

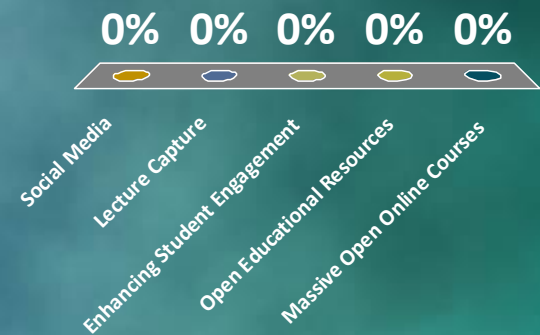
Using technology to facilitate enhanced student engagement and participation in learning chemistry

Prof Simon Lancaster
University of East Anglia,
Norwich, United Kingdom
Education Division Council,
Royal Society of Chemistry



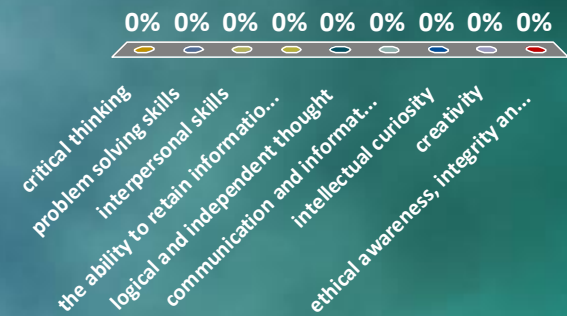
What would you like me to cover?

- A. Social Media
- B. Lecture Capture
- C. Enhancing Student Engagement
- D. Open Educational Resources
- E. Massive Open Online Courses



The objectives of education are to develop

- A. critical thinking
- B. problem solving skills
- C. interpersonal skills
- D. the ability to retain information long enough to pass examinations
- E. logical and independent thought
- F. communication and information management skills
- G. intellectual curiosity
- H. creativity
- I. ethical awareness, integrity and tolerance



The Lecture



More than anecdotal evidence

- Scott Freeman, Sarah L. Eddy, Miles McDonough, Michelle K. Smith, Nnadozie Okoroafor, Hannah Jordt, and Mary Pat Wenderoth **Active learning increases student performance in science, engineering, and mathematics** PNAS 2014, 111, 8410–8415
doi:10.1073/pnas.131903011

Freshers 'forget 60% of their A-level studies'

- “Secondary education has become increasingly politicised, which involves greater emphasis on testing and results of tests” Dr Harriet Jones, University of East Anglia

Flipping: A Concept not a Recipe

- Choose an open educational resource (OER)?
- Ask students to prepare a ScoopIt?
- Screencast?

Preparation

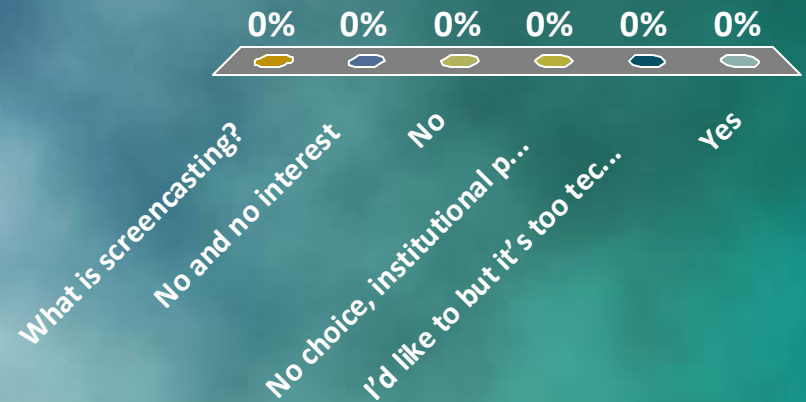
Engagement

- Challenge your students
- Student source your questions and your answers?
- React to events



Do you Screencast?

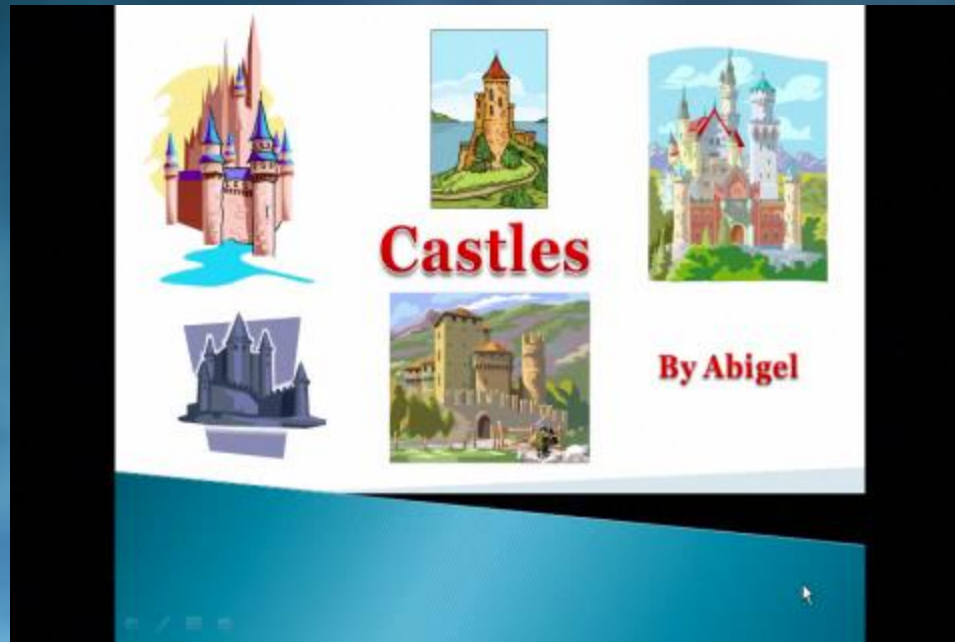
- A. What is screencasting?
- B. No and no interest
- C. No
- D. No choice, institutional policy
- E. I'd like to but it's too technically difficult
- F. Yes



‘Screencasting versus Lecture capture’?

- A screencast is a recording of the evolving image on the screen during a presentation synchronised with the speaker’s audio narration.
- We record using Camtasia Studio but other solutions are available.

Simple Screencasting

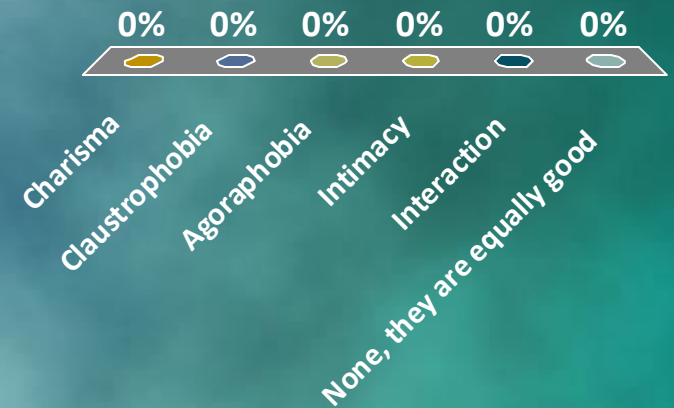


Strengths and Weaknesses

- Learning aid
- Assistance for students with disabilities and learning difficulties
- Revision aid
- Illness contingency
- Self observation
- Recording 'quality control'
- Logistics and resources
- Time Consuming
 - Preparation
 - Editing
 - File creation and maintenance
- Discourages lecture attendance?
- Discourages note taking?
- Lazy revision?

What is absent in a screencast versus a live lesson?

- A. Charisma
- B. Claustrophobia
- C. Agoraphobia
- D. Intimacy
- E. Interaction
- F. None, they are equally good



'Vignette': covering a critical concept augmented by an interactive component

The screenshot displays the University of East Anglia Portal website. The browser window shows the URL https://portal.uea.ac.uk/virtualportal/home.do?tab_044_335_3. The page features a navigation menu with links for Home, Academic, Faculty, Help & Advice, Services, Social, and My Stuff. The main content area is divided into two columns. The left column, titled 'My Modules', lists various chemistry modules, including '2000/2009 General Information for Chemistry and Foundation Year Students (unavailable)', '2000/0: BONDING, STRUCTURE & PERIODICITY', '2000/0: CHEMISTRY OF CARBON-BASED COMPOUNDS', '2000/0: INORGANIC CHEMISTRY', '2000/0: POLYMER & MATERIALS CHEMISTRY', '2000/0: POLYMERS & MATERIALS LABORATORY', '2000/0: SPECIAL STUDIES IN CHEMISTRY', '2000/0: SPECIAL TOPICS IN CHEMISTRY I', '2000/0: ADVANCED LABORATORY', '2000/0: BONDING, STRUCTURE & PERIODICITY', '2000/0: CHEMISTRY OF CARBON-BASED COMPOUNDS', '2000/0: INORGANIC CHEMISTRY', '2000/0: POLYMERS & MATERIALS LABORATORY', '2000/0: SPECIAL STUDIES IN CHEMISTRY', '2000/0: SPECIAL TOPICS IN CHEMISTRY I', '2010/11 General Information for Chemistry and Foundation Year Students', '2010/1: ADVANCED LABORATORY', '2010/1: BONDING, STRUCTURE & PERIODICITY', '2010/1: CHEMISTRY OF CARBON-BASED COMPOUNDS', '2010/1: ENERGETICS AND SPECTROSCOPY', '2010/1: INORGANIC CHEMISTRY', '2010/1: INORGANIC COMPOUNDS: STRUCTURE & FUNCTION', '2010/1: LITERATURE-BASED PROJECT', '2010/1: POLYMER & MATERIALS CHEMISTRY', and '2010/1: POLYMERS & MATERIALS LABORATORY'. The right column, titled 'Search the library', includes a search bar with a 'Go' button, a 'Browse all electronic resources by subject' section with links for Arts & Humanities, Law, Medicine & Health, Science, Social Science, and e-books, and a 'My Library Account' section stating 'You have no borrowed books at the moment.' and 'You do not have any library reservations at the moment.' The page footer shows the date 03/05/2011 and the time 18:21.

