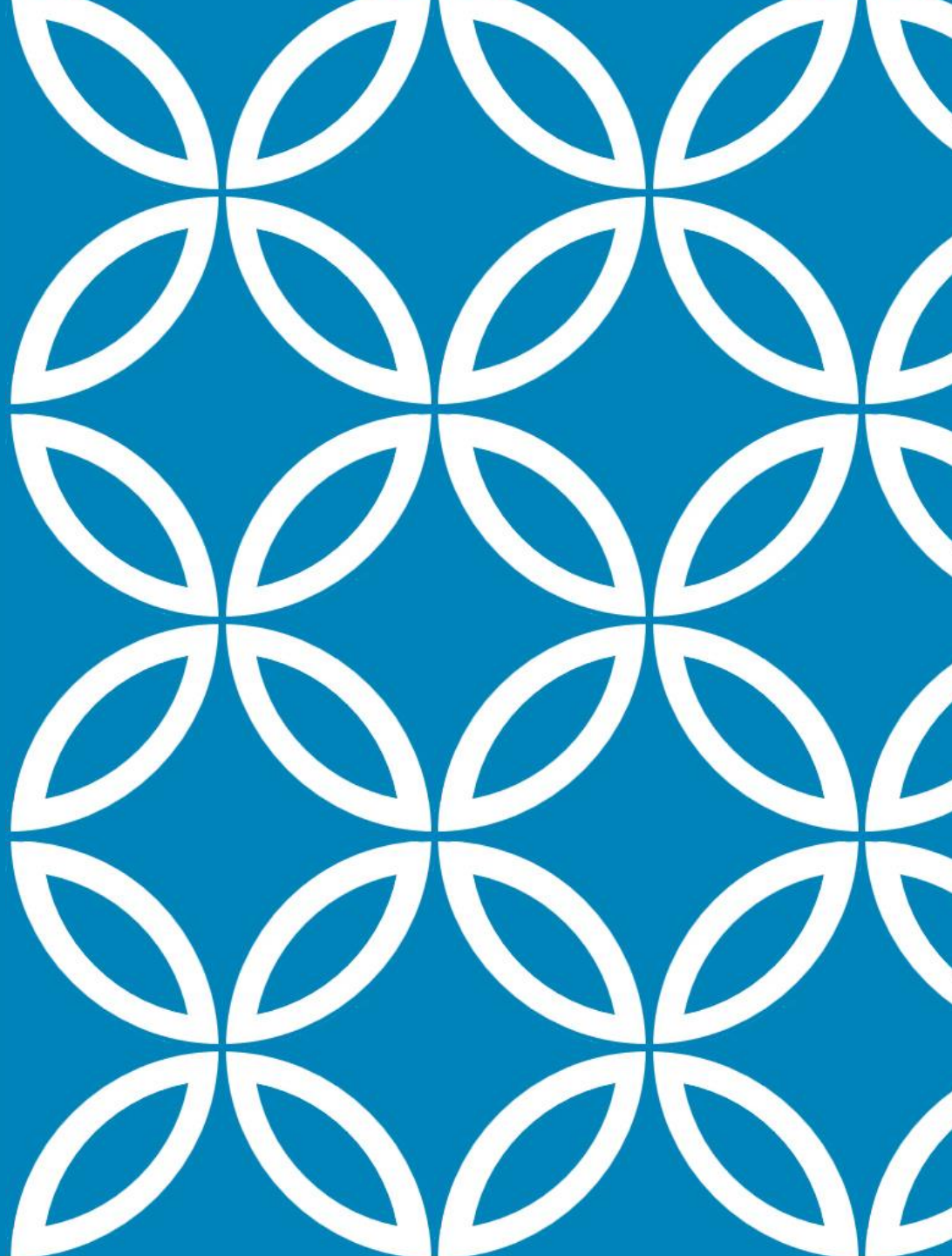


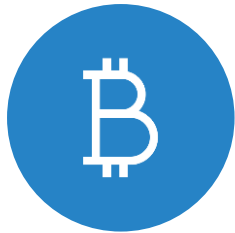
# WHAT IS CREATIVITY AND CAN IT BE TAUGHT?

---

By Paul Carney



# WHY DO WE CREATE?



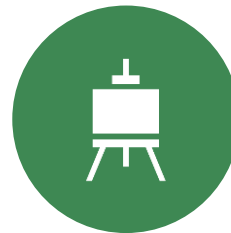
We create out of human need, to solve problems, improve quality of life and for financial gain.



