Tools for Group Thinking
Brainstorming

**What?** Brainstorming is a procedure that allows a variable number of people to express problem areas, ideas, solutions or needs. It allows each participant to state their opinion in a non-threatening environment.

**When?** The Brainstorming process is used to unite a group with diverse ideas and needs. It can be used with any age group from preschool to executive levels.

**Where?** Brainstorming is often used, but not limited to, stages 1, 2 and 8 of the Probletunity Process.

**Why?** Brainstorming:
- is non-threatening
- is a means to draw out ideas and thoughts from an individual who may not otherwise participate.
- allows student and teacher ideas to be valued equally
- serves as a catalyst for more ideas.
- allows a great number of ideas to be brought to light quickly.
- unites a group by showing them what they can accomplish as a whole.
- brainstorming creates an atmosphere of acceptance.

**Sample Uses:**
Brainstorm to identify opportunities for improvement
Brainstorm project ideas to meet specified capacities.
Identify capacities gained from learning projects.
Brainstorm tools needed to approach a probletunity.
Brainstorm to specify barriers to learning.
Brainstorming (Continued)

<table>
<thead>
<tr>
<th>Brainstorming Process</th>
<th>Caution!</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The objective of the brainstorming session is clearly stated.</td>
<td>Brainstorming is a very effective tool for understanding the insight of many individuals on a single topic.</td>
</tr>
<tr>
<td>Name for our school.</td>
<td></td>
</tr>
<tr>
<td>2. Each person in the team has the opportunity to identify at least one idea.</td>
<td>Brainstorming is often misused by letting the most vocal people ridicule the suggestions made by others.</td>
</tr>
<tr>
<td>3. Each person has the option to “pass” when it is their turn to contribute, if they do not have an idea.</td>
<td>Students (P-12 and beyond) respond enthusiastically to the brainstorming process because their ideas are given credence by writing them down.</td>
</tr>
<tr>
<td>4. All ideas are good ideas.</td>
<td>All students should have the opportunity to frequently act as facilitators for brainstorming sessions.</td>
</tr>
<tr>
<td>5. A recorder can ask for clarification of an idea in order to correctly record the suggestion.</td>
<td>Ideas should not be discredited or discussed by anyone in the group.</td>
</tr>
<tr>
<td>6. The recorder writes down each idea on a flip chart, Mylar or chalkboard so everyone can see the accumulation of ideas.</td>
<td>Keep the process growing. Sometimes the best ideas come at the end.</td>
</tr>
<tr>
<td>7. People can create new ideas based on another person’s brainstorming efforts. This is called “piggybacking”.</td>
<td>Do not worry if people pass several times. Often they are testing the process to see if it is actually safe to participate.</td>
</tr>
<tr>
<td>Do not allow the brainstorming session to degenerate into an open forum for shouting out ideas, as this will thwart the freedom for every individual to participate equally.</td>
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</table>
Multi-Voting

**What?**

Multi-voting is a way of selecting the most important item for discussion. A series of votes are taken where each vote decreases the list by eliminating the items with the fewest votes.

**When?**

When needs are very diversified and opinions are varied, multi-voting is used to gain a consensus of the group. All members will be able to support a final item without opposition.

**Where?**

Multi-Voting is often used, but not limited to, stage 1 of the Probletunity Process.

**Why?**

Multi-Voting:

- is used after a brainstorming session. It indicates if problems are diverse.
- brings the group to a consensus.
- allows each member equal power and all input has equal credence.

**Sample Uses:**

Students use Multi-Voting to prioritize:

- work assignments
- causes of variations on tests
- options for projects.
Multi-Voting
(Continued)

Multi-Voting Process

1. Brainstorm to compile a list of items. If, after discussion with the group, two or more suggestions seem similar, combine those items.

<table>
<thead>
<tr>
<th>Item</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
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<tr>
<td>3</td>
<td></td>
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<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

2. There are several different methods of voting—oral, hand raising or by ballot. Another very effective method is to give each person the same number of sticky dots. One “hot dot” is designated and marked. The hot dot carries more weight than the other dots. Each team member places the dots by the item they are voting for, using the “hot dot” for the item which is a high priority to the voter.

<table>
<thead>
<tr>
<th>Item</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>••••○</td>
</tr>
<tr>
<td>2.</td>
<td>••</td>
</tr>
<tr>
<td>3.</td>
<td>•••○</td>
</tr>
<tr>
<td>4.</td>
<td>•••</td>
</tr>
<tr>
<td>5.</td>
<td>•○</td>
</tr>
</tbody>
</table>

3. The final vote is determined by the total number of votes each item receives and by the number of “hot dots” represented for each item.

