HKASME_Mar-2012_Mail Pack

< A charitable institution with effect from 1 May 2010 under the Section 88 of the IR Ordinance >

Items in this pack:

The 11th International Nanotechnology Exhibition & Conference nano tech 2012 … *… What if … everything are viewed under the most powerful microscope?*

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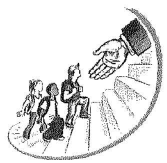
Council News

"Change" → "Education Reform?" "What's Next?" …



At last, everyone is on the mark. For three years, teachers and students have longed for the final day of the HKDSE. When this news is at your box, the HKDSE should have started. It's not just the results and ways of evaluating (which have been carried out by various parties) that we concern, the Council had arrived in the past two meetings that we need to consider "What's Next? – Yes, what're the next steps and vision for our reform!"

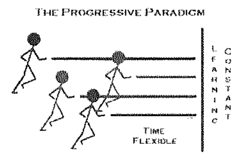
If you could re-capture what we've been addressing in the last few AGM themes, it's not surprised that almost all are related to the New Senior Academic Structure – but with various issues being raised for the contemporary. No matter what position you hold now, everyone would be affected – not just the Senior Secondary. Just like under the great tsunami, everyone have to play a part in the game – the HKDSE and its related activity. The Council is contacting different Seniors to be our guests in the coming AGM (probably in one of the June Saturdays) to discuss about the possible future so as to give light to our next generation.

Whether you agree or not, the reform surely will not stop and there're lots of things to be reviewed and overcome – for all stakeholders. If anything just come

across your mind, just give us a message through different channel and help us to shape the coming AGM forum.

"*Human history is more and more a race between education and catastrophe*" (G. H. Wells*) So, what's our education reform strategy? What's next? And, most important of all, how would you say about your position in the long run?

Once again, thanks for the dedicated work of our committee members and teachers that keep several projects flourish in the science and maths areas – including those honoured to spare their time and effort in the recent China Science Education trips. If you are interested in any of the projects and would like to give a helping hand, please free feel to contact our Office by phone or email.



Best wishes to everyone in the First HKDSE-2012.

What's your goal?

* G.H. Wells is considered the "Father of Science Fiction" (1866-1946).

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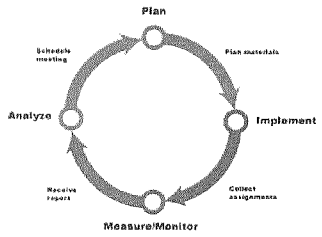
數理教育學會會員優惠隨會訊附 Babyboom Learning Co., Ltd現金卷乙張。

2012 年 2 月 1 日至 8 月 31 日期間, Babyboom 將進行以下推廣優惠:

- 常識及通識科 - 學習綠色環保概念系列
- 課外活動 - 最新邏輯智力系列
- 2012 年 Babyboom Gigo 系列
- 數學輔助教具推廣
- 魔力橋數字牌遊戲推廣

Babyboom 將於 2012 年 5 月 5 日至 6 日於九龍教協進行展銷, 詳情請瀏覽 http://www.babyboom.com.hk/news 。

Science News

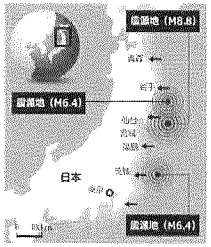


"A Science curriculum based on essential knowledge – how might it work?" is a presentation at an ASE Conference 2011. What are the meaning of "essential knowledge" here?

Check what are being reviewed and defined .... http://www.ase.org.uk/documents/a-science-curriculum-based-on-essential/

Science & Numbers ... *"311" ...*

A year long! Have you used the "311" in your teaching ? It could be anything that you could think about science & maths -- eg/ Earthquake – will that affect HK? Nuclear power – friend or foe? Could we sustain with the so-called "environmental friendly energy sources"? Impacts on economy and our standard of living ? ..... What would your "students" suggest? ....



