

Perusall

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WHAT IS Perusall ?

- A collaborative e-book reader
 - Developed at Harvard University by Eric Mazur, Gary King, Brian Lukoff and Kelly Miller

The screenshot displays the Perusall interface. The main content area shows a textbook page titled "7.4 The Bohr Model". The text describes Niels Bohr's quantum model for the hydrogen atom, noting that it was later proven incorrect but was a central figure in understanding the atom. The page includes two diagrams: one showing energy levels (n=1 to 5) with arrows indicating transitions and another showing concentric circular orbits (n=1 to 5) with an electron moving between them. Below the diagrams is a spectrum showing three discrete lines (violet, green, red) labeled "Wavelength".

On the right side, a chat window titled "Current conversation" is open. It shows a discussion between users ZD and TD. ZD asks: "Do these allowed circular orbits vary, for example in distance, for every atom, and if yes what are the factors that make them different for an atom compared to another? Personally, I would guess that they change, but I don't really know why." TD responds: "Just throwing in an idea here. The size of atoms of different elements do vary, as they do not have the same amount of protons/electrons, so pull between the positive nucleus and the electrons are different. Since the size of the atoms are different, I would suppose that the distance (radius?) of the orbitals are as well. Also, maybe the distance varies depending on the energy levels (wavelength colors), as 'each orbit has an energy associated with it' (page 113). From the equation below, we see that the size of the orbit radius (n) is affected by the nuclear charge (Z) so this should be one of the factors. Great question, I would like to know the answer as well!" Zhen Dai and Tian Yue Ding respond: "Good discussion, you're on the right track! The orbits are not circular, they are various shapes (as you'll see later on). Bohr's model wasn't quite accurate, but it was a good start. The orbits are actually referred to as orbitals and they will vary in size and shape, which in turn affects its energy. The larger the orbital, the further away the electron can be from the nucleus, which results in higher energy levels. Other factors that can affect the energy levels of the orbitals (and the electrons that reside in it), is the number of protons in the nucleus and the number of electrons in the atom. The more protons there are, the stronger the pull between the electron of interest and the nucleus (where

WHAT IS *Perusall* ?

YouTube Video

- <https://www.youtube.com/watch?v=bxEfWdfxj28&feature=youtu.be>

WHAT IS *Perusall* ?

- Instructors assign readings
 - **Engages** students outside of class
 - **Prepares** students ahead of lectures
 - **Highlights** which concepts were **troublesome** for students
 - **Shows** which topics were most engaging for students
 - **Optimizes in-class** lecture **time** with students
- Students
 - Complete **readings** online
 - **Directly annotate** the text or images, and respond to each other's comments and/or questions about the readings
 - Individual activity is turned into a **collective activity**

WHAT IS *Perusall* ?

- Free online platform
 - Perusall itself is free
 - Documents that you have the rights to can be used without cost
 - Books or articles can be purchased through Perusall

- Two versions
 - Stand-alone version (use directly from website)
 - Through your institution's Learning Management System (ex. Moodle, Blackboard, Canvas, etc.)

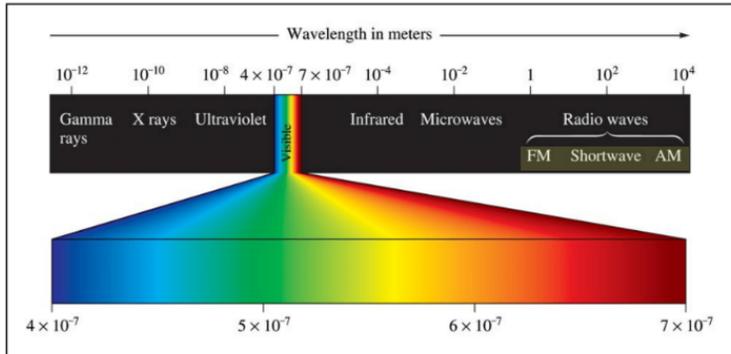
HOW DOES IT WORK?

