

Liberating the Creative Mind

Paul Kitcatt

Are you creative?

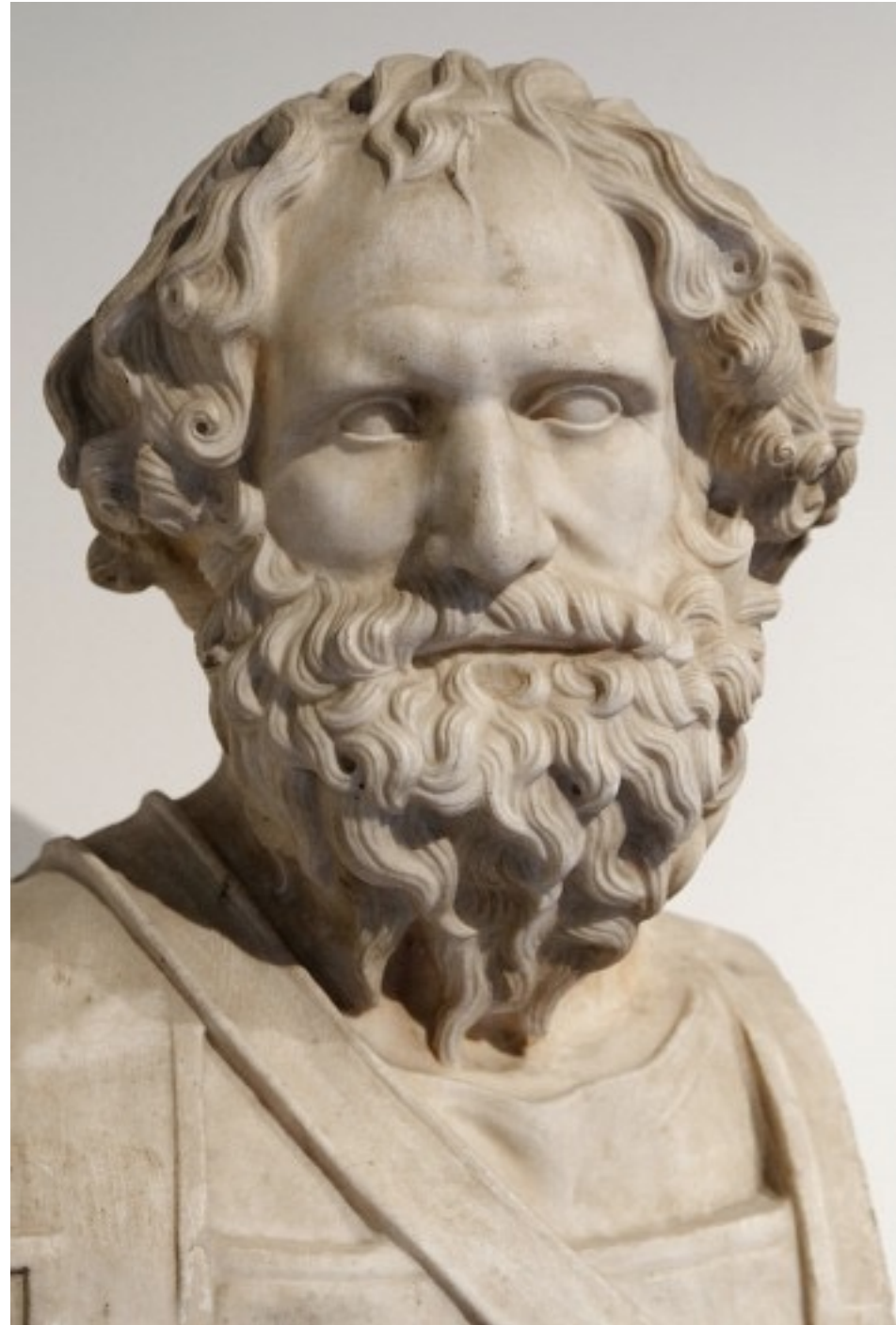


Did you draw or paint as a child?

NASA devised a test to measure creative thinking

- When they applied it to 3–5-year-olds, 98% came out at genius level
- At ten years old, 30% were genius level
- At 15, 12%
- By age 31, 2%
- Why?
- Does it matter?
- And if it does, what can we do about it?