Lucky or NOT, surely "311" is NOT for some who just view on the "dark side". Anyway, what are the "bright sides"? What's next and what lessons we could learn is still the question for many to explore! ... *With peace.*

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Latest

The Polytechnic University is currently undertaking a survey about teaching science through English. The research team would like to collect your views on what kind of support to be provided. Interested teachers can complete the on-line questionnaire on our Association's Website (The latest news).

Chemistry News

"ChemIT" – is always at our fingertips with much diverse and versatile IT tools in the market. Yet, sharing is the key issue in this site. Check for the various categories under the menu. Other than normal functional resources, there are some interesting ones – check for "***differentiation***" and "***Chemical Context***" and find out what others are trying under these themes.

Lots of samples for download at http://www.chemit.co.uk/

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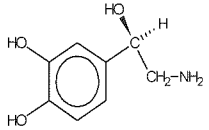


"*Eating is allowed in this Lab ...!?*" ←→ Are you kidding ?

✓ No, Below is a simple experiment to find the % of sugar in bubble gum! ←→ Just if you trust your students in the Lab ... or ... the experiment could be done in Class with a simple electronic balance.

✓ ALL you have to do is to let them obtain the mass of the followings:

	Mass (g)
1. Wrapper and unchewed gum	
2. Wrapper only → chew your gum...	
3. Unchewed gum only (how to get this?)	
4. Chewed gum + Wrapper *(don't spit too much saliva!)*	
5. What is the mass of sugar ? *(assumption = ?*	

HOPE you can figure out how to do the experiment! ☺☺☺

(eg/ How long do you need to chew in order to dissolve/consume all the sugar?)

✓ ***Warning – (1) Do NOT throw the wrapper away! (2) NEVER weigh the chewed gum directly on the balance .***

✓ Any trouble? -- Does your balance sensitive enough to find the mass of one wrapper? IF NOT, how?

✓ **SIMPLE ! Easy ? ... Sure!** ... ***BUT what further values does this experiment has ? → Let's share... !!! (e.g. What chemistry could this experiment bring about ?)***

V-Chem for Hong Kong Secondary Schools 2012

Information Sheet

'V-Chem' is an experiment-based video clip shooting competition jointly organised by the Hong Kong Association for Science and Mathematics Education (HKASME), the Education Bureau, HKedCity, and is sponsored by **MR. NG CHUNG CHUN'S MEMORIAL ACTIVITIES**. It aims at promoting the interest of students in learning Chemistry and developing students' problem solving, communication and science process skills through experiment. Details of the competition are given below:

Theme	Home Chemistry
Objectives:	To arouse students' interest in studying chemistry. To promote the conduction of simple, safe but fun chemistry experiments. To communicate chemistry concepts and skills to the public To train students' communication skills
Participants	● Not more than 2 teams per school ● Junior Form (F.1-F.3) – Each team can comprise not more than 3 students (same form or different forms) ● Senior Form (F.4-F.7) - Each team can comprise not more than 3 chemistry / Combined science (Chemistry part) students
Rules for the competition	(a) Students will design and work on their own video clip in school. Part of the clip, but not necessarily the whole clip, should include experimental work. The topic being studied should be on "Home Chemistry". (b) Each team of students should write up a report **(not more than 250 words)** to give a concise and well-ordered account of their video clip. **Or** the findings can be presented by suitable cartoon and drawing on A4 paper. The report should include the title, experimental methods, interpretation of results and conclusions. The report cover page should include the video title, school name and full names of students in both Chinese and English. (c) Each team of students should produce a video clip **(not more than 10 Mb)** in wmv, avi or mpeg format. The duration of the video clip should last from 1 to 2 minutes. (d) Students can only use either Chinese or English in their report (except the cover page and abstract) and video clip. They cannot use a mixed mode of both languages. (e) Schools will be responsible for the production costs of their projects.

