

IT in Education Subject-related Series: Effective Implementation of e-Learning and e-Assessment in Chemistry In and Out of the Classrooms

Session 2

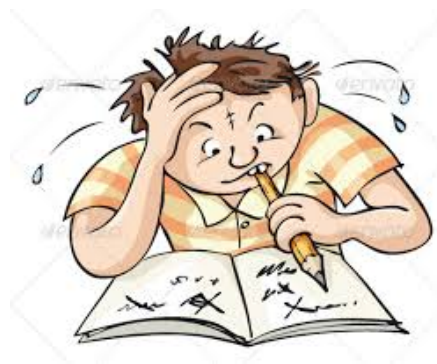
Rundown of Session 2

- ▶ Presentation of assignment
- ▶ IT tools for teaching Stoichiometry
- ▶ Making interactive e-resources by ourselves

What teaching and learning ideas have you come up with?

Difficulties in learning stoichiometry

- ▶ Writing chemical formula
- ▶ Balancing chemical equations





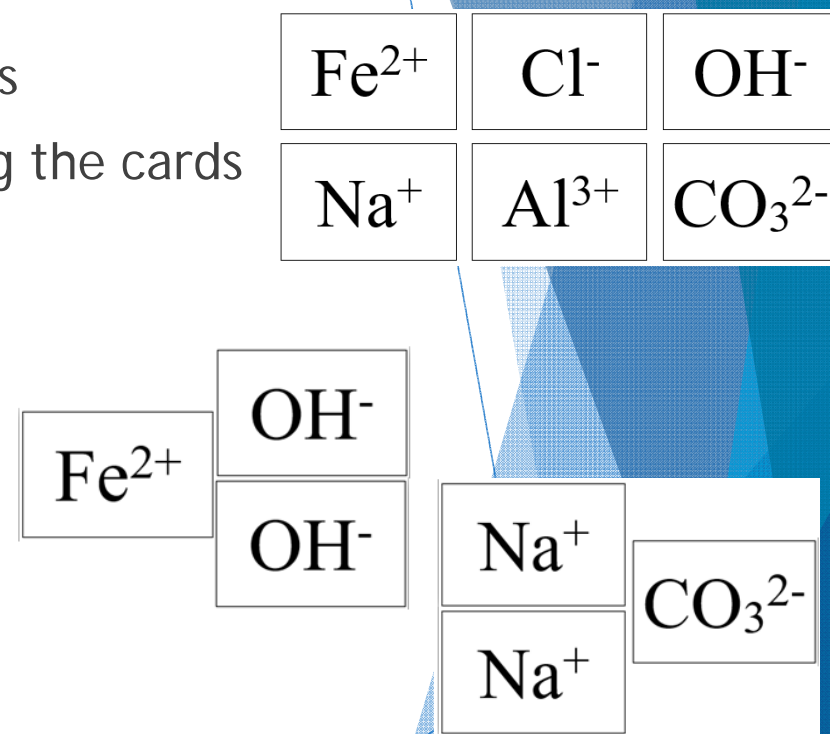
Any difficulties faced when students first learn about chemical formulas?

- ▶ Difficulties in...
 - ▶ remembering the charges of ions
 - ▶ giving the correct formulas of ions
 - ▶ writing the correct chemical formulas of compounds



Chemical formula

- ▶ Strategy tried before...
 - ▶ Prepare paper cards of various cations and anions
 - ▶ Students work in group to make compounds using the cards
 - ▶ Teacher checks and discusses with students
- ▶ Strength:
 - ▶ More fun than drilling questions
 - ▶ Easier to understand the balancing of charges
- ▶ Limitations:
 - ▶ Time consuming to prepare the paper cards
 - ▶ Take time to check the work of each group
 - ▶ Students can't practise unless each student is given one set of the cards



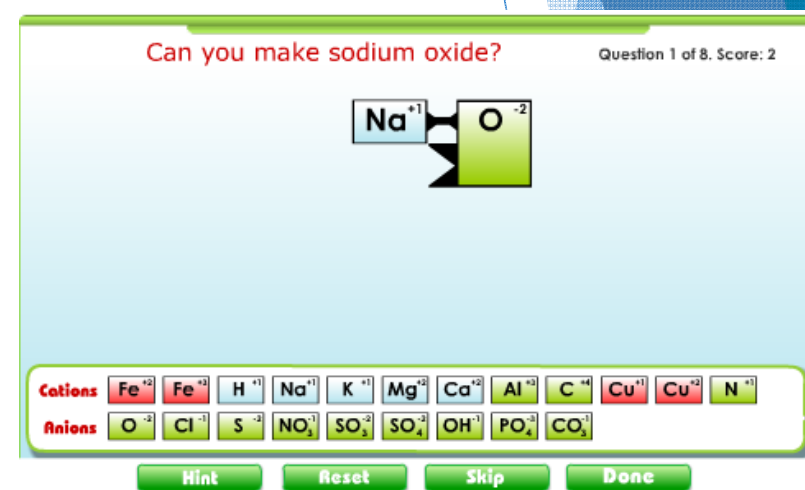
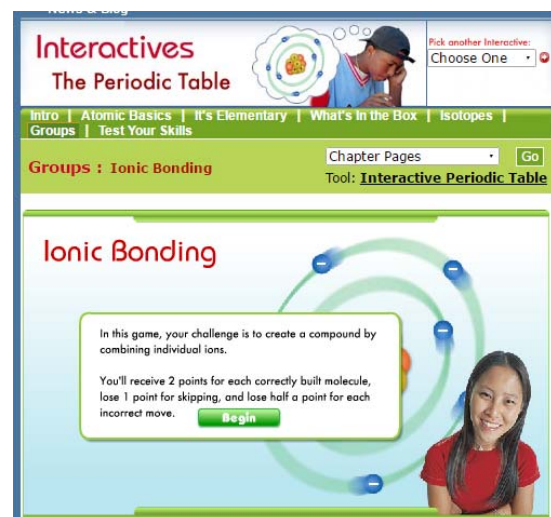
Are there any e-resources for learning chemical formulas?

Chemical formula



<http://goo.gl/5bhX86>

- ▶ The key and lock feature helps students visualize the balancing of the charges of cations and anions
- ▶ Contains only 8 questions, i.e. making the same 8 compounds every time



Chemical formula

<http://goo.gl/B8y2eN>

- ▶ Can make any compound using the given cations and anions
- ▶ Auto-checking
- ▶ Reminder when the charge is not balanced
- ▶ Learn the formula and name at the same time
- ▶ It is a flash, so need to open it with Puffin browser in iPad

updated : 1/2/2008
SK Chung

Ionic compounds are made up of '+' and '-' ions. Click & select the ions to get the name and formula of the compound. "Click" the ions again to select more. Total positive charge should counter balance total negative charge.

Li ⁺	Na ⁺	K ⁺	Ag ⁺	Cu ⁺
NH ₄ ⁺	Mg ²⁺	Ca ²⁺	Ba ²⁺	Mn ²⁺
Fe ²⁺	Co ²⁺	Ni ²⁺	Cu ²⁺	Zn ²⁺
Pb ²⁺	Al ³⁺	Cr ³⁺	Fe ³⁺	M ⁺
My ²⁺	Mc ³⁺			

F ⁻	Cl ⁻	Br ⁻	I ⁻	H ⁻
OH ⁻	CN ⁻	NO ₃ ⁻	NO ₂ ⁻	HCO ₃ ⁻
HSO ₄ ⁻	ClO ⁻	ClO ₃ ⁻	MnO ₄ ⁻	O ²⁻
S ²⁻	SO ₄ ²⁻	SO ₃ ²⁻	SiO ₃ ²⁻	CO ₃ ²⁻
CrO ₄ ²⁻	Cr ₂ O ₇ ²⁻	N ³⁻	P ³⁻	PO ₄ ³⁻
X ⁻	Y ²⁻	Z ³⁻		

Ionic Compound Factory

total positive
= +0
total negative
= 0

Name of the ionic compound :
Its empirical formula is :

Next Compound

Ionic Compound Factory

Cu²⁺ OH⁻

total positive
= +2
total negative
= -1

positive more than negative

Name of the ionic compound : copper(II) hydroxide
Its empirical formula is :

Ionic Compound Factory

Cu²⁺ OH⁻
OH⁻

total positive
= +2
total negative
= -2

GOOD ! charge balanced

Name of the ionic compound : copper(II) hydroxide
Its empirical formula is : Cu(OH)₂

Chemical formula

By Ixora Studios Pte Ltd

Open iTunes to buy and download apps.



- ▶ Free educational game
- ▶ With simple notes on the related scientific concepts
- ▶ Can learn from mistakes
- ▶ Exciting!



lithium iodide	3,520 pts	lead(II) sulfate	6,952 pts
LiI	✓ ✓	PbSO ₄	✓ ✓
sodium iodide	1,600 pts	ammonium iodide	3,000 pts
NaI	✓ ✗	NH ₄ I	✓ ✗
potassium bromide	3,520 pts	nickel(III) dichromate	7,877 pts
KBr	✓ ✓	NiCr ₂ O ₇	✓ ✗



- ▶ Random questions generated based on your own settings
 - ▶ You can select which elements to practice
- ▶ Auto-checking
 - ▶ it takes S as 'sulfur' instead of 'sulphur'

Element Flash Cards

Name that symbol!

