

Better Brainstorming

Grade Level: All

Time: Varies

Objectives

- Use brainstorming to think through issues, problems, and projects.
- Learn analytical and creative problem solving skills.

Curricular Connections: All

Materials: Blackboard or flip-chart.

Procedure:

- 1) Discuss the following brainstorming rules. (Almost everyone has brainstormed before, but often a session is less successful than it could be simply because important rules aren't followed).
 - a. Defer judgment. The goal is to generate a large number of ideas. During the idea generation phase, ideas should not be judged or discussed. The focus should be only on generating ideas and writing them down.
 - b. Freewheeling is welcomed. Ideas that may seem farfetched often lead to really great suggestions.
 - c. Quantity breeds quality. Try to generate as many ideas as possible. The greater the number of ideas, the better chance there is for quality ideas.
 - d. "Hitchhiking," "popcorning," and "piggybacking" are encouraged. Students should build off of one another's ideas. Make sure ideas are written down so that everyone can see them. As students look at the list new ideas will come to them. Remind them that this reflects a team effort—students who build on their ideas are not cheating, but adding on.
- 2) Brainstorm an issue, problem or project with which the students are working.
- 3) Incubation: An incubation period is an important part of the creative process. That is, once the conscious mind has explored a problem, it is helpful to deliberately stop thinking about the problem. Most people get their best ideas not when they are sitting at their desks thinking about a problem directly but when they are taking a shower, driving their car, taking a walk (i.e., doing something else so that their subconscious can work). This natural process can be harnessed deliberately.
 - a. Coaches should ask students when they get their best ideas, and then explain how the subconscious can also work on problems. Encourage students to carry a small notebook so they can write down any ideas that come to them. Just by paying attention to these ideas, students will find they get more ideas. They can capture ideas of problems to solve (things that bug them) or ideas of how to solve the problem. They can ask others they see and record their responses.

- b. Come back to the brainstorm sheet with new ideas. Discuss where people got their new ideas.
- 4) Evaluation: It is important to remember this step. After ideas are compiled, the students should review them to select the best ideas. You may want to develop criteria upfront, so they know what they are looking for when asked to find a good suggestion.

Other brainstorming techniques:

Attribute listing:

List attributes of the problem/scenario so you can look at each individual piece for possible changes that would impact the problem.

Mind-mapping or concept-mapping:

This is a form of visual note-taking that is very effective for generating new ideas. A central topic is selected and written in the center of a large sheet of paper. As students brainstorm ideas related to the topic, these are written around the central idea, circled, and linked to the central idea as well as one another.

Pass the Paper:

Each student writes a brainstormed idea (related to the proposed topic) at the top of a piece of paper. They pass it on to the next person and when they receive the paper from the person passing to them, they write another idea down (perhaps influenced by the idea already on the paper). This continues until the students get their own paper back. This allows for each student to have an equal amount of contribution and is much more controlled than shouting out bigger and better ideas.

Productive Thinking:

1. Think of many ideas (fluency).
2. Think of varied ideas (flexibility).
3. Think of unusual ideas (originality).
4. Add to your ideas to make them better (elaboration). Creativity in the Classroom, Alane Jordan Starko (2001).

Reverse brainstorming:

Think of ways to waste resources or increase the number of fights on the playground. Taking a new point of view works best with older kids because they can apply the abstract principles developed and transition back to the original issue.

SCAMPER

These are a series of idea-spurring questions set up as a mnemonic so they are easy for students (and teachers) to remember:

S: Substitute ... who or what else? Instead? Other time/place?

C: Combine ... blend, combine purposes, ideas, what can go together?
A: Adapt ... adjust to suit purpose/situation; what else can it be used for?
M: Modify, Magnify, Minify ... bigger, smaller, lighter, heavier, slower, faster, color, taste, meaning
P: Put to other uses ... different purpose? New ways to use?
E: Eliminate ... remove or subtract a quality or part
R: Reverse/Rearrange ... change it: up, down, order

Step into Someone Else's Shoes:

Ask your students to imagine themselves to be someone else, for example, President Bush, Martin Luther King, their school principal, etc. Then, from the vantage point of this other person, ask them to identify important issues.

Wishful Thinking:

Similar to brainstorming, Wishful Thinking encourages students to stretch their imaginations. First, students state the question, goal, situation or problem. Then, imagining anything is possible, they brainstorm their ideal solutions to the problem. With any perceived obstacles removed, new and innovative options surface. Finally, after all the new ideas are generated, these are examined one by one to see if components of these ideas may be adapted for use in solving the actual problem at hand.

Reflection:

1. Students will look at list and write down the two best ideas (or most surprising, most creative, most interesting, etc.) and explain why they picked these two.
2. Students reflect on how they see this issue differently as a result of brainstorming.

Assessment:

1. The quantity of ideas and involvement of students indicates creative thinking skills.
2. Students' reflections on list demonstrate critical reasoning skills.

Adapted from: Erika Walker and Roudy Hildreth

Related Links:

- www.publicachievement.org/teacherguide/lessons/SixThinkingHats.pdf