Prezi

- Prezi is an alternative presentation tool that allows students to follow a non-linear route; in this case between vignettes on aspects of the course.

The screenshot shows a web browser displaying a Prezi presentation. The browser's address bar shows the URL `prezi.com/im1qu0q0ghuv/copy-of-chemistry-vignettes/`. The Prezi logo is visible in the top left, with navigation buttons for 'Create', 'Learn', and 'Explore'. The presentation title is 'Copy of Chemistry Vignettes' by Simon Lancaster, dated 09 August 2011. The main content area features a large blue 'Chemistry' title with a navigation sidebar on the left. Below the title are 'Autoplay' and 'Fullscreen' controls. The presentation has 92 views and 0 comments. A section titled 'More presentations by Simon Lancaster' includes a thumbnail for 'Spider and their webs'.

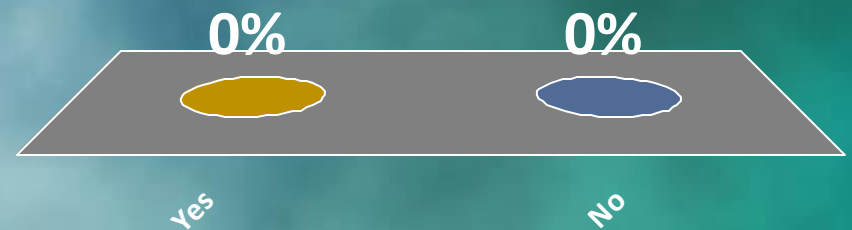
Student comments on Faculty Authored Vignettes

- “Staff vignettes are great revision tools because they are recorded well and the information is clear and concise!”
- “Good revision tool because if you haven't completely understood something in the lecture or when revising then you can go to that place in the vignette and listen to the explanation again!”
- “All lecturers should do it”
- “Would be more effective if lectures were recorded as vignettes that are only 5 minutes long”

Do you ask your students to prepare and present presentations?

A. Yes

B. No



The student authored vignette model

1. The students are paired and allocated a revision topic.
2. Each student pair prepares a presentation to be critiqued by their peers and instructors.
3. Each pair delivers a presentation to their peers and the session is captured using Camtasia Studio.
4. Each student pair creates a vignette from their screencast or a subsequent recording.
5. The student authored vignettes are published online to be used as a revision tool.

Intermolecular Forces

Chemistry Vignettes Interactive vignettes from undergraduate chemistry

Home The Vignettes Presentations **Student authored vignettes** Student produced live-video Vignettes More Screencasting

The Departmental Project Report Variety in Chemistry Education Chemistry Blogs The Chemical Concepts Inventory

Student authored vignettes

As part of a Higher Education Academy Individual Teaching Development Grant funded project students on a fourth year MChem module have been authoring vignettes in preparation for a synoptic final examination.

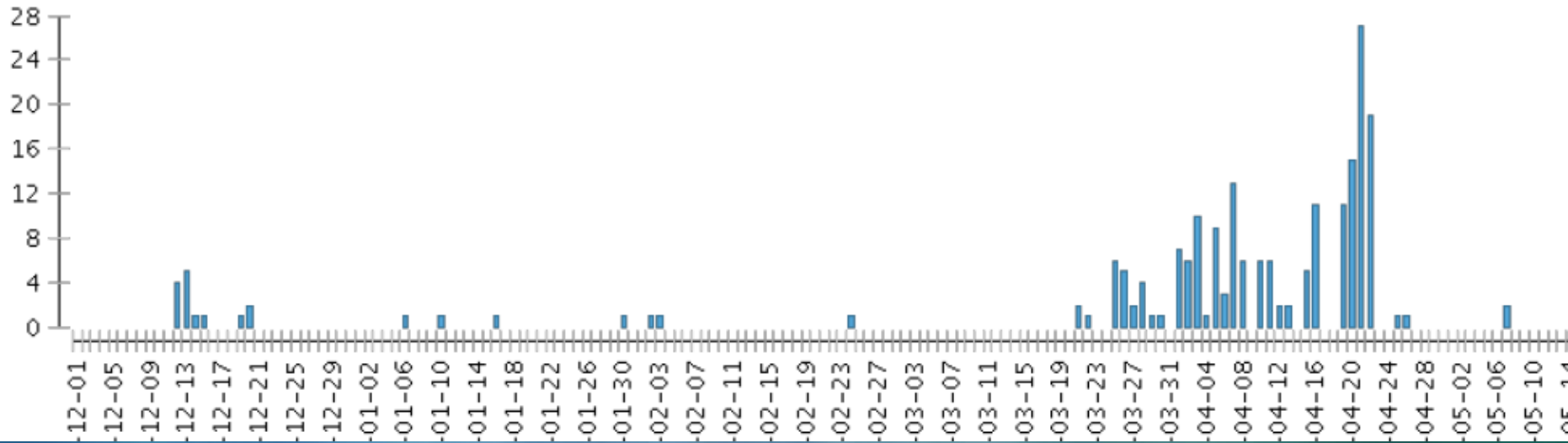
View Vignette	Download SCORM	.mp4 only version*
Intermolecular Forces	Intermolecular Forces	Intermolecular Forces

* - not interactive

Leave a Reply

13:59 01/07/2013

Uptake



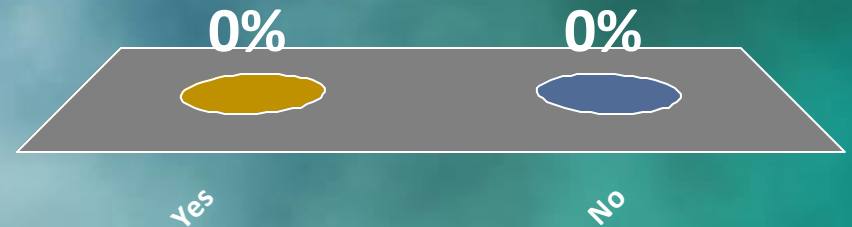
When was the exam?

Evaluation quotes

- “Thought about information in a different way when preparing interactive questions”
- “You can add more to existing presentation which is good”
- “Made you go over material you might have forgotten”
- “Had lecture notes and additional material (narration)”
- “Highlights key areas”
- “No experience made preparation difficult”
- “Students don’t have a lot of time to do it. Takes longer than actual Powerpoint”
- “Need more Camtasia experience/easier software”
- “Very good revision tool if a lot of effort is put into producing it”

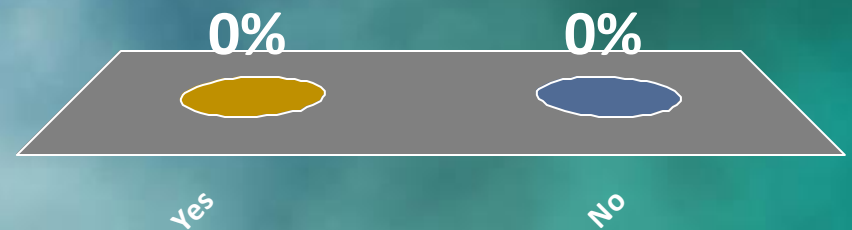
Are you Wedded to content?

1. Yes
2. No



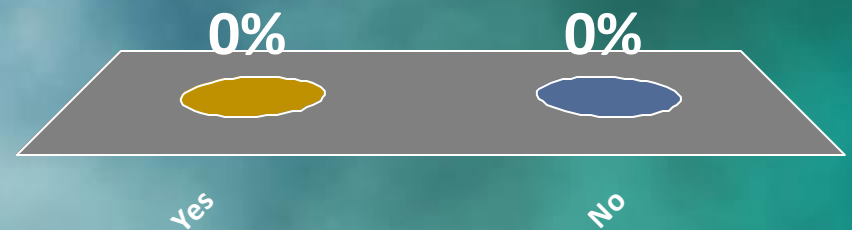
Do wish you had more time for interaction?

1. Yes
2. No



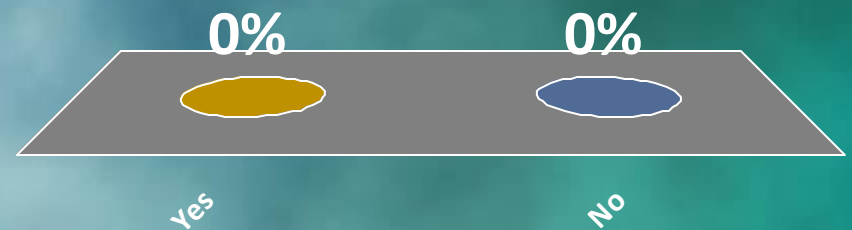
Are there parts of the course students “Don’t get”?

