

# LEARNING

## DEVELOPMENT & SUCCESS

### Studying With Friends!

#### Why Play the Games?

The **science behind learning** introduces us to many different strategies that can bring about effective, deep, and longer lasting learning. Most of these strategies can be used individually and/or in groups. However, we suggest doing both! Learning in groups can create certain learning opportunities that will simply not happen when you're studying alone, and vice versa. In this handout we introduce you to **3 powerful games you can play with your friends** which use the learning concepts of **interleaving** (learning related but different information together), **retrieval** (remembering information), **spacing** (revisiting and retrieving information at different instances over time), **thinking in alternatives** (practicing analytical thinking by reflecting on the plausibility of different answers), and **abstraction/conceptual learning** (learning the theory behind math/science examples as opposed to just putting numbers in formulas).

#### What Can I Expect?

For each game you'll see a list of items needed, how many people are ideal for the game, how the game is played, and ideas for making the game more fun or challenging. Ideas from one game can also be incorporated into the other games if you like. We definitely encourage you to throw in your own ideas for **spicing the game up**. However, **these games are beneficial only if the environment is safe and healthy**, so either don't set rules for *winners* and *losers*, or if you do, make them fun and **extremely low stakes!** Also, all three of these games require a list of important past, present, and related concepts or problems. It can be useful to create this list during a previous study session or over time throughout the term so that you can better collect a variety of related concepts and prevent forgetting past topics.



Dice Game



Fishbowl Speech



Poker Face Convos

Did you play any of these games? If so, we'd love to hear your feedback! Let us know at [learning@uwo.ca](mailto:learning@uwo.ca).

#### Games adapted and created from:

Agarwal, P. K., & Bain, P. M. (2019). *Powerful teaching: Unleash the science of learning*. John Wiley & Sons.

Lieber, L., & Graulich, N. (2020). Thinking in alternatives—A task design for challenging students' problem-solving approaches in Organic Chemistry. *Journal of Chemical Education*, 97(10), 3731-3738.

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### Dice Game

#### What You Need

- A numbered list of important past, present, and related concepts or problems
- 1 die for every 6 topics or use [virtual dice](#).

#### Groups of 2-5

#### The Basics

Take turns rolling the dice. The student who rolls the dice has to solve a problem or define the concept related to that number on the list.

Other students provide constructive feedback on that answer.

Switch turns.

#### Spice it Up!

- The student who rolls the dice can ask others to provide feedback in a particular kind of voice! E.g., boring voice, news reporter voice, etc.
- If the student who rolls the dice brings a 6 in one of the dice, they get one *why* credit. Then, when it's another student's turn to define a concept or solve a problem, the student with the *why* credit can ask them one *why* question about any part of their answer!
- If the student who rolls the dice can't say anything about the concept or solve any part of the problem at all, the next student does so for them. However, next round the first student can't roll the dice anymore and must repeat the same concept/problem.

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### Fishbowl Speech

#### What You Need

- Important past, present, and/or related concepts/problems, each written on a separate piece of paper.
- 1 fishbowl, or hat, or backpack, or basically any container that can hold the folded strips of paper!
- A timer/clock or use a [virtual timer](#).

#### Groups of 2-5

##### The Basics

Fold all the pieces of paper you wrote the concepts/problems on and put them into your container of choice.

Set the timer for 1 minute. One student stirs the container and takes one piece of paper out. They have 1 minute to orally define the concept or solve the problem on a paper while thinking out loud. If they can't, they still have to talk for 1 minute about anything related to that concept or problem!

Other students must provide at least 30 seconds of feedback on that answer.

Switch turns.

##### Spice it Up!

- If the student did not speak for 1 minute, next round they have to speak for 2 minutes! For that round, the student before them has to explain the concept/solve the problem.
- If a student spoke for 1 minute but what they said was not related to the concept/problem, the previous student has to explain the concept or solve the problem! While the previous student is explaining/solving out loud, the first student must draw an image of the description or simultaneously try to solve the problem on a different paper themselves.
- To provide their 30 seconds of feedback, students must also mention what the concept/problem reminded them of.

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### Poker Face Convos \*

#### What You Need

- Important past, present, and/or related concepts/problems, each written on a separate piece of paper.
- 1 fishbowl, or hat, or backpack, or basically any container that can hold the folded strips of paper!
- A timer/clock or use a [virtual timer](#).

#### Groups of 2-5

##### The Basics

Fold all the pieces of paper you wrote the concepts/problems on and put them into your container of choice.

Set the timer to 3 minutes (or however many minutes you prefer). One student stirs the container and takes one piece of paper out and shows the concept/problem to everyone. All students have 3 minutes to define the concept/solve the problem in silence on their own. Once 3 minutes are over, all students must show their responses to the student who picked the paper out, while maintaining a face without emotions. The student who picked the paper out must now compare their own response with everyone else's while thinking out loud and modify their own response if needed. Once they are finished, other students can stop showing a poker face and they can all discuss the answer together.

Switch turns.

##### Spice it Up!

- Whoever finishes defining the concept/solving the problem first must get up and dance while others catch up!
- If a student laughs, when it's their turn to explain, they must do so on one foot!
- The student who is explaining must also maintain a poker face.
- If the same concept/problem is chosen twice, reduce the amount of time required to solve it next time.

\* This game is especially good for Organic Chemistry.