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Answer 1:

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At the end, we’re to make a sketch to show what the fire extinguisher might look like and explain how it works.

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Hint 2

Recall what you have already learned about the reaction of sodium bicarbonate, citric acid, and water.

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Hint 3

Powder detergent is included in the ingredients for the fire extinguisher.

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Answer 3:

If we dissolve powder detergent in water and shake the mixture, it makes foam.

If the mixture of sodium bicarbonate and citric acid also contains powder detergent, the resulting carbon dioxide will also make foam.

The foam can cover and suffocate the fire.

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Hint 4

Now you need a suitable container in which you can make the extinguishing foam. Remember that you want to extinguish the fire from some distance away.

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Answer 4:

The extinguishing foam should be forced out by itself. That’s why the container should have only a very small opening.

There must be a way to add the water in order to start the reaction.

Our foam fire extinguisher must have a flexible discharge tube so that we can aim the foam at a flame.

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Now you have everything you need. Make a sketch of the foam fire extinguisher and describe how it works.

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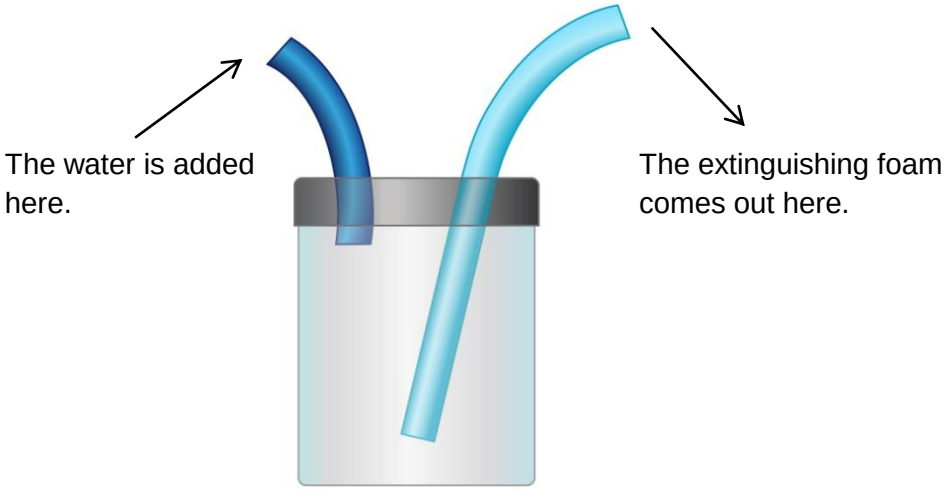
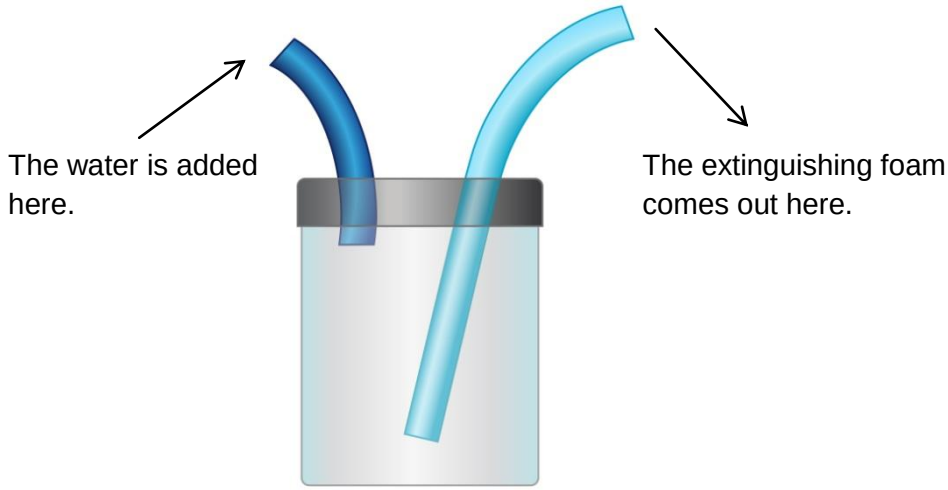


Answer 5:

The fire extinguisher consists of a container with a lid.
There is an opening where the water can be added and a nozzle where the foam comes out.

When water is added, the reaction starts and carbon dioxide gas forms. Because powder detergent is present, foam is produced. When we seal the opening for adding water, the pressure inside pushes the extinguishing foam out through the “nozzle”. We can extinguish a small flame in this way.



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