1. Yes
2. No



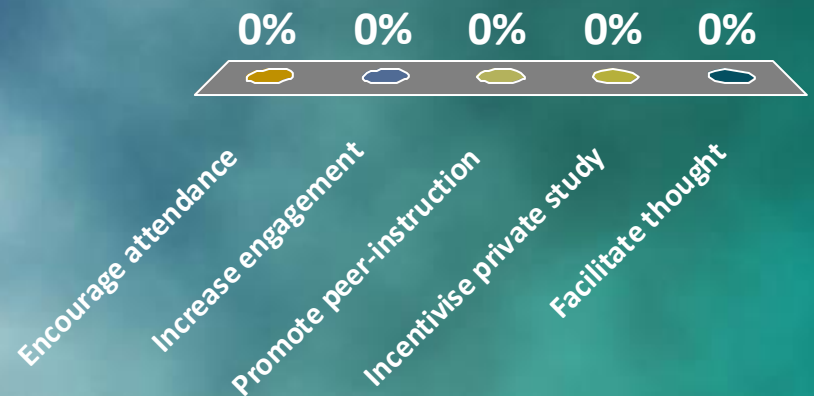
Are you ever frustrated by persistent misconceptions?

1. Yes
2. No



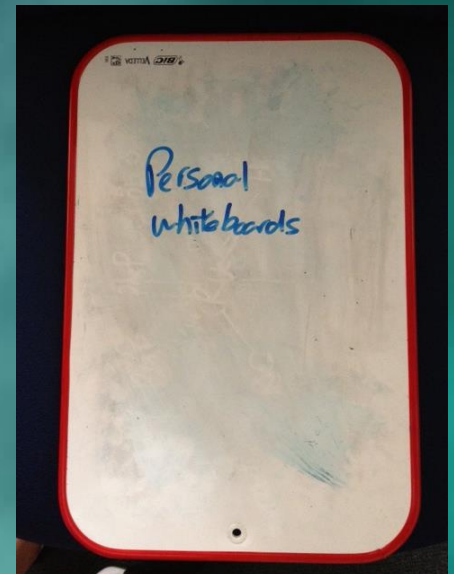
What would you like to do to improve learning?

1. Encourage attendance
2. Increase engagement
3. Promote peer-instruction
4. Incentivise private study
5. Facilitate thought

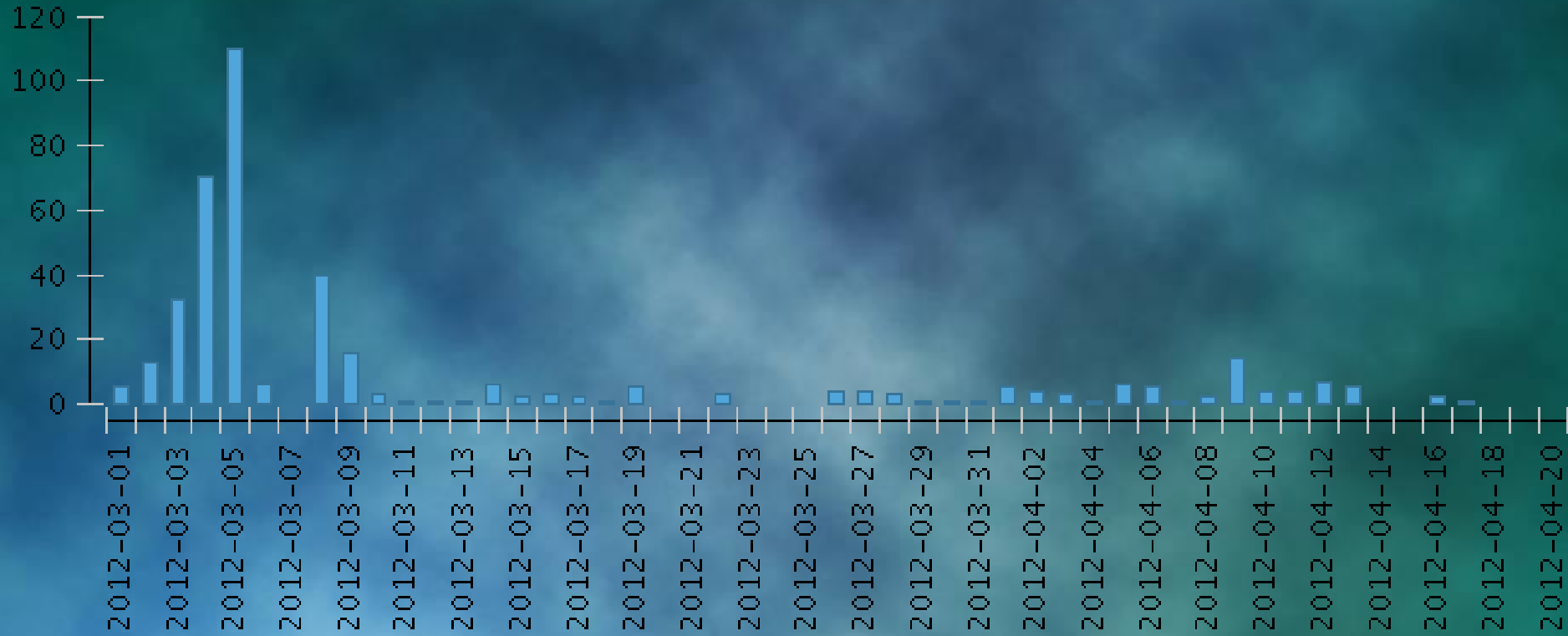


Our model of lecture flipping

- Students are strongly encouraged to watch a screencast recording of the (previous year's) lecture the flipped lecture is replacing.
- They attend the timetabled teaching slot and are engaged in as interactive and as 'challenging' a session as the 'lecturer' can muster using every audience participation device at their disposal.



Uptake



Which are genuine student evaluation comments?

1. A lot of the descriptive chemistry was very dry and essentially boring. It is hard to teach this kind of material but the 'flipped lectures' seemed to combat this.
2. I think the 'flipped' lectures run by Dr. Lancaster were a really good idea and I felt more engaged in the module.
3. I appreciated Dr Lancaster's efforts to make the lectures interesting and engaging in a modern way. The 'flipped' lectures were very successful.
4. I really enjoyed the flipped lectures and find that revising that material is much easier.
5. The flipped-lectures are a definite step in the right direction, away from archaic lectures with little or no mental stimulus, towards a more interactive learning experience that maximises learning outcome!
6. They were good fun as it was nice to have interaction with the lecture as opposed to just being talked at, it was also nice having knowledge of what you were talking about as we had already gone through the material!
7. I think the flipped lectures were a really good idea because it was a more interactive way to engage students into learning, rather than the repetitive routine of having to listen to the lecturer work through a PowerPoint presentation for an hour.

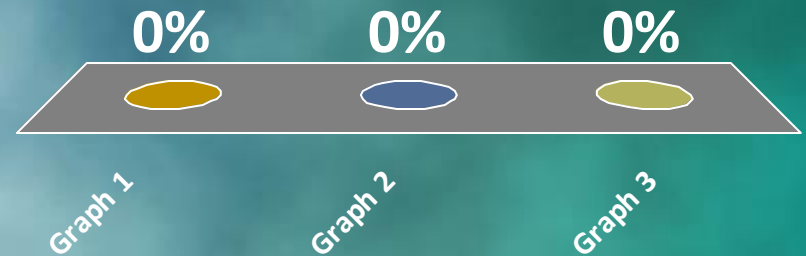
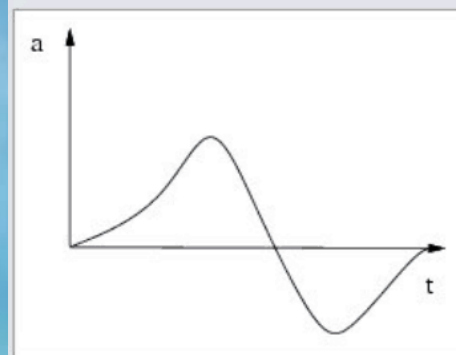
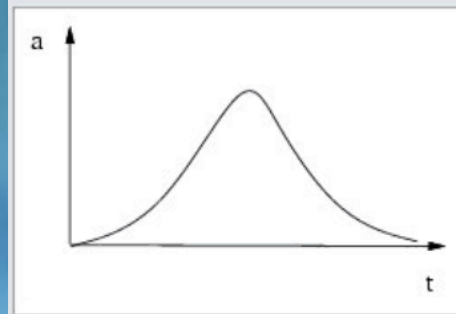
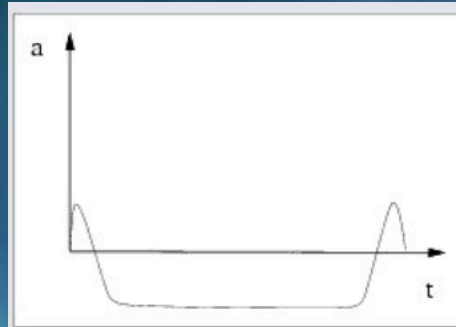
What is the objective of a question posed during a flipped session?