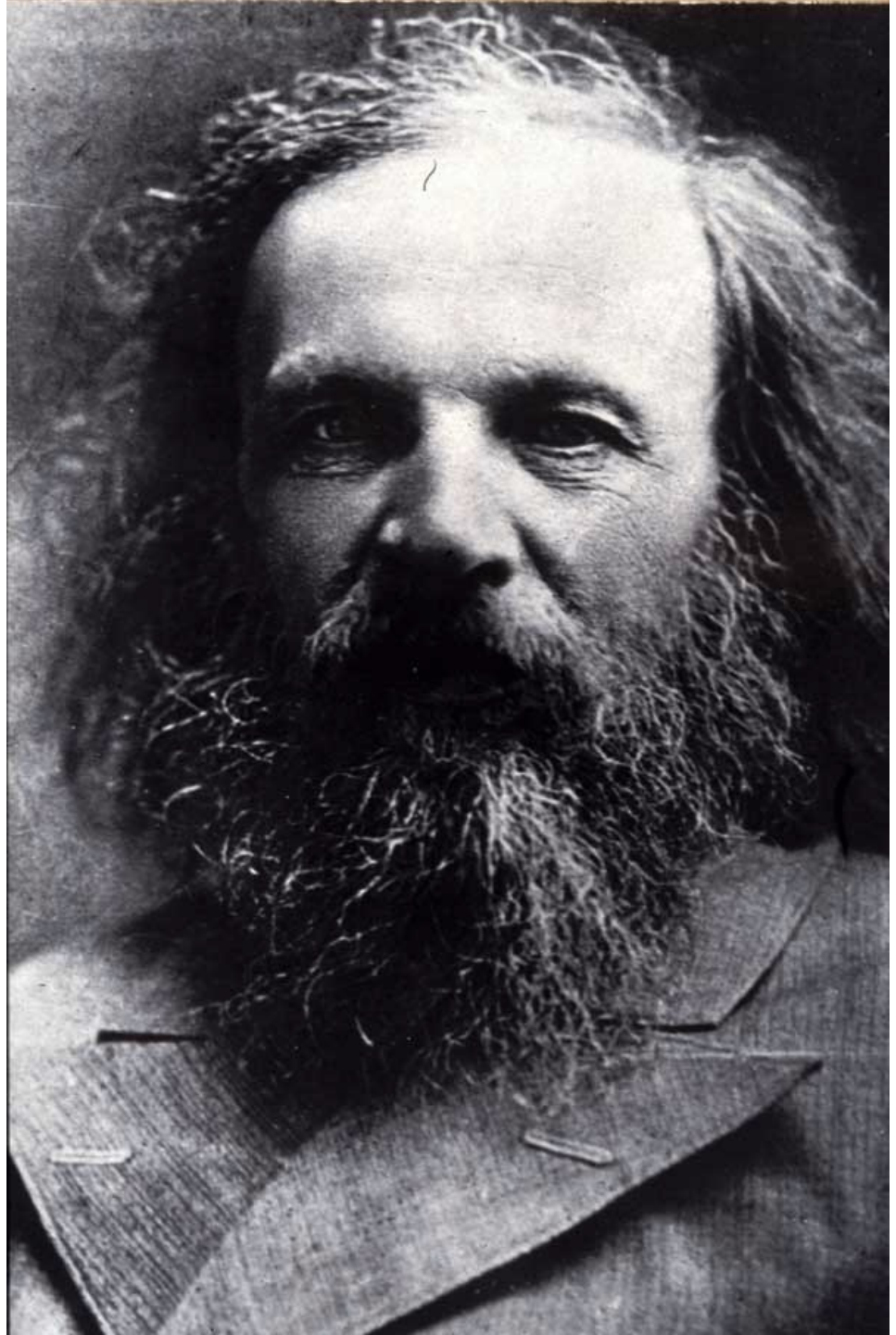
How to be creative



Archimedes' Principle

The buoyant force acting on a submerged or floating object is equal to the weight of the displaced fluid.