Perusall > General Chemistry copy 1 > General Chemistry NYA by Yann Brouillette Revised05 F2016

Page 110

Classification of Electromagnetic Radiation

For example:
The energy from the sun reaches the earth mainly in the form of visible and ultraviolet radiations
The glowing coals of a fireplace transmit heat energy by infrared radiation
A microwave emits microwave radiations.



Example:
Calculate the frequency of a green light of wavelength 5.10×10^2 nm.

Solution:
1) Convert wavelength to frequency:
 $\lambda \nu = c$ therefore $\nu = c / \lambda$

2) $\nu = \frac{2.9979 \times 10^8 \text{ m}\cdot\text{s}^{-1}}{5.10 \times 10^{-7} \text{ m}} = 5.88 \times 10^{14} \text{ s}^{-1} = 5.88 \times 10^{14} \text{ Hz}$

7.2 The Nature of Matter

Current conversation

SG: What are gamma rays used for? Can one die due to the exposure of gamma rays? Also, what is the highest wave frequency ever recorded? (Score: 1)

ZD: Gamma rays are the electromagnetic radiation that have the most energy. Thus they can kill cells and can be used to treat malignant tumors in radiotherapy. I think that if someone is exposed to these rays in the wrong way they could die. As for the highest wave frequency I don't really know. (Score: 2)

KP: I tried to look it up online, and I found out that emission of waves are measurable below 10^{24} Hz, which are obviously very high intensity gamma rays. However, there have been reports stating that they have been able to measure over 10^{29} Hz, which is quite impressive! (Score: 2)

LG: Consider that just x-rays can be really dangerous if you are exposed to them. And since gamma rays are even stronger, I guess they are even more dangerous by a lot. (Score: 1)

CL: Enter your comment or question and press Enter. Mention a friend by typing @. Add hashtags by typing #.

CONFUSION REPORT

Perusall > General Chemistry copy 1 > Created from Moodle

Confusion report for General Chemistry NYA by Yann Brouillette Revised05 F2016, Pages 109-122

Topic 1 (keywords: different, graph)

↓ Scroll for more

Topic 2 (keywords: energy, quantum)

↓ Scroll for more

Topic 3 (keywords: 'particles, wave)

How useful was this report? 😄 😊 😐 😞 😡

#26 #ant #bonding #ce0000 Due Sun Sep 16 5:00 pm EDT

ZD Do these allowed circular orbits vary, for example in distance, for every atom, and if yes what are the factors that make them different for an atom compared to another? Personally, I would guess that they change, but I don't really know why. +1

MF What could be a real life application for this? Just by reading, I can't really think of a situation where someone would want to just break the links of hydrogen and make light with it.

LG Did you ever did the experiment in high school where we had various tubes with different noble gases. And we then gave the tube and electric current, and each tube emitted light of a different color. Or the experiment where we burnt different metals with a flame, and the flame changed colors? Can those colors changes be explained by what we are seeing in this chapter? That every different atom will only produce certain wavelengths of light. Show more...

ST A little further up the page it suggests that $\Delta E = nh\nu$ meaning the change of energy (ΔE) is equal to the number of quanta times their size. However, here the number of quanta are not mentioned. I believe that is because we're only interested, in this question, to the size of the quantum ($h\nu$). What I'm not sure about is if it is right to write $\Delta E = h\nu$ because $h\nu$ is just one of the packets and not the whole energy transferred. Unless if n is 1 meaning that there is only one packet, so one quantum, which I think is possible as it is mentioned that " n is an integer (1,2,3,...)". How are we supposed to know how much is n if we are not told in the question? +2

ST Does this mean that energy can not transfer in any random quantities but instead it subdivides into smaller packets which are called quantum and the sum of all these quantum[s] (a quanta) is the energy transferred? +1