Caution!

The monitor of the process must remain neutral, not showing prejudice toward any person or item being voted on.

Any group can benefit from this tool. It gives each person the same amount of power and credence. No special place or equipment is needed, just a group of people with a desire to make change.
Affinity Diagram

What? The Affinity Diagram is an interactive data collection method which allows groups of people to identify and process large quantities of ideas in a very short time.

When? The Affinity process is used when teams need a non-judgmental process for collecting and categorizing ideas.

Where? Affinity Diagrams are often used, but not limited to, stages 1, 2, 3 and 8 of the Probletunity Process.

Why? Affinity Diagrams:
- are very spatial and interactive.
- allow groups to quickly collect and organize hundreds of ideas.
- give all ideas equal weight.
- encourage everyone to contribute.
- allow ideas to be grouped according to their natural relationships.
- are effective with all ages.
- give team members the opportunity to view ideas of other team members.

Sample Uses: What do you need to know about (i.e. Civil War, botany, geometry)?
- What are the causes of poor behavior?
- What are the barriers to improvements?
- What are the causes of variation?
- What are the probletunities affecting us?
Affinity Diagram (Continued)

Affinity Process

1. A topic is chosen and clearly stated, such as: “What do we need to know about Quality Learning?”

2. All team members individually brainstorm ideas relating to the stated question or topic.

3. As brainstorming takes place, individuals silently write each idea on a 3” X3” sticky note or note card.

4. Team members randomly place ideas in the middle of a table or stick them on a smooth surface such as a mirror or Mylar board.

5. Silently, as a group, colleagues place ideas in like categories.

6. Finally, place a header card describing the category at the top of each column.

Caution!

- Brainstorming should be done in silence. Talking at this point tends to prohibit participation.
- Ideas should be stated as briefly as possible; one word is often too brief, a sentence is often too detailed. Usually two to six words can adequately convey the idea.
- Allow enough time for everyone to generate ideas, but not so much time that some members lose focus—three to five minutes is often adequate. However, remember that some of the most creative ideas come near the end of the brainstorming session.
- It is important that all members of a team working on the task be able to see all of the ideas. Sometimes team members need to rotate around the ideas in order for all to participate.
- If a team member is being excluded, it is the responsibility of the group to see that everyone participates.
- If a stated idea is unclear, any individual can ask for a clarification from its author. Otherwise no talking is the rule.
- Care must be taken to prevent judgment of the ideas during clarification.
- Affinity Diagrams work best with a large table (preferably round). People can rotate around the table to see contributions from other team members.
Consensogram

What? The Langford Consensogram is a statistical survey that measures an entire group’s perception of effort, commitment, understanding, etc. The question asked is decided by the leader, group, team or organization.

When? The Langford Consensogram is used when you have a large group of people and wish to see their view on an issue, but don’t have the time to get deeply involved with other charting techniques.

Where? Consensograms are often used, but not limited to, stages 1, 3 and 6 of the Probletunity Process.

Why? Landford Consensograms:
- show data on an issue from an entire group, and not just the perceptions or opinions of a few individuals.
- are quick and easily used to display results and review data.
- are the simplest of all data-collecting techniques.
- show the frequency of distribution responses.
- let each individual see their responses in relationship to the whole group.

Sample Uses:
- How committed are you to learning (e.g. math, science, English)?
- To what degree do people agree with a recommendation?
- To what degree do people agree that trash on campus is a problem?
- Is the variation on the last test acceptable?
- Have students rate their attitude and change the rating at random throughout the day?
Consensogram (Continued)

Consensogram Process

1. Make sure each person in a group has a 3" X3" sticky piece of paper (use the same size).
2. Determine what is going to be measured. Write the question or statement for everyone to see.
3. Write down in increments of 5% or 10% (depending on the size of the group and the degree of the reading desired) what you think, how you feel or where you stand on the issue (e.g. How committed are you to implementing Quality Learning)? Do not put your name on the paper and do not add editorial comments.
4. Keep your answers between 0% and 100%. Do not write negative numbers or numbers over 100%.
5. Once all participants have written their responses on a sticky paper, turn them upside down and pass them to the center of the table or have one person collect them all.
6. Pick a place on a smooth wall and begin posting the responses in the form of a histogram.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Symbols</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>■■■■■■■■</td>
</tr>
<tr>
<td>90%</td>
<td>■■■■■■■</td>
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<tr>
<td>80%</td>
<td>■■■■■■</td>
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<tr>
<td>70%</td>
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<tr>
<td>60%</td>
<td>■■■</td>
</tr>
<tr>
<td>50%</td>
<td>■■</td>
</tr>
</tbody>
</table>

7. As a group, observe the distribution of results. This will aid in focusing further efforts on the issue.

Caution!

