

DESIGN & ENGINEERING



Creativity: Initiating Creative Design Brainstorming

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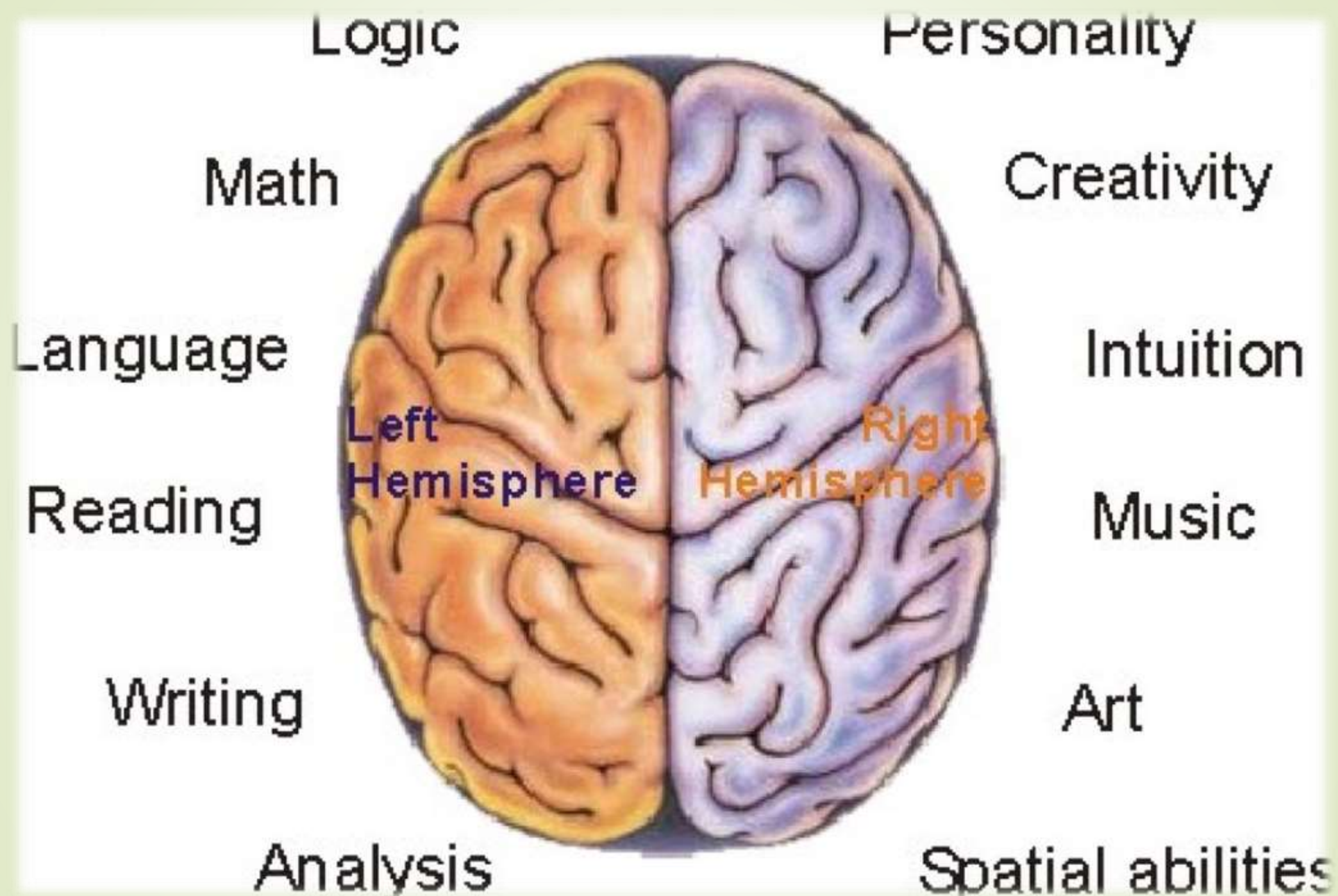
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Creativity



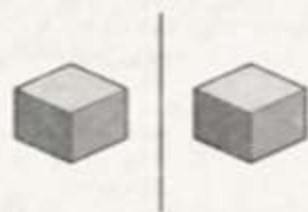
Creativity is the act of turning new and imaginative ideas into reality. Creativity is characterised by the ability to perceive the world in new ways, to find hidden patterns, to make connections between seemingly unrelated phenomena, and to generate solutions.