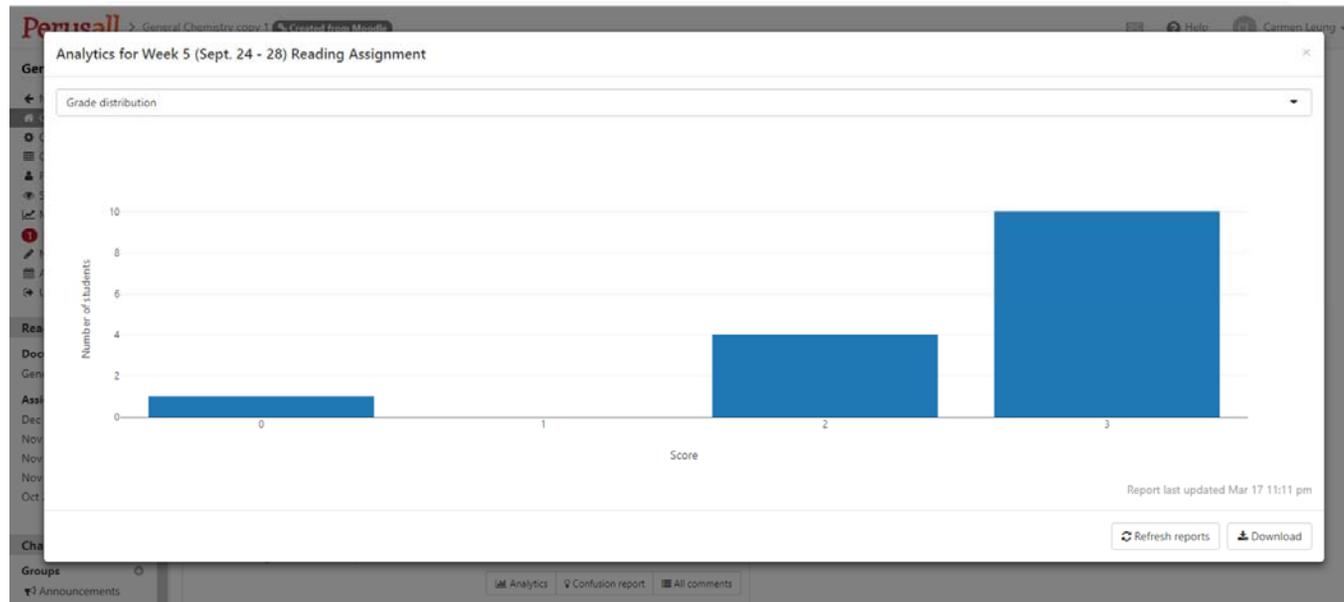
ST The photon has no rest mass because: if it is at rest, its speed is 0 so its mass is undefined ($m = E/c^2$, thus $m = E/0 = \text{undefined}$). But this is true only if we consider that the photon has an energy. (because otherwise, if its energy is zero then $E/c^2 = 0/0$ and the mass exists but it is indeterminate) Could a photon have 0 energy? ($E_{\text{photon}} = h\nu$) So I should ask is it possible to have a frequency of zero? +1 Show more...

MF I've seen this on some periodic tables before. What does calculating a wavelength have to do with chemistry/elements? Would each element tend to release a different wave length? Or is it just something used in problems like the one below? +1