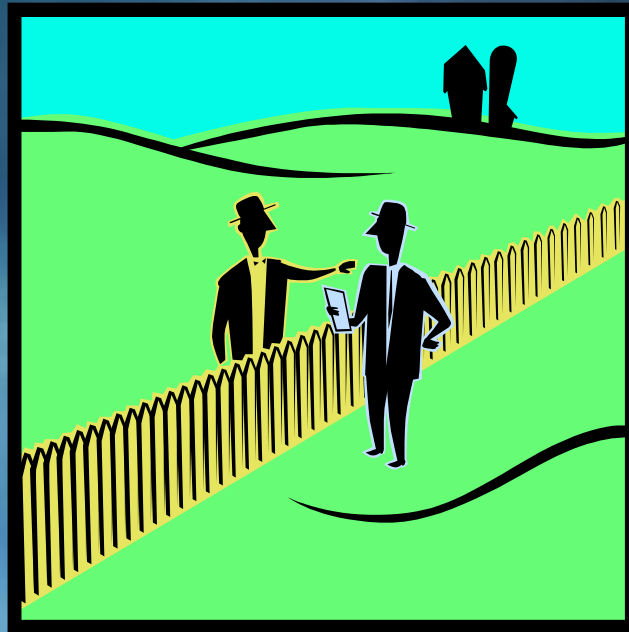
A ball initially at rest in the hand, is thrown upwards, comes back down and is caught.

Which of the following represents a plausible graph of vertical acceleration against time?

1. Graph 1
2. Graph 2
3. Graph 3



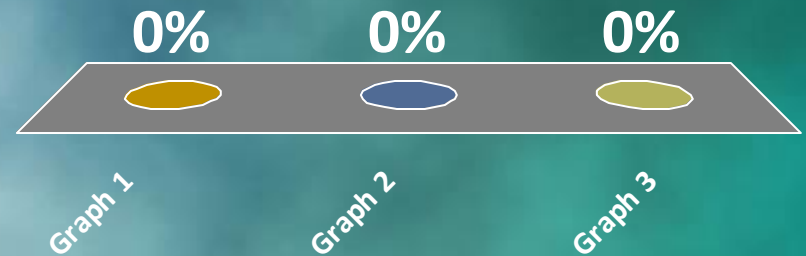
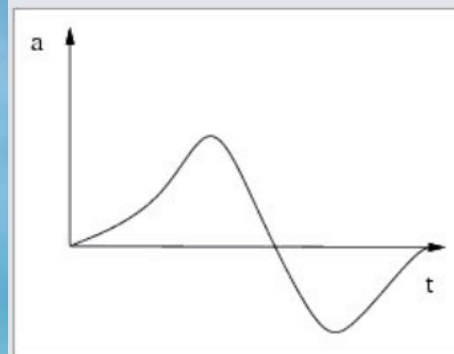
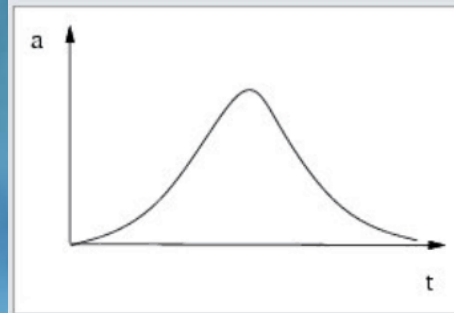
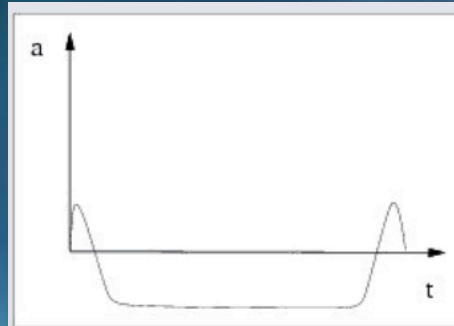
Turn to your neighbour



A ball initially at rest in the hand, is thrown upwards, comes back down and is caught.

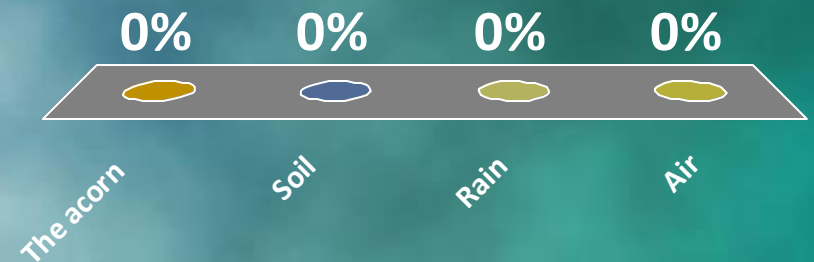
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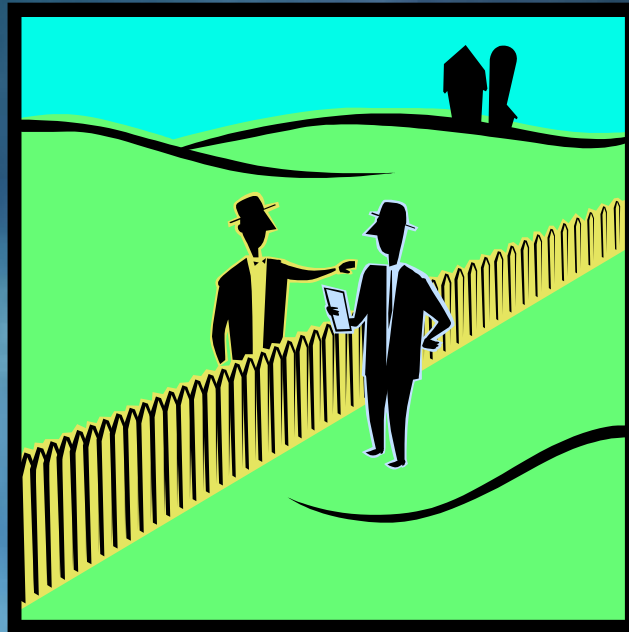


Where does most of the substance of a mature oak tree come from?

1. The acorn
2. Soil
3. Rain
4. Air

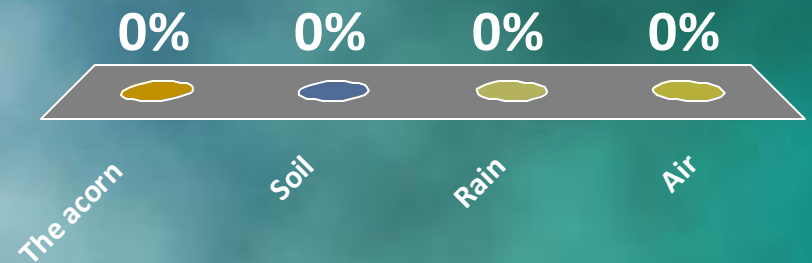


Turn to your neighbour



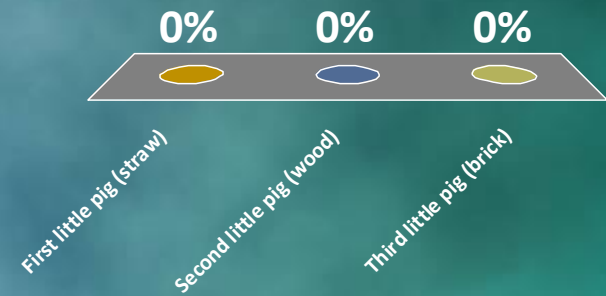
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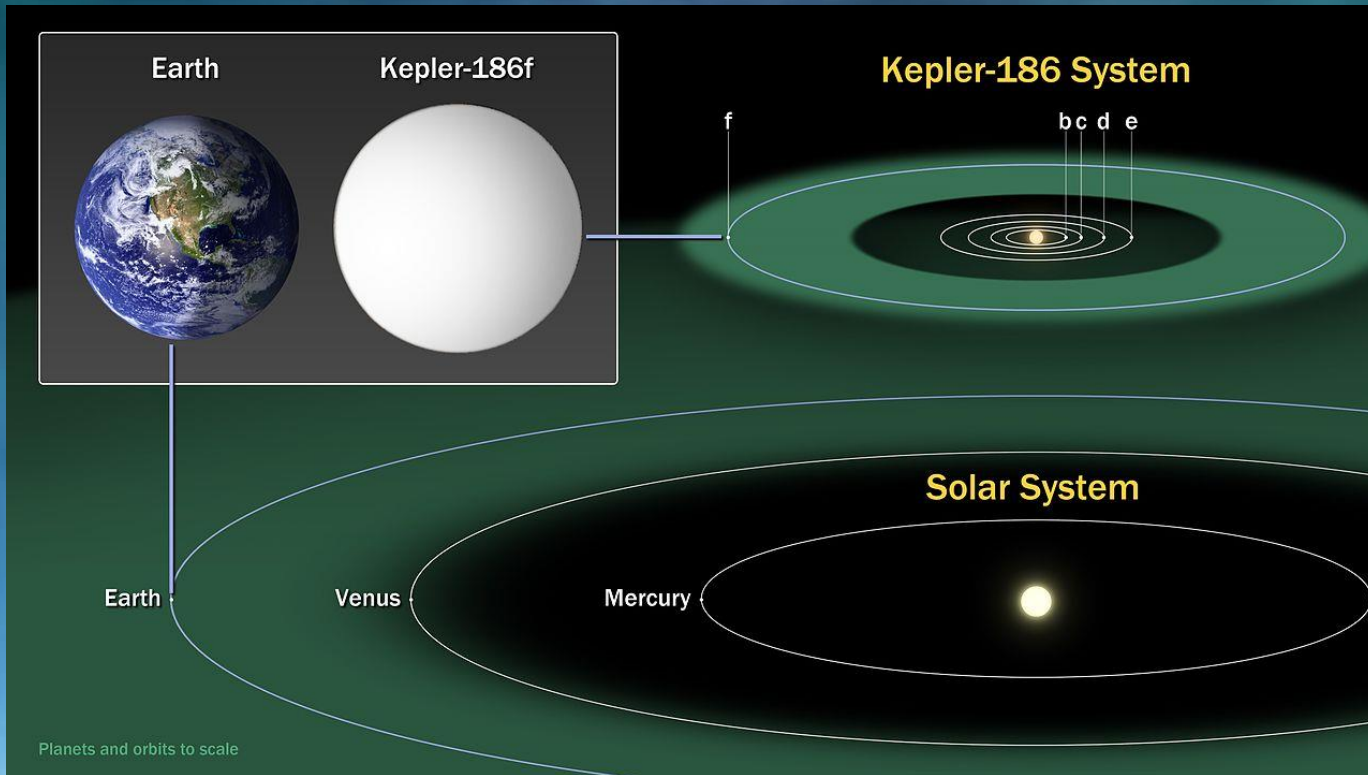


