



# **New Jersey Odyssey of the Mind**

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# **Critical and Creative Thinking**

Odyssey of the Mind is a program that helps to foster critical and creative thinking. As a coach you can help your team develop these skills. In this packet will be some ideas that you might want to use.



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## CREATIVITY IS INFLUENCED BY:

- Fluency – the ability to *generate a great number of ideas*
- Flexibility – the skill that allows us to *produce a variety of ideas*
- Originality – the talent to *think of unusual ideas*
- Elaboration – the process of *filling in all the details*
- Evaluation – the process that allows us to *select, test, and revise ideas*

As a coach, you need to help your team members develop the qualities that influence creativity. You can do this through questioning, exploring with your team, playing games with your team, and practicing spontaneous problems with your team.



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## ROLES FOR CREATING

COACH ROLES	TEAM MEMBER ROLES
Encourages	Active participant
Facilitates	Analyzes
Mediates	Builds
Questions	Creates
	Critiques
	Constructs
	Designs
	Evaluates
	Experiments
	Explains
	Finds
	Formulates
	Implements
	Interprets
	Invents
	Modifies
	Organizes
	Plans
	Produces
	Proposes
	Takes risks



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## **SAMPLE SCRIPT COMPONENTS FORM**

Allow the team to use this list as a template when creating their script...

Situations wanted:

Obstacles, materials to overcome:

Conflicts, problems:

Location, setting, place:

Goals, achievements:

Villains, bad people, evil:

Heroes, characters:

Emotions involved:

Audio/visual, special effects, sound, lights:

Additional characters, parts, ideas to add:



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## SAMPLE CHARACTER DESCRIPTION CHECKLIST

Height	Hand size
Weight	Foot size
Hair Color	Cleanliness
Hair Texture	Jewelry
Hair Style	Habits
Eye Color	General Appearance
Shape of eyes	Personality
Shape of nose	Intelligence
Shape of mouth	Birthmarks
Shape of ears	Glasses (shape and color)
Shape of face	Fingernails (appearance)
Age	Speech patterns
Teeth	Complexion
Distinguishing features	



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## SAMPLE CHARACTER ANALYSIS FORM

1. Character's Name:
2. INTERNAL ASPECTS (creatively explain the character's personality)
  - a. Background, parents, nationality, education:
  
  - b. Thought processes:
  
  - c. Beliefs:
  
  - d. Emotional aspect:
  
  - e. How is he/she similar to you?
  
  - f. How is he/she unlike you?
  
  - g. Basic motivating desire: (what make him/her tick?)
  
  - h. Relationship to other characters: (protagonist, villain, hero)
3. EXTERNAL ASPECTS:
  - a. Posture:
  
  - b. Movement: (type of walk)
  
  - c. Mannerisms:
  
  - d. Voice:
  
  - e. Dress:



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## QUESTIONS TO CHALLENGE THINKING

Use the following questions where applicable in order to challenge the thinking of your team:

What do you believe and why?

What should be done next and why?

Why do you think that's the answer? Explain.

How can we find out about \_\_\_\_\_?

Why do you think that about \_\_\_\_\_?

What would you do about \_\_\_\_\_ and why?

What are some other ways?

What is the most...  
useful and why?

interesting and why?

effective and why?

creative and why?

What are the possible consequences or effects of \_\_\_\_\_?

How would you \_\_\_\_\_?

How could you \_\_\_\_\_?

How would you propose a plan to \_\_\_\_\_?



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How would you formulate a solution?

How would you defend that?

How would you state the problem?

How would you support your conclusion?





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## SAMPLE ODYSSEY OF THE MIND MEETINGS – TEAM MEMBER’S REFLECTIONS

This reflection can be a quick 5 minute start for all meetings...each team member would fill one of these out and then a quick discussion or action could take place from this...

1. What have I done to solve the problem?
2. What do I plan on working on today? (include things brought to work on it)
3. What do I plan on working on at the next meeting?
4. What will I need in order to do that work at the next meeting?



