

# USING GAMES AND RIDDLES TO INSPIRE CREATIVITY IN GIFTED LEARNERS

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# ABSTRACT

- School curricula should be inspiring and provide time for learners to think, create, and imagine (Banaji, Cranmer, & Perrotta, 2010). Educational games, riddles, and challenges provide flexibility and time to focus on the unique aspects of ideas and content. The use of games enhances creativity (Ott & Pozzi, 2012). Various creativity games and creativity challenges may produce desired outcomes in gifted and talented learners. This session will demonstrate multiple games, riddles, and challenges to inspire creativity in the classroom.



# CAROL FERTIG (2010)



- Looking for puzzles to exercise the minds of your students? Are you in search of interactive puzzles for your kids at home?
  - Post a puzzle a day or a puzzle a week in your classroom.
  - Present a puzzle to your kids while driving in the car.
  - Create a puzzle corner at home or at school.
- The Internet is full of games and puzzles that work the brain and help kids think outside the box.
  - Just search on such terms as “brainteasers” or “puzzles.”
  - <http://resources.prufrock.com/GiftedChildInformationBlog/tabid/57/articleType/ArticleView/articleId/427/Brain-Teasers-for-Gifted-Kids.aspx>



# VIDEO GAME PLAYING TIED TO CREATIVITY

- A study of nearly 500 12-year-olds found that the more kids played video games, the more creative they were in tasks such as drawing pictures and writing stories.
- The survey assessed how often the students used different forms of technology and gauged their creativity with the widely used Torrance Test of Creativity-Figural.
- Linda Jackson (2011), professor of psychology and lead researcher on the project, said the study appears to be the first evidence-based demonstration of a relationship between technology use and creativity.
- The study appears online in the research journal *Computers in Human Behavior*.
  - <http://www.sciencedirect.com/science/article/pii/S0747563211002147>





# CREATIVITY BRAIN TRAINING GAMES

- Confucius Say

- **Game:** There are 3 random words below. Use at least one of them to create a wise Confucian saying. You can aim for wise or for humorous.

- Family
- Tent
- Antique

<http://creativitygames.net/>



- Example: Confucius say... never share a tent with your future mother-in-law.

# RESOURCES



- Hoagies' Gifted Education Page
  - Smart Board Games
  - [http://www.hoagiesgifted.org/smart\\_board\\_games.htm](http://www.hoagiesgifted.org/smart_board_games.htm)
- Top 10 Games for Gifted Children
  - [http://giftedkids.about.com/od/booksandtoys/tp/top\\_ten\\_games.htm](http://giftedkids.about.com/od/booksandtoys/tp/top_ten_games.htm)
- NAGC
  - [Games, Toys and Gifted Children](http://www.nagc.org/resources-publications/resources-parents/games-toys-and-gifted-children)
    - <http://www.nagc.org/resources-publications/resources-parents/games-toys-and-gifted-children>
- Davidson Institute
  - [http://www.davidsongifted.org/db/browse\\_resources\\_211.aspx](http://www.davidsongifted.org/db/browse_resources_211.aspx)

# BRAIN BASHERS



- All time top 10 puzzles:
  - <http://www.brainbashers.com/showpuzzles.asp?formpost=Y&field=ctop10a&page=1&puzzletext=A>
  - <http://www.brainbashers.com/>
  - Check out puzzle 4 & 9.





# NG - BRAIN GAMES

- <http://www.natgeotv.com/ca/brain-games/videos>



**Psychic Phenomena or Not?**  
Illusionist Eric Leclerc needs only a deck of playing cards to make you believe in mind reading. (01:06)

**Good Vibrations**  
This visually awesome experiment shows the complex patterns of sound waves in sand, letting you see what your brain hears. (01:36)

# GAMES APPROPRIATE FOR YOUNG GIFTED LEARNERS

## **Improvisation**

*“imagination guiding action in an unplanned way”*

- Improve enhances creative thinking/action:
  - Tears down mental barriers that block creative thinking and rewards spontaneous, intuitive responses.

# GAMES APPROPRIATE FOR YOUNG GIFTED LEARNERS

- Unconditional support of all answers and trust among group members.

*“Yes, and...”*

- Anyone’s contribution to the group discussion is accepted without judgment.