Which one of the three little pigs built the most environmentally sustainable house?

- A. First little pig (straw)
- B. Second little pig (wood)
- C. Third little pig (brick)



The Goldilocks Zone



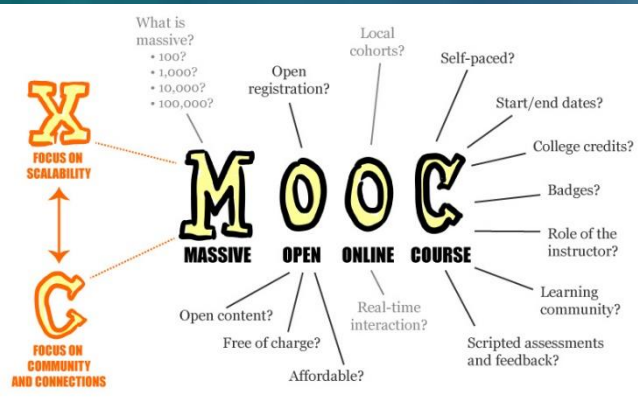
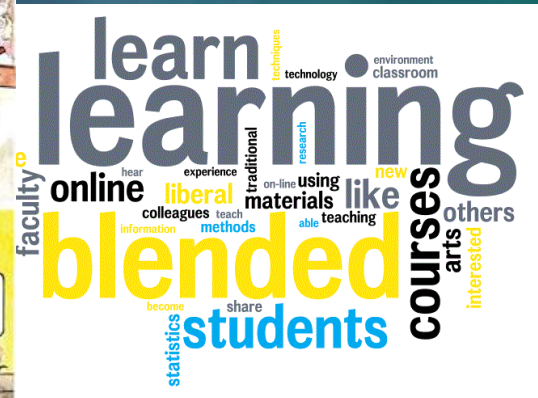
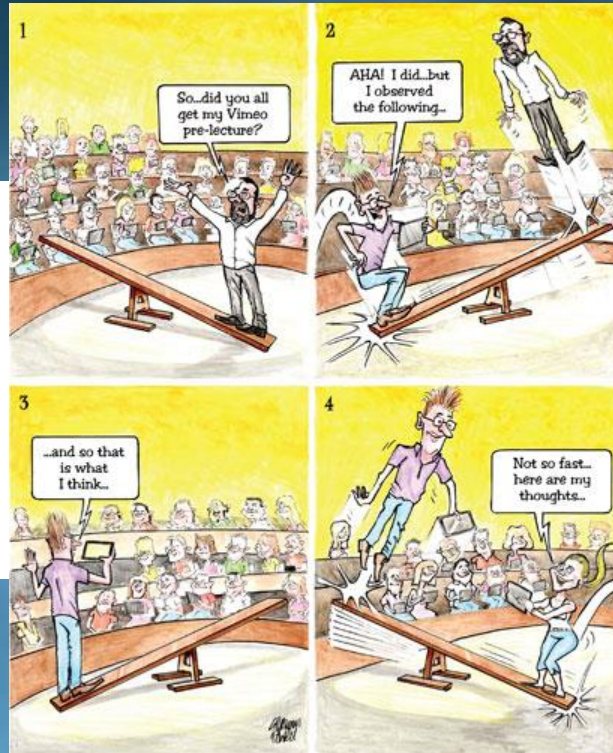
Who is best placed to
determine the Goldilocks
Zone?



Student Sourcing Questions?

- Be open to students suggestions
- Encourage students to submit questions to use within flipped sessions
- Use Peerwise to structure, screen and select questions in the sweet spot for peer instruction
- Seek answers from students and even draft new questions 'on the hoof'

The Question is Key

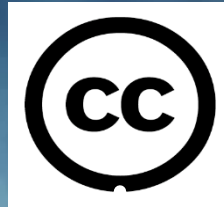


What is the default copyright status
of everything published on the
internet?



Your work is automatically protected under copyright!

Alternative copyright Licensing



Creative Commons Licences							
Copyright All rights reserved	Attribution Non-commercial No derivatives	Attribution Non-commercial Share Alike	Attribution Non-commercial	Attribution No Derivatives	Attribution Share Alike	Attribution	Public domain No rights reserved
←				→			
Most restrictive				Most accommodating			
<i>BY = Attribution</i>		<i>NC = Non-commercial</i>		<i>ND = No derivatives</i>		<i>SA = Share Alike</i>	



Open Educational Resources (OERs)

www.rsc.org/learn-chemistry/resource/listing?searchtext=&fAudience=AUD00000002&MediaType=MED00000002&fLevel=LEV00000006&fContext=CON000A1000&fSubject=SUB000C0000

Latest Headlines | Note in Reader | Import to Mendeley | Pin It | Storify this | Imported From Firef...

Select Resource Type

- Video (35)
- All (62)
- Presentation (6)
- Handout (25)
- Worksheet (2)
- Quiz (1)
- Experiment (20)
- Game (1)
- Tutorial (1)
- Article (2)
- Podcast (5)
- Website (3)

Chemistry Resources for Students

Information & data | Snippets & articles | Educational resources & tests | Lesson plans & topics | Training & curricula

Filters Applied: Clear All

Included:

- Age Group: Undergraduate
- Audience: Student
- Context: Underpinning science
- Subject: Teaching chemistry

1 - 30 of 35 Resources | Sort By: Relevance | Results Per Page: 30 | Page 1 of 2 | Go

Refine your criteria

Age Group

- Graduate (0)
- Undergraduate (35)
- 16 to 18 years (26)
- 14 to 16 years (16)
- 11 to 14 years (16)
- 7 to 11 years (0)
- 5 to 7 years (0)

Audience

- Student (35)
- Teacher (34)


Context

- Underpinning science (35)
- Water & air (1)
- Energy (6)
- Human health (6)
- Raw materials & feedstocks (5)
- Future cities (4)
- Lifestyle & recreation (1)

Subject

- Chemistry in action (22)
- Teaching chemistry (35)
- Matter & materials (16)
- Patterns in chemistry (8)
- Change (42)

SpectraSchool




Audience: Teacher Student

Subjects: Practical chemistry, Equipment, apparatus...

Age Group: 16 to Undergraduate

1 Website

Reactions of the alkali metals




Audience: Teacher Student

Subjects: Exposition, Characteristics of pure...

Age Group: 11 to Undergraduate

1 Video 1 Experiment

Hot Filtration




Audience: Teacher Student

Subjects: Equipment, apparatus & instruments...

Age Group: 16 to Undergraduate

1 Video


Distillation



Audience: Teacher Student

Subjects: Equipment, apparatus & instruments...


The methane rocket



Audience: Teacher Student

Subjects: Exposition, Chemical change/reactions...

Melting Point Determination



Audience: Teacher Student

Subjects: Equipment, apparatus & instruments...

NEWSLETTER

FEEDBACK

ChemTube3D

www.chemtube3d.com/VSEPRShapeH2O.html

UNIVERSITY OF LIVERPOOL

ChemTube3D

A Level Organic Reactions Structure and Bonding Polymers Solid State

Structure and Bonding

Atomic and Molecular Orbitals
Spectroscopy
Molecular vibrations-IR
Dipoles and Electrostatic surfaces
UV - conjugation
Stereochemistry
Introductory Structures

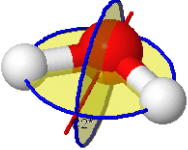
Shapes of molecules VSEPR

- Water
- Ammonia
- Methane
- PF₅
- SF₄
- ClF₃
- SF₆
- XeF₄


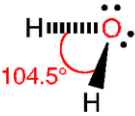
Valence Shell Electron Pair Repulsion

H₂O Water

Background Colour:



Medium (400 px) Show Symmetry Elements Jmol



The red lines outline a

Symmetry at Otterbein

symmetry.otterbein.edu/gallery/index.html

Latest Headlines Note in Reader Import to Mendeley Pin It Storify this Imported From Fire...

