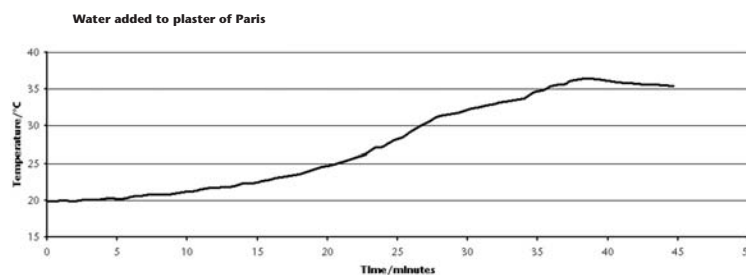


# Irreversible changes

Class 6 were looking at irreversible changes. Sachin and Anul decided to see what happened when they added water to plaster of Paris powder, measuring any temperature changes that occurred with a datalogger. Mytili and Ana did the same investigation using baking powder and citric acid solution.

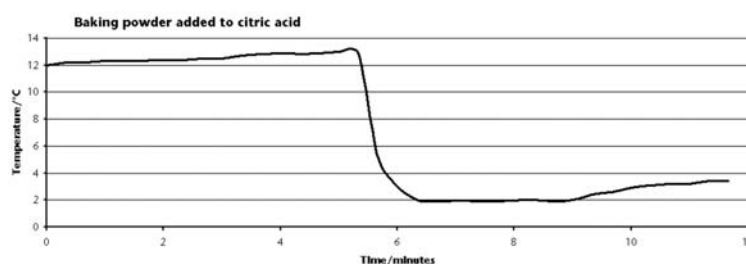
**Investigation 1:** Sachin and Anul observed that the white plaster of Paris powder had become very hard an hour after mixing. This graph shows the changes in temperature.



## Questions

1. How many minutes was it before the temperature started to change?
2. Why do you think the temperature did not change immediately?
3. What was the highest temperature reached?
4. What was the increase in temperature?
5. What would happen to the temperature if the mixture was left for another hour?

**Investigation 2:** Mytili and Ana observed that a lot of fizzing happened when the baking powder was added. This graph shows the changes in temperature. They made sure they had a steady temperature before they added the baking powder.



6. When do you think the baking powder was dropped into the citric acid?
7. What was the lowest temperature reached?
8. What was the decrease in temperature?
9. Do energy changes happen during an irreversible change? Explain your answer.
10. Look at the two graphs. How long did each reaction take? Which reaction was the faster of the two?