(Problem number 10 of 10)

19

???

Potassium

39.0983

What is this element's chemical symbol?

Check my answer!

Table of Elements

How am I doing so far?

Start over

Start over with the same settings

Element Flash Cards

Welcome to It's Elemental - Element Flash Cards!

Welcome to It's Elemental - Element Flash Cards! The computer will give you an element and, depending on the selections you make below, you will have to supply the element's chemical name, chemical symbol or atomic number. Enter your answer into the text box and press the 'Check my answer' button. Remember, spelling counts!

Would you like to practice only the first 36 elements? How about just the elements with 'strange' chemical symbols? If so, press the 'More options, please!' button and you will be able to select whichever elements you desire!

A JavaScript enabled web browser is required.

How many questions would you like?

☐ 5 ☒ 10 ☐ 20 ☐ 40 ☐ All Available

What would you like to be tested on?

☒ Chemical Names ☒ Chemical Symbols ☐ Atomic Numbers

Require that chemical symbols be properly capitalized?

☒ Yes ☐ No

More options, please!

I'm ready! Let's start!

La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
89	90	91	92	93	94	95	96	97	98	99	100	101	102	103
Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

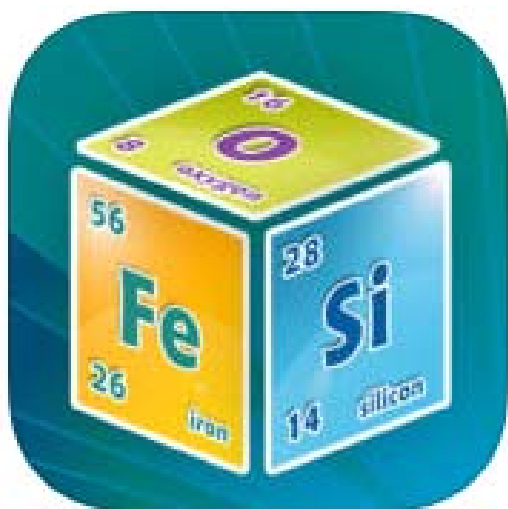
You can select as many pre-defined sets as you wish:

Strange Symbols	First 20 Elements	First 36 Elements
Alkali Metals	Alkaline Earth Metals	Halogens
Noble Gases	Lanthanides	Actinides
Transuranic Elements	Naturally Occurring Elements	Artificially Produced Elements
All Solids	All Liquids	All Gases

Clear All Selections

Periodic Table of Chemical Elements Quiz

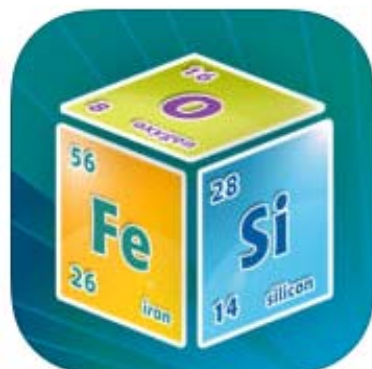
By Bogumil Sikora



- ▶ Free educational game
- ▶ English and Chinese versions



Let's have a try and see how you find these resources.



<http://goo.gl/B8y2eN>

Ionic Compound Factory

My²⁺ Mc³⁺ CrO₄²⁻ Cr₂O₇²⁻

X⁻ Y²⁻

Cu²⁺ OH⁻

total positive = +2
total negative = -1

positive more than negative

Name of the compound : **copper(II) hydroxide**

Its empirical formula is :

<http://goo.gl/5bhX86>



<http://goo.gl/MtqHLi>

Element Flash Cards

Name that symbol!
(Problem number 10 of 10)

What is this element's chemical symbol?

Check my answer!

Table of Elements

How am I doing so far?

Start over

Start over with the same settings

19

???

Potassium

39.0983

Any difficulties faced when students first learn to write **balanced chemical equations**?

- ▶ Difficulties in...
 - ▶ giving the correct products of a reaction
 - ▶ identifying which element to start with for balancing
 - ▶ getting the coefficients right
 - ▶ confusing between the coefficients and the numbers in the chemical formulas of compounds



ENDMEMO

<http://goo.gl/t6WRkL>

ENDMEMO

Search

IGCSE Chemistry

Tailored materials for students in CIS, SIS, CDIS, Yew Chung, CKY, KGV

[illegible]

Balance Check Clear

This chemical equation balancer can help you to balance an unbalanced equation.



Jefferson Lab 

<http://goo.gl/whUhB>

Jefferson Lab 

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Balancing Act!

Welcome to It's Elemental - Balancing Act!

Welcome to It's Elemental - Balancing Act! The computer will give you a number of incomplete chemical equations. Balance the chemical equations by selecting coefficients from the pull-down menus. Once you think the equation is balanced, press the 'Check my answer!' button. Have fun and good luck!

Other games based on the Table of Elements are available

A JavaScript enabled web browser is required

How many equations would you like?

☒ 5 ☐ 10 ☐ 15

Choose a difficulty level:

☐ Beginner ☒ Intermediate ☐ Advanced

I'm ready! Let's start!

Jefferson Lab 

Science Education

Balancing Act!

Balance this equation!
(Equation number 1 of 5)



[Check my answer!](#)

Check out these
two resources.

- What are their strength?
- What are their weaknesses?
- Which one do you prefer using?



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資訊科技教育
Information Technology in Education



Member of VTC Group
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Chemical equations and stoichiometry

ENDMEMO Search

IGCSE Chemistry

Tailored materials for students in CIS, SIS, CDIS, Yew Chung, CKY, KGV

Home » Chemistry »

H											He						
	0	1	2	3	4	5	6	7	8	9							
Li	Be	()									B	C	N	O	F	Ne	
Na	Mg										Al	Si	P	S	Cl	Ar	
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn						
Las		La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	
ACS		Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	

Balance Check Clear

This chemical equation balancer can help you to balance an unbalanced equation.

- ▶ Does not check for wrong chemical formula, so the chemical equation may still be wrong even it is balanced
- ▶ Students may just use it to get their equations balanced instead of doing so by themselves

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Science Education

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Balancing Act!

Balance this equation!
(Equation number 1 of 5)

$$\text{C}_2\text{H}_3\text{N} + 15\text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O} + 4\text{NO}_2$$

1 1 1

Check my answer!

- ▶ Only point out the error but provide no hint to facilitate self-learning

Chemical equations and stoichiometry



<https://goo.gl/T77gUU>



- ▶ Free online video lessons, learning notes and auto-check practice questions

Useful auto-check practice:

- ▶ Balancing chemical equations
 - ★ Balancing chemical equations 1
- ▶ Stoichiometry
 - ★ Ideal stoichiometry
- ▶ Limiting reagent stoichiometry
 - ★ Limiting reagent stoichiometry

< CHEMISTRY Chemical reactions and stoichiometry

CONTENTS

Introduction
Balancing chemical equations
Stoichiometry
Limiting reagent stoichiometry
Molecular composition
Types of chemical reactions



Skill check: Stoichiometry

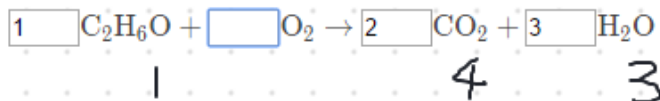
A skill check for stoichiometry, limiting reagents, and balancing equations

< CHEMISTRY | CHEMICAL REACTIONS AND STOICHIOMETRY | BALANCING CHEMICAL EQUATIONS

Balancing chemical equations 1

Practice balancing chemical equations.

Balance the following chemical equation:



$$4 + 3 - 1 = 6$$

Stuck? These things might help.

Don't worry, you won't lose your streak.

**Balancing chemical equations**

How to balance a chemical

**Balancing more complex chemical equations**

Example of balancing the

Scratchpad



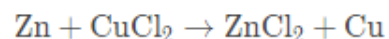
Check answer

Students don't even need draft paper or calculator as scratchpad and calculator are provided.

Ideal stoichiometry

Determine the amount (in moles) of a product from a given amount of one reactant.

Given the following reaction:



How many moles of ZnCl_2 will be produced from 21.0 g of Zn, assuming CuCl_2 is available in excess?

moles (round to three significant figures)

Stuck? These things might help.

Don't worry, you won't lose your streak.

▶ Stoichiometry example problem 1

▶ Stoichiometry example problem 2

Scratchpad ▼

Calculator ▼

Periodic table □

Report a mistake

Must use the relative atomic mass in the Periodic table provided for calculation

Auto-check function that shows students their own progress.

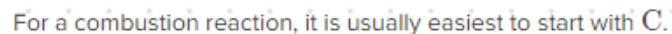
Get a hint

Get 5 correct in a row

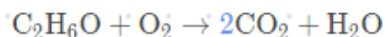
Check answer

Practice balancing chemical equations.