There is a natural human curiosity to invent, investigate & explore. This happens regardless of formal education.



The act of creativity often makes us feel better.



Creative acts might only be valued as Creative at a later date, just as Van Gogh's or Mendel's work was.

# CREATIVITY; WHAT IS IT?



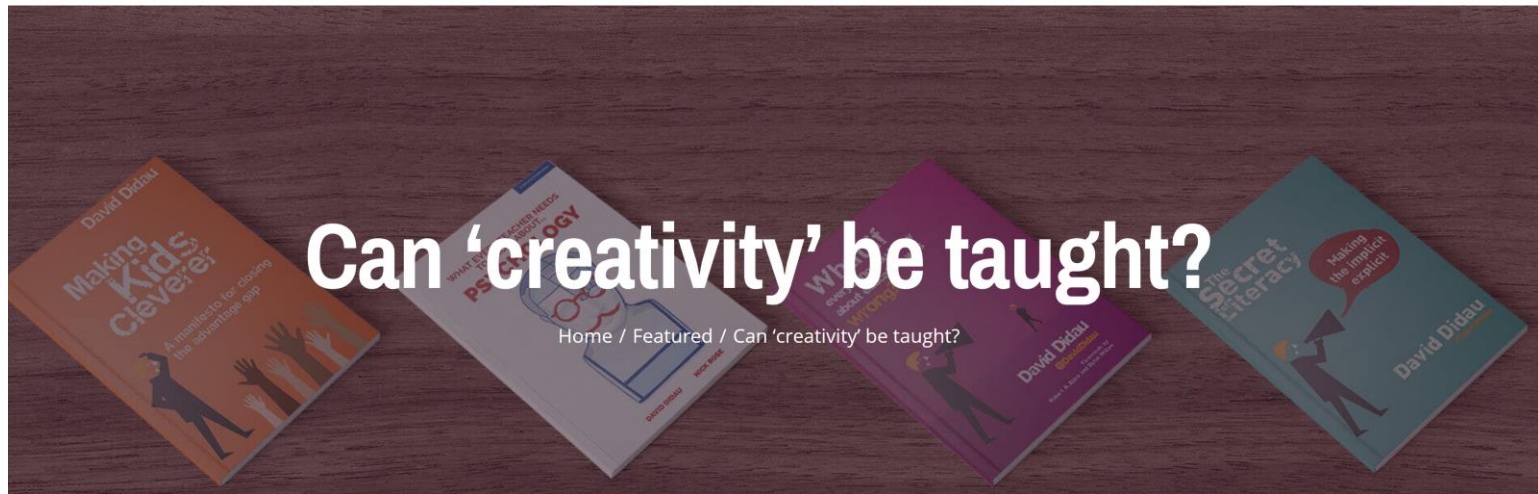
**Creativity is a spectrum between:**

Small 'c' creativity; our personal application of the extrinsic knowledge we have processed and understood to devise novel outcomes.

AND

Capital 'C' Creativity; when creative acts are accepted by the culture and lead to a transformation of the symbolic domain.

Psychologist Csikszentmihalyi



Creativity is happenstance and unquantifiable

Creativity is knowledge, therefore it is a by-product of knowing more


All historic innovators were experts before they made a creative breakthrough

Creativity does not transfer between domains

**INCREASE KNOWLEDGE**



**Creative acts automatically result**



The image is a screenshot of a web page from 'SCHOOLS WEEK'. At the top right, the logo 'SCHOOLS WEEK' is displayed in black and orange. Below the logo, a navigation menu includes 'News', 'Opinion', 'Features', 'Reviews', 'Politics', 'Supplements', 'Archive', and 'Jobs'. A search bar with the text 'Search schools' and a magnifying glass icon is located on the right side. The main content area features the word 'Opinion' in a large blue font. Below this, the article title 'Creativity can't be left to chance – it must be taught' is written in a bold black font. To the left of the title is a portrait of Paul Carney. Below the portrait, his name 'PAUL CARNEY' is written in a bold black font, followed by his title 'Art education consultant and council member of the National Society for Education in Art and Design' in a smaller font. At the bottom of the article preview, there is a date and time 'Sat 26th Jan 2019, 5.00' and a row of social media sharing icons for Twitter, Facebook, WhatsApp, and Email.