Instruct the group not to write their names on the paper.

Participants should not discuss their responses with others until all data has been posted.

Critical issues should be tested frequently.

Be prepared to act on the results of the data analysis.

Langford Consensograms work best with medium to large groups, but can be used with groups of all sizes, especially when there is controversy.
Fishbone Chart

What? Fishbone Charts, also called Cause and Effort or Ishikawa Diagrams, are used to identify possible causes, root causes, of variation in a specific event.

When? A Fishbone Chart can be used when causes of variation need to be visually identified and categorized for easier inspection.

Where? Fishbone Charts are often used, but not limited to, stages 2 and 4 of the Probletunity Process.

Why? Fishbone Charts:
- can help groups analyze causes of potential problem areas.
- encourage everyone on a team to contribute their view points.
- are a clear illustration of a problem which has been identified by a group.

Sample Uses: Use a Fishbone Chart to:
- Study causes of variation of scores on spelling tests.
- Study the causes of the Civil War.
- Study the causes of bird migration.
- Understand the causes of low morale.
- Identify the causes for absences.
- Study why fish are not biting.
Fishbone Chart (Continued)

**Fishbone Process**

1. Identify a problem. Be specific and complete.
2. Take a sheet of notebook or flipchart paper. Turn it sideways.
3. Write the effect of the problem in a box at the far right side.

<table>
<thead>
<tr>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive Tardies</td>
</tr>
</tbody>
</table>

4. Draw a backbone. This is a straight line that extends from the effect box across to the opposite side of the paper.

<table>
<thead>
<tr>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive Tardies</td>
</tr>
</tbody>
</table>

5. Now draw fishbone at an angle connecting them to the backbone.

6. As a group or individual, brainstorm to find causes of variations.

<table>
<thead>
<tr>
<th>Causes</th>
<th>Weather</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>People</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive Tardies</td>
</tr>
</tbody>
</table>

7. Label each backbone with a major cause of variation.
8. Identify the most likely causes to the problem. Begin working to improve the process.

**Caution!**

A common mistake is to use a fishbone chart only as a diagramming or outlining tool. While the diagram is effective for this use, its main purpose is for understanding the causes of variation in a process or system.

Use the brainstorming tool as an effective way to identify causes.

Make sure the people who work in the system are helping to identify the causes of variation.

Remember: The people closest to the work are the most knowledgeable about the process—this includes students.
A Plus/Delta chart is a simple tool used to solicit feedback from individuals or groups on the strengths and weaknesses of a given situation.

It is used to quickly collect opinions and observations on a given situation.

A Plus/Delta is used throughout the Probletunity Process as a method for quickly reflecting on the progress of a team or large group. It is often used at stage 1 of the Probletunity Process to identify needs for improvement from the entire group. It is also used in classrooms to enable students to reflect on the changes necessary to improve learning or to study a particular content area.

A Plus/Delta:
- to get immediate feedback.
- to provide cumulative information.
- to allow every person a voice in the improvement process.
- to focus individuals and groups on the need to improve.

A Probletunity Team uses a Plus/Delta to begin the team process.
A class uses a Plus/Delta to assess the strengths and weaknesses of the last math project.
A principal uses a Plus/Delta with random classes to assess the last fire drill.
A parent uses a Plus/Delta with the family to assess a recent vacation.
Plus/Delta Process

1. Decide the size of the group, i.e. individual input or group assessment.

2. Divide a blank sheet of paper or flipchart page into two sections. Label the left side with a plus sign (+) which designates what is going well and label the right side with a delta sign (Δ) for what needs improvement.

3. If the Plus/Delta is used to solicit individual feedback, simply brainstorm ideas and place them in the appropriate columns.

4. If the Plus/Delta is used to solicit feedback from a group, follow the structured brainstorming process for each side of the Plus/Delta chart.

5. Compile the results by using a check sheet to identify the most common plusses and needs for improvement. Count the total tally marks to assess priorities of the group or use multi-voting.

   +
   
   III the sound system
   IIIII application ideas
   II the food
   I individual participation
   II–III time to experiment

6. Repeat the procedure for the opposite side.

7. Take action on the results to either remedy common problems or continue to expand and improve what is going well.

Caution!