Email Print

ANALYTICS

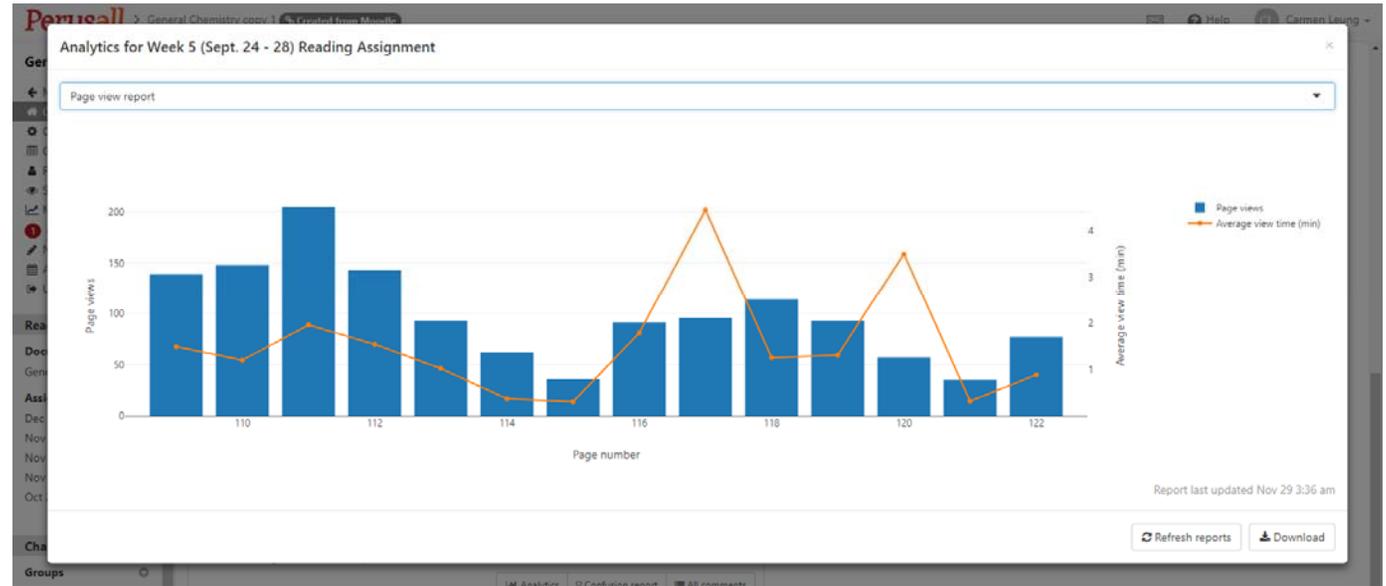
- Grade distribution



- Annotation submission time heat map

ANALYTICS

- Page view report



Analytics for Week 5 (Sept. 24 - 28) Reading Assignment

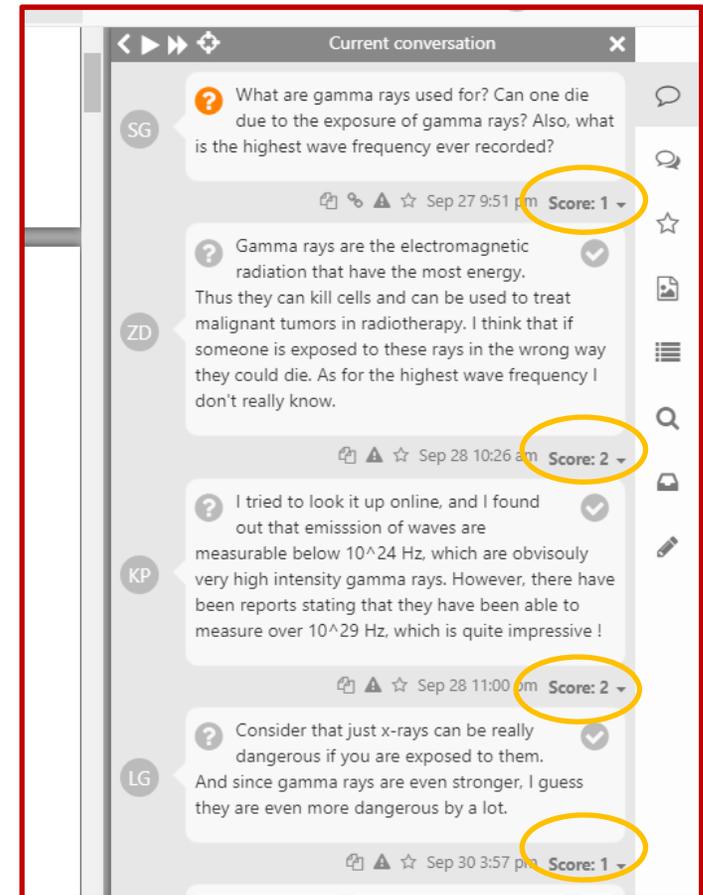
Student activity report (beta)