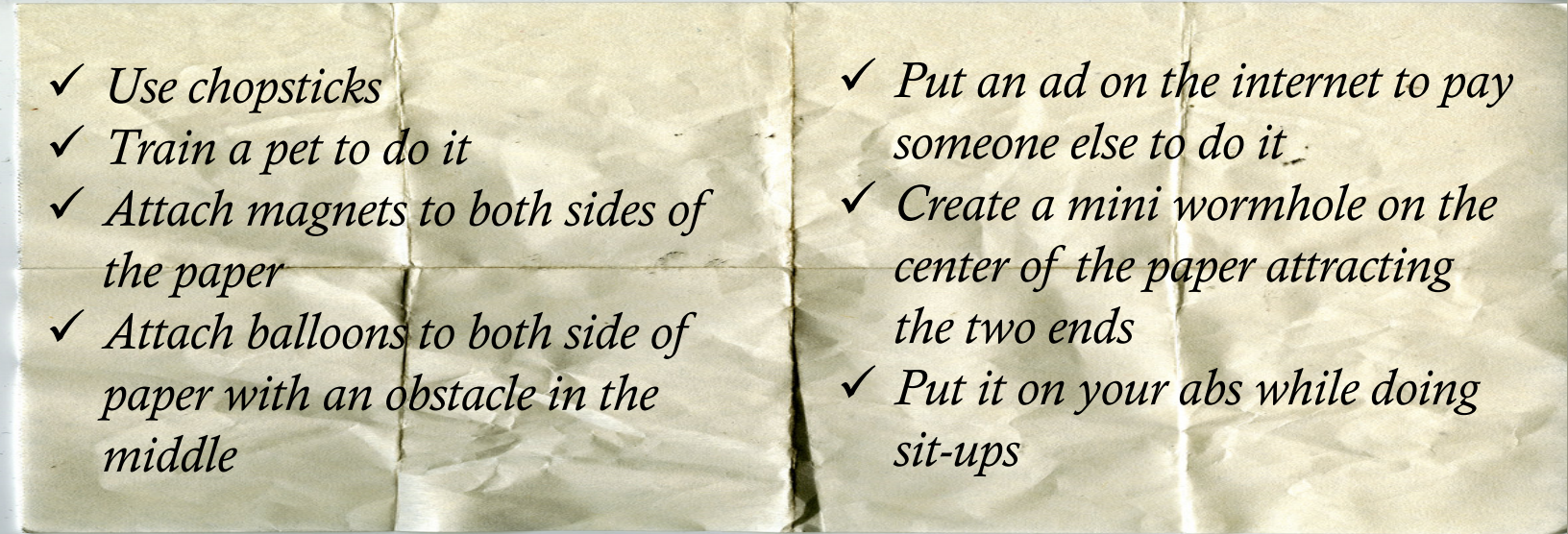
# GAMES APPROPRIATE FOR YOUNG GIFTED LEARNERS

## One-Word Story or Conducted Story



# GAMES APPROPRIATE FOR YOUNG GIFTED LEARNERS

- **Can You Hack It:** This exercise could pose you any random challenge, for which you should think of as many diverse solutions as you can. Performed in rounds or led by a conductor.
- Example: *“Fold a sheet of paper without touching it with your hands”*

- 
- ✓ *Use chopsticks*
  - ✓ *Train a pet to do it*
  - ✓ *Attach magnets to both sides of the paper*
  - ✓ *Attach balloons to both side of paper with an obstacle in the middle*

- ✓ *Put an ad on the internet to pay someone else to do it*
- ✓ *Create a mini wormhole on the center of the paper attracting the two ends*
- ✓ *Put it on your abs while doing sit-ups*



# GAMES APPROPRIATE FOR YOUNG GIFTED LEARNERS



- **Living Wax Museum/  
Historical Talk Show:**  
Students pick an important historical figure to research, and later “become” that person, improvising answers to questions posed by fellow classmates, visiting parents or the talk-show “host”.



# FILL-A-PIX

- Form whimsical pixel-composed pictures when solved
- Using logic, solver determines which squares are painted and which should remain empty until the hidden picture is completely exposed
- Various sizes and difficulty levels



# PATCHWORDS

- Given a set number of horizontal and vertical tiles, and you must drag and drop them into the given patchwork-pattern so that the letters align in every row and column form valid English words



# PATCHWORDS

T	O	R	N	
A	R	E	A	S
B	A	D	G	E
	L	O	S	E

# LOGIC PUZZLES

- Determine the megapixel, first name, and artist for each person using only the clues you'll be given on the next page. Below are all categories and their corresponding options used in this puzzle (in no particular order). You will want to take some time to familiarize yourself with each option and the category it belongs to before you begin your puzzle.