Balance the following chemical equation:



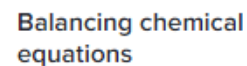
There are 2 C on the left and 1 on the right, so multiply CO_2 by 2



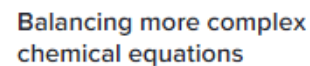
+ Get another hint (2/5)

Stuck? These things might help.

Don't worry, you won't lose your streak.



How to balance a chemical



Example of balancing the

Scratchpad



Check answer

Students can get step-by-step hint when they get stuck.

Videos demonstrating how to solve the problems are provided for students' reference



<https://goo.gl/T77gUU>



Let's have a try!

How can we make use of this in teaching and learning?

Any limitation?

Chemical equations and stoichiometry



<http://goo.gl/P20WI2>



- ▶ Online interactive video lessons and auto-check quizzes

Chapters:

- ▶ 2: Atoms, Ions, and Compounds
- ▶ 3: Chemical Reactions and Earth's Composition

CHAPTERS CHEMTOURS SMARTWORK EBOOK SCIENCE NEWS

1 2 **3** 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

IN THIS CHAPTER

- Study Plan
- Diagnostic Quiz
- Flashcards
- ChemTours**
- Ebook

SHARE

CHAPTER 3
Chemical Reactions And Earth's Composition

ChemTours

- [Avogadro's Number](#)
- [Balancing Equations](#)
- [Carbon Cycle](#)
- [Percent Composition](#)
- [Limiting Reactant](#)

When choosing online resources ...



CHEMICOOOL

<http://apps.appshed.com/227701/>

CHEMICOOOL

Get **STARTED**

Are **you** in Year 9?
Do **you** struggle with Chemistry?
Determined to fix it?

Simply press **GO!**

GO!



TCK

Structure of an Atom

Atoms- The smallest particle of a chemical element that can exist

Elements- An element is a substance that contains of one or more atoms.

Compound- A compound consists of two or more **separate** elements.

Molecule- Two or more atoms that have been chemically joined.

Mixtures- A mixture is two or more substances that have not been chemically joined.

The Periodic Table

A vertical column of elements in the periodic table is a group. The elements in a group have similar chemical properties to each other.

For example:

Group 1 contains sodium and other very reactive metals.

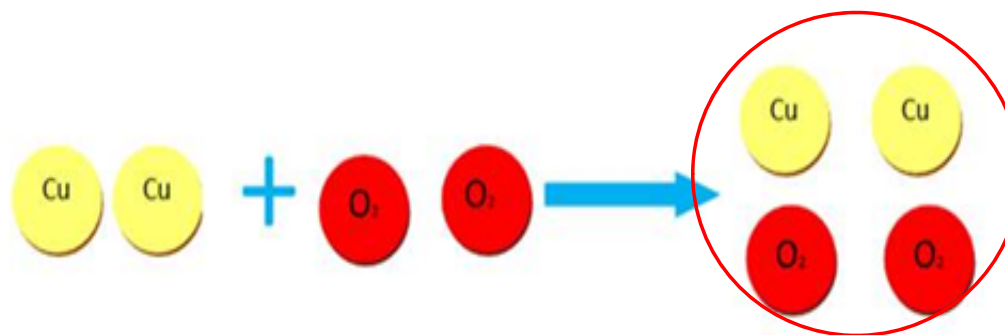
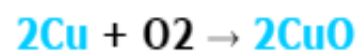
Group 7 contains chlorine and other very reactive non-metals.

Group 0 (also known as group 8 or group 18) contains helium and other very unreactive non-metals.

1	2											3	4	5	6	7	0
																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg							

Notice that there are unequal numbers of each type of atom on the left-hand side compared to the right-hand side. To make things equal, you need to adjust the number of units of some of the substances until you get equal numbers of each type of atom on both sides.

Here is the **balanced** symbol equation:



Making interactive e-resources by ourselves?

Interactive video



<https://www.zaption.com/>

- ▶ Login in with Google account
- ▶ YouTube videos form various sources
- ▶ Various interactive elements, e.g. MC Qs, Open response, Drawing, Check boxes, etc.
- ▶ Live interaction with students during presentation
- ▶ Very user friendly

Animal Reproduction

Author: Dr. Kwan, Jenny Dr. Kwan, Jenny Published: May 19th, 2016 Length: 02:10

PRESENT

SHARE

ANALYTICS



The video player shows a cartoon illustration of two bees flying in a grassy field with trees. On the right side of the player, there is a text box with the question "Why do animals want to pass on their genes to the next generation?" and a "Type your response here" input field. Below the input field is a red "Submit" button. The video player interface includes a progress bar, a play button, and other standard video controls.

Animal Reproduction

Author: Dr. Kwan, Jenny Dr. Kwan, Jenny Published: May 19th, 2016 Length: 02:10

PRESENT

SHARE

ANALYTICS

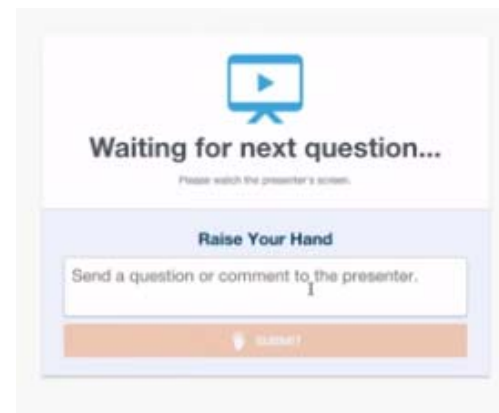
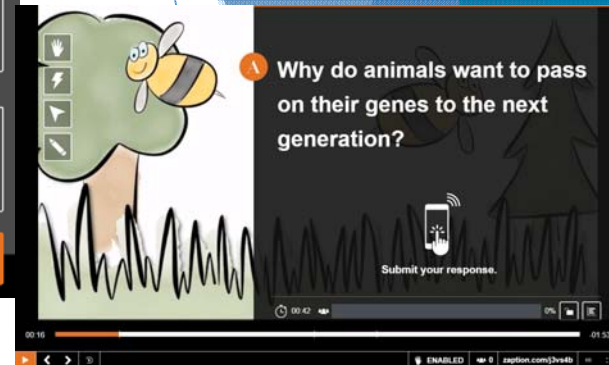
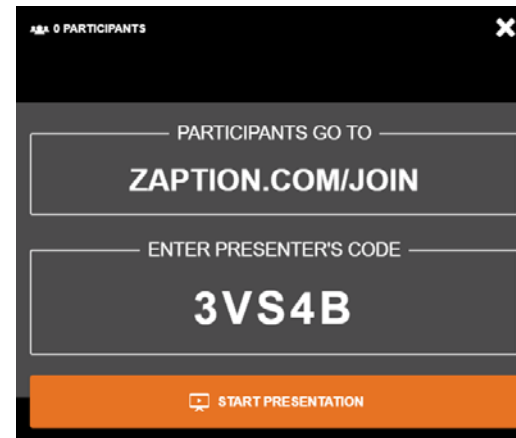


The video player shows a cartoon illustration of a man and a woman standing on either side of a large orange heart. On the right side of the player, there is a multiple-choice question: "How long does it normally take for a baby to develop inside the mother?" with three radio button options: "4-6 months", "9-10 months", and "12 months". Below the options is a red "Submit" button. The video player interface includes a progress bar, a play button, and other standard video controls.



Interactive presentation

- ▶ Presentation mode:
 - ▶ Unlimited number of students can join the presentation by simply entering a code
 - ▶ Only the teacher is streaming the video (must be from desktop)
 - ▶ Students watching the presentation can use the “Raise their hand” / “Ask a question” function to ask a question or give a comment
 - ▶ Teacher can ask students quick question during presentation as well



Zaption Lesson analytics

Overall

VIEWER NAME	LAST SEEN ▾	VIEWING TIME	POINTS SCORED	RESPONSES SUBMITTED	# TIMES STARTED
[REDACTED]	6/27/16 at 9:27 am	3m 10s	0 / 3 (0%)	0 / 5	2
[REDACTED]	6/18/16 at 11:42 am	Viewed live presentation	3 / 3 (100%)	4 / 5	1
[REDACTED]	6/18/16 at 11:38 am	Viewed live presentation	2 / 3 (67%)	4 / 5	2

Responses for each question

Multiple Choice
 What is/are the requirement(s) for a collision to result in a reaction?

[< Previous Question](#) | [Next Question >](#)








Video Context

Choices

- A** Only proper orientation
- B** Only enough energy
- C** Both proper orientation and enough energy
- D** Either proper orientation or enough energy

Distribution of Answers

Individual report

4 / 5 RESPONSES	3 / 3 SCORE	6/18/16 LAST RESPONSE	N/A TOTAL TIME	2 VIEWS	5 RATING
TYPE	CORRECT	QUESTION	ANSWER		
		What is/are the requirement(s) for a collision to result in a reaction?	 Both proper orientation and enough energy		
		Most reactions happen in	 both forward and backward directions		
		What do you think is the underlying assumption for this city?	The number of people keeping the same, people can't leave the city		

30

Examples of interactive videos prepared using



- Introduction to equilibrium

Go to <http://www.zaption.com/join>
Then enter the code



Welcome! Follow the instructions on the presenter's screen to join the presentation.