| Last name | First name | Viewing time (min) | Active reading time (min) | Activity |
|-----------|------------|------------------------|------------------------------|------------------------|
| DA | | 51 minutes, 36 seconds | 33 minutes, 51 seconds (66%) | 3 annotations |
| YB | | 20 minutes, 55 seconds | 19 minutes, 44 seconds (94%) | |
| AB | | 1 hour, 49 minutes | 1 hour, 41 minutes (92%) | 6 annotations + 1 + 1 |
| ZD | | 1 hour, 4 minutes | 50 minutes, 5 seconds (78%) | 3 annotations |
| TD | | 5 hours, 54 minutes | 4 hours, 16 minutes (72%) | 15 annotations + 9 + 4 |
| MF | | 28 minutes, 21 seconds | 22 minutes, 56 seconds (81%) | 3 annotations |
| SG | | 47 minutes, 35 seconds | 40 minutes, 14 seconds (85%) | 3 annotations + 1 |
| LG | | 2 hours, 8 minutes | 1 hour, 20 minutes (62%) | 8 annotations |
| TH | | 3 hours, 28 minutes | 1 hour, 19 minutes (38%) | 3 annotations + 1 |
| CL | | 3 hours, 16 minutes | 2 hours, 1 minute (62%) | 23 annotations |
| DP | | 2 hours, 6 minutes | 1 hour, 54 minutes (91%) | 4 annotations |

- Student activity report

HOW ARE STUDENTS ENGAGED?

- Students can get responses to questions outside of class from peers and instructors.
- Annotations are scored, and resulting reading assignments are given an overall grade.
- Grading is based on effort and engagement, rather than learning outcomes.
- Instructors are recommended to make Perusall grades count towards their final course mark.



HOW ARE STUDENTS ENGAGED?

- Annotations are evaluated based on:
 - **Quality** – Scores are either 0, 1 or 2 (2 showing thorough and thoughtful reading AND insightful interpretation of the reading).
 - **Quantity** – Instructor sets minimum number of annotations, Perusall computes overall grade based on highest-quality annotations.
 - **Timeliness** – Is assignment completed by deadline?
 - **Distribution** – Are annotations made throughout the document?
- Common question by students, ‘What if I don’t have any questions or comments to make?’
 - Elaborate on a specific topic, connect to personal experience or perspective, extension to another topic or perspective, paraphrase part of the text

HOW ARE STUDENTS ENGAGED?

- Overall grade for each reading assignment is out of 3

- 3 = exceptional (rarely given)
- 2 = meets expectations
- 1 = needs improvement
- 0 = insufficient

The screenshot shows a table with columns for 'Average score', 'Week 1 (Aug. 27-31) Reading Assignment', 'Week 2 (Sept. 3-7) Reading Assignment', and 'Week 3 (Sept. 10-14) Reading Assignment'. A tooltip is open over one of the rows, displaying the following data:

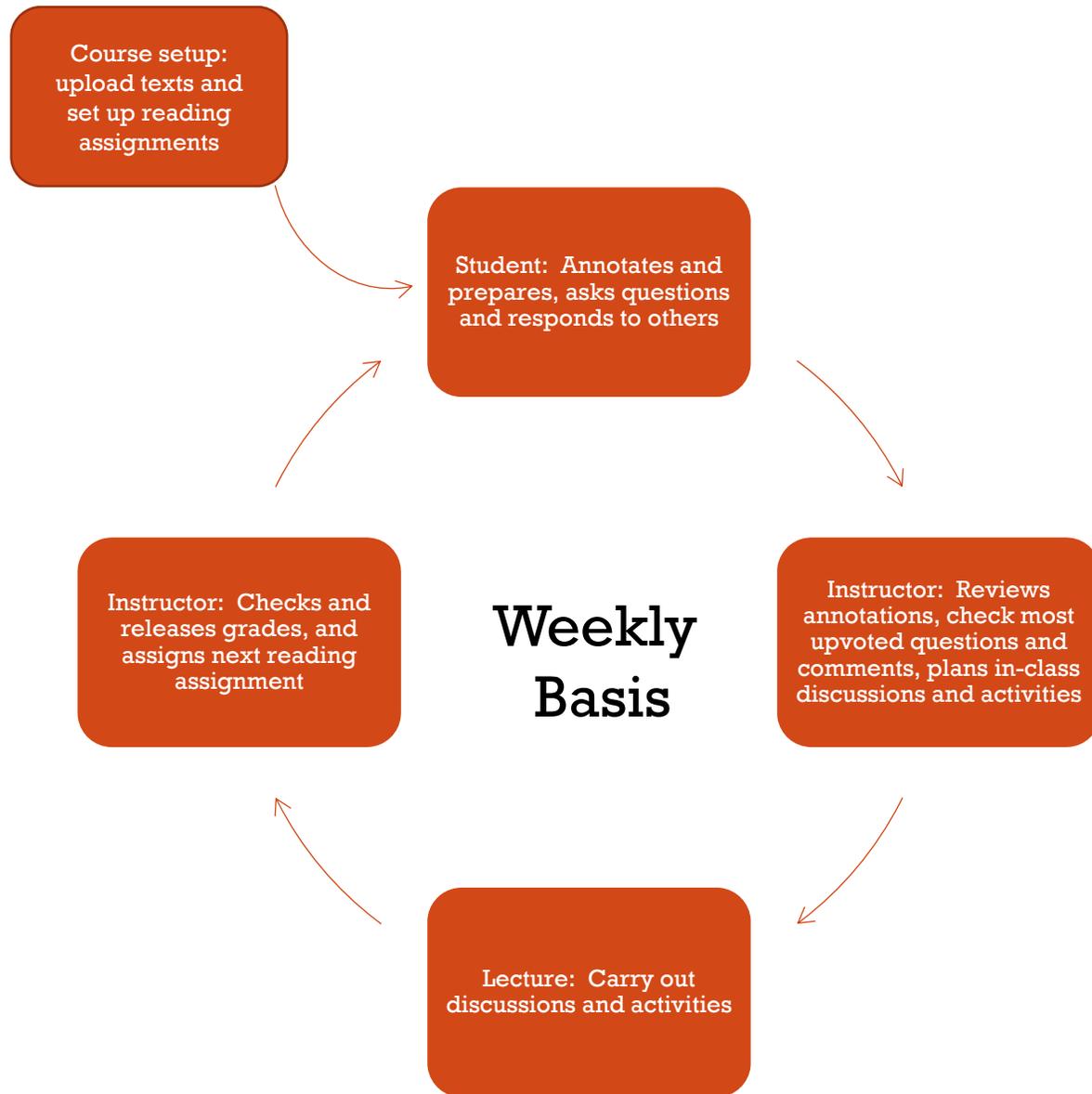
| | |
|--|------|
| Total number of annotations | 6 |
| Total number of annotations submitted on time | 6 |
| Average quality of top 3 annotations submitted on time | 2.00 |
| 2 = demonstrates thorough and thoughtful reading and insightful interpretation of the reading, 1 = demonstrates reading, but no (or only superficial) interpretation of the reading, 0 = does not demonstrate any thoughtful reading or interpretation | |
| Distribution of annotations | 5.0 |
| 0 = clustered, 5 = evenly distributed throughout assignment | |
| Assignment score | 3 |
| scores range from 0 to 3 | |

- Personal recommendations
 - Do not make the first reading assignment count

Or

- Drop the lowest assignment grade at the end of the course

COURSE SETUP



CONCLUSION

- Students are engaged with content **outside of class** and are better prepared for class
- Assignment grades are based on **effort and engagement** in the annotations
 - Perusall rewards desirable behaviour.
- Social features to promote **collective experience**
 - Class is sectioned into groups of 20
 - ‘Upvote’ questions and comments
 - Email notifications when a peer has responded to a comment or question student made
 - Avatars to see who is doing the reading assignment at the same time
- Allows for **flipped classroom** approach
 - Confusion reports are based on just-in-time teaching philosophy
- Students perform better on in-class exams ([Miller et al., 2018](#))

MORE INFORMATION

- Supporting document: <https://www.rug.nl/e-learning/innovation-projects/perusall-active-learning-template.pdf>
- Live demo of Perusall: <https://app.perusall.com/demo>
- Help and Support: <https://support.perusall.com/help>
 - **Getting started for instructors**
<https://support.perusall.com/help/getting-started-instructors>
 - **Getting started for students**
<https://support.perusall.com/help/getting-started-students>
- Documents to share with students:
 - **Annotating in Perusall**
<https://drive.google.com/file/d/0B65NaC15zIBqMnNmN0gyczA1TUk/view>
 - **Examples of annotations and scores**
<https://drive.google.com/file/d/0B65NaC15zIBqV3lqWTVacFB6YUU/view>

Enter your email address:

Please agree to our Terms of Service and Privacy Policy.