Work schedule	30/4/12 (Mon)	Deadline for submission of application forms, written report and upload the video clips. All materials should be submitted through the school principal to: Mr Ben Ng HKASME, Room 114, 1/F, Po On Court, 1 Po On Road, Sham Shui Po, Kowloon ***An application form (on page 2) is attached.***
	28/5/12 (Mon)	Announcement of six results and inform the students and schools
	30/6/12 (Sat)	Prize presentation.
Adjudication	The panel of judges comprises representatives from the HKASME, the Education Bureau and HKedCity. All projects will be judged according to the creativity, video clip content and presentation skills.	
Awards	➢ Gold, silver and bronze medals and book coupons will be presented to members of the first three winning teams. ➢ Certificates and souvenirs will also be given to all members of the commendable teams.	
Enquiries	Enquiries regarding the competition may be directed to Miss CHU of HKASME at 2333 0096 / enquiry@hkasme.org. ***Detail and suggestion*** of the competition can be downloaded from www.hkasme.org.	
Copyright	The organizers reserve the right to publish in full or part of the entries. All entries will not be returned to schools.	

Application Form (Deadline: 30/4/2012)

HKASME
Room 114, 1/F, Po On Court
1-15 Po On Road, Sham Shui Po, Kowloon
(Fax no.: 2333 3355)

'V-Chem' for Hong Kong Secondary Schools 2012

I nominate the following team(s) to participate in the above competition:

Participating Team(s) :			
Team A		*Team B (if any)*	
Class	*Name*	*Class*	*Name*
Responsible Teacher(s) :			
Mr/Ms*		Mr/Ms*	
E-mail:		E-mail:	

Name: *Dr./Mr./ Ms. _____ Date:_____

School: _____

Sch. Tel: _____ Home/Mobile no. _____

Fax no:_____ Email: _____

Signature: _____

第十屆屯門區校際初中數學比賽及公開講座

屯門區中學校長會與香港數理教育學會合辦「**第十屆屯門區校際初中數學比賽**」已於本年三月三日完成。於比賽當日亦舉辦了兩場公開講座，藉此推動數學老師交流。

講座(一):第三學習階段的多元化評估模式	**講座(二)：中國數學巨著<<九章算術>>與我何干?**
簡介：第三學習階段的不同評估模式及評估活動例子，包括開放式問題及探索課業。	簡介：<<九章算術>>是我國古代的數學巨著，內容十分豐富；但與2000年後的我們有什麼關係?為何要花時間研究它?它在我們的數學教學上，有什麼意義?
講者：何綺紅女士 教育局課程發展主任(數學) 對象：中學數學科老師	講者：鄧美愉女士 教育局課程發展主任(數學) 對象：中學數學科老師

我們很高興邀請了兩位在前線有心有力的同工為第十屆屯門區校際初中數學比賽的評審及顧問，包括：

教育局總課程發展主任(數學)吳少階先生
教育局課程發展主任(數學)鄭仕文先生

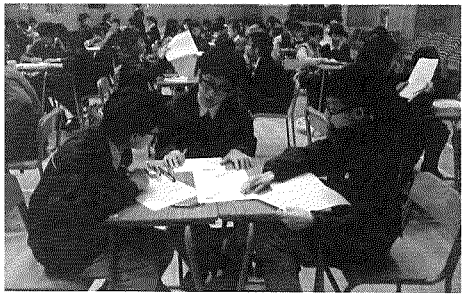
團體名次

	學校名稱
冠軍	順德聯誼總會梁銶琚中學
亞軍	南屯門官立中學
季軍	保良局董玉娣中學

於比賽同日(3 月 3 日)，第二屆**趙聿修紀念中學初中數學邀請賽**(元朗區校際初中數學比賽)在趙律修紀念中學舉行。

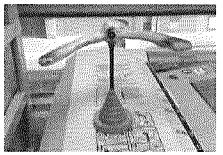
團體名次

	學校名稱
冠軍	元朗商會中學
亞軍	新界鄉議局元朗區中學
季軍	東華三院盧幹庭紀念中學



Physics News

科學玩具 "平衡鳥" ---讓學生在玩的過程中揭示其中的物理原理



簡介

利用鳥嘴把玩具鳥停在手指頭上。無論您把鳥怎樣放置或擺動，它都能平衡穩定而不掉落。如真鳥一樣飛翔。

思考題

為什麼把平衡鳥隨意放置，均能處於平衡狀態.？

原理

- 由於在兩個前伸的鳥翼頂端均加有重物，所以整個玩具的重心其實位於鳥嘴處。
- 平衡鳥之所以會平衡，主要是杠杆原理的應用。嘴前端即是玩具鳥的支點 (重心)，翅膀到嘴之距離為力臂,當力臂等長，且左右兩邊等重時 (重量分佈在二翼，重心也要低)，則能平衡在任何地方上。

