

TECHNOLOGY FOR ASSESSMENT IN THE CLASSROOM

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Using online tools to enhance and enliven learning of senior chemistry concepts (Secondary, Science): This resource is about the use of such online assessment tools as Kahoot!, Testmoz, PearDeck, Quizziz and Google quizzes.

The advantages of using these technological tools include:

- they are free
- they are fun (Kahoot! & PearDeck)
- great formative assessment for students and teachers
- can provide instant feedback

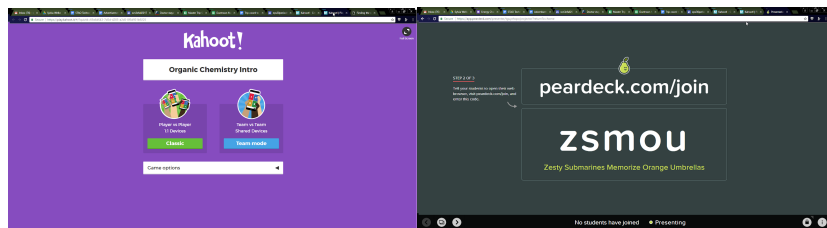
The resource takes teachers from starting out with the online tool to constructing an assessment. While some examples are from senior chemistry, all tools can be used in various levels (elementary to high school) and in all subjects.

The resources provides images & screenshots to guide the novice and provides suggestions for finessing assessments for those already using the tools. There are also some videos of their use in classrooms.

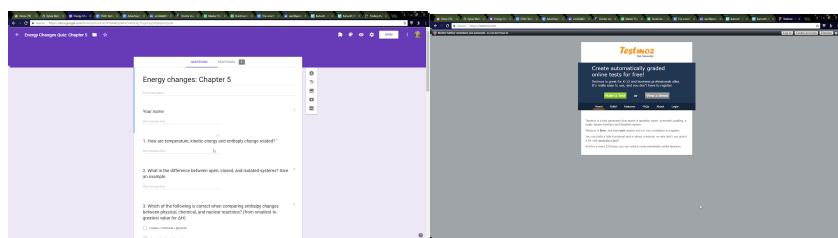
These online tools should use age-appropriate wording and text size, along with images that support students who are learning to read and who are developing literacy skills (including ELLs).

Technology Focus

The focus is on using online tools (Kahoot!, PearDeck, Socrative) to reinforce chemistry concepts as well as internet quizzes as a form of student self-assessment (Google forms/Testmoz) and as formative assessments.



There are many different online tools for different purpose, most have a free version and others are at a minimal cost per year. The use of these tools builds on students' savvy with devices and their interest in games, but moreover it gives them immediate feedback on their understanding and provides teachers with ideas to adjust their instruction.



Description

These technological tools concern online versions of formative assessments, which can be used for any science and technology subject (and all others, for that matter). Numerous, free online quizzes exist that can enhance in-class learning (via assessment as learning) and that can act as assessment for learning outside of class. Teachers can use existing tools, such as Kahoots and PearDeck, as in-class assessments as a fun, interactive way to review the previous lesson/s or as an exit card for the current class. Online quizzes, such as Testmoz or Google forms, can also be a good way for students to check their own progress on a certain concept and lets the teacher know what needs more reinforcement. Teachers can also assign online quizzes for students outside of class in a flipped classroom format, whereby students review materials and then use class time for support or mentoring to improve skills. At the same time, teachers gain some insight into student understanding upon reviewing the results.

Level (Beginner level).

Any teacher would be able to use this technology. Very little prior knowledge is required for any of the online tools described here. Teachers should be comfortable with using the online tools either on a SmartBoard or a traditional projector. Teachers also need to feel at ease with helping students with their use of technology (i.e. smartphones, tablets, etc.) in order to participate in class. Students who are comfortable with technology can also peer teach the use of the tool. If it is an online quiz to be done outside of class, then teachers must ensure that all students are comfortable with the use of technology.

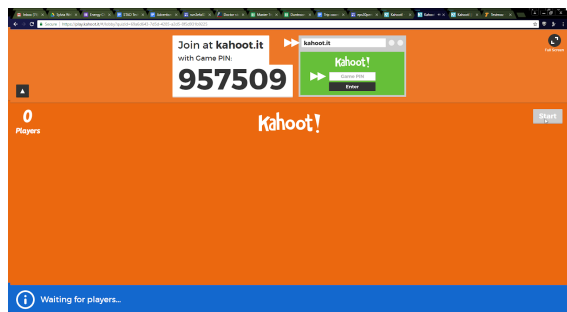
Audience

While the examples in this particular description are aimed at secondary science classes, all levels could benefit from this and all areas of the science curriculum and other subjects. These online tools should use age-appropriate wording and text size, along with images that support students who are learning to read and who are developing literacy skills (including ELLs).