Enter join code

Example: DENYX

SUBMIT



Now, let's give it a try and make an interactive video that you can use later in your own lesson!

- Choose a YouTube video
- Edit it with interactive elements





<https://www.zaption.com/>

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 SIGN IN WITH GOOGLE

 SIGN IN WITH EDMODO

OR

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Last Name

Email *

Password *

NEXT

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Shared with me
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Drafts
Uncategorized



Create New Lesson



Ionic bonding, covalent bonding...

Updated: June 8, 2018



Animal Reproduction

Updated: May 22, 2018

Type keyword to search or enter video URL

Search

Find a video to add to your lesson

or [browse your videos](#)

simple chemical cell

My Videos 0 YouTube 665k vimeo 37 bo preview 0 PBS 1 More...

Galvanic Cells (Voltaic Cells)
by Tyler DeWitt
66,162 views
23:35

DSE07 - (11) Simple Chemical Cell with...
by HKBUA SCM
175 views
05:39

Electrochemistry
by Bozeman Science
201,654 views
08:44

Darvino Dericko - (Biology) Chemical...

Electrochemistry

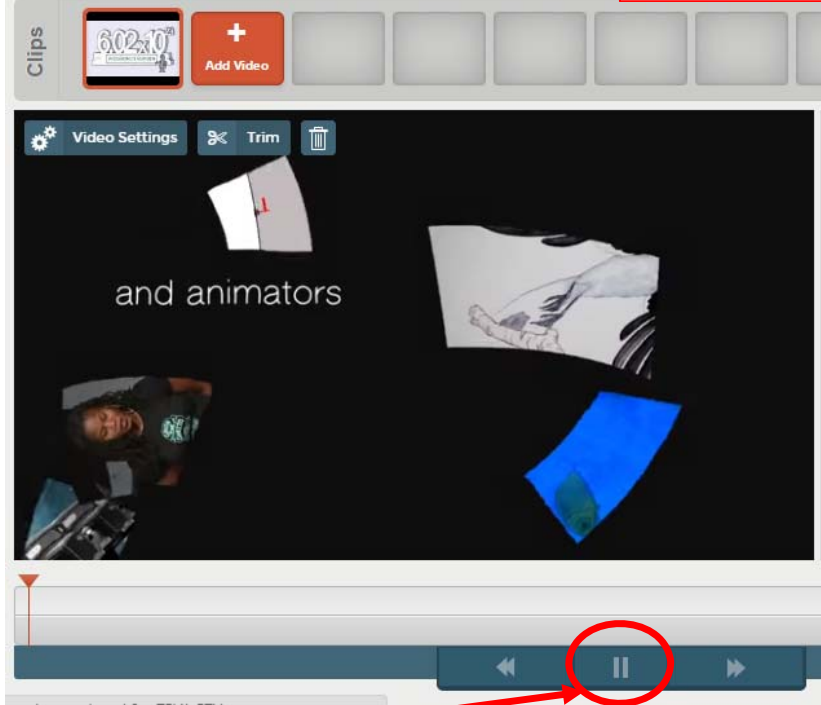
Chemistry Essentials - 034

0:10 / 8:43

Add This Video to Lesson

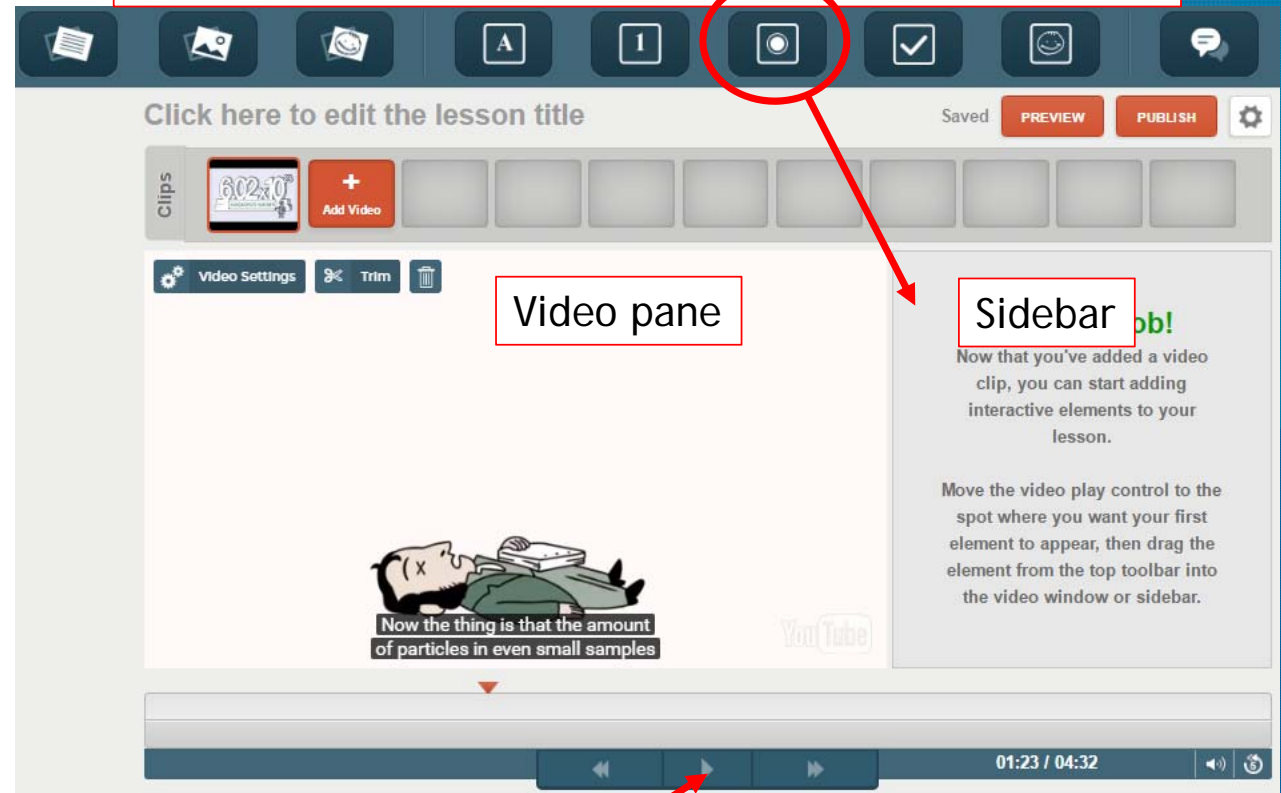
Click here to edit the lesson title

1. Give a title to your video lesson



2. Click the play button to start your video

4. Choose the interactive element and drag it to the video pane or sidebar



Video pane

Sidebar

3. Pause the video at the moment that you want to add an interactive element

Multiple choice Question

When did Avogadro first proposed the idea?

☐ 1811

☐ 1856

☐ 1860

+ ADD CHOICE

SUBMIT

Element Settings

1. Type your question

3. Set the correct answer

2. Type the choices

When did Avogadro first proposed the idea?

☐ 1811

☐ 1856

☐ 1860

+ ADD CHOICE

SUBMIT

Not Scored

Correct

Incorrect

4. Give feedback for wrong answer

Feedback

Jump To

Remove

Feedback

For choice: "1856"