Symmetry @ Otterbein

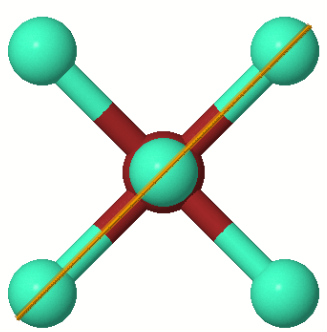
Home Tutorial **Gallery** Challenge Info Feedback

Point Group Type:
All

Select Molecule:

- 1,1-dichloroethylene
- 1,2-dichloroethylene (cis)
- 1,2-dichloroethylene (trans)
- 12-crown-4
- 18-crown-6
- BH₃
- BrF₃
- C₆₀F₃₆
- S₄N₄
- [Ca(THF)₆]²⁺
- [Co₄(Cp)₄] cluster
- [Cr(CO)₆]
- [Fe(C₉H₉N)₆]²⁺
- [Fe(Me₃-Cp)(P₃)]
- [Ga₄L₄] cluster
- [MnCl(CO)₅]
- [Mo₆Cl₆Cl₆]²⁻
- [Os₂Cl₂]²⁻
- [OsCl₂(CO)₄] (cis)
- [OsCl₂(CO)₄] (trans)
- [OsCl₃(CO)₃]⁻ (fac)
- [OsCl₃(CO)₃]⁻ (mer)
- [OsCl₃F₃]²⁻ (fac)
- [OsCl₃F₃]²⁻ (mer)
- [Re₂Cl₄]²⁻
- [Si₉O₁₂(CH₃)₉]
- [Th(NO₃)₆]²⁻
- [V₆P₈O₂₄]-core
- [W(CN)₆]²⁻
- [YbI₂(THF)₃]

Preferences



Point Group = C_{4v}

Jmol

Element	Operation	Element	Operation
<input type="checkbox"/> C ₄ axis	Rotate	<input type="checkbox"/> Show All Planes	
<input type="checkbox"/> C ₂ axis	Rotate	<input type="checkbox"/> plane (σ _v)	Reflect
		<input checked="" type="checkbox"/> plane (σ _v)	Reflect
		<input type="checkbox"/> plane (σ _d)	Reflect
		<input type="checkbox"/> plane (σ _d)	Reflect


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ScoopIt



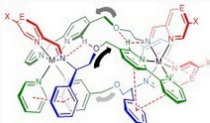
Metallohelices: design, self-assembly, biomedicine

Curated by [Scott Group](#)



Scooped by [Scott Group](#)

Nature Chemistry: Asymmetric triplex metallohelices with high and selective activity against cancer cells




From [www.nature.com](#) - August 3, 9:35 PM

*Water-soluble metallohelices containing an antiparallel head-to-head-to-tail arrangement of strands are reported. This amphipathic functional topology is akin to that of host-defence

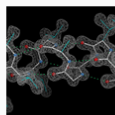
peptides. The metallohelices show high and selective toxicity to a cancer cell line, causing dramatic changes in the cell cycle without DNA damage. In contrast, there is no significant toxicity to MRSA and *Escherichia coli*."

Scott Group's insight:
We describe a method by which amphipathic metallohelices with peptidomimetic structures can be designed and prepared. A large range of compounds produced includes some highly selective anticancer candidates.




Scooped by [Scott Group](#)

Meet the 'Lego Death Star' Designed to Kill Cancer Dead



From [motherboard.vice.com](#) - August 6, 4:23 PM

Self-assembling molecules promise to fortify the body's natural anti-cancer defenses.



Scooped by [Scott Group](#)


Genetic Eng & Biotech News: Stable Metallohelices Self-Assemble, Fight Cancer

From [www.genengnews.com](#) -



Chemed | Chemistry Education

Interesting chem ed links. Especially interested in transition from school to college, laboratory learning and technology in education. I only scoop things I've read and find useful and/or interesting. Follow [@Chem_Ed_Links](#)
Curated by [Michael Seery](#)




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Warming to PeerWise | Education in Chemistry Blog




From [www.rsc.org](#) - June 26, 2:13 PM

Reaction (0)



Scooped by [Michael Seery](#)

Determination of AI Content in Commercial Samples through



Scooped by [Michael Seery](#)

How guidance affects student engagement with an interactive simulation (free)



From [pubs.rsc.org](#) - June 19, 3:16 PM

"We studied how students engaged with an interactive simulation in a classroom setting and how that engagement was affected by the design of a guiding activity. Students (n = 210) completed a written activity using an interactive simulation in second semester undergraduate general chemistry recitations. The s"

Amazon?

Academics, how do you u... x (1) rsc learn chemistry - V... x Happy Pet Wiggly Giggly... x Future Radio 107.8FM | Fu... x Stages launch three new p... x

www.amazon.co.uk/Happy-Pet-Wiggly-Giggly-Jack/dp/B000OGKUKA/ref=sr_1_1?ie=UTF8&qid=1379506230&sr=8-1&keywords=wiggly+giggly+dog+toy


Latest Headlines Note in Reader Import to Mendeley Pin It Storify this Imported from Firef...

amazon.co.uk Simon's Amazon Today's Deals Gift Cards Sell Help

Shop by Department Search All wiggly giggly dog toy Go Hello, Simon Your Account Try Prime Basket Wish List

Pet Supplies Brands Best Sellers Subscribe & Save Dogs Cats Small Animals Fish & Aquatics Birds Reptiles & Amphibians Wildlife

Instant Order Update for Simon Lancaster. You purchased this item on 9 Feb 2012. [View this order.](#)



Happy Pet Wiggly Giggly Jack Dog Toy
by [Rosewood](#)
★★★★☆ (82 customer reviews)

Price: **£5.99** & eligible for **FREE Super Saver Delivery** in the UK on orders over £10. [See details and conditions](#)

In stock.
Dispatched from and sold by Amazon. Gift-wrap available.

Want it by 1pm tomorrow, 19 Sept.? Order it within **1 hr 49 mins** and choose **Express Delivery** at checkout. [Details](#)

- 4-inch diameter, Colours may Vary
- Batteries not required
- Supervise pets during playtime
- For indoor or outdoor use

> [See more product details](#)
16 new from £4.99

Quantity: 1

Yes, I want **FREE One-Day Delivery** with a free trial of [Amazon Prime](#)

[Add to Basket](#)

or

[Sign in](#) to turn on 1-Click ordering.

[Add to Wish List](#)

More Buying Choices


WUNDAPETS	Add to Basket
£6.99 + FREE UK delivery	
VetUK Ltd	Add to Basket
£5.46 + £1.99 UK delivery	
Surepets Ltd	Add to Basket
£7.49 + FREE UK delivery	
16 new from £4.99	

Have one to sell? [Sell yours here](#)

[Share](#) [Email](#) [Facebook](#) [Twitter](#) [Pinterest](#)

Click to open expanded view
[See all 2 customer images](#)
[Share your own customer images](#)

Frequently Bought Together



Price For All Three: £17.58

[Add all three to Basket](#)

[Show availability and delivery details](#)

- This item:** Happy Pet Wiggly Giggly Jack Dog Toy by Rosewood £5.99
- Happy Pet Tough Toy Nobby Wobbly Dog Toy by Happy Pet Products Ltd £5.00 (£2.08 / 100 g)
- Good Boy Dog Toy Treat Ball Puzzle by Armitages £6.59

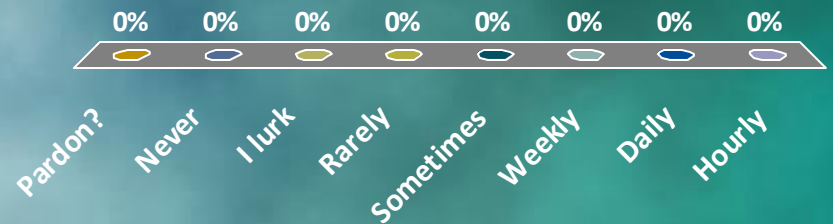
Customers Who Bought This Item Also Bought

Page 1 of 11

13:10 18/09/2013

Do you Tweet?

- A. Pardon?
- B. Never
- C. I lurk
- D. Rarely
- E. Sometimes
- F. Weekly
- G. Daily
- H. Hourly



@S_J_Lancaster: Tweeting

“**Twitter** is a website, owned and operated by Twitter Inc., which offers a social networking and microblogging service, enabling its users to send and read messages called *tweets*. Tweets are text-based posts of up to 140 characters displayed on the user's profile page.”

Wikipedia,

<http://en.wikipedia.org/wiki/Twitter>, accessed 1/5/2011.

Reasons to Tweet:

1. To keep in touch with the subject / education community.
2. To facilitate your life.
3. To provide a novel and very immediate means of communication with students over a particular topic or module.

Why should anyone tweet?