Technology Tool Detailed Descriptions follow

1. KAHOOT!

Kahoot! (<https://kahoot.com/what-is-kahoot/> (<https://kahoot.com/what-is-kahoot/>))



Kahoot! is a great way to engage students (<https://www.bing.com/videos/search?PC=SK2M&q=video+using+Kahoot!+in+classroom&ru=%2fsearch%3fFORM%3dSK2MDF%26PC%3dSK2M%26q%3dvideo%2busing%2b>

of any age in any subject as it is a competitive game. The winner is the person with the most correct answers in the shortest

time. Students like it because there is a scoreboard after each question and winners can change after every question.

Materials and Equipment

Projector/laptop or Smart Board

Mobile devices for students

Prior skill set/requirements

It is very easy to use; all that is required is the creation of an account (that's free) and you are on your way to create your first Kahoot! game.

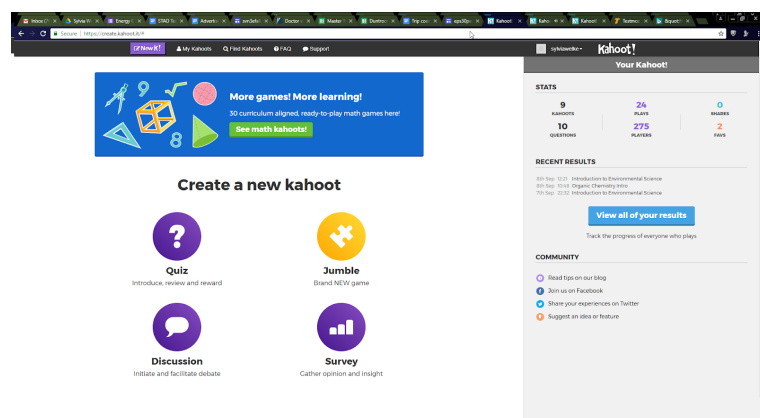
Kahoot! requires students to have mobile devices such as smart phones or tablets so that they can connect to the Kahoot! site (<https://kahoot.it/#/>). Students then type in the game ID and then the competition begins.

Creating a game

Once you have created an account (click 'sign up' on the kahoot.com site), you can either select from any of the public Kahoot! games already created or you can create your own.

A) Creating your own Kahoot!

1. New K! in the upper left hand corner
2. You can create a quiz, a jumble, discussion or a survey.

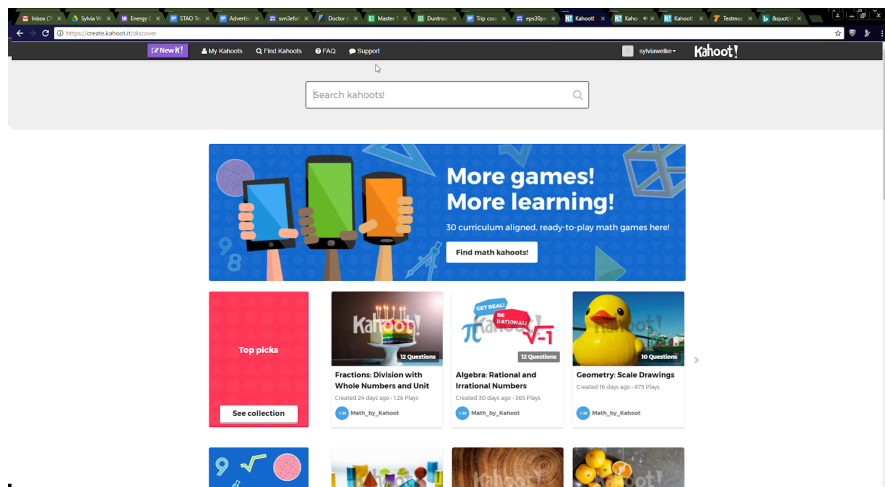


3. If you choose quiz, then add a title, description with other things like a cover image, resources, intro video as optional
4. Then add a question, provide at least two answers with a max of four (and one right answer)
5. Select the right answer
6. You can select a time limit from 20 seconds to 2 minutes.
7. You can also award points or not.