Feedback length: 0 / 200

DONE

5. Click 'Element Settings' for more settings of the interactive element

Multiple Choice Settings

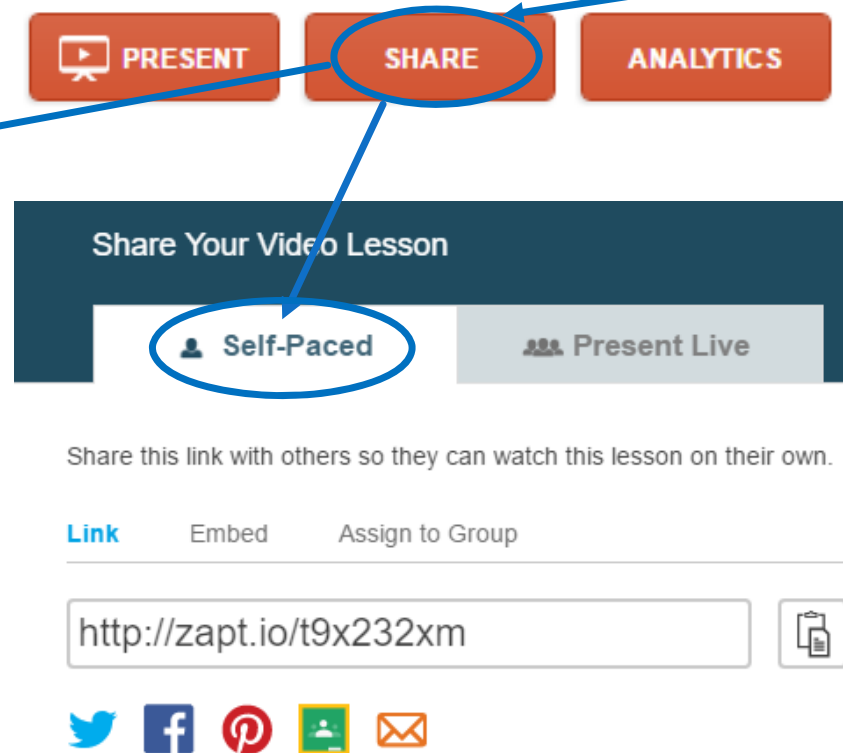
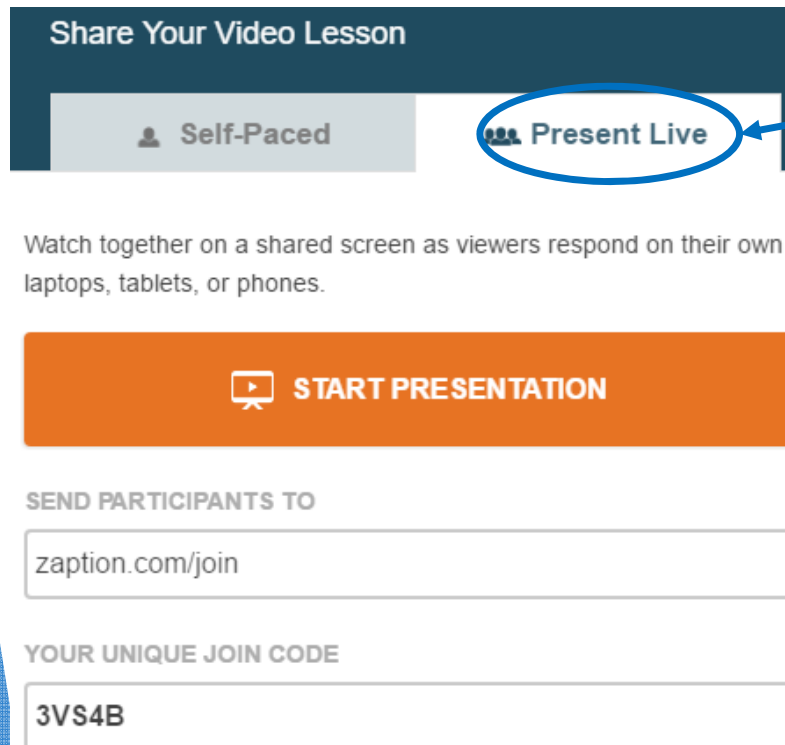
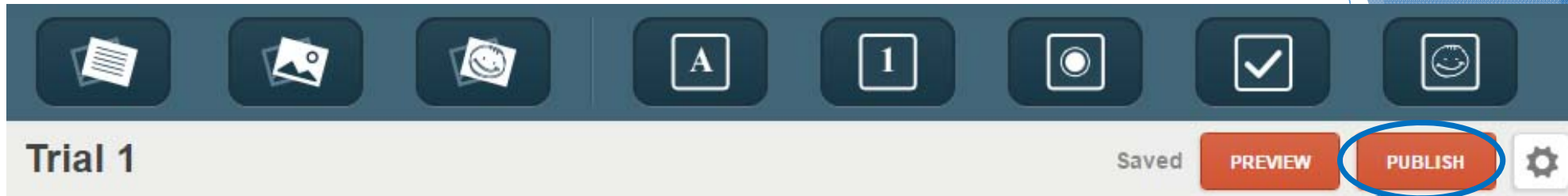
Position: ☐ On the Video Window (left) ☒ On the Sidebar (right)

Behavior: ☐ Continue playing video ☒ Pause video on start

Points: This question is worth: 1 pts

Done

Sharing your interactive video



Continue to explore the other interactive elements...

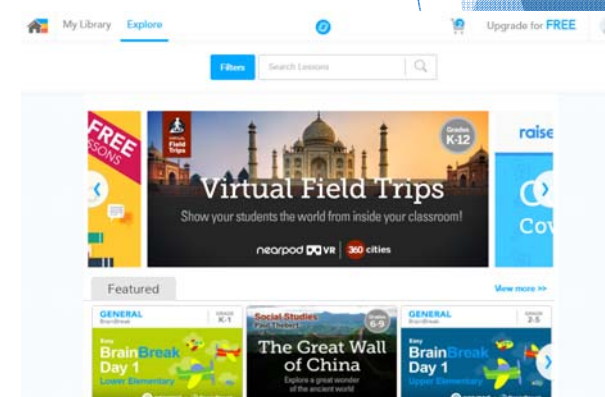


Interactive lesson material



<https://nearpod.com/>

- ▶ Log in with Google account
- ▶ Create lesson material with PowerPoint, pictures, websites, videos and interactive activities embedded
- ▶ Ready-to-teach lessons prepared by others are available



Interactive lesson material

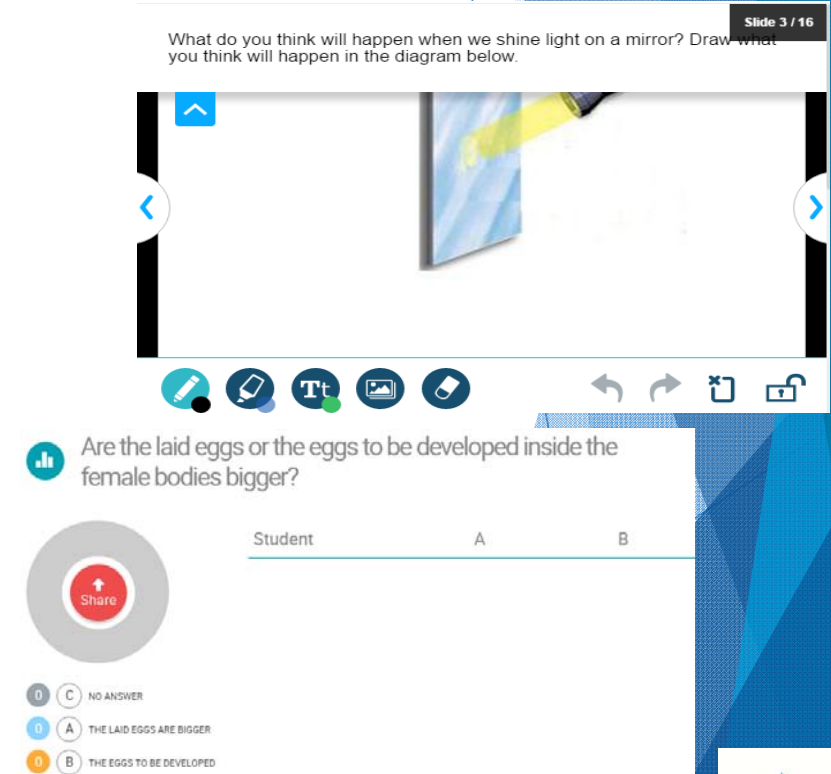


<https://nearpod.com/>

- ▶ Join a session by entering the session code
- ▶ Illustrate ideas visually with the 'Draw it' function
- ▶ Instant and convenient
- ▶ No one is left out
- ▶ Easy identification of students' need
- ▶ Submitted responses can be shared with the whole class



TK/TPK

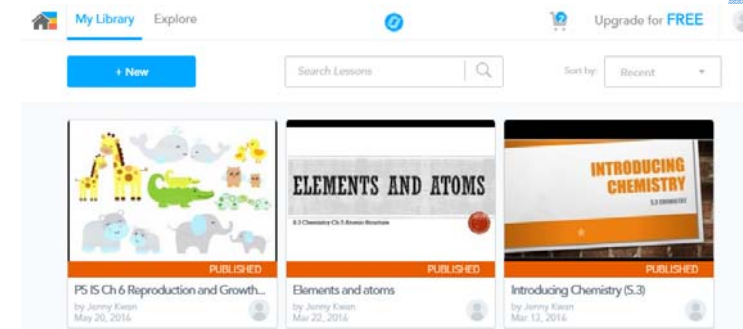


Interactive lesson material



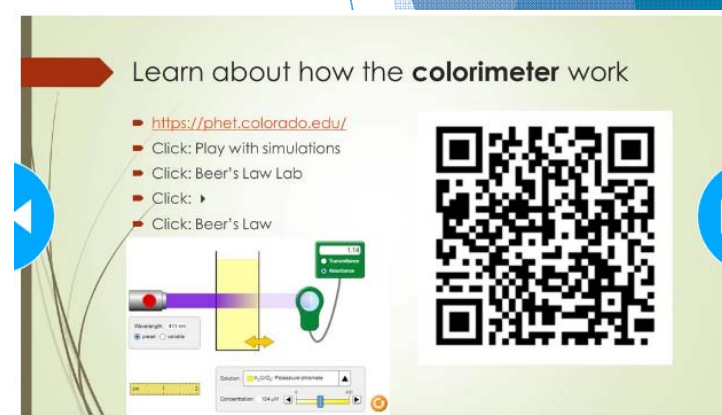
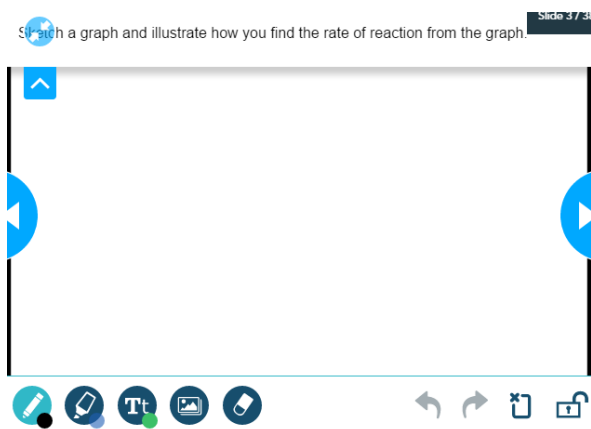
<https://nearpod.com/>

- ▶ Lesson materials prepared can be sent to students as assignment
- ▶ Provide reports with Ss' answers and statistics
- ▶ Editable version of lesson materials can be shared with others



Examples of Nearpod lesson materials

- Rate of reaction (self-prepared)



- Endothermic and Exothermic Reactions (downloaded)





<https://nearpod.com/>



Let's have a try!