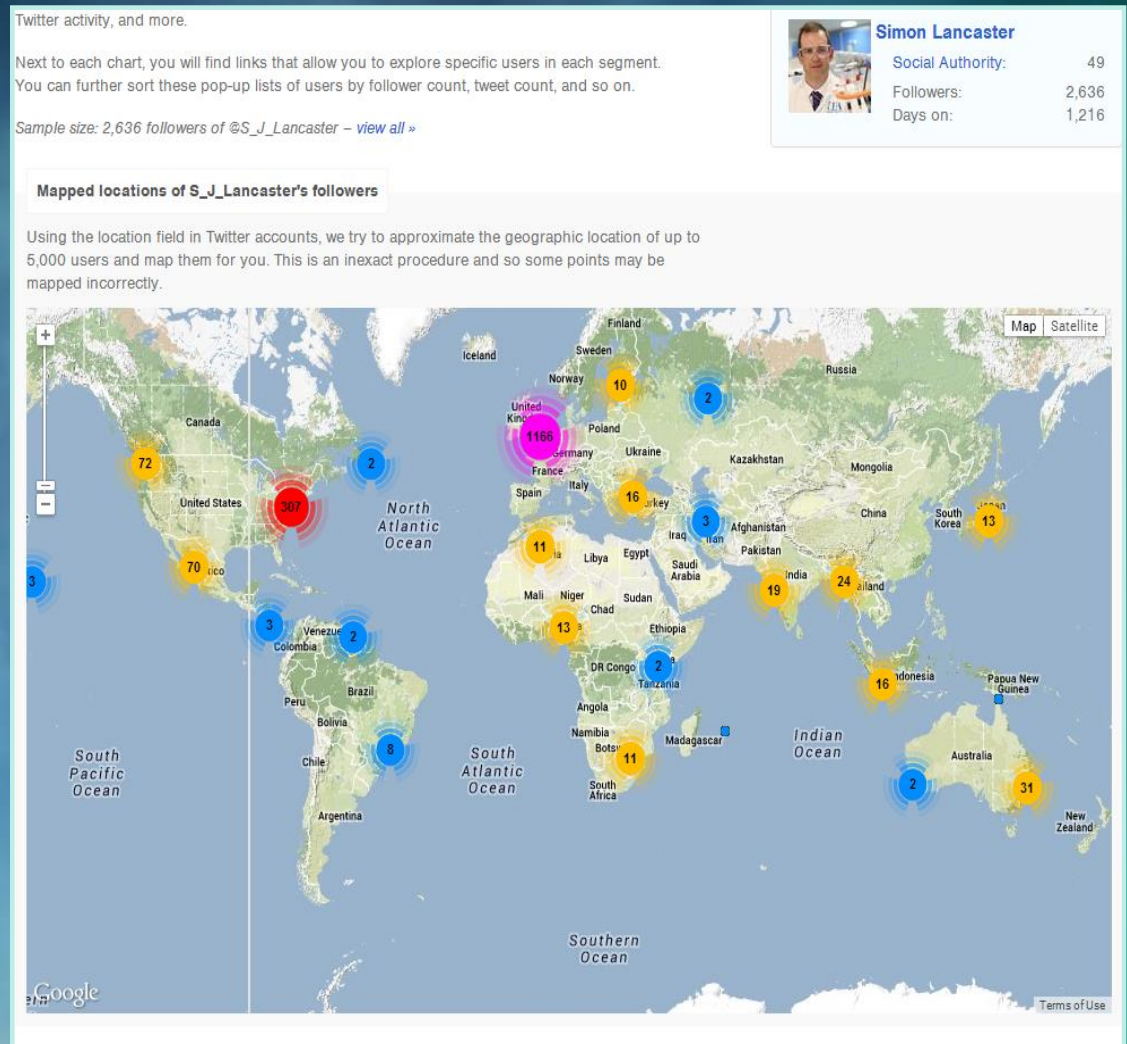
A Teacher's Perspective

To provide a novel and very immediate means of communication with students over a particular topic or module.

Building a network.

https://followerwonk.com/analyze/@S_J_Lancaster?op=fl

January 3, 2015



Interacting with Current Students

@CHE2C32 - Case Study

- **Example tweets from @CHE2C32 :**
 - "Super-toxic" dimethylmercury is this week's Chemistry in its element #podcast subject. Careful now! <http://bit.ly/cHswSp>
 - Transformation of beta tin into alpha modification. <https://vine.co/v/Mv6F2gIXnOX>
 - Periodic Table graphic is finally complete! Data for each element, coloured to indicate trends <http://wp.me/p4aPLT-dE> pic.twitter.com/qewjkKdzZW
 - "I learned very early the difference between knowing the name of something and knowing something." ~Richard P. Feynman

Interacting with Current Students @CHE2C32 – Crowd Sourcing

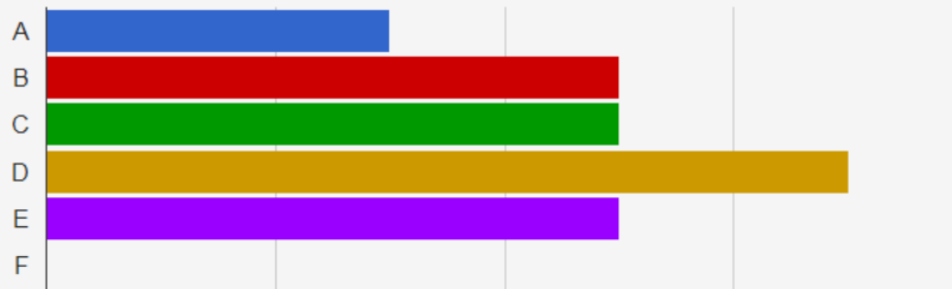
- **Example tweets from followers (students):**
 - **@CHE2C32** made some great black shiny crystals today :D
 - **@CHE2C32** Tutorial work and dolly mixtures - happy times :)
 - **@CHE2C32** is in the house and my experiment chooses this time to start going wrong. Thank you God.
 - **@CHE2C32** Annoyed at some feedback on my topic 3 and I have another 3 lab reports to finish!
 - I don't think iv'e seen a phosphorus NMR spectra before **@CHE2C32**

How do teachers use Twitter?

Teachers, how do you utilise Twitter?

The view of teachers working at any level of the education system are welcomed.

Thank you for answering this question, the results will be presented (without attribution) at #ueateach14 on June 6th



- A** To moan 25% (6 Votes)
- B** To seek advice on teaching strategy 42% (10 Votes)
- C** To consult subject experts 42% (10 Votes)
- D** To add a fun element to encourage engagement 58% (14 Votes)
- E** Something else 42% (10 Votes)
- F** No teaching related use

Survey closes in 5 days

24

Votes

208

Views



Widgets

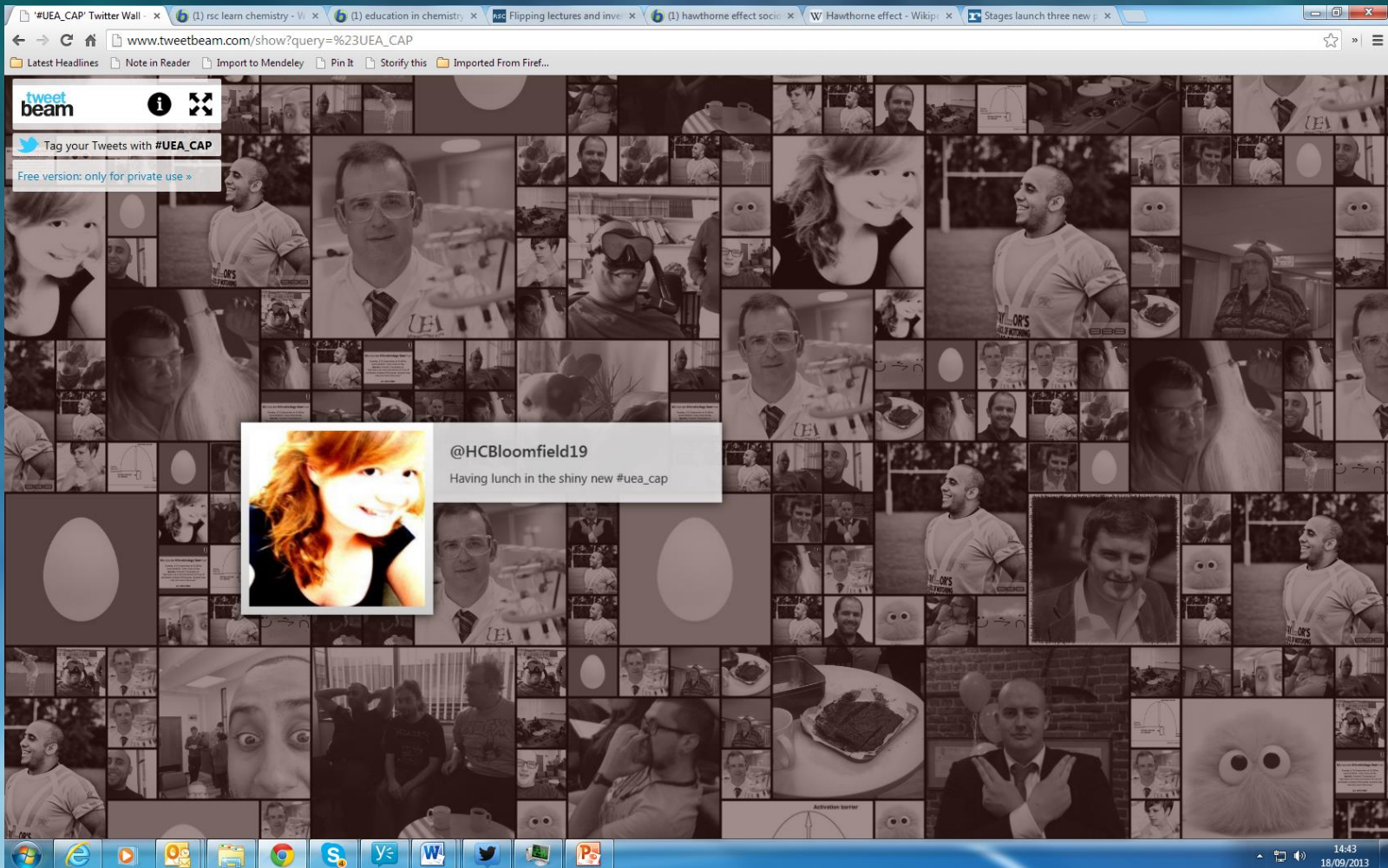
The screenshot shows a web browser window displaying the University of East Anglia (UEA) portal. The browser's address bar shows the URL: https://portal.uea.ac.uk/webapps/portal/frameset.jsp?tab_tab_group_id=_4_1&url=%2Fwebapps%2Fblackboard%2Fexec. The page features a navigation menu with links for Home, Academic, Faculty, Help & Advice, Services, Social, My Stuff, and Email. A search bar is located in the top right corner, with the text "UEA People" and "Surname or Extension #".

