Breakout Games

What are breakout games?

Breakout games are a series of activities or puzzles that students complete to either learn about a subject or as an assessment of content learned. This allows for students to move in the classroom and also allows for students to collaborate and communicate with each other. Problem solving skills are also used as students complete various activities throughout the breakout game. Most games have a theme and a goal so that students are motivated to complete each activity as they work towards the end goal.

Creating a breakout game

There are 2 types of breakout games that you can create for your students.

- The first is a **physical** breakout, which involves the use of physical items that students will find, manipulate, and solve in order to unlock a piece of the game. These types of breakouts were the first to hit the mainstream and have taken the form of complete rooms being transformed.
- The second is a **digital** breakout, which involves finding, manipulating, and solving puzzles electronically. Students can still unlock pieces, however this is done by entering the code into a virtual lock, rather than a physical one. Google forms of the Breakout EDU site can be used to create your digital games.

What are some advantages and disadvantages of these two types of games?

Styles of breakouts

In addition to the types of breakouts, there are 2 styles of breakouts that are typically used when creating and solving the breakout games.

- **Sequential or linear** games are played so that students can only unlock puzzles and continue on in one direction as the work through the game.
- **Non-sequential** games are played so that there is not a direct path from start to finish. Students may unlock pieces of the final puzzle at any time throughout the game, but it is a combination of all pieces that are needed to be successful at the end of the game.

What are some advantages and disadvantages of these two styles of games?

Creating your own breakout games

There are several different ways to begin thinking about creating a breakout game. In my experience, these are the steps I recommend as you begin thinking about your game. The most important thing to remember is that the breakout should be a fun learning activity for your students. This is an alternative way to either have students learn about content, to assess students' understanding of content, or maybe even a little of both.

Resources for creating breakouts

Breakout EDU has templates that you can use to create physical or digital breakouts. Keep in mind that these templates are for posting games to their website, so you may not need to complete all sections if the game is just for your own classroom use. https://www.breakoutedu.com/create

Planning your breakout

Start with the content standard(s)

As with any other instructional materials that you develop, the content standard(s) should always be where you begin. Identify these first so that your breakout is aligned to the standards from the beginning.

Identify what students should have learned by the end of the breakout

Just like you work through a lesson plan, consider what skills or knowledge your students should have learned by the end of the breakout. Activities completed during the breakout should help students learn content, or give them an opportunity to demonstrate the identified skills or knowledge (learning outcomes). Unlike a lesson plan, there should be some sort of ending or prize, something tangible that signifies when students have reached the end of the breakout game.

Create a scenario or theme for the breakout

Let's face it, a fun scenario or theme enhances the enjoyment of the breakout. If the topic and scenarios are fun, it is more motivating for you as you create the breakout activities and for students as they complete them. I suggest brainstorming a few possible scenarios. Sometimes what seems like a fun scenario, turns out to be a little flat as you begin designing the breakout.

Determine the type and style of the breakout

- Will your breakout be physical or digital?
- Will your breakout be linear or non-linear?
- How many students will be in a group as they complete activities?

These decisions will help you determine how you will create the materials for your breakout, and also help you think about how many sets of materials you will need to create for your activities

Determine the length of the breakout

You should decide before you begin how much time you want to devote to the breakout games. There are several suggestions for this:

- 45 minutes seems to be about the shortest span of time for a breakout to be successful if you include multiple activities
- 60 minutes is the typical amount of time that is allotted to completing traditional breakout rooms
- It is definitely possible to extend the amount of time longer than 45 or 60 minutes. Consider if you want students to work over the course of a few days or a week, and complete one piece of the breakout each day. For example, you may be working on a science breakout and have 30 minutes a day for science instruction. You could have students complete one piece of the breakout each day, working towards a culminating activity or event on Friday.

Plan for how you will group students

It is important to think about how you will group your students as they are working through these materials.

- Plan the size of your groups:
  It has been suggested to me more than once that groups of 3 students are the most difficult to work within due to the dynamics of individual opinions. You may or may not agree. However, one thing to consider is that groups that are too small may not have enough diversity to answer questions, and groups that are too large may not have enough activities for all students to actively participate.