8. Keep adding questions.

B) Choosing a pre-existing Kahoot!

1. Use the search bar to enter a key term (e.g. thermodynamics)
2. Peruse the quizzes or jumbles already available (click on 'Play' to see the questions)
3. When you find one that is suitable to your class' needs, you click on 'duplicate'
4. Now you can edit the title and any of the questions and then save it as your own
5. You can delete any questions that you don't think are useful and add new ones

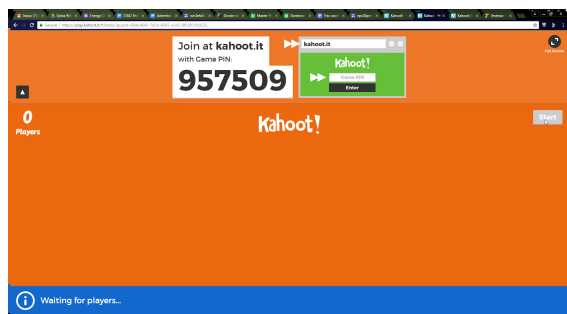


C) Options

With each question, you can add an image (perhaps as a hint) or you can embed a video that leads to your question.

Getting a Kahoot! game going in class

1. Once you have created a quiz, jumble, survey, etc, you will receive a game PIN for it. This will be the PIN that students will have to enter on their devices on the kahoot.it site.



2. Load the game on the site by going to your account; project the game on the screen or SmartBoard
3. Students will be asked for a name (could be their real name or a pseudonym (appropriate)) before they can start to play.
4. You will see how many students are joining.

5. Students can still join even though the game has started.

Instructional strategies:

You can use a Kahoot! game at the beginning of a class (as review) or at the end (exit card alternative).

You don't need more than 10 questions, especially if you want to use the game as a discussion kick-starter; however, you can have up to 20 (more than that can get too long and the novelty wears off).

Uses of Kahoot! games

- Review of concepts at the beginning or end of class
- Review prior to in-class written quiz (very useful for language sheltered or workplace science courses)
- Discussion starters
- Exit cards for understanding
- Surveys at the beginning or end of class

Examples

Here is one example (<https://create.kahoot.it/#quiz/a44f3ad6-b3bf-48a7-a1f2-f600948e550d>) of a Kahoot used in Grade 12 academic chemistry.

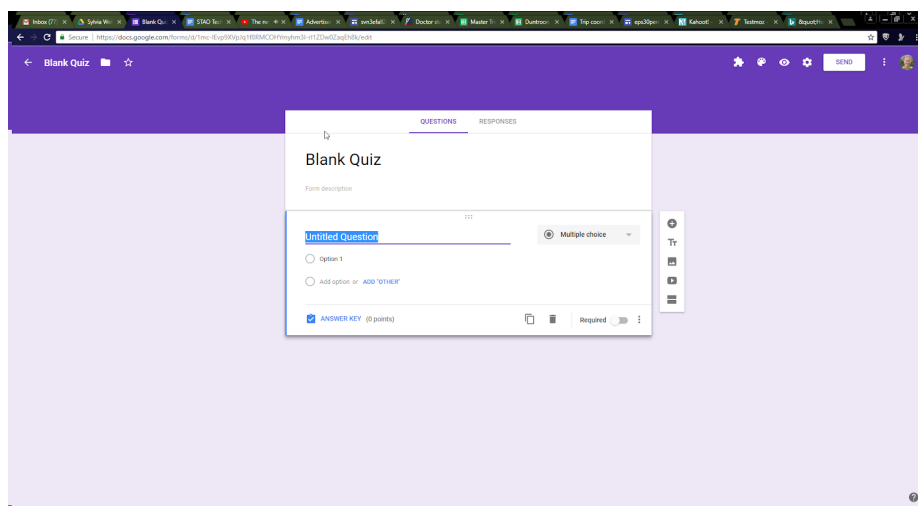
Videos

Here is one (<https://www.bing.com/videos/search?PC=SK2M&q=using+Kahoots+youtube&ru=%2fsearch%3fFORM%3dSK2MDF%26PC%3dSK2M%26q%3dusing%2bKahoots%2byoutube>

by Tech in 2 that goes through some of the steps of using a Kahoots, there is a similar one from EdTech can be found here (<https://www.youtube.com/watch?v=de7G0WioH8E>) with an additional Kahoot! in a biology classroom at this link (<https://www.youtube.com/watch?v=FlEy8h-hOdM>).