Sign in Sign up



With Nearpod

Username or Email

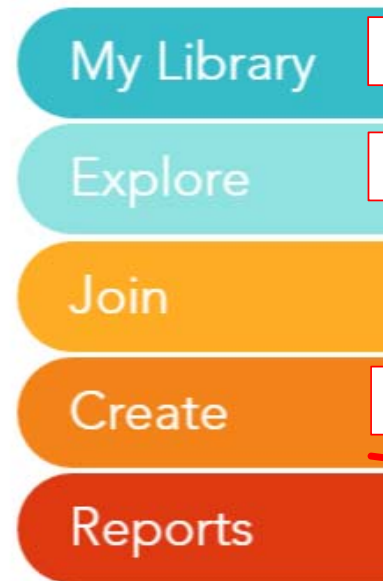
Password

☒ Keep me signed in [Forgot password?](#)

Sign in

Or sign in with  

1. Sign in with google account



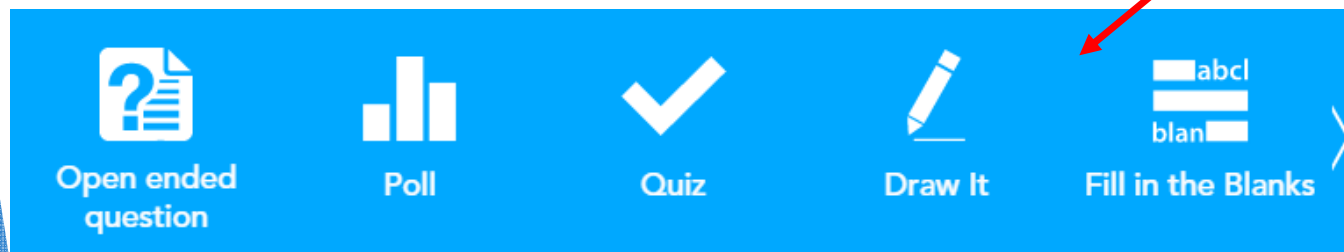
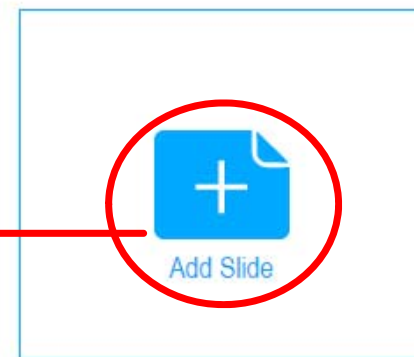
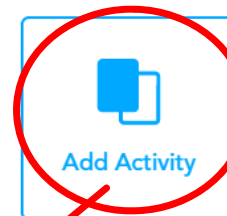
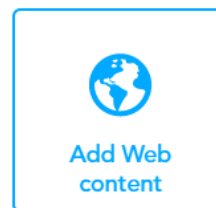
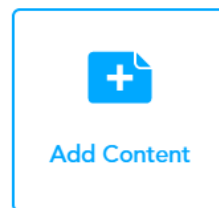
Go to your collection of lessons

Check out ready-to-use lessons prepared by others

2. Make your own lesson

Untitled Lesson  Settings

+ Add Slide



Draw it

 Draw It

Draw It instructions (optional)



Drag your
image or PDF
here
(Max 3 Mb)

Or choose any of these options below:



Browse
my files



From
Dropbox



From Box

 Cancel

 Save

Quiz

 Quiz

Enter Quiz title (optional)

▶ 1

Enter question

f(x)



1.1

Enter answer

f(x)



1.2

Enter answer

f(x)



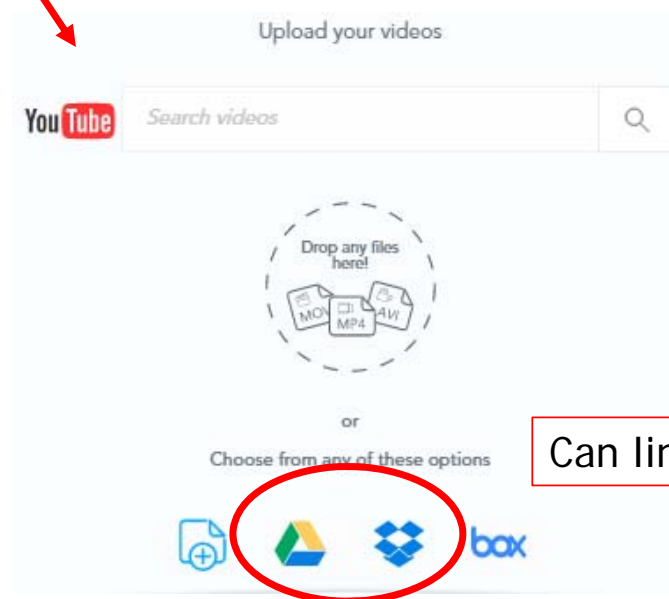
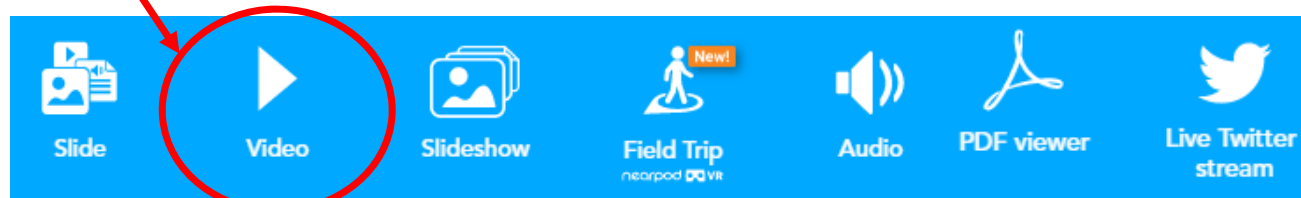
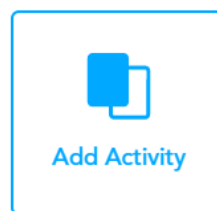
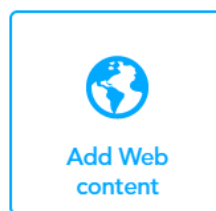
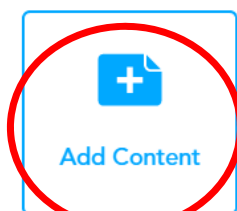
 ADD ANSWER

 ADD QUESTION

- Can't type feedback for wrong answer
- Can't type chemical formula properly



nearpod



Can link to Google drive and Dropbox too



Trial lesson for Session 2

1. Give your lesson a title

Toolbar: + Add Slide, Delete Slide, Copy (Ctrl+C)

Slide Types:

- Add Slide
- Poll: Which of the following are topics in Chemistry?
- Quiz: Which of the following has not been introduced in this course?
- Draw It: Draw an electron diagram of a fluorine molecule.
- Draw It: Colour the gaseous elements in yellow. Circle the most reactive non-metal.

Slide List:

- 1 Which of the following are topics...
- 2 E-resources for teaching Chemis...
- 3 Draw an electron diagram of a fl...
- 4 Colour the gaseous elements in ...

Bottom Bar: Leave us a message! | Share | Preview | **Create**

2. Rearrange the order of slides if needed

3. Click 'Create' to save your lesson

Lesson Details

Trial lesson for Session 2

Description & Tags (e.g. Algebra, US Presidents, Verbs, etc.)

