

輪語-Fixed Pulley and Movable Pulley

科學教育與應用學系
 四年級: 呂佳臻、林以翎
 指導教授 王盈丰老師

Lesson Plan and Motivation :

Unit Title: Fixed pulley and Movable pulley.		Grade Level : 6 grade.														
Unit Length: 共2節80分鐘		Number of Students: 24														
Teaching Objectives:		1. Students can understand the concepts of the fixed pulley. 2. Students can understand the principles of the pulley by the experiment. 3. Students can realize that pulley is a kind of principle of a lever and can be used in life.														
Learning Focus	Student Performance	ti-III-1 能運用好奇心察覺日常生活現象的規律性 會因為某些改變而產生差異, 並能依據已知的科學知識科學方法想像可能發生的事情, 以察覺不同的方法, 也常能做出不同的成品。														
	Learning Content	INb-III-4 力可藉由簡單機械傳遞。														
Core Competencies		自-E-A3 具備透過實地操作探究活動探索科學問題的能力, 並能初步根據問題特性、資源的有無等因素, 規劃簡單步驟, 操作適合學習階段的器材儀器、科技設備及資源, 進行自然科學實驗。														
Procedures:		Time: (mins) Materials:														
Lesson one: Fixed Pulley																
Warm-up:																
<ul style="list-style-type: none"> The teacher takes students to review what they have learned in the last class (Fixed pulley) . Watch the video about the use of pulleys in daily life, and ask students to find out where the pulleys appear in the video. 		10 textbook video														
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Lesson two: Movable Pulley and Crane Gigo Toys																
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<ul style="list-style-type: none"> The teacher takes students to review what they have learned in the last class (The fixed pulley) . Students play with the Gigo toys in groups of four. Students share the result with the hall class. 		10 Gigo toys														
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Gigo Toys :

Fixed Pulley	Movable Pulley	Photos
The Gigo crane		
1 Put together the parts: 15-hole dual rod:4 11-hole rod Long peg:4 23mm pulley washer:2 30mm axle		8 Tie the rope: 600mm line
2 Put together the crane boom: 3 hole rod(lateral closed):2 two-in-one converter:4		9 Assemble the gear: 20T gear 60T gear 20mm axle connector Axle:2
3 Assemble the parts: Base grid 5x15 frame:2		Finish!
4 Put together the crane boom: Long peg:4 5x5 frame:2		
5 Put together the crane and pulley: 33mm pulley:2 100mm axle		
6 Assemble the 40T gear: 40T gear		
7 Assemble the crane hook: 3 hole rod:2 3 hole dual rod:2 23mm pulley Washer:2 30mm axle Long peg:2 Bended rod:2		