2. ONLINE QUIZZES USING GOOGLE FORMS

Using Google forms for quizzes is a good way for students to self-assess. They can take quizzes during class time or on their own. Students can also create quizzes as a study aid. This tool would mostly be used as a formative assessment, although if done in class, it could be part of a summative assessment.



Materials and Equipment

Projector/laptop or Smart Board

Computers or mobile devices for students in class or at home

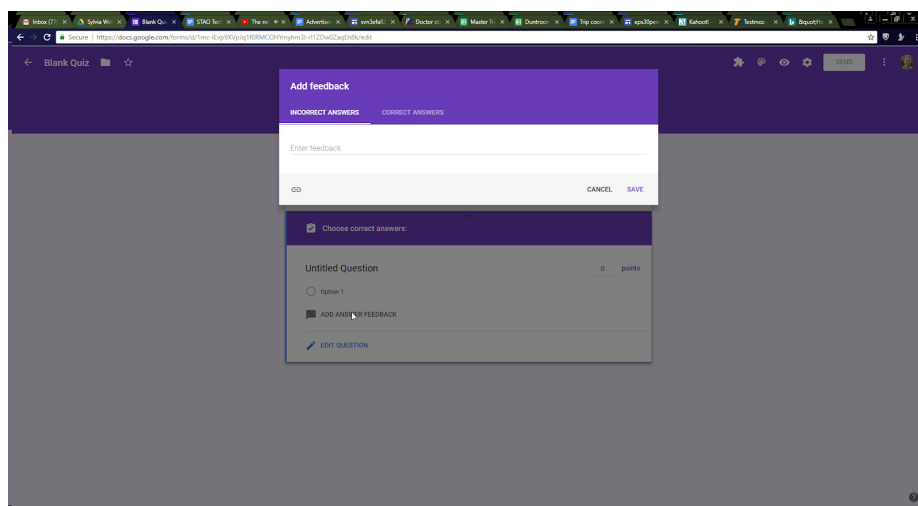
Prior skill set/requirements

- Teachers and students require a Google account and access to a computer or mobile device in class or at home.
- Some familiarity with Google drive and accounts is useful, but this could be covered in an introductory class (especially for English language learners and/or newcomers to Canada).

Creating a quiz

It's easy – here are a few simple steps to guide you and you can also follow this video.

1. Once signed into Google, click on the icon for Google apps in the top right corner of the screen and select 'Forms' (you might have to go to 'More' if it does not appear in the first set of apps).
2. Click on 'Blank Quiz'
3. Click on 'Blank Quiz' and rename the quiz to your liking (e.g. Thermodynamics Quiz 1)
4. Adding a form description is optional; this would be just a reminder for yourself about the purpose of the quiz.
5. Decide what type of question you would like to pose (short answer, paragraph, multiple choice, checkboxes, dropdown).
5. Click on 'Untitled Question' and enter the question.
6. If you picked MC, checkboxes or drop down, you will be asked for your different options (2, 3, or 4 different ones to choose from). Enter these (your potential answers) under Option 1, Option 2, etc.
7. When you are done with your question and options for answers, then decide whether or not this question is required (students must answer the question before moving on).
8. You should also indicate how many points (if any), the question is worth.
9. Then click on 'answer key' and provide an explanation for the right answer (this will come up if student choose an incorrect answer). You can include a short explanation, page numbers to a textbook for a relevant reading, a video or a link to an electronic resource.



10. If you have a question that requires a short or long answer, then you will have to read through them individually

11. If you need to change your question, click 'Edit Question'.

12. To add questions, click on the plus sign to the right of the questions.

Editing

Click on the question and then on 'Edit Question'

Your edits are automatically saved

Deleting

Questions and/or sections can be deleted by clicking on the garbage can icon.

Options

1. If different sections are required or desirable, you can click on the last (bottom) icon, which will divide the quiz up into sections (section 1 of 3, etc.).
2. You can include images in the questions or videos by using the 3rd and 4th icons from the top.
3. You can also provide a subtitle to your quiz by clicking on the Tt icon.
4. You can restrict the responses to your school board or make it public.
5. Under settings, you can also allow students to submit multiple times or limit them to one response (i.e. if you happen to use a Google quiz as a summative assessment).
6. There are also options (under the Presentation tab) to show a progress bar or to shuffle the order of the question.
7. Also under settings, there are some grading options and defaults for students to see answers.
8. Make the quiz more colourful and select the palette icon at the top right.