- Plan for grouping students:
  - Will you allow them to self-select groups?
  - Will you randomly choose groups?
  - Will you choose groups based on skill levels?
    - This could be by mixing skill levels
    - Or you could modify the breakout to allow for higher or lower level clues for certain groups (differentiation)

- Teach students how to work with their group members:
  We all know that the most successful groups of students are those who work well together. Use this opportunity to help students learn how to work together to solve problems. Give them suggestions and strategies for working together before they begin the breakout. Consider what you will do if you see students struggling within their groups during the breakout so that you are prepared with some additional helpful tips. Consider thinking about what you will do if students argue with each other and need some conflict resolution suggestions.

Determine how many sets of materials you will need based on the size of your groups. If a typical classroom has 25 students, and you determine that you would like students to be in groups of 5, then you will need to create 5 sets of physical materials for your students. If students are completing a digital breakout, then you would need 5 devices for them to use while completing activities online.

Create the individual pieces of the breakout
This is where the magic begins. This is also the most time consuming part of creating the breakout because you have to think about each piece of the breakout, and also how students will put together the information you give them to solve a puzzle which opens another piece of the breakout. Make sure as you work on the individual pieces of the breakout that all those pieces align to content standards and desired learning outcomes. Suggestions for activities are listed later in this document.

Test the breakout
You don't want to skip over this part of the process. I highly recommend giving the breakout to someone who has not been involved in the planning. Another colleague, students in an after school club, a parent volunteer, your spouse, or children could all be involved in helping you test your breakout. I would also recommend either watching the process of completing the breakout so that you can take notes. Consider taking notes on the following:

- Length of time to complete each activity
- Mistakes in wording, sequencing, or directions for each activity
- Misunderstandings in the directions for completing each activity
- Areas where you may need to develop hints to help if students are stuck on an activity

Remember that the goal is not for students to get through these activities easily, so there should be some troubleshooting and problem solving going on as the activities are completed. There should be 25-50% of students who don't finish the breakout activities. This is OK and adds another layer of complexity to the breakout activities.

Redesign (and retest if needed)
If you identified any trouble spots in your breakout activities or materials, take the time to change them before students begin working on the breakout game. It likely more issues will arise, and that is OK. Part of problem solving is working through issues that you didn't expect would happen. You can model this for your students.

During the breakout

Hopefully all your pre-planning has paid off and your students are moving through the activities in your breakout. Plan on taking notes again while students are working through the breakout game so you can make additional changes for the future if necessary.

Offering hints
Before beginning the breakout, consider if you will offer students the opportunity to earn hints if they are stuck in a section of the breakout.

- How many hints will you allow?
- Is there a penalty for one or multiple hints (time penalty?)
- Can students earn a hint by completing something or working well together?
- Does there need to be a consensus between group members when asking for a hint?

Keeping track of time
Think about how you will monitor time as students are working.

- Will you show time elapsed or time remaining?
- Will you give warnings at certain points?
- Plan an additional activity for groups who finish early.
- Plan for students who don't finish the activity. At what point is it OK for them to not be successful?
- Use the Breakout EDU Facilitation tool at:
  http://facilitationtool.breakoutedu.com/index.php?key=NCZAEceZOJwi6RQ

Additional items to consider during breakouts to help with management

- Consider having an additional set of materials on standby in case something is not working correctly during the breakout. This will allow you to replace materials quickly
- Sometimes students have the right answer for a lock, but they can't get the lock open. Think about how you might prepare them for this scenario ahead of time and what your response will be if this happens.
- Have a document with the answers close by so that you can refer to the answers if needed during the breakout.
- Most breakout designers will agree that if students can't complete the first activity within the first quarter of time given for the breakout, then they will become discouraged and begin to give up. (i.e. open the first lock within 15 minutes of a 60 minute game)

After the breakout

Just as with other lessons that you teach, you should reserve time after the breakout to talk to students about what they have learned from the experience. Breakout EDU has a great set of Reflection Cards that help students think through the content and the experience of completing the breakout games. They can be found at https://www.breakoutedu.com/reflectioncards/

Consider having students think about:
- Content learned
- Experiences during the breakout game
- How the team worked together
- Suggestions for working through breakout activities in the future
- What was challenging and why
- What would they have done differently if they worked through the activities again
- Why were they successful at completing all activities or why were they unsuccessful

Resetting materials for the next class
One thing to consider as you are designing the breakouts, and also after the students complete breakouts, is how much of the breakout needs to be reset for the next class or group completing it. If you only have 5 minutes between groups, then what consumables or lock resetting will you need to be able to accomplish during this time, and do you have adequate time to complete this? If you are using digital breakouts, do you need to clear the cache, close a browser, or reset a device?