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## SCAMPER (a technique to creative thinking)

The SCAMPER technique was developed by Bob Eberle. SCAMPER is an acronym for idea-spurring verbs to improve objects or generate ideas. The letters represent the words “substitute”, “combine”, “adapt”, “modify”, “magnify”, “minify”, “put to other uses”, “eliminate”, “rearrange”, and “reverse”. Questions associated with these verbs, as well as examples of objects that illustrate them, are listed below.

Once you have taught your team this technique and practiced it several times you can then encourage your team to use the SCAMPER method to identify new solutions to their problem or to improve their solution. This way, as a coach, you will be guiding them to productive brainstorming without giving outside assistance by answering their questions.

**SUBSTITUTE:** What can you use instead of the ingredients, materials, objects, places, or methods now used? Vegetarian hot dogs and disposable diapers are examples of products which illustrate substitution.

**COMBINE:** Which parts or ideas can you blend together? Televisions with built in VCRs and musical greeting cards are examples of combinations.

**ADAPT:** What else is like this, what can be copied or imitated? Air fresheners that resemble shells and children’s beds that look like race cars illustrate adapting.

**MODIFY:** Can you change an attribute such as color, sound, taste, odor, form, or shape or perhaps add a new twist? Parabolic skis and scented candles illustrate modifying.

**MAGNIFY:** Can it be stronger, larger, higher, exaggerated, or more frequent? Extra-strength medicines as well as over-sized sports equipment and large screen televisions are examples of products that have been magnified.

**MINIFY:** Can it be smaller, lighter, less frequent or divided? Write-band televisions and 12-hour pain relievers are examples of minifying objects.

**PUT TO OTHER USES:** Can it be used in a way other than how it was intended to be used? Old tires used for fences, swings, and bird feeders illustrate “put to other uses”.



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**ELIMINATE:** What can you take away or remove? Sodium-free and fat-free foods and cordless telephones are examples of eliminating something.

**REARRANGE:** Can you interchange parts or change the pattern, layout, sequence, or schedule? The new surround sound stereo speakers and vertical paper staplers are examples of rearranging.

**REVERSE:** Can you turn parts backward, inside out, upside down, or around? Reversible clothing is a classic example of reversing something.



## QUESTIONING

Questions are one of the best strategies that we can use as a coach to develop thinking skills.

**Listed below are 36 types of critical and creative thinking questions.**

[These questions come from a list created by Dr. Spencer Kagan, founder of the Kagan Institute of Cooperative Learning]

### Analyzing

How could you break down...?

What are the parts of...?

What qualities/characteristics....?

### Applying

How is \_\_\_\_\_ an example of...?

What practical applications ...?

How could you use...?

How does this apply to...?

In the problem, how would you apply...?

### Augmenting/Elaborating

What ideas might you add to...?

What more can you say about...?

How could you improve...?

Are there other ways to do that...?

### Categorizing/Classifying/Organizing

How might you classify...?

What category does \_\_\_\_\_ belong to? Why?

What else could you add to this...?

How else could you organize this...?

### Comparing/Contrasting

How would you compare...?

What similarities...?

What are the differences between...?

How is \_\_\_\_\_ like \_\_\_\_\_?

How is \_\_\_\_\_ different from \_\_\_\_\_?

### Connecting/Associating

What do you already know about...?



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What connections can you make between...?  
What things do you think of when you think of...?

## Decision Making

What are the pluses and minuses of choosing...?  
What would be a better decision...? Why?

## Defining

How would you define...?  
In your own words, what is ...?

## Describing/Summarizing

How could you summarize...?  
If you were a reporter, how would you describe...?

## Determining Cause/Effect

What are the causes of...?  
How does \_\_\_\_\_ effect \_\_\_\_\_?  
What impact might...?  
What would happen if...?

## Drawing conclusions/Inferring Consequences

What conclusions can you draw from...?  
What would happen if...?  
What would have happened if...?  
If you changed \_\_\_\_\_, what might happen?

## Eliminating

What part of \_\_\_\_\_ might you eliminate? Why?  
How could you get rid of...?