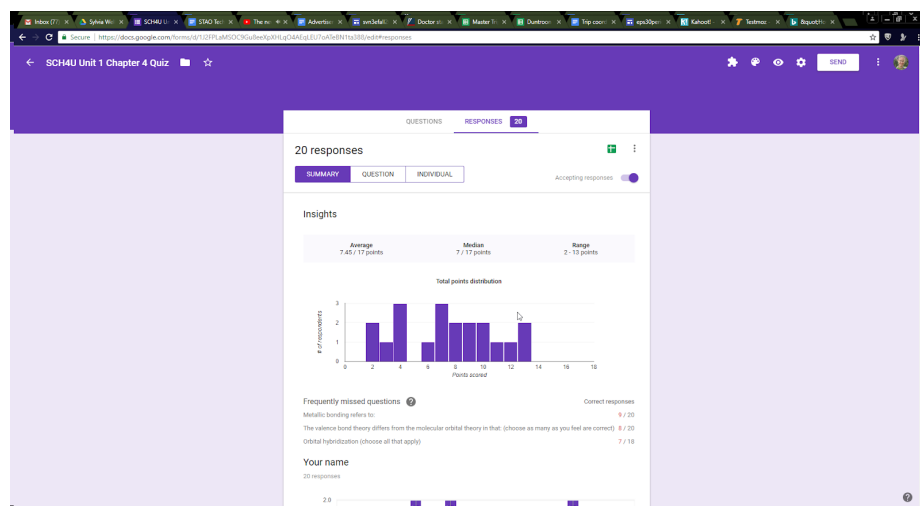
Sharing the quiz with your students

Once the quiz is ready to go...

- Click the send icon at the top right of the page
- Click the link icon in the 'Send via' row.
- Check the 'Shorten URL' box and copy the link to your website if you have one. If not, you can copy the link to a document or on the board to be given to your students.

Evaluating responses/grading

Once the time for a quiz has elapsed, you can click on responses and move the 'accepting responses' to 'not accepting responses.' You can then look at summary statistics of the questions or by individual student.



Finally, you can download a spreadsheet that indicates:

- The time the quiz was taken
- The score
- Student name
- The answer to each question
- Short or long answer questions for marking manually

Instructional strategies

Google quizzes, as mentioned, can be used in-class or at home as:

- In-class self-assessments
- Pre-summative assessment reviews

They could be used as part of a summative assessment in-class. The value of a tool such as Google quizzes is the instantaneous feedback that students get. This is a substantial benefit over paper quizzes, which can take longer to return to students. Teachers can provide the correct answer with an explanation as well as links and text page number for review.

Uses of Google quizzes/forms

Teachers would mostly use Google quizzes/forms as a student self-assessment tools in and/or out of class. You can also use the Exit Ticket template as is or modify it.

You can use exit cards as well to check for understanding of a lesson/discussion.

Here are some examples of uses of Google quizzes and forms:

<https://goo.gl/forms/NdimjsTby6TjkYAA2> (<https://goo.gl/forms/NdimjsTby6TjkYAA2>) (Acid base equilibria self-assessment – SCH4U)

<https://goo.gl/forms/7cVXDEiJ6mbYx13Y2> (<https://goo.gl/forms/7cVXDEiJ6mbYx13Y2>) (Atomic Structure and Properties self-assessment quiz – SCH4U)

<https://goo.gl/forms/TbzPK5e3Csw3pVDD3> (<https://goo.gl/forms/TbzPK5e3Csw3pVDD3>) (Energy Changes in-class quiz – SCH4U)

Videos:

<https://www.youtube.com/watch?v=ayvhVM2BMv0> (<https://www.youtube.com/watch?v=ayvhVM2BMv0>) (how to create quizzes with Google Forms)

<https://www.youtube.com/watch?v=DaEvdCvmhVY> (<https://www.youtube.com/watch?v=DaEvdCvmhVY>)