Management of breakout kits
It is important to think about how you will manage physical breakout kits after you have completed the breakout. If you will be using the kits for additional breakouts, or if you are sharing them with other teachers, then you will need to come up with a plan for resetting locks so that you don't wind up with locks that nobody knows how to open.
Consider a plan for where to store the kits once you are finished using them.
https://docs.google.com/forms/d/e/1FAIpQLSf3FfmZAF8OJrW0GI8ZdFRz-KH9HKk6hu5pJ0vxjBcdQ9fipg/viewform?c=0&w=1

Taking breakouts to the next level
After your students have completed a few breakouts, you may want to consider having them create breakouts of their own. Here is one teacher's adventure with trying student created breakouts: http://blog.mariventurino.com/2016/10/student-created-breakout-edu- games.html

Checking out materials from the ITC
We have 8 physical breakout kits available for checkout.
More information about the items we have available in each kit can be found at:
https://www.winthrop.edu/itc/default.aspx?id=49324

The NEW Breakout EDU website
- Some of the website is free
- Users now need to pay for access to certain areas of the website
- If you have ordered a breakout kit in the past, you can order an access code or email Breakout EDU and send them your purchase information. They may send you an access code.

Digital breakout resources
Digital breakouts require less physical space and objects than physical breakouts do. They might be easier for you to try with students as a way to get them interested in completing additional breakout activities.

Example of using google forms for digital breakouts
https://sites.google.com/site/yehbreakouts/cpp
https://tommullaney.com/2016/11/17/digital-breakouts-in-the-new-google-sites/

Access to the old Breakout EDU digital breakouts
https://www.breakoutedu.com/digital2016

Digital Breakout Lock Types Text
Lock- A-Z (up to 10 letters)
Number Lock- 0-9 (up to 5 letters)
Directional Lock – up, down, right, left (up to 5 directions)
Shape Lock – circle, square, triangle, star, diamond (up to 5 shapes)
Color Lock (red, green, orange, blue, brown, yellow, purple, gray, white, black (up to 5 colors)
https://www.breakoutedu.com/digital-tutorials

Breakout ideas based on subject areas

Science
Seasons
https://docs.google.com/presentation/d/1cts2mMpRgXUhqyaWXeuB-
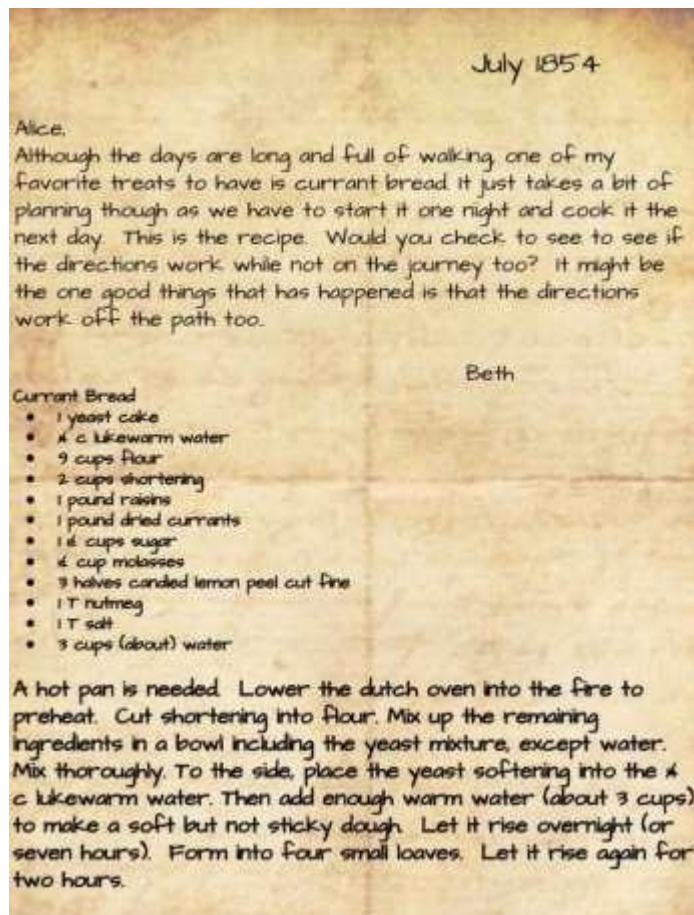IJDhvkqjAhEeH4VC22BKLE/edit#slide=id.g25cb516de3_0_44

