**Traditional games** such as <u>Simon Says</u> have been played for generations by young children and can play a role in the development of executive functions, particularly inhibitory control. <u>Statues</u> and variations such as musical statues, <u>Red light</u>, <u>Green light</u>, etc. [Inhibitory control]



Other traditional games, such as the tray game in which a tray of objects are presented for children to look at and then, out of sight, one object is removed from the tray. When presented to the children again they have to say what's been removed from the tray. [Inhibitory control; working memory]

Hidden object books (e.g., Where's Wally) and games demand sustained attention and working memory, especially if the reader/player looks for more than one object at a time (i.e., bearing in mind the list of objects). [Working memory]

**Academic games** like <u>Fizz-buzz</u> require that players bear in mind the rules of the game and not to say the number that rushes into their heads without checking first if it's a fizz, a buzz or a fizz, buzz! [Inhibitory control; working memory]



In the game <u>Taboo</u>, one player has to get the other players to guess the word written on a card they have drawn. The "describer" gives a description of the word on that card without saying any of the forbidden words listed on the card. The describer must hold back the temptation to say any of the words on the card and generate new, less obvious ways of describing that word.

Good for all age groups, the activity can be extended by adding more forbidden words

or producing the cards from scratch.

[Inhibitory control; working memory; cognitive flexibility]

[underlined blue words, can be searched for in Wikipedia]

**Card games** with strategy (e.g., not *Snap!*) especially those that require players to bear in mind the cards already played demand a range of executive functions, including planning. For example, <u>Go fish</u>, <u>Crazy Eights</u> (a.k.a. Uno), <u>Pinochle</u>,

Rummy, Canasta, Bridge. The increasing complexity and challenge of game-play makes card games easily differentiated for young people with different executive function abilities. [Inhibitory control; working memory; cognitive flexibility]

Any significant **strategy game** requires executive function skills

- Chess
- Risk
- Go/Reversi/Othello
- Euro games (e.g., Carcassonne)
- Pentago (place five marbles in a row on a 6 by 6 wooden grid, which is actually made up of four smaller 3 by 3 grids. The twist: after placing a marble, a player gets to twist one of the four smaller grids 90 degrees]

"Parlor games" – good to play with kids/adolescents while travelling, out for coffee/meal, etc

<u>Twenty Questions</u> Selecting questions, bearing in mind answers, hypothesizing what the object might be, changing thinking in response to unexpected answers, re-hypothesizing, not using up questions with guessing the object.

[(Inhibitory control); working memory; cognitive flexibility]

<u>Elephant's foot umbrella stand</u> A game where a "rule" has to be worked out, logic applied and responses recalled. [(Inhibitory control); working memory; cognitive flexibility]

Odd one out: Many variations but essentially three objects are chosen in some way (e.g., by one player or one from each of three players) and reasons for why each one in turn is the odd one out must be given. Extension to which one is the oddest and why.

[(Inhibitory control); working memory; cognitive flexibility]

<u>Two-person letter writing</u> Two people write a notional letter from one well-known character to another by taking it in turns to say a word. For example, Kyle Sandilands to Geri Halliwell:

Person #1: Dear Person #2: Geri, Person #1: I Person #2: can't Person #1: believe Person #2: that .....

Unexpected twists and turns make the dialogue amusing and put great demand on executive functions.

[working memory (bearing in mind the correspondents, the nature of the correspondents' relationship, the flow of the letter, etc)] [cognitive flexibility (responding to the twists and turns)]

## "Creativity" games

Based on the work of DeBono, the Creativity Games site uses a random word generator (of familiar words) to spark some creative thinking. A number of games can be chosen, for example:

Life without Generate a random word. Use it as inspiration to think

what it would be like if we never had it in this world.

Confucius say Generate 3 random words. Use at least one of them to

create a wise Confucian saying. You can aim for wise or

for humorous.

Rolling improvement Generate a random word. It is the starting word. Your

aim is to suggest an improvement upon this item and

building upon the improvements of previous

commenters. It must be a creative improvement. That

is, it cannot be obvious.

The heaviest Generate 3 random words. Which one is the heaviest

and explain why. You may not use the same word as

the person who commented before you.

http://creativitygames.net/random-word-generator/

(phone apps – search random word generator in your app store) [(Inhibitory control); working memory; cognitive flexibility]

All of the activities above require interaction with other people and have the advantage of interpersonal interaction and also the opportunity for adults to model the skills involved in the games/activities and scaffold young people's development of the skill. "Well... just stop and have a think."

## Online games and apps:

Space Mines Patrol from CogMed <a href="http://www.spaceminespatrol.com/">http://www.spaceminespatrol.com/</a> A game designed to challenge working memory as a taster of the CogMed products.

Many of the online game genres such as Hidden Object Games and Strategy Games have the potential to develop executive functions but they are unlikely to do so in isolation.

Examples of game apps that demand executive functions include:

4 pics 1 word

https://itunes.apple.com/au/app/4-pics-1-word/id595558452

https://play.google.com/store/apps/details?id=de.lotum.whatsinthefoto.us

The four photographs presented are connected by one word that the player must find.

[(Inhibitory control); working memory; cognitive flexibility]

## wikigame

https://itunes.apple.com/au/app/wiki-game-wikipedia-game-racing/id459318432