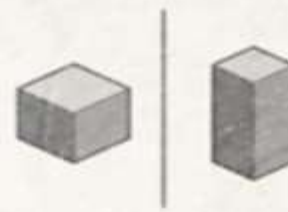
Three Components of Creativity



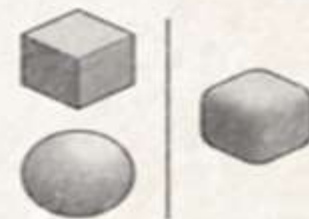
THE BASIC ELEMENTS OF CREATIVITY



COPY



TRANSFORM



COMBINE

Enhance Creative Thinking



Creative cognition is the use of regular cognitive operations to solve problems in novel ways.

Following are some positive steps you can take to enhance your creative thinking

Develop a creative attitude :

It is essential to develop confidence that you can provide a creative solution to a problem. Although you may not visualize the complete path through to the final solution at the time you first tackle a problem, you must have self-confidence ; you must believe that a solution will develop before you are finished. Of course, confidence comes with success, so start small and build your confidence up with small successes



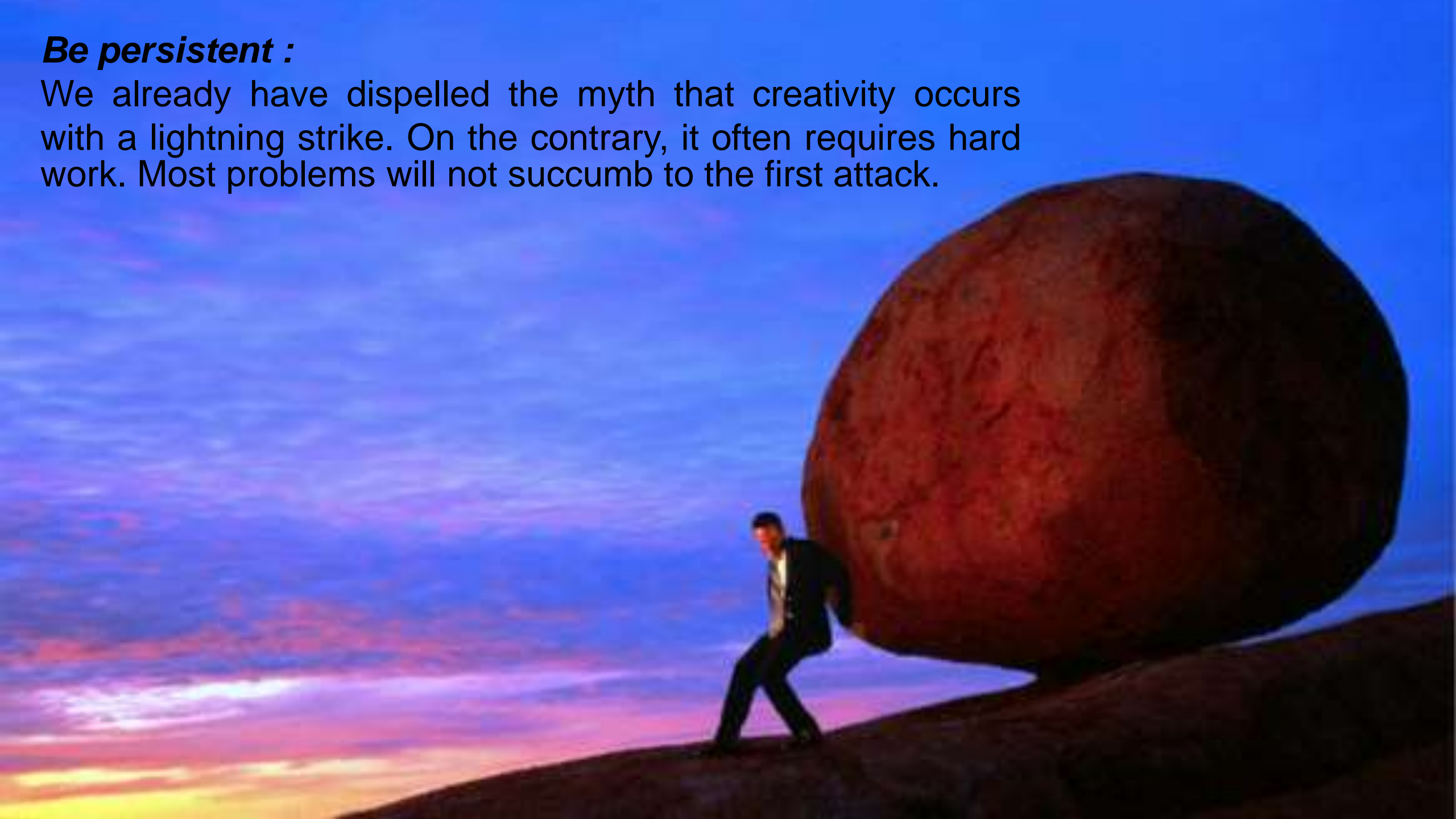
Unlock your imagination :