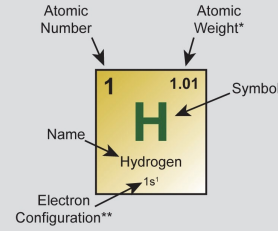




Periodic Table of the Elements

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|---|--|---|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|---|--|--|--|---|--|--|--|---|--|--|--|---|--|--|--|---|--|
| | Group 1 1a | | | | | | | | | | | | | | | | | | | | | | | | | | 18 0 | | | | | | | | | |
| Period 1 | 1 H Hydrogen 1s ¹ | | | | | | | | | | | | | | | | | | | | | | | | | | 2 He Helium 1s ² | | | | | | | | | |
| 2 | 3 Li Lithium 1s ² 2s ¹ | | 4 Be Beryllium 1s ² 2s ² | | | | | | | | | | | | | | | | | | | | | | | | 10 Ne Neon 1s ² 2s ² 2p ⁶ | | | | | | | | | |
| 3 | 11 Na Sodium [Ne]3s ¹ | | 12 Mg Magnesium [Ne]3s ² | | | | | | | | | | | | 13 Al Aluminum [Ne]3s ² 3p ¹ | | 14 Si Silicon [Ne]3s ² 3p ² | | 15 P Phosphorus [Ne]3s ² 3p ³ | | 16 S Sulfur [Ne]3s ² 3p ⁴ | | 17 Cl Chlorine [Ne]3s ² 3p ⁵ | | 18 Ar Argon [Ne]3s ² 3p ⁶ | | | | | | | | | | | |
| 4 | 19 K Potassium [Ar]4s ¹ | | 20 Ca Calcium [Ar]4s ² | | 21 Sc Scandium [Ar]3d ¹ 4s ² | | 22 Ti Titanium [Ar]3d ² 4s ² | | 23 V Vanadium [Ar]3d ³ 4s ² | | 24 Cr Chromium [Ar]3d ⁵ 4s ¹ | | 25 Mn Manganese [Ar]3d ⁵ 4s ² | | 26 Fe Iron [Ar]3d ⁶ 4s ² | | 27 Co Cobalt [Ar]3d ⁷ 4s ² | | 28 Ni Nickel [Ar]3d ⁸ 4s ² | | 29 Cu Copper [Ar]3d ¹⁰ 4s ¹ | | 30 Zn Zinc [Ar]3d ¹⁰ 4s ² | | 31 Ga Gallium [Ar]3d ¹⁰ 4s ² 4p ¹ | | 32 Ge Germanium [Ar]3d ¹⁰ 4s ² 4p ² | | 33 As Arsenic [Ar]3d ¹⁰ 4s ² 4p ³ | | 34 Se Selenium [Ar]3d ¹⁰ 4s ² 4p ⁴ | | 35 Br Bromine [Ar]3d ¹⁰ 4s ² 4p ⁵ | | 36 Kr Krypton [Ar]3d ¹⁰ 4s ² 4p ⁶ | |
| 5 | 37 Rb Rubidium [Kr]5s ¹ | | 38 Sr Strontium [Kr]5s ² | | 39 Y Yttrium [Kr]4d ¹ 5s ² | | 40 Zr Zirconium [Kr]4d ² 5s ² | | 41 Nb Niobium [Kr]4d ⁴ 5s ¹ | | 42 Mo Molybdenum [Kr]4d ⁵ 5s ¹ | | 43 Tc Technetium [Kr]4d ⁵ 5s ² | | 44 Ru Ruthenium [Kr]4d ⁷ 5s ¹ | | 45 Rh Rhodium [Kr]4d ⁸ 5s ¹ | | 46 Pd Palladium [Kr]4d ¹⁰ | | 47 Ag Silver [Kr]4d ¹⁰ 5s ¹ | | 48 Cd Cadmium [Kr]4d ¹⁰ 5s ² | | 49 In Indium [Kr]4d ¹⁰ 5s ² 5p ¹ | | 50 Sn Tin [Kr]4d ¹⁰ 5s ² 5p ² | | 51 Sb Antimony [Kr]4d ¹⁰ 5s ² 5p ³ | | 52 Te Tellurium [Kr]4d ¹⁰ 5s ² 5p ⁴ | | 53 I Iodine [Kr]4d ¹⁰ 5s ² 5p ⁵ | | 54 Xe Xenon [Kr]4d ¹⁰ 5s ² 5p ⁶ | |
| 6 | 55 Cs Cesium [Xe]6s ¹ | | 56 Ba Barium [Xe]6s ² | | ♦ | | 72 Hf Hafnium [Xe]4f ¹⁴ 5d ² 6s ² | | 73 Ta Tantalum [Xe]4f ¹⁴ 5d ³ 6s ² | | 74 W Tungsten [Xe]4f ¹⁴ 5d ⁴ 6s ² | | 75 Re Rhenium [Xe]4f ¹⁴ 5d ⁵ 6s ² | | 76 Os Osmium [Xe]4f ¹⁴ 5d ⁶ 6s ² | | 77 Ir Iridium [Xe]4f ¹⁴ 5d ⁷ 6s ² | | 78 Pt Platinum [Xe]4f ¹⁴ 5d ⁹ 6s ¹ | | 79 Au Gold [Xe]4f ¹⁴ 5d ¹⁰ 6s ¹ | | 80 Hg Mercury [Xe]4f ¹⁴ 5d ¹⁰ 6s ² | | 81 Tl Thallium [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ¹ | | 82 Pb Lead [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ² | | 83 Bi Bismuth [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ³ | | 84 Po Polonium [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁴ | | 85 At Astatine [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁵ | | 86 Rn Radon [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁶ | |
| 7 | 87 Fr Francium [Rn]7s ¹ | | 88 Ra Radium [Rn]7s ² | | ★ | | 104 Rf Rutherfordium [Rn]5f ¹⁴ 6d ² 7s ² | | 105 Db Dubnium [Rn]5f ¹⁴ 6d ³ 7s ² | | 106 Sg Seaborgium [Rn]5f ¹⁴ 6d ⁴ 7s ² | | 107 Bh Bohrium [Rn]5f ¹⁴ 6d ⁵ 7s ² | | 108 Hs Hassium [Rn]5f ¹⁴ 6d ⁶ 7s ² | | 109 Mt Meitnerium [Rn]5f ¹⁴ 6d ⁷ 7s ² | | 110 Ds Darmstadtium [Rn]5f ¹⁴ 6d ⁸ 7s ² | | 111 Rg Roentgenium [Rn]5f ¹⁴ 6d ⁹ 7s ² | | 112 Cn Copernicium [Rn]5f ¹⁴ 6d ¹⁰ 7s ² | | 113 Uut Ununtrium [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 7p ¹ | | 114 Fl Flerovium [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 7p ² | | 115 Uup Ununpentium [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 7p ³ | | 116 Lv Livermorium [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 7p ⁴ | | 117 Uus Ununseptium [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 7p ⁵ | | 118 Uuo Ununoctium [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 7p ⁶ | |