## Evaluating/Assessing

What is your opinion about...?  
Why did you like or dislike...?  
How would you rate/grade...? Why?  
Would you prefer/rather...? Why?  
What is your favorite...? Why?  
Do you agree or disagree with...? Why?  
What are the positive and negative aspects of...?  
What are the advantages and disadvantages of...?  
Is it better or worse...? Why?  
By what criteria would you assess...?



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## **Explaining**

How could you explain why...?

What reasons might explain...?

What are some alternative explanations for...?

## **Experimenting**

How could you test...?

What experiment could you do to...?

## **Generalizing**

What general rule can...?

What principle could you apply...?

What is common to all...?

## **Interpreting**

What does \_\_\_\_\_ mean to you?

What is the significance of...?

What role...?

What is the reason for...?

## **Inventing**

What could you invent to...?

What machine could...?

## **Investigating**

How could you find out more about...?

If you wanted to know about...?

## **Making Analogies/Similes/Metaphors**

How is \_\_\_\_\_ like \_\_\_\_\_?

What similarities do \_\_\_\_\_ and \_\_\_\_\_ share?

What analogy/simile/metaphor can you invent for...?

## **Observing**

What did you notice about...?

What observations did you make about...?

What changes...?

## **Patterning**

What patterns did you find...?



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How would you describe the organization of...?  
If the pattern were to continue...?

## **Planning**

What preparation would you...?  
How would you plan to...?

## **Predicting/Hypothesizing**

What would you predict...?  
What is your theory about...?  
What are some possible explanations why...?  
If you were going to guess...?

## **Prioritizing**

What is more important...?  
How might you prioritize...?  
In what order would you rank...?

## **Problem Solving**

How would you approach the problem?  
What are some of the possible ways to solve...?

## **Questioning**

What questions do you have about...?  
If you could ask a question of...?

## **Reducing/Simplifying**

In a word/sentence, how would you describe...?  
How can you simplify...?

## **Reflecting/Metacognition**

What were you thinking when...?  
How has your thinking changed on...?  
How could you describe what you thought about...?

## **Relating**

How is \_\_\_\_\_ related to \_\_\_\_\_?  
What is the relationship between...?  
How does \_\_\_\_\_ depend on \_\_\_\_\_?

## **Reversing/Inversing**

What is the opposite/antonym of...?



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## **Role-Taking/Empathizing**

If you were (someone/something else)...?

How does \_\_\_\_\_ look like to \_\_\_\_\_?

What would it feel like to be...?

## **Sequencing**

How could you sequence...?

What steps are involved in...?

## **Substituting**

What else could you use for/instead of...?

What is a synonym for...?

What is another way you could...?

## **Symbolizing**

How could you express it with a drawing/symbol/song/movement/poem?

## **Synthesizing**

How could you combine/put together...?

What could you make using...?





## Do You Recognize These 10 Mental Blocks to Creative Thinking?

[This came from an article by Brian Clark on mental blocks to creative thinking. He is the founder of [copyblogger.com](http://copyblogger.com).]

*Suggestion: Read this article and use it when working with your team.*

### 1. Trying to Find the “Right” Answer

One of the worst aspects of formal education is the focus on the *correct answer* to a particular question or problem. While this approach helps us function in society, it hurts creative thinking because real-life issues are ambiguous. There’s often more than one “correct” answer, and the second one you come up with might be better than the first.

Many of the following mental blocks can be turned around to reveal ways to find more than one answer to any given problem. Try reframing the issue in several different ways in order to prompt different answers, and embrace answering inherently ambiguous questions in several different ways.

### 2. Logical Thinking

Not only is real life ambiguous, it’s often illogical to the point of madness. While critical thinking skills based on logic are one of our main strengths in evaluating the feasibility of a creative idea, it’s often the enemy of truly innovative thoughts in the first place.

One of the best ways to escape the constraints of your own logical mind is to think [metaphorically](#). One of the reasons why metaphors work so well in communications is that we accept them as true without thinking about it. When you realize that “truth” is often symbolic, you’ll often find that you are actually free to come up with alternatives.

### 3. Following Rules

One way to view creative thinking is to look at it as a *destructive* force. You’re tearing away the often arbitrary rules that others have set for you, and asking either “why” or “why not” whenever confronted with the way “everyone” does things.