You must rekindle the vivid imagination you had as a child. One way to do so is to begin to question again. Ask “why” and “what if,” “Why Not” “How”



Be persistent :

We already have dispelled the myth that creativity occurs with a lightning strike. On the contrary, it often requires hard work. Most problems will not succumb to the first attack.



Develop an open mind :

Having an open mind means being receptive to ideas from any and all sources. The solutions to problems are not the property of a particular discipline, nor is there any rule that solutions can come only from persons with college degrees.



Suspend your judgment :

We have seen that creative ideas develop slowly, but nothing inhibits the creative process more than critical judgment of an emerging idea. Engineers, by nature, tend toward critical attitudes, so special forbearance is required to avoid judgment at an early stage of conceptual design.



Set problem boundaries :

We place great emphasis on proper problem definition as a step toward problem solution. Establishing the boundaries of the problem is an essential part of problem definition. Experience shows that setting problem boundaries appropriately, not too tight or not too open, is critical to achieving a creative solution.





**How to
Initiate Creative
Thinking ?**

**Sit somewhere with
no distractions,
think again what
you have already
done and
start jotting
down ideas**



Start sketching
whatever in your
mind or visualizing



**Now start putting things
haphazardly.**

**Pick out
things that
catch your eye
& put them
all together.**





Then start again over.

**You should
continue this
process a
few times
until
you run out
of ideas.**

**See what idea or scheme catches
your eye.**

**Ask yourself,
What caught
your eye
and
why ?**





**should this be
the focal point?
Will it work
correctly ?**

PLAN

Basically it is like a flow chart.

**If yes,
then
keep
working
on it.**



An abstract graphic featuring a series of colorful triangles (blue, green, yellow, orange, red, purple) scattered across the frame. These triangles are arranged along a path defined by multiple overlapping, wavy lines in shades of green, yellow, and pink. The overall effect is a sense of movement and flow, with the triangles appearing to be part of a larger, dynamic composition.