Social Studies
Immigration
https://drive.google.com/drive/folders/1jtiCOMHAfKj3t2JZnwEssDt0WNwmawyh
Hamilton
https://sites.google.com/allendalek8.com/breakout-hamilton

Additional Ideas
- Be a tour guide who gives directions or create a map using directional words. The directions correspond to the arrows on a lock.
- Create old recipes with directional words like rise and fall

July 1854

Alice,
Although the days are long and full of walking, one of my favorite treats to have is currant bread it just takes a bit of planning though as we have to start it one night and cook it the next day. This is the recipe. Would you check to see to see if the directions work while not on the journey too? It might be the one good things that has happened is that the directions work off the path too.

Beth

Currant Bread
- 1 yeast cake
- ¼ c lukewarm water
- 9 cups flour
- 2 cups shortening
- 1 pound raisins
- 1 pound dried currants
- 1¼ cups sugar
- ¼ cup molasses
- 3 halves candied lemon peel cut fine
- 1 T nutmeg
- 1 T salt
- 3 cups (about) water

A hot pan is needed Lower the dutch oven into the fire to preheat. Cut shortening into flour. Mix up the remaining ingredients in a bowl including the yeast mixture, except water. Mix thoroughly. To the side, place the yeast softening into the ¼ c lukewarm water. Then add enough warm water (about 3 cups) to make a soft but not sticky dough. Let it rise overnight (or seven hours). Form into four small loaves. Let it rise again for two hours.

Created by Joyce Camp and the ITC Staff- Updated August 2018

Math

Give students numerical puzzles or equations to solve. The answers could open a lock.

English Language Arts

Wonder
https://drive.google.com/drive/u/0/folders/0B0lX9U7hfkO7SUZVbkp1eUpZaDg
https://drive.google.com/drive/folders/0B6SK6t2oHQXkUUJTcDlQXzFBblU

Harry Potter
https://drive.google.com/drive/folders/0ByEybSv5yzoXOEMyWERrS0xnQkk

Ideas for breakout activities

<u>Join the Breakout EDU group on Facebook</u>
The best decision I made once I became interested in creating breakouts was to join the Breakout EDU group on Facebook.   This group is extremely active, publishing multiple posts each day. Educators post links to premade breakouts, ideas for activities, troubleshooting tips, and questions about materials or suggestions for where to buy materials. I've posted questions to this group a few times and have had multiple replies within a few hours.

Additional tools for creating activities within the breakout
Puzzlemaker- http://www.discoveryeducation.com/free-puzzlemaker/?CFID=355277&CFTOKEN=12766806

Mapmaker-   http://www.thetechieteacher.net/2014/11/map-maker-for-elementary.html?m=1

Edpuzzle videos- Can use it for a letter lock. During the video, embed T/F questions. The key to open the lock was the order of Ts and Fs from the questions in the videos.

Thinglink- https://cinderellatransformed.blogspot.com/

Google maps- https://www.google.com/maps/d/- You can put websites attached to the map locations and create clues using the route it takes to get to different locations.