The main content area displays two widgets:

- The module introduction is online now**: Posted on Monday, 7 January 2013. The widget includes a link to the module information: [Module Link /Module Information/Module introduction](#). It is attributed to Simon Lancaster, posted to 2012-3 - INORGANIC CHEMISTRY.
- #CHE2C32 Twitter Feed**: Posted on Thursday, 3 January 2013. This widget displays a list of tweets related to the #CHE2C32 hashtag. The tweets are as follows:
 - Simon Lancaster @S_J_Lancaster** (4 Apr): "@chemchem7 one with @NJ_Clayden on Monday and one with me on Friday. #CHE2C32"
 - Inorganic Chemistry @CHE2C32** (3 Apr): "What a way to finish #CHE2C32 marking, the best came last, 97.5% for a practical report, scarcely believed it could be done! Expand"
 - Inorganic Chemistry @CHE2C32** (2 Apr): "I will make a rote-learning dispensation for the word 'phosphorus'. #CHE2C32"
 - Inorganic Chemistry @CHE2C32** (1 Apr): "It's published: Molecular Main Group Chemistry. I don't suppose it'll be obvious why but it's the most #CHE2C32 screen cast ever."
 - Simon Lancaster @S_J_Lancaster** (1 Apr): "Uploading a three-hour indexed epic on Molecular Main Group Chemistry. Fingers crossed. #CHE2C32"
 - Inorganic Chemistry @CHE2C32** (29 Mar): "Is this a good day to mark #CHE2C32 lab reports? Tweet #CHE2C32"

Tweetbeam

There are many (web) apps designed to project a real-time Twitter-feed.



Storify

How do we combat the transient nature of the Twitter feed and make a lasting record?

The screenshot shows a web browser window displaying a Storify page. The browser's address bar shows the URL `storify.com/S_J_Lancaster/a-new-avatar-for-chemistry-at-uea`. The page header includes the Storify logo, a search bar, and a 'Create Story' button. The main content area features a story by Simon Lancaster, titled 'A new avatar for chemistry at UEA', posted 'a month ago'. The story text reads: 'Our students are not just good at chemistry and so we have challenged them to design a new avatar for the School of Chemistry Twitter and Facebook accounts. Please feel free to comment below on your favourite to date so we can shortlist for a vote.' Below the text is a photograph of a hand-drawn avatar on a whiteboard. The avatar is a stylized figure with green curly hair, wearing a white lab coat with a red border. The whiteboard contains several handwritten notes: 'BASICS OF CHEMISTRY' on the left, 'I ❤️ H₂O' on the chest, 'CHE-1C3Y' at the bottom, and a quote on the right: 'I pity the fool who don't choose CHE-1C3Y! © words of Mr T wester'. Below the photo, there is a tweet from @CHE1C3Y and a reply from EMMA HAMPTON. The right sidebar shows the user profile for S_J_Lancaster (Simon Lancaster), a Senior Lecturer in Inorganic Chemistry, with 21 stories, 6 followers, and 9 following. It also lists 'Total views' (135) and 'RELATED STORIES' such as 'WoTD Perfect Tweet Challenge - Week January 21, 2013' and 'CHE2C32 2012-13 Topic 1'. A 'feedback' button is visible on the right edge of the page. The bottom of the browser shows the Windows taskbar with various application icons and the system clock displaying 11:43 on 12/04/2013.

What is massive?
• 100?
• 1,000?
• 10,000?
• 100,000?

Open registration?

Local cohorts?

Self-paced?

Start/end dates?

College credits?

Badges?

Role of the instructor?

Learning community?

Scripted assessments and feedback?

Real-time interaction?

Affordable?

Free of charge?

Open content?

M O O C

MASSIVE OPEN ONLINE COURSE

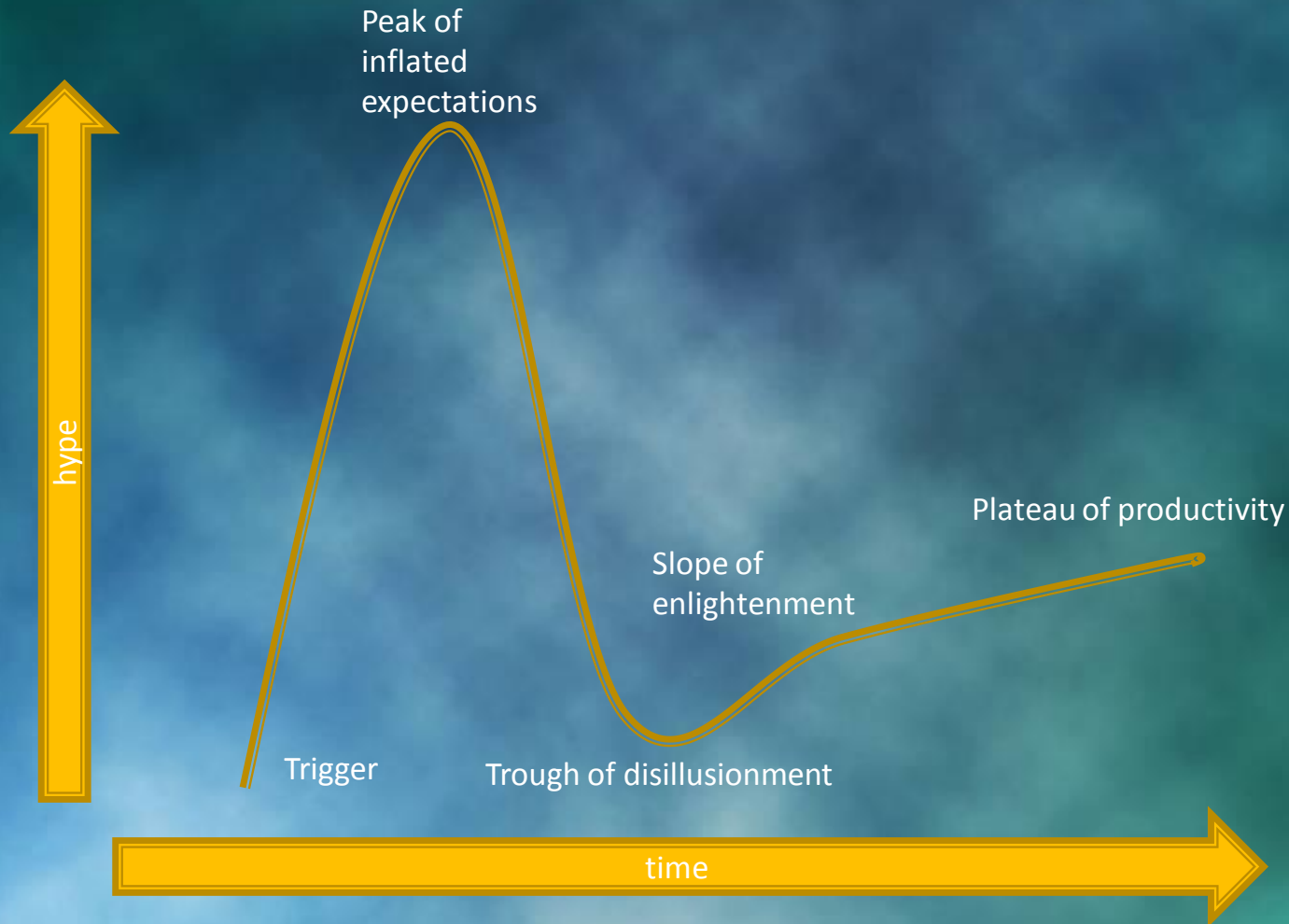


FOCUS ON SCALABILITY



FOCUS ON COMMUNITY AND CONNECTIONS

Technology Hype Cycle



~~Conclusions~~ Suggestions

- Ask what you are adding by expecting your students to attend
- Question everything, especially the questions
- Seek (possible) answers from the floor
- Be prepare to relinquish some control

Acknowledgements

- The Royal Society of Chemistry
- The Variety in Chemistry Education and Physics Higher Education Conference Communities
- Higher Education Academy
- Higher Education Science Technology Engineering and Mathematics
- University of East Anglia