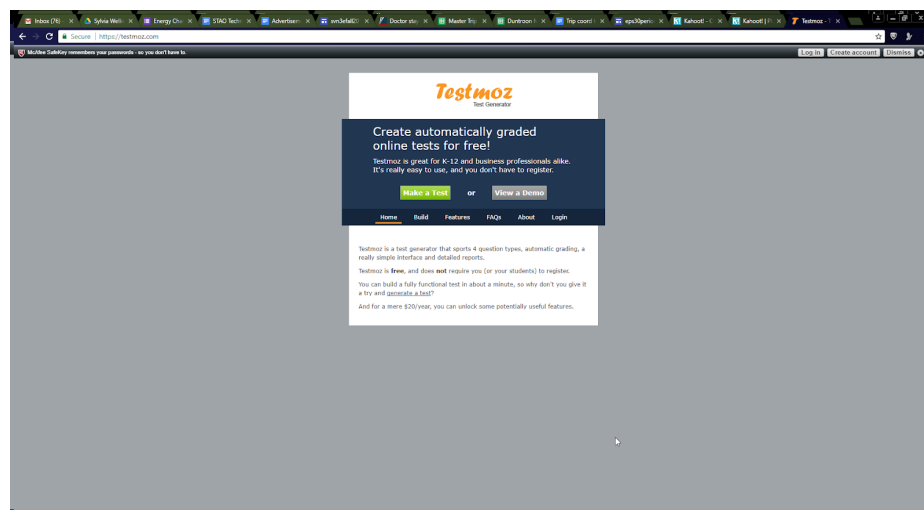
Additional resources:

<https://support.google.com/docs/answer/7032287?hl=en> (<https://support.google.com/docs/answer/7032287?hl=en>) (Google support)

3. TESTMOZ ([HTTPS://TESTMOZ.COM/](https://testmoz.com/) ([HTTPS://TESTMOZ.COM/](https://testmoz.com/)))

You can create free quizzes online with Testmoz and get summary information about how students fared. Just like quizzes using Google forms, students taking the quiz can get instant feedback, but only in terms of marks not explanations for incorrect responses. Testmoz can be used as in-class student self-assessments, reviews, exit tickets or potentially as part of a summative evaluation.

Teachers are not required to register, but they can sign up for \$20 a year for more extensive options.



Materials and Equipment

Projector/laptop or Smart Board

Computers or mobile devices for students in class or at home

Prior skill set/requirements

Teachers and students do not require anything other than a computer or a mobile device. Teachers only need to have their questions ready to input.

Creating a quiz

1. If you choose not to create an account (i.e. not pay the annual fee), you simply click on 'Create a test'.
2. Choose a test name, a password and record them (send an email to yourself).
3. Also send yourself the URL for the test you are creating (if you don't keep the URL, you can't get back to your test for any editing)
4. You can then go to 'adjust settings' and change such things as the Quiz name, provide a short introduction to the quiz for your students, have a conclusion and check off post-quiz options.
5. On the same tab, you can choose to have your students enter a passcode for the quiz or not.
6. Click 'save' and you will move to the Questions tab—time to start entering your questions.
7. You have the option of multiple choice, true or false, fill in the blank and multiple response.
8. Enter a question, decide on the type, enter the points and indicate the right answer.
9. 'Save and enter new question' until you are done, then 'save'

Editing/deleting questions

Before you publish your quiz, you can edit it. After editing, you have to update it.

You also have the option of deleting any questions.

Options

If you are collaborating with colleagues or students, you can share the quiz with them. There is no option to provide answers, should students get the incorrect response.

You can also shuffle answers within questions and then randomize the question order to avoid/minimize any cheating.

Sharing the quiz with your students

Once you have finished your quiz, you click on 'publish' and then you will be given a URL to share with students. They will go to the site, enter their name (ask them to not enter pseudonyms or nicknames) and they can take the quiz.

Evaluating responses/grading

Once students have completed the quiz, you can log in under the 'admin login' tab and then click on 'reports.' Here you can get a summary of how students fared on individual questions and how individual students did on each question. The student score sheet and the question grid can be exported as CSV files, which open in Excel.

Instructional strategies

Testmoz is best used as an in-class quiz as it does not provide feedback, so questions/answers would have to be discussed in class. Testmoz quizzes could be used as test reviews in class in groups. They could be used as part of a summative assessment in-class.