Megapixels	First Names	Appetizers	Artists
1.8	Finn	Chili fries	Claude Monet
2.2	Kai	Fried mozzarella	Gustav Klimit
5.2	McKenzie	Potato skins	Jackson Pollock
6.0	Rodney	Soup of the day	Paul Cexzanne

# LOGIC PUZZLES

- The artist who specialized in Gustav Klimt is not Finn and didn't order potato skins.
- The person who ordered potato skins as an appetizer is not Finn.
- The person who ordered chili fries as an appetizer is not Rodney.
- Either the person with the 5.2 megapixel camera or the person with the 6.0 megapixel camera ordered fried mozzarella.
- The person who ordered soup of the day as an appetizer has a camera with more megapixels than the person who ordered potato skins as an appetizer.
- The person with the 1.8 megapixel camera studied the works of Paul Cezanne.
- The person with the 6.0 megapixel camera didn't study the works of Jackson Pollock.
- Rodney has a camera with fewer megapixels than Mckenzie.
- The artist who specialized in Jackson Pollock ordered fried mozzarella.
- Of Rodney and Mckenzie, one studied the works of Claude Monet and the other ordered chili fries.



# GAMES & RIDDLES APPROPRIATE FOR ADOLESCENT GIFTED LEARNERS

Gifted Adolescents can express high function in several subject areas such as math, science, English, Music, and the Arts

Games and Puzzles allow gifted teens to explore their particular gift and/or interest in a fun non threatening way.



# IPAD APPS

DragonBox Algebra 12+ is a must-have tool for students so they can earn better grades and gain confidence in algebra and mathematics. It is based on the award winning game DragonBox Algebra 5+, but covers more advanced topics in mathematics and algebra.

<http://www.dragonboxapp.com>





# BRAIN POP



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

Also in Spanish

Special section for Educators

Ages 6-17

BrainPop movies may be used to introduce a new lesson or topic, for illustrating complex subject matter or to review before a test. Content is aligned to USA state education standards and is searchable by topic or state standard



# NASA

- Design your own roller coaster – Physics

<http://www.learner.org/interactives/parkphysics/>



The image shows a screenshot of the 'Amusement Park Physics' website. The top section has a blue background with vertical stripes and features the title 'Amusement Park Physics' in a yellow, bubbly font. A cartoon character with white hair and glasses is positioned between the words. Below the title is an orange button with the text 'Park Physics Flashed' and a play icon. The middle section has a light blue background and features the title 'AMUSEMENT PARK PHYSICS' in a yellow, bubbly font. Below the title is the subtitle 'What are the forces behind the fun?' in a smaller, blue font. A photograph of an amusement park with a roller coaster, Ferris wheel, and other rides is shown below the subtitle. At the bottom of the screenshot is another orange button with the text 'Park Physics Classic' and a play icon.

# ENERGY SLANG - MATCHING

The screenshot shows the 'Energy Kids' website interface. On the left is a navigation menu with categories: 'What is Energy?', 'Energy Sources', 'Using & Saving Energy', 'History of Energy', and 'Games & Activities'. Under 'Games & Activities', 'Slang' is selected. The main content area is titled 'Slang' and includes an introductory paragraph: 'Everyday words sometimes have a different meaning to people who work in energy industries. Click on the common words below to learn their energy meanings.' Below this is a 3x6 grid of 18 items, each with an illustration and a label: Row 1: Rabbit (Rabbit), Bird in a cage (Cage), Oil can (Can), Cat (Cat), Christmas tree (Christmas Tree), City gate (City Gate); Row 2: Beer bottle and glass (Coke), Grave (Deadman), Stomach (Digester), Doghouse (Doghouse), Face (Face), Horse head (Horse Head); Row 3: Pig (Pig), Miner (Roughneck), Crown (Royalty), Scrub brush (Scrubber), Solar panel (Solar System), Tank (Tank Farm).

- [http://www.eia.gov/kids/energy.cfm?page=energy\\_slang](http://www.eia.gov/kids/energy.cfm?page=energy_slang)

# GAMES & RIDDLES APPROPRIATE FOR ALL GIFTED LEARNERS

## Play

Creativity is strongly related to play.  
Some even consider play essential for fostering  
creativity.