文章閱讀

- ≪對 "重心類科學玩具"課程化的研究≫，≪物理通報≫ 2009 年 第5期
- 平衡鳥的製作
  http://www3.mtps.kh.edu.tw/class/95sciencegame/doc/ps2.doc

有興趣的老師可到本會會址玩賞平衡鳥和其他教育玩具。

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2012趣味科學比賽 － 靈渠輕送

由香港學者協會、香港中學校長會、香港數理教育學會、香港教育工作者聯會、香港科技大學理學院、康樂及文化事務署香港科學館合辦的2012趣味科學比賽 －靈渠輕送，已於2月11日假香港科學館演講廳順利舉行。

中國內地高考物理試題

下面列舉一些有關內地各省市高考(及中考)物理科試題介紹及分析的文章，以供大家在考試擬題或教學上作參考。文章選自『物理通報』，該雜誌由河北省物理學會及中國教育學會物理教學專業委員會主辦。會員可到本會會址閱覽有關雜誌及文章。

第一輯

編號	文章	備註
A01	例談如何提高高考物理選擇題的得分率 -- 對2010 年浙江理科綜合物理選擇題的分析與理解	2011-02-P65-5
A02	鑑賞2010 年高考物理試題	2010-12-P58-5
A03	2010 年浙江省高考理綜 (物理) 試題評析	2010-12-P69-4
A04	2009 年全國各地高考試題賞析 -- 帶電粒子在磁場中運動問題	2010-04-P75-4
A05	2009 年高考物理選擇題的解法示例	2010-03-P78-4
A06	從高考命題談模型再造與跳躍思維	2010-03-P74-4
A07	2009 年高考江蘇卷物理試題評析	2010-02-P61-4
A08	"新類型考題" 的變化特徵及考查功能探析	2010-01-P56-4
A09.1	判斷的依據是什麼 --- 分析2009 年高考江蘇卷物理第9 題	2010-01-P62-2
A09.2	判斷的依據是什麼 --- 再議2009 年高考江蘇卷物理第9 題	2010-07-P68-2
A10	2009 年高考 "科技信息題" 賞析	2009-12-P48-2
A11	淺析2009 年天津高考物理試卷的特點	2009-11-P50-3
A12	2009 年廣東高考物理試題評析	2009-10-P52-4
A13	倡導重視教材、力求跳出題海 --- 2009 年上海物理高考題賞析和思考	2009-08-P50-4
A14	高考 (北京卷) 物理命題特色與趨勢 --- 面向新課程高考改革探索 (下篇)	2009-05-P47-4
A15	高考試題中出現的一些問題值得引起關注	2008-10-P38-4
A16	2007 年廣東高考物理試題評析	2007-06-P48-4
A17	2007 年江蘇高考物理試題評析	2007-12-P43-4
A18J	從2009 年物理中考談探究性試題教學	2010-09-P13-3
A19J	初中物理開卷試命題研究	2006-12-P34-3

2011-11-08

2009 年中國高考物理選擇題舉例 (摘錄自文章編號 A5-2011)

浙江卷第15題

氫原子核由兩個質子與兩個中子組成，這兩個質子之間存在著萬有引力、庫侖力和核力，則 3 種力從大到小的排列順序是

A. 核力、萬有引力、庫侖力

B. 萬有引力、庫侖力、核力

C. 庫侖力、核力、萬有引力

D. 核力、庫侖力、萬有引力　　**答案為 D**

[解析] 核力是吸引力，質子之間的庫侖力是排斥力，是核力將核子束縛在原子核內，因此核力大於庫侖力;研究核子間相互作用時萬有引力可以忽略，庫侖力大於萬有引力，故選 D.