| | | | |
|--|-----------------------|--|-------------------|
| | Alkali Metals | | Lanthanide Series |
| | Alkaline Earth Metals | | Actinide Series |
| | Transition Metals | | Halogens |
| | Non-metals | | Inert Gases |
| | Other Metals | | |



- Aa** - Solid ♦
- Aa** - Gas
- Aa** - Liquid
- Aa** - Synthetically Prepared ★

| | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|--|---|---|---|--|--|---|---|
| 57 La Lanthanum [Xe]5d ¹ 6s ² | 58 Ce Cerium [Xe]4f ¹ 5d ¹ 6s ² | 59 Pr Praseodymium [Xe]4f ³ 6s ² | 60 Nd Neodymium [Xe]4f ⁴ 6s ² | 61 (145) Pm Promethium [Xe]4f ⁶ 6s ² | 62 Sm Samarium [Xe]4f ⁶ 6s ² | 63 Eu Europium [Xe]4f ⁷ 6s ² | 64 Gd Gadolinium [Xe]4f ⁷ 5d ¹ 6s ² | 65 Tb Terbium [Xe]4f ⁹ 6s ² | 66 Dy Dysprosium [Xe]4f ¹⁰ 6s ² | 67 Ho Holmium [Xe]4f ¹¹ 6s ² | 68 Er Erbium [Xe]4f ¹² 6s ² | 69 Tm Thulium [Xe]4f ¹³ 6s ² | 70 Yb Ytterbium [Xe]4f ¹⁴ 6s ² | 71 Lu Lutetium [Xe]4f ¹⁴ 5d ¹ 6s ² |
| 89 (227) Ac Actinium [Rn]6d ¹ 7s ² | 90 Th Thorium [Rn]6d ² 7s ² | 91 Pa Protactinium [Rn]5f ² 6d ¹ 7s ² | 92 U Uranium [Rn]5f ³ 6d ¹ 7s ² | 93 (237) Np Neptunium [Rn]5f ⁴ 6d ¹ 7s ² | 94 (244) Pu Plutonium [Rn]5f ⁶ 7s ² | 95 (243) Am Americium [Rn]5f ⁷ 7s ² | 96 (247) Cm Curium [Rn]5f ⁷ 6d ¹ 7s ² | 97 (247) Bk Berkelium [Rn]5f ⁷ 7s ² | 98 (251) Cf Californium [Rn]5f ⁷ 7s ² | 99 (252) Es Einsteinium [Rn]5f ⁷ 7s ² | 100 (257) Fm Fermium [Rn]5f ⁷ 7s ² | 101 (258) Md Mendelevium [Rn]5f ⁷ 7s ² | 102 (259) No Nobelium [Rn]5f ⁷ 7s ² | 103 (262) Lr Lawrencium [Rn]5f ⁷ 7s ² 7p ¹ |