**You should look for
other items
and accessories
also that
coordinate
with it.**

**If no, then go back
and**

**find another
idea**

**and start
working
with that.**

**You may have come up
with an even
better
idea**

**of your own for
brainstorming**



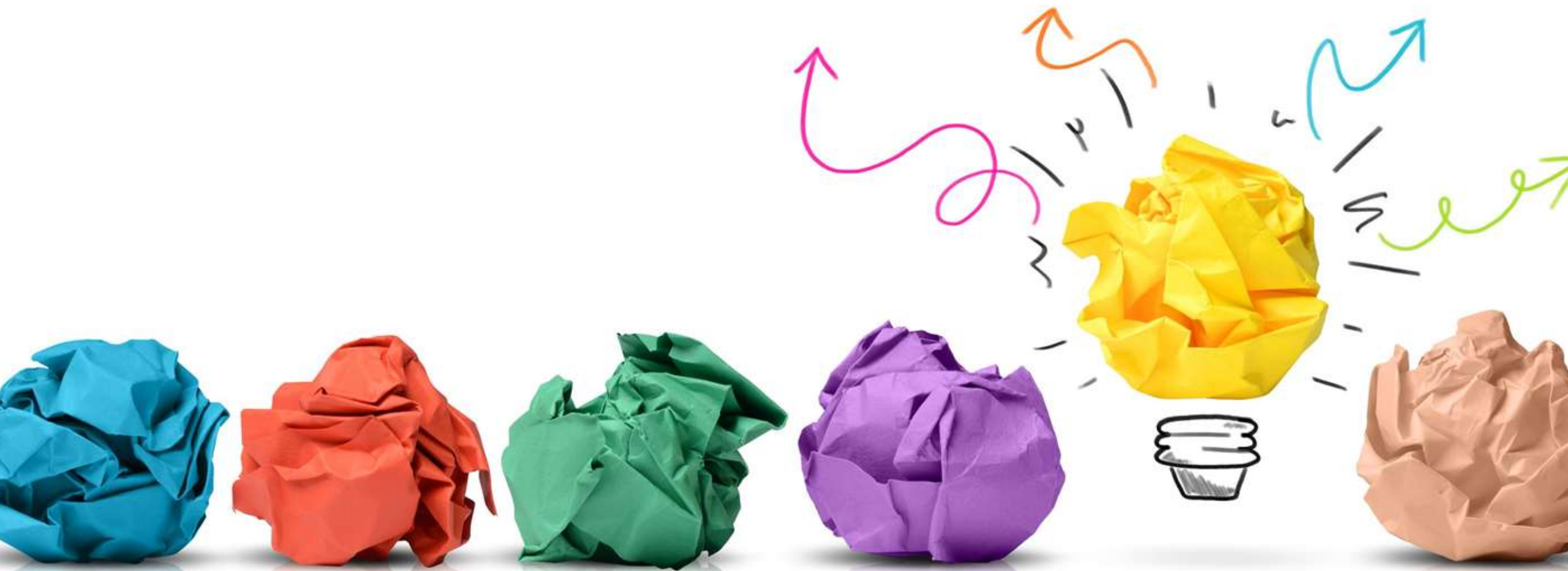
The fact is you have to
VISUALIZE what things will look like
when the
project become
completed





**“Genius is 1% inspiration,
99% perspiration.”**

— Thomas Alva Edison



Brainstorming

Brainstorming is a group creativity technique by which efforts are made to find a conclusion for a specific problem by gathering a list of ideas spontaneously contributed by its members.