GRADES

SUBJECT

Submit

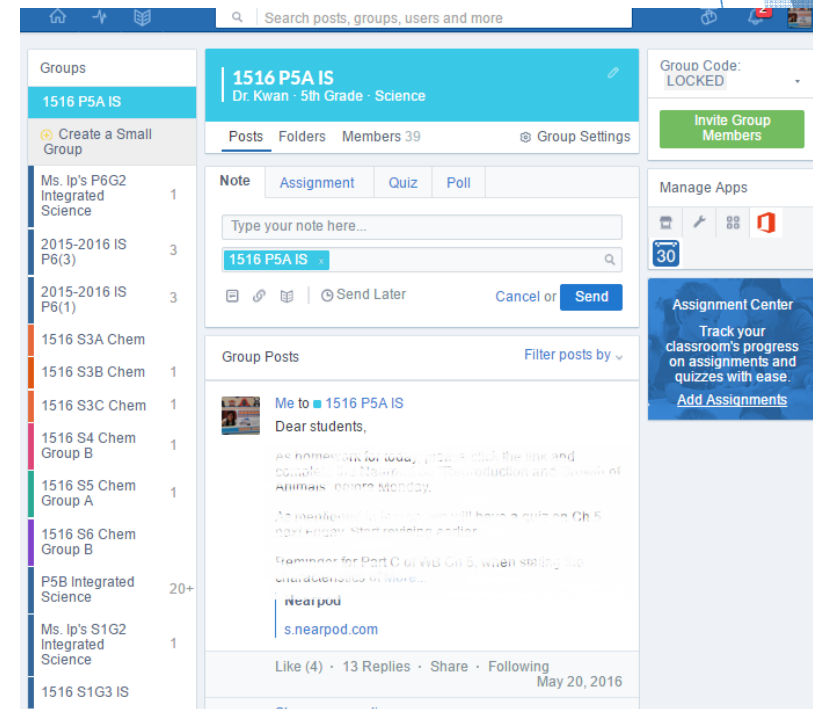
E-Platform for learning and assessment



<https://www.edmodo.com/>



- ▶ Looks like Facebook
- ▶ Activities of a class can be easily managed
- ▶ Sharing of resources, collection of assignment, quiz, poll, post-lesson discussion, making announcement, homework list, etc.
- ▶ Can keep track of students' performance easily
- ▶ Store resources in 'Library'



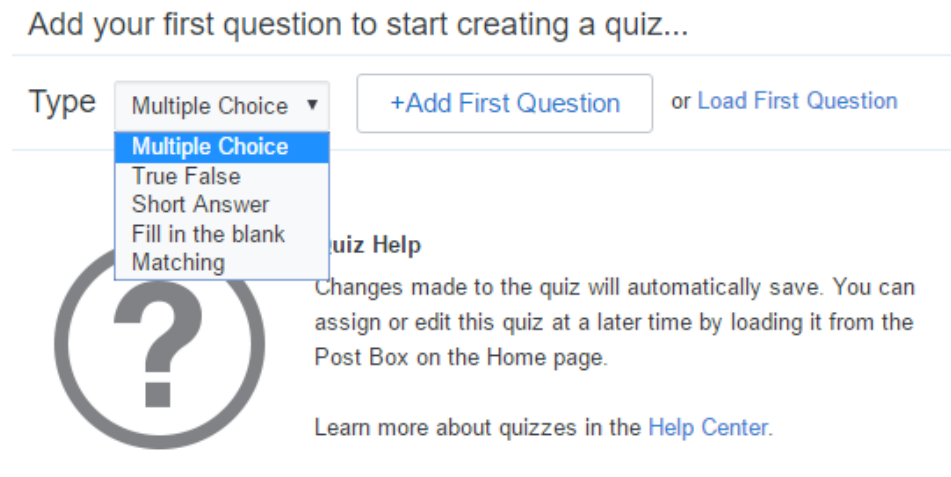
E-Platform for learning and assessment



- ▶ Setting of quiz is easy
 - ▶ MC Qs, T/F, Fill in the blank, Matching - auto check
 - ▶ Short answer - no auto check

[Can't type chemical formula properly]

- ▶ The quiz can be used for pre-lesson task or post-lesson consolidation



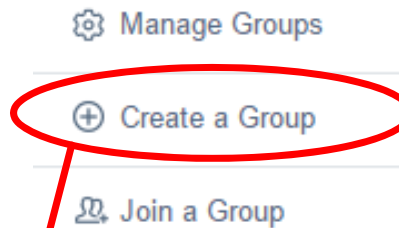


<https://www.edmodo.com/>

1. Log in with Google

The login page shows a 'Log In to Edmodo' section with fields for 'Email or Username' and 'Password', and a green 'Login' button. To the right, under 'Or you can', are links for 'Log in with Office 365' and 'Log in with Google'. At the bottom, there are links for 'I'm a Teacher', 'I'm a Student', and 'I'm a Parent'.

2. Create a group



The form is titled 'Bring your classroom onto Edmodo!'. It includes a text input for 'Name your group', a 'Select a Grade' dropdown menu, a 'Subject Area' dropdown menu, and a 'Change Color' button. At the bottom right, there is a blue 'Create' button circled in red.

3. You can then give the Group code to students for joining your group

The group code display shows 'Group Code: fgbziy' with a dropdown arrow. Below it is a green button labeled 'Invite Group Members'.





Create a quiz

Note Assignment **Quiz** Poll

Create a Quiz or Load From Collection

Note Assignment **Quiz** Poll

Type your note here...

eChem group Jun 11&18 x

Send Later Cancel or **Send**

4. After setting the Qs, set the 'Time Limit' and click 'Done'

Done

Preview Print Quiz

The Quiz can be printed. (VS The quiz in Schoology can't be printed.)

1. Set a title

Untitled quiz -2016-06-13-02-45-42 Time Limit: Minutes

Add your first question to start creating a quiz...

Type **Multiple Choice** +Add First Question or Load First Question

2. Choose the type of question

Untitled quiz -2016-06-13-02-45-42 Time Limit: 60 Minutes

Type: Multiple Choice Points: 1

QUESTIONS

+ or Load

Hint: Drag 'n drop question numbers to reorder

Question Prompt:

Attach

Responses:

A

Attach

B

Attach

Set as Correct Answer

3. Set the correct answer
(Can't type feedback for wrong answer)


Correct Answer

51



Analytics

Individual report

 Time Taken: 03:21 | turned_in Jan 30, 2016 @ 9:29 PM
Graded | [Delete](#)

1 2 3 4 5 6 7 8 9 10 11 12

We cannot change the shape of an inflated balloon because air is fixed in shape.

True

False

Correct Answer

Comments

Overall test performance

Question Breakdown
12 questions | 12:00



Question #1
Air in general...
True False



Question #2
You can dete...
True False



Question #3
A mixture of ...
True False



Question #4
We can detec...
True False



Question #5
The town gas...
True False



Question #6
Leaves that d...
Multiple Choice

Revision quiz on Ch 4 Burning and rusting	P5IS Little Scientists - Ch 3 Air	upload sound- proof materials photo and comments on it
-	-	-
-	12/12	-
-	-	-
8/9	9/12	Turned In
-	4/12	-
4/9	-	Turned In
-	-	-
9/9	11/12	Turned In
9/9	11/12	Turned In

Class performance

52





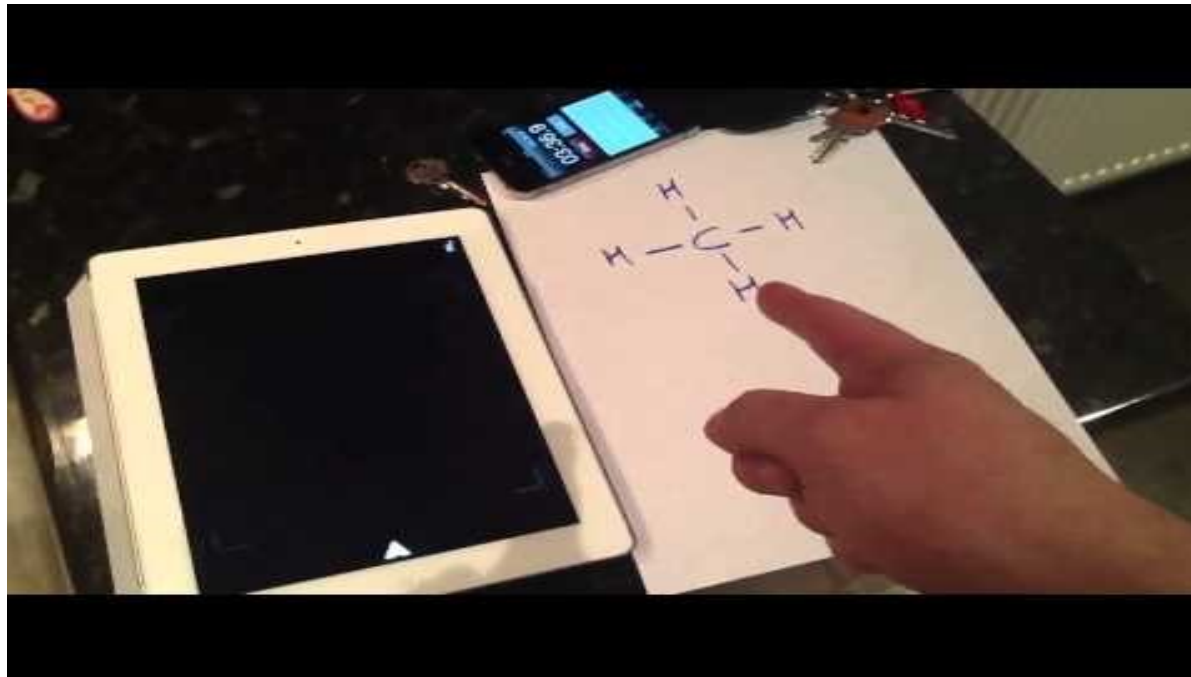
Continue to explore the other functions...