* Based on Carbon-12. (###) represents most stable or most stable expected isotope.
 ** Some electron configurations are based on theoretical expected arrangements.
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Every simply connected, closed 3-manifold is homeomorphic to the 3-sphere

Poincaré

believed that logic was not a way to invent but a way to structure ideas and
that logic limits ideas

Instead, he favoured walking.

He believed it made the ideas fixed in his head move around and come into contact – it provoked serendipity

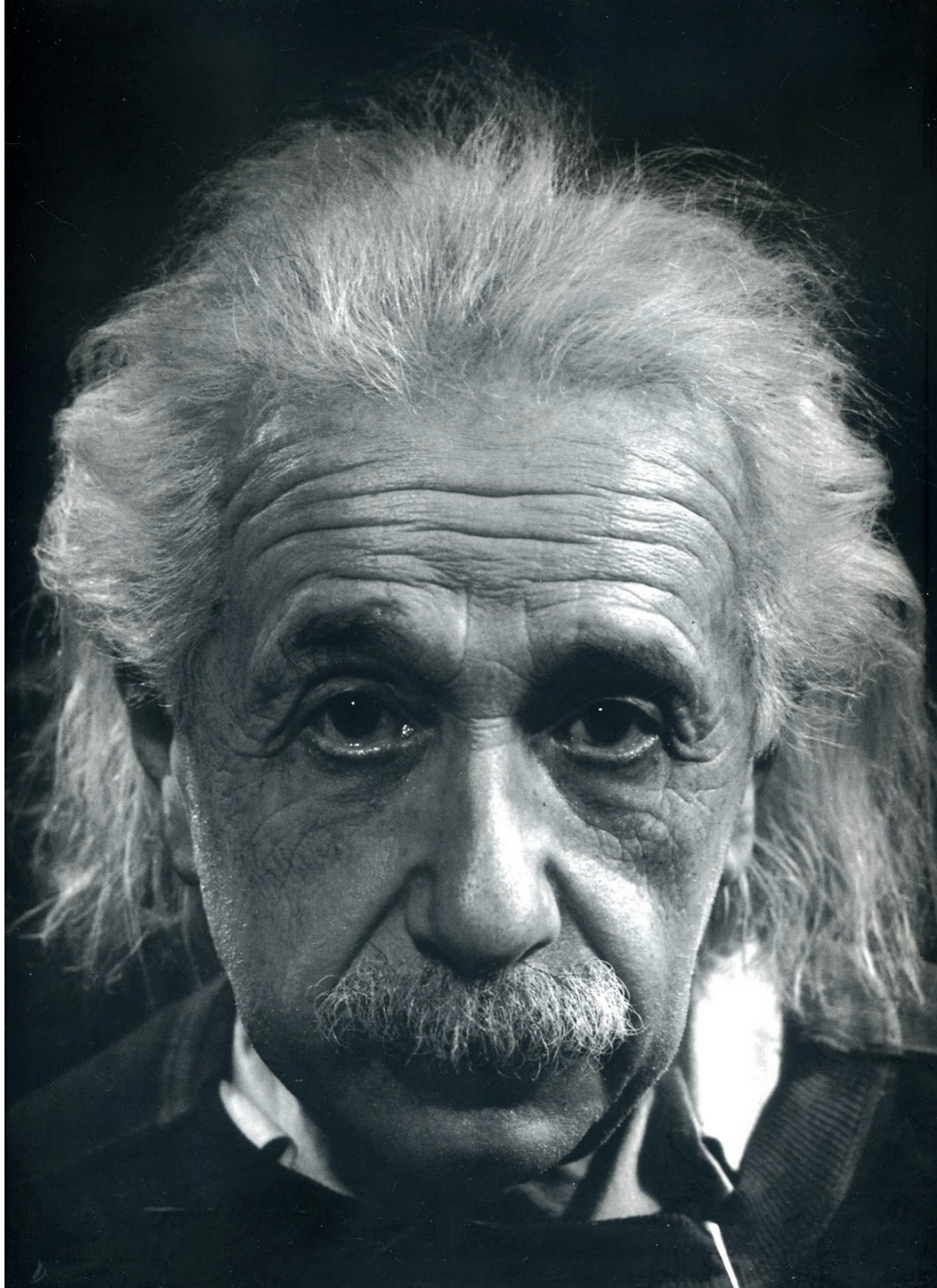


What's so special about these activities?

You're not at a desk, on the phone, doing email or even trying to do anything at all.

Which means another part of your mind – the undermind, or subconscious - can push up into your conscious mind.

Provided it has been fed and watered.



$$E=mc^2$$

Albert Einstein, 1905.

'When I examine myself and my methods of thought I come to the conclusion that the gift of fantasy has meant more to me than my talent for absorbing positive knowledge.'