Uses of Testmoz

Here is an example:

<https://testmoz.com/1350007> (<https://testmoz.com/1350007>) (Grade 10 Applied Science – Biology unit)

Videos on how to create quizzes in Testmoz:

<https://www.youtube.com/watch?v=R-K7PwqsWCI> (<https://www.youtube.com/watch?v=R-K7PwqsWCI>)

<https://www.youtube.com/watch?v=zPKGwrDqIB0> (<https://www.youtube.com/watch?v=zPKGwrDqIB0>)

4. PEARDECK ([HTTPS://WWW.PEARDECK.COM/](https://www.peardeck.com/) ([HTTPS://WWW.PEARDECK.COM/](https://www.peardeck.com/)))

In some ways Pear Deck is similar to Kahoots, but it has different features. Pear Deck uses existing or created (on the spot) presentations about a given topic. Teachers can intersperse questions (ranging from multiple choice to open ended) to engage students in the content. Unlike Kahoot!, it is not a competitive game; rather all students go through the presentation and their responses to questions are plotted to give a teacher an idea how they are doing. The responses are anonymous so students don't have to be shy about answering.

Materials and Equipment

- Teacher needs a Google account to set up Pear Deck
- Student require computers or mobile devices
- Wi-fi
- Projector or SmartBoard
- Additional computer or tablet for teacher

Prior skill set/requirements

After setting up an account (free for the non-premium version at <https://www.peardeck.com/> (<https://www.peardeck.com/>)), all you need is a bit of time to go through a tutorial (a good idea) and set up a practice Pear Deck. Here is a link to an excellent tutorial by Pear Deck: <https://www.youtube.com/watch?v=lYmf3usCuJI> (<https://www.youtube.com/watch?v=lYmf3usCuJI>)

Pear Deck requires students to be in a computer lab or have mobile devices such as smart phones or tablets so that they can connect to the Pear Deck site (<https://app.peardeck.com/student/tdknlvuuk/> (<https://app.peardeck.com/student/tdknlvuuk/>)). Students then type in the game ID and the Pear Deck presentation can begin.

Once you have a Google account and have signed into Pear Deck with your Google account, the Pear Deck app will automatically appear in your Google drive, so that you can share or work collaboratively on your presentations with colleagues or students.

Creating a presentation

A) Using an existing PPT, Google Slide presentation or PDF file (you only have five to import for free, then you have to upgrade to the premium version \$\$, which is about \$200 per year).

1. Import an existing presentation that has pre-planned questions in it (the questions can be T/F, multiple choice, open-ended questions, thumbs up/down or yes/no).
2. Then in Pear Deck, you can insert the type of response you would like
3. Repeat this until you have finished the presentation.

B) Create a new Pear Deck

1. Instead of importing a pre-planned presentation or pdf file, you can create a presentation from scratch.
2. Add questions and type of responses you would like.

C) Use an existing presentation with no pre-planned questions

1. You can use any presentation you have for your course and spontaneously ask students questions about the content by clicking on 'ask a quick question'
2. You can ask if they agree or disagree with a particular statement and gather their responses and then use the next slides to explain.

Getting a Pear Deck session going in class

1. Once you have your presentation (pre-planned or not), you should have it in presentation view on your screen/SmartBoard and have the teacher dashboard (only available with the premium version) to see who has signed on. The latter is not absolutely necessary.
2. Students need to go to peardeck.com/join and type in the code that is displayed on your screen.
3. The presentation can't start until you advance it.
4. Students can still join even though the game has started.
5. When the presentation is done, click 'end session' where you can review sessions and responses.

Instructional strategies/Uses of Pear Deck

Pear Deck presentations could be used at the beginning of class as a review of a previous concept, as the main lesson or as an exit 'card'.

Specifically you can use Pear Deck

- to get student feedback on the understanding of a topic (assessment for learning)
- to ask students about how they feel about an upcoming summative assessment- a self-evaluation (thumbs up/down)
- to re-ask a question after a discussion/clarification.

Videos

Here are videos from Pear Deck to get you going:

<https://www.youtube.com/watch?v=lYmf3usCuJI&t=184s> (<https://www.youtube.com/watch?v=lYmf3usCuJI&t=184s>) (a good introductory video from Pear Deck staff)

Here is a whole channel of Pear Deck videos on different aspects of the tool:

<https://www.youtube.com/channel/UC3BBXdeJ-iSvwVFoYvDDMQw> (<https://www.youtube.com/channel/UC3BBXdeJ-iSvwVFoYvDDMQw>)

Here is an additional one from a teacher who has used it:

<https://www.youtube.com/watch?v=38xlY7R9ryM> (<https://www.youtube.com/watch?v=38xlY7R9ryM>)

ASSESSMENT STRATEGY

Kahoot! PearDeck, Google forms/quizzes, should only be used as assessments for and as learning (i.e. formative).