Aurasma Studio

- turning 2D image into animations/ videos/ 3D models/ web pages

E.g. Using Aurasma to illustrate 3D model of compound





Aurasma Studio

Let's try to make a new aura!

- ▶ Go to <https://studio.aurasma.com/register> to create an account
- ▶ Open Aurasma App in your device and log in



TK/TCK

WELCOME TO
Aurasma Studio

Aurasma provides a powerful drag-and-drop web studio that enables anyone to easily create, manage, and track augmented reality experiences

Create Account

☐ I have an existing phone account

Username

Email

Password

Confirm Password

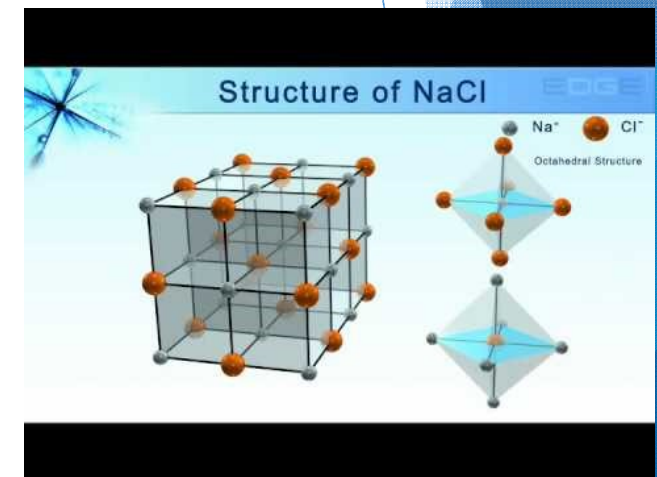
☐ By signing up I agree to the Aurasma
Terms of Service & Privacy Policy

Sign Up



Making a New Aura using the App

- ▶ Click the + sign on the top right corner
- ▶ Take a photo of your object
- ▶ Choose an overlay (e.g. take another picture, upload video from your device)
- ▶ Name your overlay
- ▶ Adjust the position of your overlay



Creating games for chemistry

▶ Game Platform

▶ <https://gdevapp.com>

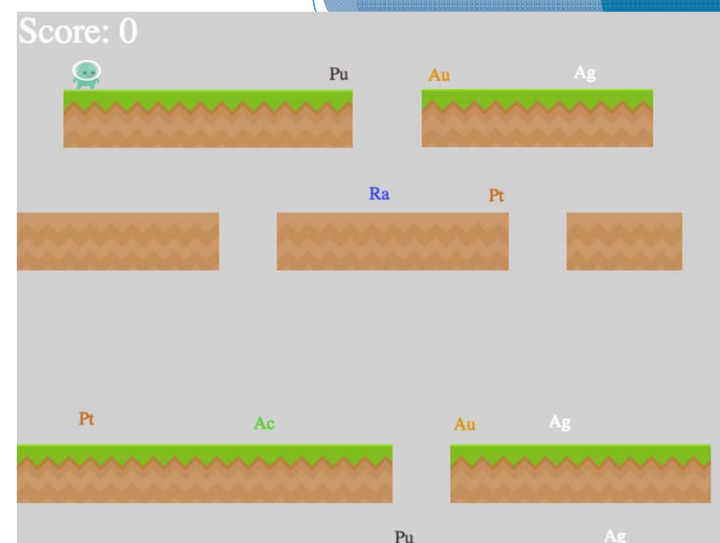
▶ Teaching Video

▶ <https://youtu.be/N7hGV12CUgA>



▶ Sample Product

▶ <https://gdevapp.com/play.html?g=575c334c24636d6983458cea>

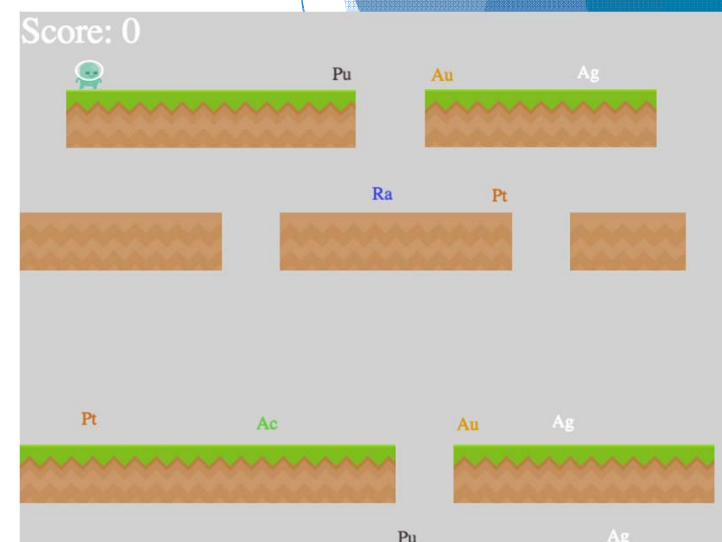


Creating games for chemistry

Example

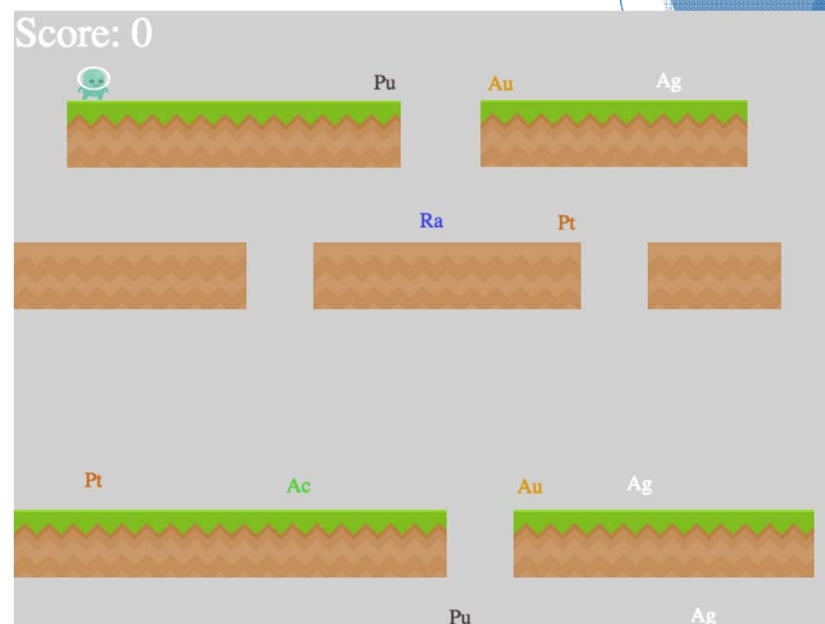
- ▶ Objective: be aware of radioactive elements
 - ▶ In this game, create a character “Human” who gets scores when collecting metal elements but loses his/her life when touching radioactive elements.
- ▶ Objects: Human, Au* (Metal), Pu* (Radioactive), GameOver (Text), TotalScore (Score), Grounds
- ▶ Rule 1: If human touches Au, gets 10 scores and destroys Au
- ▶ Rule 2: If human touches Pu, game over
- ▶ Exporting to IOS or Android

Challenging Task



Creating games for chemistry

- ▶ Why creating games by ourselves or asking students to create games?
- ▶ Any limitations?



Conclusion & References

Content	Reference	
1. What is TPACK?	<ul style="list-style-type: none"> - http://www.matt-koehler.com/tpack/tpack-explained/ - Mishra & Koehler (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. Teachers College Record, 108(6), 1017-1054. 	
2. Alternative conceptions	<ul style="list-style-type: none"> - Taber, K. (2002). <i>Chemical misconceptions: prevention, diagnosis and cure: Theoretical background, Volume 1</i>. Royal Society of Chemistry. 	
- Concept comic	StoryboardThat Bitstrips	http://www.storyboardthat.com/ https://www.bitstrips.com/
- Mind map	AnswerGarden popplet mindmeister	https://answergarden.ch/ http://popplet.com/ https://www.mindmeister.com/hk

Conclusion & References

Content	Reference	
3. Online tools and resources for Chemistry learning	PhET Royal Society of Chemistry Annenberg Learner General Chemistry Interactive Simulations Yenka Jefferson Lab Khan Academy W.W. Norton & Company, Inc.	https://phet.colorado.edu/ http://www.rsc.org/ https://www.learner.org/ http://goo.gl/RX1bTX http://www.yenka.com/ http://education.jlab.org/ https://www.khanacademy.org/ http://goo.gl/W1K7tD
4. Apps	wRite FORMULA Periodic Table of Chemical Elements Quiz	
5. e-Learning platform	Schoology Edmodo	https://www.schoology.com/ https://www.edmodo.com/
6. Interactive learning tools	Zaption Nearpod Aurasma GDevApp	https://www.zaption.com/ https://nearpod.com/ https://www.aurasma.com/ https://gdevapp.com