Einstein

He imagined what it would be like to ride on a beam of light

But you don't have to imagine anything

You just have to stop trying to find an answer

Information

Incubation

Inspiration

Evaluation

Information =

Brief

+

Observation

+

Questions

Mendeleev worked on classifying the elements for ten years

When he stopped trying to find an answer, it came to him

Same for Archimedes

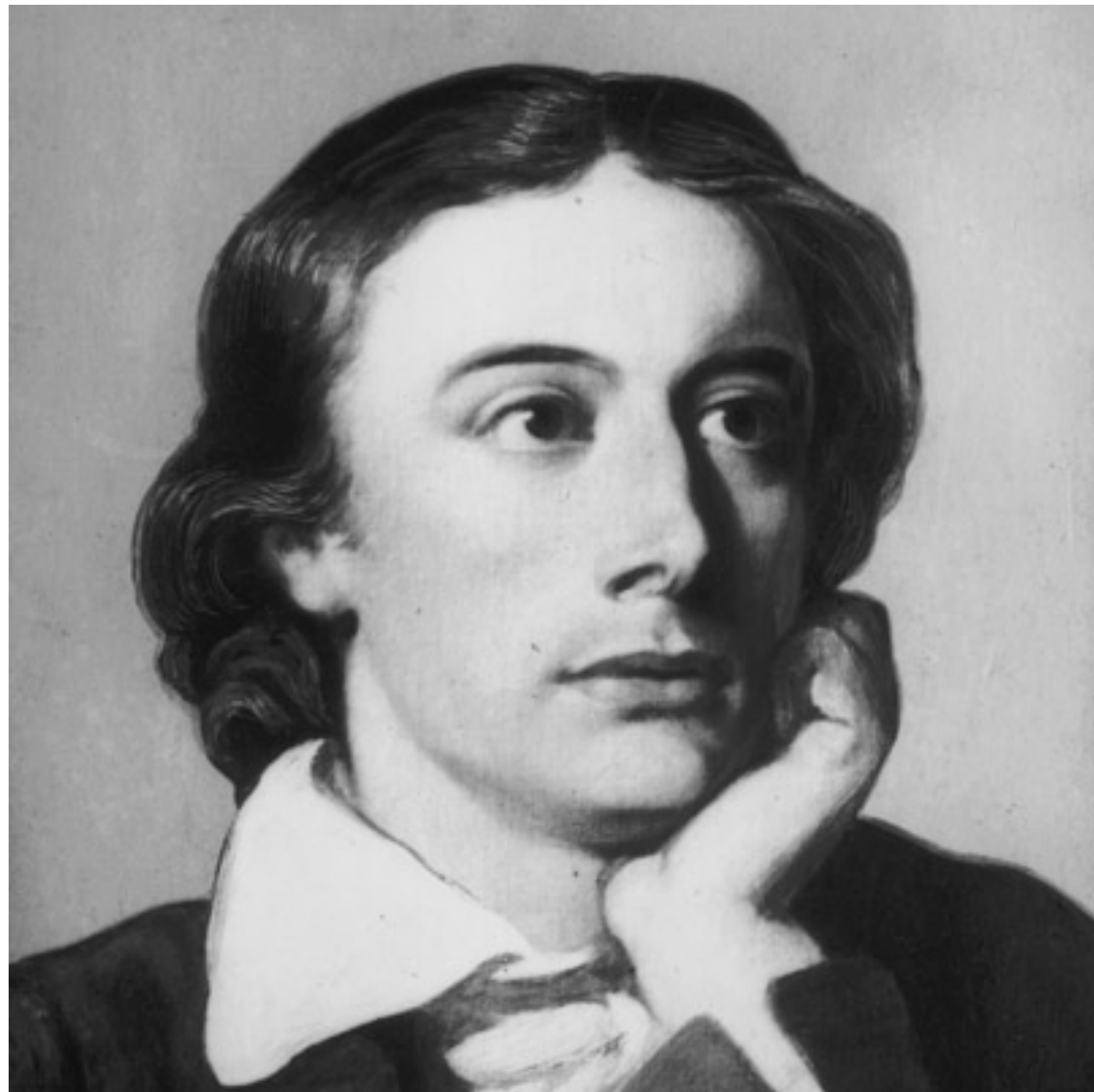
Incubation

Calming of the mind

Not consciously thinking about the question

Doing something else (or nothing)

Return to it in a state of negative capability



My heart aches, and a drowsy numbness pains
My sense, as though of hemlock I had drunk,
Or emptied some dull opiate to the drains
One minute past, and Lethe-wards had sunk:

'Negative Capability - that is, when a man is capable of being in uncertainties, mysteries, doubts, without any irritable reaching after fact and reason.'

Not trying to find an answer

≠ not thinking

It means not thinking in our default mode

$$2 + 2 = 4$$

There are only 10 types
of people in this world;
those who understand binary
and those who don't.