Terms of Service

🖨️ Print

Frequently Asked Questions

What are my rights over content I post to Perusall?

You retain complete control over your content. If instructors request that their courses be completely deleted, we do not retain any information, including posts, from them. Instructors have complete control over the content displayed and can remove the content of any post at any time.

Are my class' annotations accessible via a search engine?

No, your class' annotations are not available or accessible via search engines.

Privacy Policy

🖨️ Print

Last updated March 24, 2018

Perusall takes your privacy very seriously. The Privacy Policy in this document describes Perusall's policies and procedures on the collection, use, sharing, and disclosure of your information when you use the Perusall Service, via the Perusall website through your computer or other devices. We will not use or share your information with anyone except as described in this Privacy Policy. This Privacy Policy does not apply to information we may collect by other means (including offline) or from other sources. Capitalized terms that are not defined in this Privacy Policy have the meaning given them in our Terms of Service.

Information Collection and Use

Perusall uses information we collect to analyze how the Service is used, diagnose service or technical problems, maintain security, personalize content, conduct research, remember information to help you efficiently access your account, monitor aggregate metrics such as total number of visitors, traffic, and demographic patterns, and track User Content and users as necessary to comply with the Digital Millennium Copyright Act and other applicable laws. We also study how

OK

Welcome to Perusall! Let's finish setting up your account.

1

Create or enroll in a course

Courses are for formal courses at the college, university, and K-12 levels, or for continuing education or other training.

Start or join a club

With Perusall clubs, you can read a book, article, or other materials with friends or colleagues you choose. Your group's conversations are private: club members decide who should be in the club. Select a book you have already purchased within Perusall to use it in your club free of charge; club members that haven't yet purchased the book can rent or purchase access at the regular Perusall price.

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2

I am a student

I am an instructor

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2

I am a student I am an instructor

3

Select course type
 I want to create a standalone course that students access directly at perusall.com.
 I want to create a course that is integrated with my Learning Management System.

Course name
Your unique course URL is based on this name. If you change the name, the URL will change.

Institution
Type to search for your institution, and [contact Perusall support](#) if your institution is not listed.

Course start date

Course end date

Enrollment estimate
20
The approximate number of students you expect to join the course. Perusall will use this value and the Target Group Size to create discussion groups for students.

Target group size
20
Students will be placed into groups of approximately this size and will only be able to see comments and questions within their group. Changing this setting will not retroactively apply to groups that have already been formed, to provide consistency for students.

Based on these settings, Perusall will place students into **1** discussion group(s) for each document. Discussion groups are fixed for a particular document once it is added to the course. [Learn more about discussion groups](#)

- Select materials
- Browse our catalog of available titles
 - Request a title not in the catalog
 - I will upload my own documents

← → ↻ 🔒 https://app.perusall.com/courses/chemistry-sandbox

Perusall > Chemistry Sandbox

Help CL Carmen Leung

Chemistry Sand... X

- ← My Courses and Clubs
- 🏠 Course home
- ⚙️ Course setup
- 📅 Gradebook
- 👤 People
- 👁️ Student view
- 📧 Notifications
- 📝 Notes
- 📅 Add to my calendar

Chats

- ⚙️ ⓘ
- Groups +
- 📢 Announcements
- 🗨️ General discussion
- One-on-One +

Hashtags

- ⚙️ ⓘ
- #grades
- #lecture
- #logistics
- #section

Your course Chemistry Sandbox has been created! Next steps:

- 1 Set up your readings** in [Course Setup](#). You can select a textbook from our catalog, upload any PDF or EPUB file, or take a snapshot of a web page.
- 2 Get students enrolled** by telling them to create a Perusall account and enter your course code **LEUNG-PNGHS** upon registration. (You can always get this code later from your [Course Setup](#) page.)
- 3 Incorporate Perusall into your course:** see our [knowledge base article](#) for suggestions on how to incorporate Perusall scores into your course grades, and how to advise students on how they should approach Perusall.
- 4 There is no step 4!** You'll be able to track and manage student progress on this page once students start working in the course.