Kahoot! – only provides assessment of understanding at the general class level

Testmoz/Google forms/quizzes – can get individual results and can be used as assessment for/as learning

NEXT STEPS/EXTENSIONS/ACCOMMODATIONS/OTHER TOPICS FOR THIS TECH TOOL:

Once you have used any of the online tools several times in your class so that students are familiar with them, you can ask them in groups or individually, to create their own online quiz/game with answer keys. This is easy with Google forms/quizzes, Pear Deck or Kahoot!, especially if students already have a Google account. For Testmoz and others, students would have to create an account.

ADDITIONAL ONLINE TOOLS

Adapted from: <http://www.educatorstechnology.com/2014/02/10-useful-web-tools-for-creating-online.html>
(<http://www.educatorstechnology.com/2014/02/10-useful-web-tools-for-creating-online.html>)

1- Mentimeter (https://www.mentimeter.com/?utm_campaign=Listly&utm_medium=list&utm_source=listly)

This is a free, tool to interact with your students via their mobile devices – they can express their readiness with content, respond to questions and the results are anonymous and are displayed immediately. The free version is basic and only allows three questions per presentation, which would be good for a short review or an exit card. The premium version is \$99 US/month. It has good reviews.

You sign up via Google or Facebook, then you can search presentations or you create your own. Click on the type of question you would like, then on new slide. You will see a code that your students will be asked for at www.menti.com (<http://www.menti.com/>).

2-PollEverywhere (http://www.pollerywhere.com/?utm_campaign=Listly&utm_medium=list&utm_source=listly)

For class sizes of 25 or less it is free. It is good for polling your class for their opinion and understanding. The results can be embedded into a PowerPoint presentation or web page and update in real time, while responses can be submitted via text message, Twitter or web.

3-Online Quiz Creator: Play or Make a Quiz for Free! (http://www.onlinequizcreator.com/?utm_campaign=Listly&utm_medium=list&utm_source=listly)

This is an easy, free way to make quizzes that can be played in class.

4-ProProfs (Quiz Maker) (http://www.proprofs.com/quiz-school/?utm_campaign=Listly&utm_medium=list&utm_source=listly)

It has a free version that lets teacher create quizzes and surveys.

5-Quibblo (http://www.quibblo.com/?utm_campaign=Listly&utm_medium=list&utm_source=listly)

Quibblo is free for a basic version and is similar to other basic online quiz making tools. It has a number of pre-existing quizzes in different subjects that can be searched out and used or modified. You can also create your own or make surveys and polls.

6-GoToQuiz.com (http://www.gotoquiz.com/create.html?errs=1&utm_campaign=Listly&utm_medium=list&utm_source=listly)

It's a very simple site for creating a quiz that generates a unique URL for others to take. There are advertisements throughout this site.

7-Survey Anyplace - Mobile Quizzes and Surveys (http://surveyanyplace.com/?utm_campaign=Listly&utm_medium=list&utm_source=listly)


Survey Anyplace enables anyone to create appealing mobile quizzes and surveys to engage with audiences on the go. Use the feedback to increase class engagement and to get student feedback. There is a free version.



(mailto:
subject
out

this
(http://www.gotoquiz.com/create.html?errs=1&utm_campaign=Listly&utm_medium=list&utm_source=listly)
https://www.gotoquiz.com/create.html?errs=1&utm_campaign=Listly&utm_medium=list&utm_source=listly
catalyst/ready-to-go
for-for-for-for-
assessment
in- in- in- in-
the-the-the-the-
classroom

RESOURCES

-  Using online tools to enhance and enliven learning of senior chemistry concepts
(<https://docs.google.com/document/d/1oWkdptrLT55fsWGfcxPe8A6ZQlygRTVJqDkN0xI8cj8/edit>)

ELEMENT

-  Technology Enabled Learning (/expert-elements/technology-enabled-learning)



RETURN
TO CATALYSTS (/classroom-catalysts)


STAO/APSO WEBSITE (<http://stao.ca/cms/>)


SEARCH (/search)

PRIVACY POLICY (/privacy-policy)

TERMS OF USE (/terms-of-use)

CONTACT (/contact)

 **FACEBOOK** (<https://www.facebook.com/STAOAPSO?ref=ts>)

 **TWITTER** (<https://twitter.com/staoapso>)

 **GOOGLE+** (<https://plus.google.com/u/0/+ScienceTeachersAssociationofOntarioDresden/about>)

 **INSTAGRAM** (<https://instagram.com/staoapso/>)

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