全國卷 I 第 14 題

下列說法正確的是

A. 氣體對器壁的壓強就是大量氣體分子作用在器壁單位面積上的平均作用力

B. 氣體對器壁的壓強就是大量氣體分子單位時間作用在器壁上的平均衝量

C. 氣體分子熱運動的平均動能減小，氣體的壓強一定減小

D. 單位體積的氣體分子數增加，氣體的壓強一定增大　　**答案為A.**

〔解析〕本題考查氣體部分的知識. 根據氣體壓強的定義 A 正確， B 錯，氣體分子熱運動的平均動能減小，說明溫度降低，但不能說明壓強也一定減小，C 錯. 單位體積的氣體分子增加，但溫度降低有可能氣體的壓強減小， D 錯.

全國卷 I 第 21 題

質量為 M 的物塊以速度 v 運動，與質量為 m 的靜止物塊發生正碰，碰撞後兩者的動量正好相等，兩者質量之比 (M/m) 可能為

A.2　　B.3　　C.4　　D.5　　**答案為 A 、B.**

[解析] 碰撞的極端分別為彈性碰撞和完全非彈性碰撞.質量為 M 的物塊以速度 v 向質量為 m 的靜止物塊發生正碰，如果發生彈性碰撞，則由動量守恒和能量守恆得　$v_1 = (M - m)v/(M + m)$　$v_2 = 2Mv/(M + m)$

根據題目要求 $Mv_1 = mv_2$, 因此 $M/m = 3$. 如果發生完全非彈性碰撞，則 $v_1 = v_2$,根據要求 $Mv_1 = mv_2$, 因此 $M/m = 1$. 由此可得 $1 \le M/m \le 3$, 因此選 A 、B 項.

香港數理教育學會- 2012 圖書教具訂貨表格(Fax: 2333 3355)

特價書籍及教具會員價發售 (至 7 月 31 日)

Room 114, 1/F., Po On Court, 1-15 Po On Road, Sham Shui Po, Kowloon.

九龍深水埗寶安道 1-15 號，寶安閣 114 室 (Tel: 2333 0096 Fax: 2333 3355)

- These prices are subject to change without prior notice.
- For BULK order, please contact HKASME office first.

For the old items, books, BULK order which are not on the list, please phone us for detail and quotation.

Login → www.yahoo.com--> login name: chemistry1@ymail.com → pw: hkasme

No.	Items / Books (Please note the prices of SET items)	$
	Delivery (Yes / No)	
	Cheung Sha Wan/Sham Shui Po MTR Station	$30
	Kowloon	$80
	N.T. / H.K. Island / Tung Chung / Others	$110
	Total	$

- These prices are subject to change without prior notice.

Name_____ sign:_____ Date: _____

Sch. Tel: _____Home / Mobile no. _____Fax no:_____

School_____

Email:_____

Address_____

- The order form can be photocopied.
- For BULK order, please contact HKASME office first.