Watch a 90 second video on how to set up your course

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2

I am a student

I am an instructor

3

Select course type

- I want to create a standalone course that students access directly at perusall.com.
- I want to create a course that is integrated with my Learning Management System.

Create a Perusall course integrated with your Learning Management System (LMS) directly through your LMS. [Learn more](#)

Complete setup

← → ↻ <https://moodle.dawsoncollege.qc.ca/course/view.php?id=12765¬ifieditingon=1> ☆ 🌐

🏠 Dashboard 📅 Events 📁 My Courses 👤 This course 🗑️ Help 📖 Library 🗨️ Hide blocks ↗️ Full screen

🛑 Turn editing off

✦ Week 2: Sept. 4 - 7 (Sept. 5 is a Monday schedule) Edit

Perusall

- Week 2 (Sept. 3-7) Reading Assignment
- Due on Sunday, Sept 9 at 5:00 pm

Quiz 1

- Fri, Sept. 7th, in class.
- It will cover all the content seen in the first two sets of lecture slides - Topic 1A and Intro- Atoms, Molecules and Ions, and Topic 1B - Periodic Table and Naming Compounds. It also corresponds to sections 2.5 to 2.8 in the textbook.
- You are not allowed to bring any study aids ('cheat sheets'). I will provide a periodic table that will have only the chemical symbol (no names), atomic mass and atomic numbers.

⚙️

✦ **P** Week 2 (Sept. 3-7) Reading Assignment Edit

+ Add an activity or resource

✦ Week 3: Sept. 10 - 14 Edit

Pre-lab work

- To be completed before your lab session. You will have until 9:00 pm the day before to complete the work. If you do not complete the work on time, you will lose half the points on all pre-lab questions in your lab report when it is graded.

Perusall

Perusall > General Chemistry copy 1 > General Chemistry NYA by Yann Brouillette Revised05 F2016

Page 61

This assignment has 2 parts. Scroll to the bottom to continue to the next part.

3.11 The Concept of Limiting Reagent

When a chemical reaction occurs, the reagents involved are **not always in the perfect proportion** so that they will all be consumed.

Balanced reaction: $O_2 + 2 H_2 \rightarrow 2 H_2O$
 Proportions used "in a lab": 32 g 10 g ?
 So what quantity (in g) is produced?

| | Beginning | End |
|-----|-----------|-------|
| O—O | H—H | H—O—H |
| | H—H | H—O—H |
| | H—H | H—H |
| | H—H | H—H |
| | H—H | H—H |

O_2 is limiting the reaction. Two moles of H_2O will be produced, so 36 g.

The reactant (also called reagent) that runs out first, and thus limits the amounts of products that can form, is called the limiting reagent (limiting reagent). In other words, the limiting reagent is the chemical that determines how far the reaction will go before the chemical in question gets "used up", causing the reaction to stop. The chemical of which there are fewer moles than the proportion requires is the limiting reagent. The other reagents are considered to be in surplus, and therefore are called excess reagents.

To determine how much product can be formed from a given mixture of reactants, we have to look at the reactant that is limiting.

Example 1 :

If 20.0 g of Fe_2O_3 are reacted with 8.00 g Al(s) in the thermite reaction, Which reactant is limiting?.

$$Fe_2O_3(s) + 2Al(s) \rightarrow 2Fe(l) + Al_2O_3(s)$$

Solution:

First, determine how many moles of Fe(l) can be produced from either reactant.

Moles produced of Fe from reactant Fe_2O_3

$$\frac{\text{mol } Fe_2O_3}{\text{grams } Fe_2O_3}$$