Idea

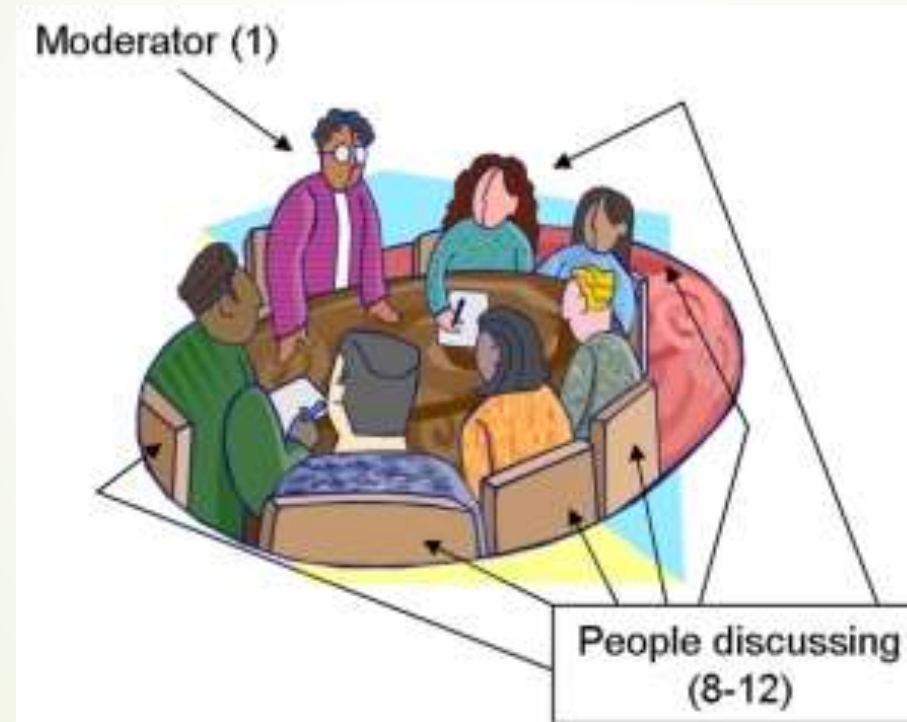
Collaboration is key! As you can see, all group participants are actively involved in an effective brainstorming session. You'll also notice that this group is getting really creative by brainstorming visually with paints. Brainstorming can take many different forms. Your group should choose to brainstorm ideas in a format that works the best for you.

Tips for Effective Brainstorming



#1 Assign a Moderator

Assigning someone to guide the brainstorming session into a productive direction is an absolute must. Though the entire point involves the free flow of ideas, this can quickly get completely off track and out of control if not kept in check.



#2 Identify Goals

It's best to begin a brainstorming session by briefly stating an overview of the project. Even if everyone present is familiar with it, the refresher is a good way to get their brains in the right place. After stating what the project entails, clearly state the goal of the brainstorming session. Never go into a brainstorming session without a clear idea of what you want out of it, otherwise you're setting yourself up for a phenomenal waste of time.



#3 Set a Time Limit

Obviously, you'll have to end the brainstorming at some point. However, it may not always be the best idea to ideate until people simply stop talking. Try setting and announcing a firm time limit at the beginning of the session. The significance of the announcement is that it ensures everyone knows that the agreed upon goals must be met by a certain time. If you've got a strong team, this will encourage them to stay on track and really crank out as many ideas as possible within the allotted timeframe.



#4 Write Down and/or Sketch Everything

Be prepared at the start of the meeting with sketchpads, stickie's, or a large amount of whiteboard space for everyone involved. Remember that every idea, good or bad should be briefly written or sketched out. Never imagine that you'll simply remember the important things that were said. Otherwise, three days later you'll be scratching your head trying to figure out how you could forget all those great ideas.



#5 Don't Judge

This concept might be a bit overstated but it is absolutely essential to effective brainstorming. At the beginning of the process you want to **shoot for quantity over quality**. Rather than taking five minutes to discuss reasons why a particular idea is bad or good, just take every idea and move along.



#6 Embrace the Ridiculous

If you really want to see the value of brainstorming, don't simply avoid judging unrealistic ideas, actually encourage them. As strange as it sounds, the very best ideas are often born from the very worst. Ask questions like, "what if money were no option?" or "what if our time table were three times as long?"



#7 Start General, End Specific

If you're the moderator of the brainstorming session, your job is to gently steer the conversation towards a productive output.



#8 Look for Synergy Potential

As you begin to trim your selection of ideas in the step above, beware of viewing the possibilities in black and white terms. It's not always the case that the furthering of one idea must mean the death of another. There is often potential for creating synergy among originally separate suggestions.



#9 Avoid Group Think

There's a fine line between a team that productively cooperates and one that suffers from too much cooperation. The moderator should watch intently for signs of group think and steer the conversation accordingly.



#10 Include an Outsider

final suggestion for effective brainstorming is to include at least one person in the group who doesn't belong. For instance, if you're working with a team of designers, try throwing in a developer to add some diversity to the mix. Or better yet, grab someone who knows absolutely nothing about creating websites or developing attractive user interfaces.



Reference

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