Marauders Map- Harry Potter- http://www.instructables.com/id/Marauders-Map-FULL-SIZE- Replica/

Virus tracker- https://virustracker.vbi.vt.edu/

Ideas for boxes that can lock
Locking pencil pouch-
https://www.amazon.com/dp/B00K0T3MY2/ref=asc_df_B00K0T3MY25262037/?tag=hyprod-20&creative=394997&creativeASIN=B00K0T3MY2&linkCode=df0&hvadid=198100146910&hvpos=1o3&hvnetw=g&hvrand=17049932749853170792&hvpone&hvptwo&hvqmt&hvdev=m&hvdvcmdl&hvlocint&hvlocphy=9011805&hvtargid=pla-349226285969

Ammo boxes- https://www.amazon.com/dp/B005IURN5M?tag=amz-mkt-chr-us-20&ascsubtag=1ba00-01000-org00-mac00-other-nomod-us000-pcomp&ref=bit_pcomp_ask_simstreat_c_sav0

Creating pieces using the 3d printer
https://www.thingiverse.com/thing:1547143

Complete the following Digital Breakout

Art and Artists- Created by Joyce https://platform.breakoutedu.com/game/digital/exploring-new-digital-breakout-edu- opportunities-22154

ELJ-AU3-XHY

Digital Breakout Sample- free from Breakout EDU
https://platform.breakoutedu.com/game/digital/a-breakout-edu-digital-game-sample-38

Explore how to create a Digital Breakout

Help Wanted!
https://platform.breakoutedu.com/game/help-wanted

<u>**Put this breakout together**</u>

1. Print all items in the "Plants to Print" slides presentation for the number of groups you have. (EXCEPT the scene- if you have access to a QR code scanner)

2. Cut out and sort Plant Needs Cards, Edible Plant Parts Cards, and Seasons Cards (slides 5 or 6, 9, 10, 12)

3. Copy the QR code (slide 3) on the back of the round puzzle and cut (slide 2).
As an alternative to the QR code you can use invisible ink on the back to write your message. The QR code says "Tell your teacher: You make me grow."

4. Place the edible plants cards into the small box.

5. Place the "We Broke Out" sign (slide 13) in the box with enough "Farm Dollars" For Each Kid to have one. Another option would be to use your own "classroom cash" if applicable. (Students can turn in their "First payment" for whatever you deem appropriate.

3-DIGIT LOCK = 2-1-3
4-DIGIT LOCK = 0-8-6-9
ABC MULTILOCK = P-L-A-N-T
DIRECTIONAL MULTILOCK = DOWN-UP-RIGHT-LEEFT-DOWN

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Complete the following Digital Breakout
Art and Artists- Created by Joyce https://platform.breakoutedu.com/game/digital/exploring-new-digital-breakout-edu- opportunities-22154
ELJ-AU3-XHY

Digital Breakout Sample- free from Breakout EDU
https://platform.breakoutedu.com/game/digital/a-breakout-edu-digital-game-sample-38

Explore how to create a Digital Breakout

Olympic Dreams
https://platform.breakoutedu.com/game/OLYMPIC-DREAMS

Put this breakout together
Items
Small lock with Hasp and Word Lock, Direction Lock, 4 Digit Lock, and Key Lock.
Large Lock Box with 3 Digit Lock ~ small box and other clues hidden inside. Could also include "luggage" (shirts, gloves, socks, etc.)

Print all of the digital resources (2 files) - PRINT IN COLOR
     ~ Olympic Images - posters to hang in the gym - spread them out
     ~ Olympic Breakout Resources - one copy of each page per group
1.   Place the Passport in the small lock box. Lock with Hasp, Word Lock, Direction Lock, 4 digit lock, and Key lock. Place small box in large Breakout Box.

2.   Along with the small box, place the following items / clues in the large Breakout box: key, calendar (itinerary), venue image (with "handwritten notes"), and flight information (cut to size - 2 separate sheets).

3- DIGIT LOCK = 7-6-4

4- DIGIT LOCK = 3-3-4-5
ABC MULTILOCK = M-E-D-A-L
DIRECTTIONAL MULTILOCK = DOWN-RIGHT-UP-LEFT-RIGHT

* If possible, include other items in the box such as luggage (t shirts, socks, etc.) If possible, have an old wallet with the flight information folded inside. Also, the key attached to a keyring with other keys could be fun!
** An alternate would be to use a piece of lockable luggage instead of the large box!
5- On flight information, highlight Wed, Feb. 7 and 11:30 am.
6- Lock large Breakout box with 3 digit lock.
7- Hang posters (Olympic Images) around the gym. Try to spread them out.

**Don't feel limited to just these images. Flags and other posters just add to the fun!
When students arrive, if possible, have the Olympic theme playing. Read the intro story. Give them the Flight Map and Packing List.

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