Creativity is knowledge in action; it is creating novel products from what we learn

Creative processes and approaches can be identified & should be taught to increase creative potential

Creative processes can be transferred between domains, but to do that we must identify what creativity looks like in each domain

**BY LEARNING  
HOW  
CREATIVITY  
OCCURS  
WITHIN EACH  
DOMAIN WE  
CAN BETTER  
ACTUATE IT.**

**PAUL CARNEY**



# BIG C CREATIVITY

Must be accepted by the gatekeepers of that field of knowledge.

Are only Creative so long as they continue to affect the domain.

Cannot usually occur without expert knowledge.

Not the sole property of 'creative' people.

Varies from domain to domain.

Occurs at the point of intersection between different knowledge bases.

Comes from risk, novelty, playfulness, imagination and experimentation combined with discipline, rigour, reality expertise and determination.

Is driven by motivation and passion.

Csikszentmihalyi



# IDENTIFYING CREATIVITY & CREATIVITY IN DIFFERENT DOMAINS



The expert knowledge threshold is lower in areas such as Pop music because the demand for new, innovative product is centred on things such as style, fashion and taste.

In academia, there is a greater factual knowledge base to assimilate before innovation can be made. Change in these domains must be rigorously reviewed.

# CIRCUMSTANCES IN WHICH CREATIVITY FLOURISHES

---

Willingness, determination

---

Curiosity, openness, wonder & interest

---

Priority; of need, of domain keepers

---

Acceptance by the domain gatekeepers

---

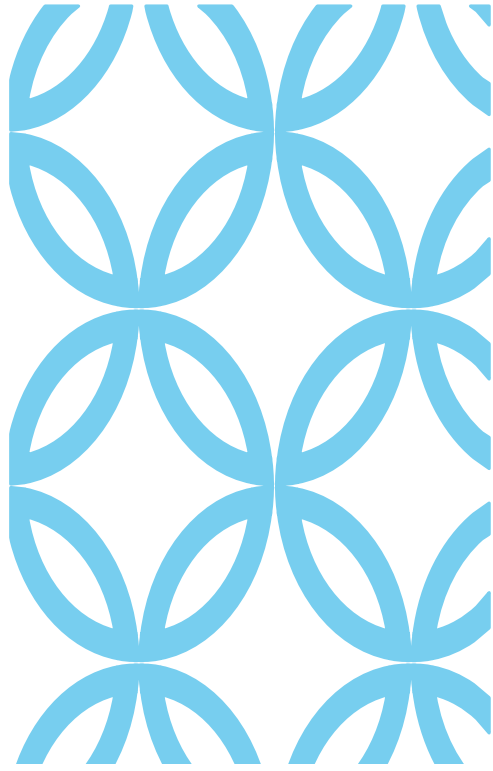
Privilege, opportunity, access to resources

---

How to apply knowledge, thoughts or deeds in original ways

---

Ability to generate and evaluate ideas



# **PROCESSES BY WHICH CREATIVITY OCCURS**

**Serendipity, play** – penicillin, microwave, pacemaker

**Increased knowledge** – Discovery of Pluto

**Methodical** – DNA sequencing

**Alternative viewpoints** – electricity, Volta Galvani

**Observation** – Gravitational waves

**Trial and Error** – Light Bulb

**Visualisation** - Relativity

**Collaboration** – Human Genome project

**Adaptation** - BioBricks

# EXERCISE



# ...CREATIVITY

**Can you think of creative acts that we do on a regular basis?**

So many daily acts we take for granted involve the creation of a new and novel outcome and they don't have to involve the arts.

Only a tiny fraction of creative acts become Creative.

# CREATIVITY IN THE CURRICULUM

creativity in the curriculum is where knowledge stops being a passive incoming process and becomes an extrinsic application of that knowledge.

Look at the Programme of Study for the National Curriculum Purpose of Study.

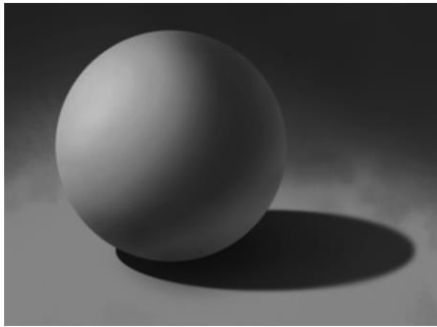
Factual and Procedural knowledge are like the training part of an athletes preparation, they are the tactics, the discipline and the physical and mental toughening.

