chhak phòa iâ-chí-khak ê tãi-chì. Thèh 1 tè gû-leng thng-á kâ 1 thâu liáp hō i chiam-chiam, lēng-gōa hit thâu khng tiàm thō-kha. Mōh 1-liáp iâ-chí-khak tiàm gû-leng thng-á ê téng-kōan, chhin-chhiūⁿ chiàⁿ-pēng ê tô án-ni. Koh lâi chiū sī kâ iâ-chí-khak siòng-chin-chin ùi gû-leng thng-á hmh--lòh--khì, chit tè gû-leng thng-á chiū ē chhak-jip iâ-chí-khak. Sī sīm-mih gōan-in chiam-chiam nng-nng ê gû-leng thng-á ũ hoat-tō chhak phòa iâ-chí-khak? Che chiū-sī kap téng-bīn thō-kha lòng phòa po-lê-poe-á sio-siāng, in-ūi chiap-chhiok ê sī-kan chin té, tì-sú gû-leng thng-á chok-iōng tī iâ-chí-khak ê lát piàn-chiāⁿ chiok tōa.

Chit ê ke-pô Chong..a kâ gû-leng thng-á chhak phòa iâ-chí-khak ê chhi-giām chò hō Chì-bēng in ang-á bó khòaⁿ liáu, Chhun-kiau chiah chai chē-chhia hâ an-chōan-tòa chiū-sī beh pó-hō ka-kī ê an-chōan. Nā bō, chhia lâi sio chōng, á-sī hiōng-hiōng tòng-chhia, chē tiàm chhia-lāi ê lāng chiū ē kháp-tiōh chhia-khak. Lāng lâi hō chiok tōa ê lát lòng--tiōh, só sán-seng ê siong-hāi chiū chin siong-tiōng--lōh! 2 lāng kâ Chong..a soeh ló-lát liáu, Chhun-kiau chiū hâ an-chōan-tòa hoaⁿ-hoaⁿ-hí-hí khi hō pēng-iú chhiāⁿ--lah.

iâ-chí-khak



gû-leng thng-

á

The diagram consists of three vertically aligned elements. At the top is a large oval filled with diagonal hatching. A hollow arrow points downwards from the bottom center of this oval. Below the arrow is a simple pentagon shape, which is a square with a triangle on top. The text 'iâ-chí-khak' is positioned to the left of the oval, and 'gû-leng thng-' is positioned below the pentagon. The letter 'á' is located to the left of the pentagon.