# CREATIVITY & PLAY

- Allows gifted learners the opportunity to express themselves openly & without judgment
- Promotes a more productive environment



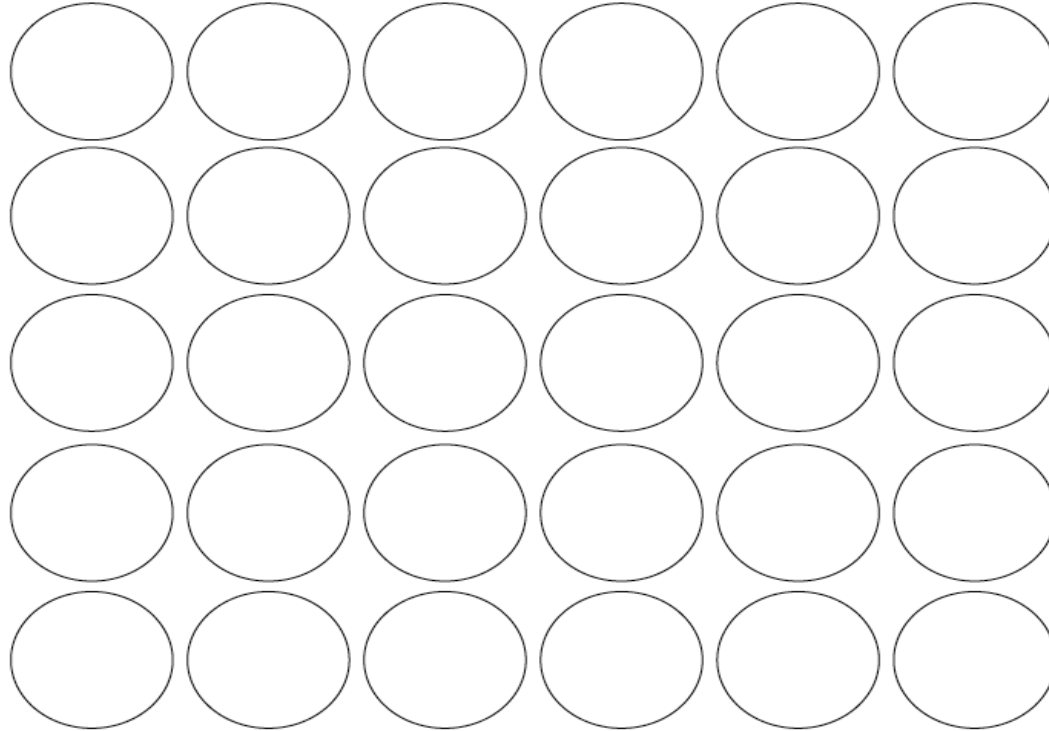
# TIM BROWN



- A creativity exercise mentioned in one of the **TED talks**.
- **Tim Brown** spoke about it in his talk on *creativity and play*. The exercise came from **Bob McKim**, a Professor Emeritus at **Stanford University** who spent a lot of time researching creativity in the 60s and 70s.
- Draw the person next to you in 30 seconds.
- Another idea is to draw as many different pictures using the circles as you can in **one minute only**.
- [http://blog.ted.com/2008/11/06/the\\_powerful\\_li/](http://blog.ted.com/2008/11/06/the_powerful_li/)

# THE 30 CIRCLE TEST

**The 30 Circle Test.** Summarise a Unit of work using only drawings in 60 seconds. Quantity is key, so sketches rather than Monet is better. Then get students to share drawings and allow them time to develop their work. Fantastic activity for consolidating, revision and making their learning concrete.



Circle Test. (2012, November). Retrieved March 5, 2015, from <https://mmscreativeentrepreneurship.wordpress.com/2012/11/29/circle-test/>



# EXAMPLE



Jumpstart Creativity with the 30 Circles Challenge - Skills21. (2013, January). Retrieved March 5, 2015, from <http://www.skills21.org/2013/01/jumpstart-creativity-with-the-30-circles-challenge/>

# QUESTIONS



# PRESENTATION REFERENCE

- Reffel, J. A., Spencer, N. F., Gonzalez-Acevedo, C., Dowling, H., & Adams, K. (2015, March). *Using games and riddles to inspire creativity in gifted learners*. Paper presented at the annual meeting of the Georgia Association for Gifted Children, Athens, GA.
- <http://www.valdosta.edu/colleges/education/psychology-and-counseling/center-for-gifted-studies/conferences.php>