Creativity is the performance, the game, the thrill of victory or the bitter taste of defeat.

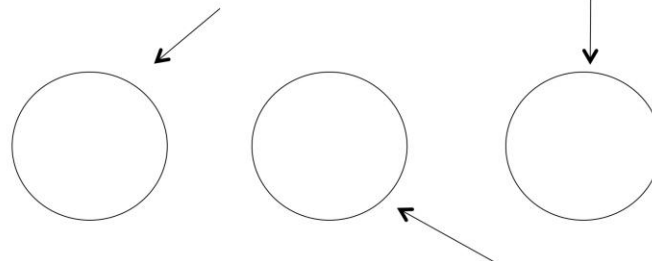
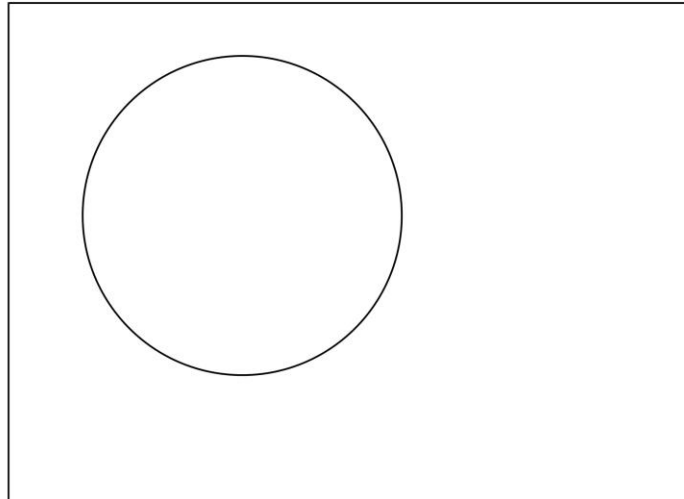


# INCREASING KNOWLEDGE...

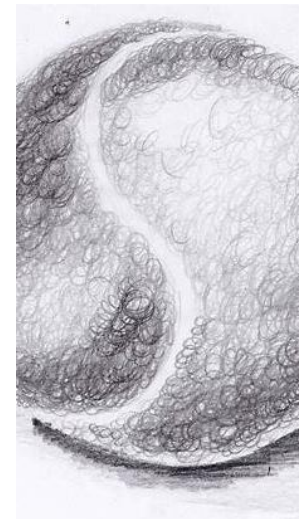
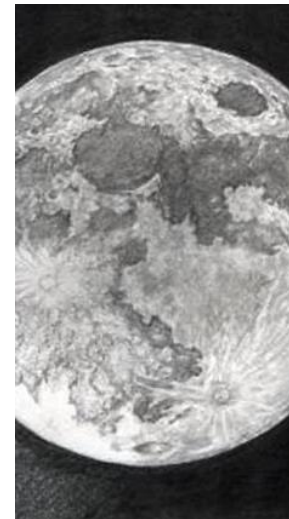
**Task:** Shade the circle to look like the ball



Copy the shading into the circle so that it looks like the ball. Blend your tones smoothly. Make sure that there are no gaps. Go neatly to the edges. Make sure that you copy the way that the shading follows the contour of the ball. Then shade the other 3 circles in the direction of the arrow.



# CREATIVELY APPLYING KNOWLEDGE





**WHAT IS KNOWLEDGE IN YOUR  
DOMAIN & HOW CAN YOU  
CREATIVELY APPLY IT?**

**?**

# CREATIVE GEOGRAPHY



Geography is the study of people, places and environments. Domain knowledge is vital to understanding Geography



Creative Geography is how you apply what you know about Geography to real situations.



Creative Geography is using your knowledge of farming in the Russian Steppe's to inform the organisation of your own culture, to create cooperatives of your own.

# CREATIVE HISTORY



History is the study of the past. Learning historical events and remembering them is important.

Creative History is understanding the purpose of knowing history. What do we want to do with our knowledge of History? How can it affect future choices?

When you answer these questions then you begin to involve creative processes; making decisions, informing actions, affecting our future planning.

For history to become meaningful it needs the relevance that creativity brings; how can we use and apply what we know about the past?

# CREATIVE PHYSICAL EDUCATIO N

**Physical Education** may not seem to be a creative subject. But when you think of physical exercise in terms of how the individual applies their subject knowledge to themselves and their environment and it becomes very creative.