You have to let your undermind take over

Relax

Like in a bath

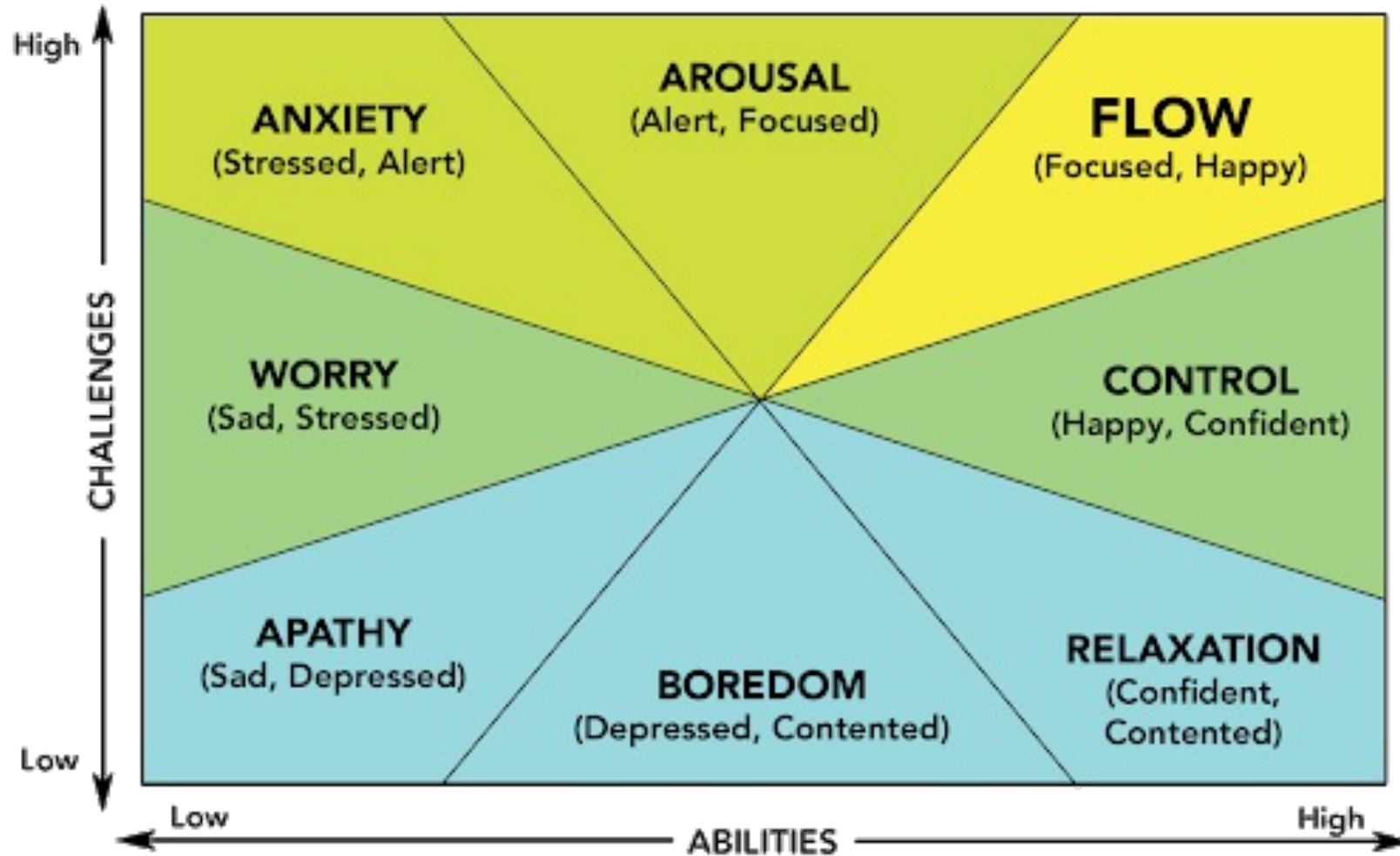
Bed

Or walking

The conditions for creative thinking are:

- Time
- Space
- A tight brief
- A deadline
- Information
- Experience

The Psychology of Flow



“Being completely involved in an activity for its own sake. The ego falls away. Time flies. Every action, movement, and thought follows inevitably from the previous one, like playing jazz. Your whole being is involved, and you're using your skills to the utmost.”

Mihaly Csikszentmihalyi

What's stopping you?



1and1 Mail - Send email

Send Advanced Save Draft Close

Send to 50 email(s) in 4 group(s)

From [1]info@1and1soft.com

Message

Subject Information Request UTF-8

Dear [%FirstName],

As per [%Company]'s request to receive regular updates about new product lines, upgrades and additional services here, I am enclosing the following information for you:

/* List the information */

I hope you find this information useful. We strives to provide you, our valued customer, with the very best service.

If you no longer wish to receive these updates, please state that in a reply to this message.

Sincerely,

[%FromName]
[%FromEmail]
Customer Service Dept

Attachment

Add Delete

Preview and Test

Test emails Preview Test

Google

facebook



twitter



Sleep faster, we need the pillows



The role of the creative director

If we want to liberate the creative minds of children in school, we need first to liberate the creative minds of their teachers.

Liberate you from what?

- League tables
- The national curriculum
- Examinations
- Traditional subject boundaries
- Set books
- Limiting ideas about education
- emails

The cultural context

- Creativity is childish
- It's play
- It's not important compared to hard subjects
- You're not going to get a job doing it
- You're not very good