If there is no commonality between individuals, this signifies the lack of a common system.

If common concerns are not apparent, then revert to solving individual concerns as time permits.
<table>
<thead>
<tr>
<th>Ah – Ha!</th>
<th>To Do</th>
</tr>
</thead>
</table>

**Ah – Ha!**

**To Do**
## Force Field Analysis

### What?
A Force Field Analysis is a visual listing of possible forces driving or preventing change.

### When?
A Force Field Analysis is useful if a team wants to find out what is driving, slowing or not allowing change at all.

### Where?
Force Fields are often used, but not limited to, stages 1, 3, 5 and 8 of the Probletnity Process.

### Why?
A Force Field Analysis:
- Teaches people to think together
- Enhances creative thinking
- Helps to find a starting point from which the team will take action
- Shows both driving and preventing forces of a certain concept

### Sample Uses:
- What are the forces affecting learning?
- What were the driving and preventing forces in the Vietnam War?
- What are the forces affecting global warming?
Force Field Analysis
(Continued)

Force Field Process

1. It is best to use a flip chart or a large piece of paper

2. Draw one line down the center and another across the top (2” from the top).

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
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</table>

3. Title the left column “driving forces” and the right column “preventing” or “resisting “ forces.

<table>
<thead>
<tr>
<th>Driving</th>
<th>Preventing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>

4. Take five to ten minutes for each column and brainstorm as many ideas as you can with your group. Don’t worry about validity. This will be handled later.

5. Now a clearer picture exists of what is driving or preventing your organization from improving.

Caution!

The forces presented should not be evaluated or discussed. However, group members can ask for a clarification.

Use a structured brainstorming process if the team members are unfamiliar with one another.

Eliminate the preventing forces first. Then move on to the driving forces.

A Force Field Analysis can be used with any size group. It works best if it is written on a blackboard, Mylar board, or large piece of flip chart paper so that all team members can see the ideas emerge.
# Parking Lot

**What?** A Parking Lot is a place on a wall, chart or storyboard where group participants can place notes referring to positive processes, needs for improvement and general concerns, questions or insights.

**When?** Parking Lots are used when group participants need an avenue to anonymously communicate to facilitators, mediators or group leaders. It is also used when ideas, questions or comments emerge at times when they cannot be explored. The Parking Lot allows these issues to be recorded and dealt with later.

**Where?** A Parking Lot is often used, but limited to, stages 2 and 6 of the Probletunity Process.

**Why?** Parking Lots:
- Provide a method of continual improvement of a process
- Provide a structured forum for participants who pose complex or sensitive questions not stated in the group.
- Provide a place to capture ideas without losing them.

**Sample Uses:**
Use a Parking Lot:
- on every storyboard to store improvement ideas for later use.
- in team meetings to generate ongoing feedback.
- in the classroom to study critical issues.
- in the faculty workroom as a feedback loop for administrators.
Parking Lot
(Continued)

Parking Process

1. Designate a stable area for the parking lot, i.e. whiteboard, flipchart or wall chart.
2. Divide the work area into four quadrants and label +, Δ, ? and I.
   
   +  = What is going well?
   Δ  = What needs improvement?
   ?  = What questions?
   I  = What are the issues?

3. Participants place positive comments on what is going well in the section marked +. They place suggestions for improvement in the section marked Δ for deltas. Questions are placed in the section marked ? and issues or general comments are placed in the section marked I.

<table>
<thead>
<tr>
<th>Parking Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
</tr>
<tr>
<td>?</td>
</tr>
</tbody>
</table>

Note: It is simple for participants to use sticky notes to record their comments, however the same process can be accomplished by using notecards or slips of paper.

4. The facilitator or mediator should clear the Parking Lot periodically and notify the general population on how each improvement suggestion, question or issue is being addressed.

Caution!

Parking Lots are placed where all participants will have access, but notes cannot be attributed to any one individual.

Notice there is no Parking Lot for participants to complain. All comments have to be framed in the format of positive improvement, question or issue.

Participants need to know how their comments are being addressed. Implementation of a suggested improvement without notification to participants might lead them to assume that nothing has happened.

Facilitators and mediators should also inform the group of the positive comments generated. Often people who are prisoners in teams or seminars are quite surprised to learn that other people are enjoying the experience.
Five Whys?

**What?** The Five Whys? are simply a process of asking Why? at least five times in a row to detect the root cause or meaning of a particular problem or situation.

**When?** Asking Why? is necessary when people do not truly understand the situation, or when a deeper understanding is necessary.

