

Exploding Rockets

To make an exploding rocket:

- Put about a quarter of an Alka Seltzer into a film canister.
- Pour in a small amount of cold tap water.
- Place the lid on the canister and quickly turn it over, placing the lid of the container on the floor.
- Once you have placed the container on the floor, stand well back - and wait.
- Your rocket should launch after about 30 or 40 seconds.

What happens when you pour water on the Alka Seltzer tablet?

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What makes the rocket blast off?

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Before you try to launch the rocket again, you need to wipe around the edges of the canister and rinse the lid. Why do you think this is important?

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Changing the Amount of Alka Seltzer

What do you think will happen if you use more Alka Seltzer tablet. Write your prediction here:

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Now try the experiment again. Place your rocket close to a wall, so you can get some idea of how high it goes. We will try the experiment using:

- a quarter tablet;
- a half tablet;
- a whole tablet.

Each time you do the experiment measure the amount of time from when you put the lid on the canister to when it blasts off. Write your measurements in the table below. (If you have enough Alka Seltzer tablets you can take each measurement twice and then take an average.)

Also try to make a rough estimate of the height of the rocket each time.

	1st measurement	2nd measurement	Average time
1/4 tablet			
1/2 tablet			
whole tablet			

Does the time change when you add more tablet?

Can you explain why this happens?

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Does the height of the rocket change?

Can you explain why this happens?

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Changing the Temperature of the Water

This time we are just going to use a quarter of an Alka Seltzer tablet, but we will change the temperature of the water.

Do you think the temperature of the water will affect the height of the rocket?

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We will try the experiment using 3 different water temperatures:

- ice cold water;
- cold tap water;
- luke warm water.

Of course, you have already done this experiment using cold tap water, so you do not need to do this part of the experiment again. You can just write in the appropriate numbers from the previous worksheet.

Each time you do the experiment measure the amount of time from when you put the lid on the canister to when it blasts off. Write your measurements in the table below. (If you have enough Alka Seltzer tablets you can take each measurement twice and then take an average.)

	1st measurement	2nd measurement	Average time
Ice cold water			
Cold tap water			
Luke warm water			

Does the time change as the water gets warmer?

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Can you explain why this happens?

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