It's true that creativity is childish.

Picasso said,

'Every child is an artist; the problem is staying an artist when you grow up.'

'It took me four years to paint like Raphael, but a lifetime to paint like a child.'

And it can be playful – even fun.

Why is this a bad thing?

And it's therefore not important,
like a hard subject.

Sometimes, in my agency, we'd job swap.
The suits always maintained the creatives had it easy.
So we'd give them a brief, etc.
And then they'd be faced with this:

Meanwhile, the creatives had been answering the phones...

And you're not going to get a job being creative?

In 2021, creative industries contributed £109bn to the UK economy – 5.6% of the total.

That sounds like a lot of jobs.

Perhaps someone should tell the government?

And finally – you're not very good.

Every single creative person I know suffers from imposter syndrome

Including me

Because every one of us has been told we're not good enough

And now, at my vast age, I think it was pure jealousy

Because we were doing what everyone wishes they were doing –
making something new

'If you hear a voice within you say,
"you cannot paint,"
then by all means paint
and that voice will be silenced.'

Van Gogh

So – if I were in charge of education,

I would encourage creative thinking in all subjects.

Because I think the world needs as many creative thinkers
as it can get.

Because it makes life better

And because we've got ourselves into a bit of a mess

And I would do it by

Scrapping league tables

The national curriculum

Exams

Set books

Encourage cross-curricular learning

Redefine school inspectors as a resource rather than assessors

Halve the class sizes

Fit carpets and curtains in every classroom

You may say that I'm a dreamer...

'But a man's reach should exceed his grasp – or what's a heaven for?'

Cruelty to children must stop. Full stop.

What's your vision?