**Where?** The Five Whys are often used, but not limited to stages 1, 4 and 8 of the Proletunity Process.

**Why?** The Five Whys?:
- Cause people to use higher order thinking skills.
- Cut through layers of bureaucracy to find the true meaning.
- Cause people to challenge their current situation or problem.

**Sample Uses:** Use the Five Whys? to understand:
- Why we use the Pythagorean Theorem?
- Why I am at this seminar?
- Why we have chosen a particular proletunity?
- Why we learn about other countries?
- Why do fish have gills?
Five Whys? (Continued)

Five Why Process

1. Identify a problem, situation or concept to be studied.
2. Ask Why? this particular condition exists.
4. Continue to ask Why? until everyone involved is satisfied they have arrived at the root cause.

Example:

Why do fish open their mouths when they swim?
Answer: To take in water.

Why do they take in water?
Answer: So it will pass over their gills.

Why does water need to pass over their gills?
Answer: So the gills can collect oxygen from the water.

Why do the gills collect oxygen from the water?
Answer: This allows the fish to breathe.

Why does the fish need to breathe?
Answer: To stay alive.

Caution!

Asking Why? five times should not be a futile effort. Refrain from using this exercise frivolously. Make sure everyone involved is making an effort to seriously answer the question, “Why?”

Follow each use of the tool with a debriefing session so individuals have a chance to relate their own understanding with others.
Imagineering

What? Imagineering is a brainstorming technique used to identify what an individual or group envisions as the perfect project, process or system. Another term used for Imagineering is idealized redesign.

When? Imagineering is useful when difficulties are encountered by a group while identifying perfect characteristics of a vision, goal or aim. Imagineering can be used when individuals or groups do not have a shared vision of what the perfect project, process or system will look like (e.g. What is the perfect student? What is the perfect school?).

Where? Imagineering is often used, but not limited to, stages 2, 5, 7 and 8 of the Probletunity Process.

Why? Imagineering:  
- Identifies individual perceptions of what perfect is and aids in the construction of a shared vision among members of an organization.  
- Is a great tool to use when people are having trouble envisioning a perfect outcome they may be working toward.

Sample Uses: Imagineer:

The process for opening a new school
The perfect way to learn math.
The perfect school.
A process for ordering supplies.
## Imagineering (Continued)

<table>
<thead>
<tr>
<th>Imagineering Process</th>
<th>Caution !</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clearly state the objective of the Imagineering session.</td>
<td>All ideas are good ideas.</td>
</tr>
<tr>
<td><strong>“What would the be the perfect learning environment?”</strong></td>
<td>People can create new ideas based on another person’s Imagineering efforts.</td>
</tr>
<tr>
<td>2. Each person in the group is given five minutes to write down as many responses to the stated objective as possible.</td>
<td>If you do not know what you would do if you could do whatever you want - how can you possibly know what to do now, when you can not do whatever you want?</td>
</tr>
<tr>
<td>3. The team recorder collects the responses and compiles them.</td>
<td></td>
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<tr>
<td>4. Post the responses for all team members to see.</td>
<td></td>
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<tr>
<td>5. The team reviews each response for clarity and justification.</td>
<td></td>
</tr>
<tr>
<td>6. Redundant areas are removed.</td>
<td></td>
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<tr>
<td>7. The result can then be disseminated throughout the team and periodically reviewed and updated as new knowledge becomes available.</td>
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</tbody>
</table>
The Biggest Barrier to Creativity

Creative people often have fears. It doesn’t matter how well things have gone in the past, there’s always a little voice inside that makes some people doubt their creative work. With that voice they tell themselves:

“I may fail this time.”

“It’s been quite a while since I had a good creative idea. I’ve probably lost my touch.”

“I’m too shy to really be able to move ahead.”

“I may lose all my money.”

“I may ruin my reputation.”

“I’m afraid of what others will say or think.”

“It probably won’t work anyway.”

“It may all turn out to be a mistake.”

Fear is one of the biggest barriers to creativity. It locks the mind up and won’t let it function. It freezes things into position and won’t let them move.

Yet the fear is also the sign of a creative mind. The person who becomes afraid of things that don’t yet exist (and probably never will) is showing the power of his imagination. His mind is obviously strongly creative!

The only problem is that the person’s creative abilities are turned in the wrong direction- into worries instead of solutions. He needs to turn the negative images into positive ones. He needs to rechannel his thoughts in another directions.

A strong fear is simply a good imagination wrongly directed.

Turn your imagination from fears to positive thinking, and you’ll be able to develop a creative solution to your problem.