Creative PE is learning a new sporting technique then apply that in a game.

Creative PE is producing a significantly new (for me) sporting action, such as doing a climbing wall, abseiling, running a sub four minute mile.

When I break a world record I'm Creative but only for as long as that record stands. Compare these creative actions to others in groups and we see that competitive sport is creative because it is constantly producing new and variable outcomes.

# CREATIVE ENGLISH



English Language is of course full of creativity by its very nature.

You only have to construct a sentence to begin your creative journey, but creativity in English is learning how to create original, meaningful and imaginative sentences.

Creativity in English is shaped by rules and codes, audience, purpose and intent, but also by passion, motivation and desire.

Through study of how writers have shaped and changed literature we begin to learn how creativity affects that domain. By learning how to creatively apply this knowledge of cultural change then the chances of making influential change increases.

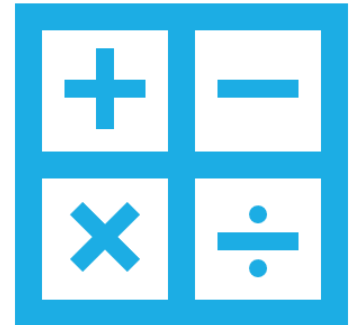
# CREATIVE MATHEMATICS

Mathematics depends on rules and axioms, strict systems that we need to learn before we can Creatively apply them.

The chances of any student going on to redefine the laws of mathematics are very slim but whilst we are unlikely to ever change the domain rules of maths we can all be low-level creative with maths very easily.

Playing with numbers, finding new routes to get to the same answer, inventing and problem solving are integral to the way many people teach and learn maths. Maths is open to numerous methods and techniques, it is cultural, even ambiguous.

If you want a student to apply the mathematics to their own environment, when you want them to use what they know to create a new outcome then they are being creative.

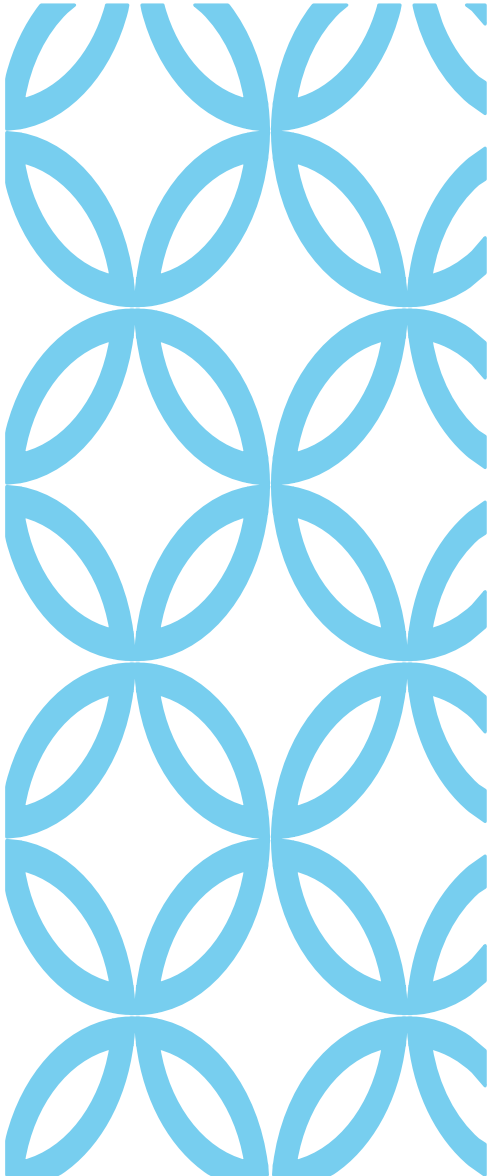


# CREATIVE LANGUAGE

S

The body of knowledge we need to learn to speak a language is static and it must be learned, but it is the way we absorb then apply this knowledge where creativity is important.

It is the way we employ that language, construct our own meanings from it that creativity is vital because this is how we keep wanting to learn more.



Creativity gives us a reason to study, it motivates us and it helps us make intrinsic connections to the knowledge we have learned. It's what we do with the stuff we know.

We do it all the time; on trains, in our offices, sat on our tablets, in the gym, walking on the moors, in the car, our brains can't help making new stuff; applying what we know to the world around us.

We need greater knowledge to do that more effectively, but we also need to understand the different ways we can use that knowledge too.

---

**TO SUMMARISE**