

# Growing Minds in Science #1

## Lessons for Stimulating Thinking

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# Teacher's Guide For "Bursts And Bangs"

## ABOUT THE ACTIVITY

"Bursts and Bangs" refers to explosions. An explosion is defined as a blowing up or a detonation, especially accompanied by a loud noise. As is pointed out in the activity, there are all kinds of explosions. In hay fever season, our house echoes with them—lots of sneezes and quite a few coughs.

To demonstrate the difference between an explosion and a loud noise, you can pop a blown-up paper bag after you have struck a large bell. Or you can blow up a balloon, holding the end with your fingers, and let it escape. It will fly crazily in the room, and the escaping air will make a fascinating, but not big, noise. Then you can take the same balloon (if you can retrieve it), blow it up to its maximum capacity, and then puncture it. The contrast in sound shows that an explosion happens in a fraction of a second.

### Level 1: Identifying the essential nature of explosions

At the first level, your students are asked to name the essential characteristics of an explosion. They can be general in defining an explosion or somewhat technical, as in the definition "when a liquid or gas changes suddenly and violently to an expanding gas." There is suddenness to any explosion; it takes place in a very short period of time. It is also accompanied by a loud noise.

### Level 2: Speculating about explosions that produce nine results

Your students are to think of the various kinds of explosions that would result in a detour, a canceled party, a laugh, and others. This is a test of their imaginations.

### Level 3: Discussing personal experiences with explosions

The last question of the final section has your students naming the explosion that had the most impact upon their lives. The idea is to bring home the importance of explosions to each student.

**Targeted Learner Outcomes:** The student will:

- identify the nature of explosions
- speculate about the reasons for nine explosions
- name three explosions which had an impact on her or her life

## Bursts And Bangs

**A.** Did you know that your life is filled with explosions? You are barely aware of some of them, and others make themselves known dramatically to you. The hiccups, coughs, and sneezes we hardly notice, but we are certainly aware of the fireworks on the Fourth of July and the tire blowouts when they happen. However, even when we are expecting an explosion, it always seems to surprise us a little.

Although some explosions benefit us, others, such as bombs, erupting volcanoes, and gun shots, can be devastating. There are many kinds, but all of them can be identified as explosions. Why?

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**B.** What kinds of explosions might cause these outcomes?

1. a detour \_\_\_\_\_

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2. a television station going off the air \_\_\_\_\_

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3. a black eye \_\_\_\_\_

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4. soda spattered over the interior of a car \_\_\_\_\_

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5. broken windows \_\_\_\_\_

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6. a canceled party \_\_\_\_\_

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7. a child's laugh \_\_\_\_\_

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8. sudden riches \_\_\_\_\_

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9. a formal portrait \_\_\_\_\_

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C. What was the last explosion you were aware of in your community?

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What was the last explosion you were aware of in the rest of the country?

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What was the last explosion you were aware of in the rest of the world?

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Of these explosions, which had the most impact upon your life? Explain why it did.

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