NEW	Redspot Exam, past paper, notes, Q & A for 334 / GCE w/ ans	$
	2009-2010 GCE A Level (Topical): Bio / chem. / phy	$120
New	2011 GCE A Level (Topical): Bio / chem. / phy	$140
AL4	A-level 1000 MCQ w/ Helps and Ans (Redspot) – Phy / Chem / Bio	120
	2009-2010 GCE O Level (Topical): Bio / chem. / phy	$80
	2009-2010 GCE O Level (Yearly): Bio / chem. / phy	$80
New	2011 GCE O Level (Topical): Bio / chem. / phy	$100
New	2011 GCE O Level (Yearly): Bio / chem. / phy	$100
	GCE O Level KEY.POINTS: Bio / chem. / phy	$120
	GCE O Level Classified (SAP): Bio / chem. / phy	$120
	2009-2010 GCE O Level Alternative To Practical: Bio / chem. / phy	$80
New	2011 GCE O Level Alternative To Practical: Bio / chem. / phy	$100
	Smart Biology Study for O Level	$120
	GCE A Level Biology Easy Study Notes	$170
	GCE A Level Biology KEY.POINTS	$170
New	O level Comprehensive Guide (w/ practice) to Bio TBT	90
New	O level Biology Q & A	90
New	O level Complete Guide to Biology TBT	90
No.	**SCOTLAND OFF. PAST PAPER w/ ans & REF.– For 334**	**$**
New	2009-2010 Foundation/General Official SQA Past Papers – Science	150
	2009-2010 Bio / chem. / phy Official SQA Past Papers General / Credit / Int. 1 / Int. 2 / Higher / Ad. Higher (Pls Circle)	150
	2011 Bio / chem. / phy Official SQA Past Papers General / Credit / Int. 1 / Int. 2 / Higher / Ad. Higher (Pls Circle)	190
New	BrightRED: Standard / Higher Grade / Ad. Higher: Bio / chem. / phy (Pls Circle)	200
New	Bio / chem. / phy Practice Papers for SQA Exams - Credit / Gen / Int. 2 / Higher	150
New	Bio / chem. / phy (LL): Standard Grade Questions / Higher Qns	190
New	Human biology Questions (LL)	170
	IB Materials – Suit 334	
IB1	IB Diploma: Biology / Chemistry / Physics / Mathematical Studies	$280
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IB5A	IB Question Bank (1000+ qn+ans) (Ver.2) - Bio / chem. / phy	1630
New	(Barron's E-Z Series) E-Z Chemistry / Physics / Biology	190
New	The 100+ Series Chemistry / Biology / Physical Science	170
37	**Easy Way Series:** Note + Exam+Ans: - Biology / Microbiology	190
40	**AS and AL Through Diagrams** (Rev Guides) –Bio. / Human bio	200
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NEW!	Fire Bubbles & Exploding Toothpaste: More Unforgettable Fun Expt	220
NEW!	Janice VanCleave's Super Science Challenges: Hands-On Inquiry Projects for Schools, Science Fairs, or Just Plain Fun!	190
	種子哪裡來？ (商周)	100

	孟德爾和了不起的豌豆實驗 (臉譜)	70
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	Singapore GCE Step-by-Step Pub w/ ans for 334 / CE/ AL	**$**
SS1	Advanced Study Guide – Chem – suit, 334, GCE, CIE,IB & HKAL	260
SS2	A-level study guides – Chemistry (H1) – illustrated notes & e.g.	140
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SS5	A-Level Practice Question (H2) – 400 qns + ans. – **Chem / Phy**	200
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	Science DVD	
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25A	Discovery-科學史上 100 個最偉大的發現 (I) 中文字幕 Earth Sciences, Astronomy, Physics	90
D25B	Discovery-科學史上 100 個最偉大的發現(2) 中文字幕 Bio, Medicine, Genetics, Chemistry	100

	2012 NEW EQUIPMENT FOR TEACHING	
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	 Potato Chip Science: 29 Incredible Experiments (with Kits)	180
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	Crystal Tree 10 / pcs / (350 pcs ($3200/ box)	
New	 ngel Flames - 12 Candles burn in one of 5 delightful colors.	$30
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	Solar Science 太陽熱水器	100
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NEW!	 **Salt water fuel cell car** - runs on salt water for about 5-7 hours continuously	140

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	 UV Outside Detector	30
	**Round Bouncing Ball Kit**	250
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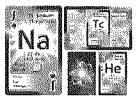
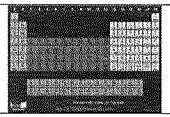
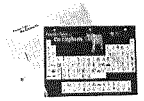
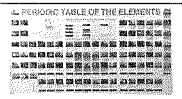
	12 inch Galileo Thermometer 伽利略溫度計	**$160**

 **Periodic Table Playing Cards $160**	 **P.T. postcards (40pcs) $ 150**	 **P.T. of the Elephants (40pcs / A4) $ 150**	 **The Periodic Table Photo Card Deck $250**	 **The Periodic table of the Elements Poster (Cartoon) $ 160**