

Problem Solving

Pembroke's Friday Freebie

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Creating Caring Classrooms

How to encourage students to communicate, create, and be compassionate of others



**Thought
&
Emotion**

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Problem-Solving Together

“Hey, why didn’t I think of that!” Brainstorming helps us to share ideas with others, piggyback on ideas that others might have, and create a storm inside our heads to come up with ideas and thoughts around a certain topic.

Ask students to imagine that they are applying to work for a company called Brainstorm Inc. Those who work at the company are known for their skills at solving problems creatively and for their ability to work with others. For the job interview, the manager of the company has identified the following problems. Students working with one or two classmates choose one of these challenges or questions, and brainstorm for three minutes only:

Challenges

- List things that are difficult.
- List things that are blue.
- List things that we read.
- Describe a monster.
- Invent some new pie flavors.

Questions

- How many ways can you use a toothpick?
- What are some words that are more than four syllables?
- What are some ways to recycle plastic bottles?
- How can we make schools better in the future?
- What would happen if the world did not have any numbers?

Brainstorming to Problem-Solve

1. Students work with one or more classmates. Together, the students choose one of the problems to solve and take turns providing a solution to the problem. How long might they continue to brainstorm the problem together?
2. Students work with a partner. Together, they choose a problem. They repeat the above activity, writing as many solutions as they can in three minutes. They then compare their list with their partner’s to see which ideas are the most original.
3. Students work with a partner. Together, they choose another problem from the list to brainstorm. This time they can work together to write as many solutions as they can to the problem. No time limit applies. They then compare their list with that of another pair who has worked on the same problem or a different one. As a group, they should challenge themselves to add ideas to the original lists.
4. Students choose a different topic to brainstorm with a partner. How long will it take them to brainstorm 25 ideas? 50 ideas?
5. Students come up with a new topic for others to brainstorm. They should survey the class to see how many different solutions to the problem the group can come up with. In this activity, the whole group is involved in brainstorming at the same time. When students meet each other, they propose solutions to each other’s problems and receive ideas in return.

A Structure for Brainstorming: Teaching Tip

The following outline offers a scheme for moving from independent to collaborative work, particularly for brainstorming activities.

1. Students work independently to record answers.
2. Student work in pairs to compare answers. Which items can they borrow from each other?
3. Partners meet with another pair. Students compare answers. What new items can they offer each other?
4. Students work in groups of six or eight. Which item can each student borrow from anyone else in the group? What new items can the group brainstorm to add to the list?
5. Students share as a whole class. Which is the most popular answer? Which is unique?

Brainstorming A B C s

Assure students that if they can't think spontaneously of a word or a phrase for a particular letter (e.g., X, Y, and Z are often more troublesome), they can do research using a dictionary or the Internet or "borrow" answers from others.

Brainstorming items in alphabetical order can lead students to practise and use divergent thinking skills. The alphabetical framework helps students to access prior knowledge about a theme or a topic, but also encourages them to think of words or phrases that might not be immediately obvious. Brainstorming alphabetical lists can be a meaningful collaborative activity as two or more students bounce ideas off each other.

• **C Is for Caring**

Invite students to review the "Caring Classroom A B C" line master (page 151). For ease of reference, the alphabet is summarized here. Students can discuss how they think these words connect to caring classroom communities. What other alphabetical words might they add to this list?

A Acceptance	B Belonging	C Caring
D Dynamic	E Equality	F Fun
G Groups	H Harmony	I Inquiry
J Justice	K Kindness	L Listening
M Meetings	N Negotiation	O Order
P Perseverance	Q Questions	R Respect
S Safety	T Trust	U Understanding
V Voice	W Welcome	X eXtra special
Y Yes!	Z Zero tolerance for bullying	

• **Basic Brainstorming**

Students can work with one or two classmates to brainstorm an alphabetical list on a topic of their choice. Some topics to consider include things we read, things we use numbers for, foods, animals, place names, book titles, authors, and book characters. An alphabet grid appears as a line master in the Appendixes.

- ***Cooperative Alphabet Books***

Once students have brainstormed an alphabetical list on any topic, they can work collaboratively to assemble a cooperative book, where each student contributes a page. Younger children might be limited to labelling the page with one or two words (e.g., Andy, Brendan, Callum, Dimitri). Older children can use a syntactic pattern that is repeated throughout, for example, “Alysse read an amazing adventure book with her aunt in Australia.” The alphabet book is also a useful format for presenting information about a topic. For example, an alphabet book about Canadian geography might include information about the Atlantic Ocean, British Columbia, the Canadian Shield, and Dartmouth.