This is easier said than done, since people will often defend the rules they follow even in the face of evidence that the rule doesn’t work. People love to celebrate rebels like Richard Branson, but



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few seem brave enough to emulate him. Quit worshipping rule breakers and start breaking some rules.

## 4. Being Practical

Like logic, practicality is hugely important when it comes to execution, but often stifles innovative ideas before they can properly blossom. Don't allow [the editor](#) into the same room with your inner artist.

Try not to evaluate the actual feasibility of an approach until you've allowed it to exist on its own for a bit. Spend time asking "what if" as often as possible, and simply allow your imagination to go where it wants. You might just find yourself discovering a crazy idea that's so insanely practical that no one's thought of it before.

## 5. Play is Not Work

Allowing your mind to be at play is perhaps the most effective way to stimulate creative thinking, and yet many people disassociate play from work. These days, the people who can come up with great ideas and solutions are the most economically rewarded, while worker bees are often employed for the benefit of the creative thinkers.

You've heard the expression "work hard and play hard." All you have to realize is that they're the same thing to a creative thinker.

## 6. That's Not My Job

In an era of hyper-specialization, it's those who happily explore completely unrelated areas of life and knowledge who best see that everything *is* related. This goes back to what ad man [Carl Ally](#) said about creative persons—they want to be *know-it-alls*.

Sure, you've got to know the specialized stuff in your field, but if you view yourself as an *explorer* rather than a highly-specialized cog in the machine, you'll run circles around the technical master in the success department.

## 7. Being a "Serious" Person

Most of what keeps us civilized boils down to conformity, consistency, shared values, and yes, thinking about things the same way everyone else does. There's nothing wrong with that necessarily, but if you can mentally accept that it's actually nothing more than groupthink that helps a society function, you can then give yourself permission to turn everything that's accepted upside down and shake out the illusions.

Leaders from Egyptian pharaohs to Chinese emperors and European royalty have consulted with *fools*, or court jesters, when faced with tough problems. The persona of the fool allowed the truth



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to be told, without the usual ramifications that might come with speaking blasphemy or challenging ingrained social conventions. Give yourself permission to be a fool and see things for what they really are.

## 8. Avoiding Ambiguity

We rationally realize that most every situation is ambiguous to some degree. And although dividing complex situations into black and white boxes can lead to disaster, we still do it. It's an innate characteristic of human psychology to desire certainty, but it's the creative thinker who rejects the false comfort of clarity when it's not really appropriate.

Ambiguity is your friend if you're looking to innovate. The fact that most people are uncomfortable exploring uncertainty gives you an advantage, as long as you can embrace ambiguity rather than run from it.

## 9. Being Wrong is Bad

We hate being wrong, and yet mistakes often teach us the most. Thomas Edison was wrong 1,800 times before getting the light bulb right. Edison's greatest strength was that he was not afraid to be wrong.

The best thing we do is learn from our mistakes, but we have to free ourselves to make mistakes in the first place. Just try out your ideas and see what happens, take what you learn, and try something else. Ask yourself, what's the worst that can happen if I'm wrong? You'll often find the benefits of being wrong greatly outweigh the ramifications.

## 10. I'm Not Creative

Denying your own creativity is like [denying you're a human being](#). We're all limitlessly creative, but only to the extent that we realize that we create our own limits with the way we think. If you tell yourself you're not creative, it becomes true. Stop that.

In that sense, awakening your own creativity is similar to the path reported by those who seek spiritual enlightenment. You're already enlightened, just like you're already creative, but you have to strip away all of your delusions before you can see it. Acknowledge that you're inherently creative, and then start tearing down the other barriers you've allowed to be created in your mind.



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## **ONE FINAL NOTE ABOUT CREATIVITY...**

Whenever your team seems stuck, unable to think, create, complete a task, work together...**DO A SPONTANEOUS PROBLEM** or **play a game** (such as board games, card games).

**Make it fun!!!**

If that does not work, take a **snack break** or **end the meeting** and plan to meet again soon.

Remember this should be an enjoyable journey/quest for all.