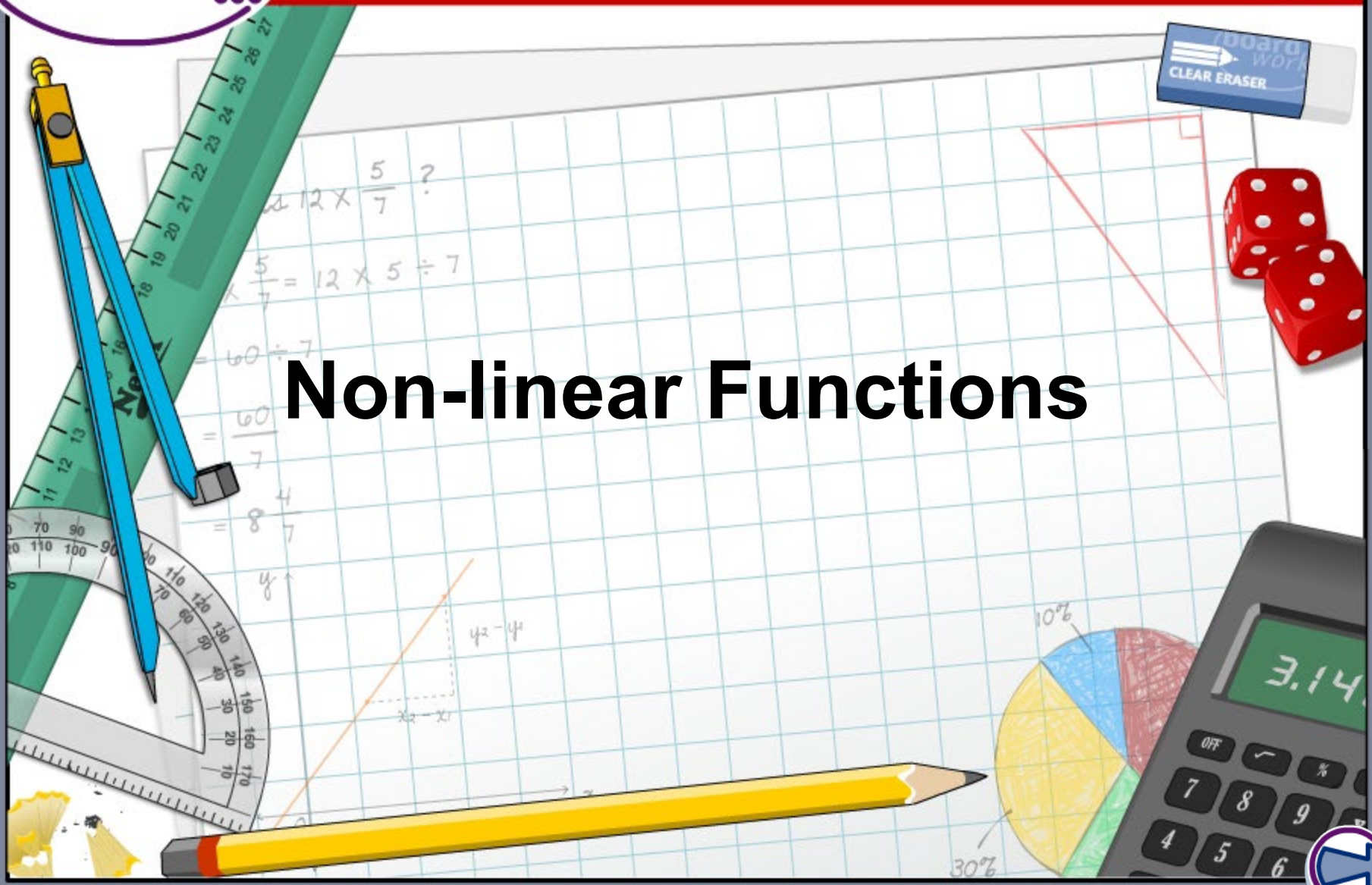


Non-linear Functions

Information

Common core icons

This icon indicates a slide where the Standards for Mathematical Practice are being developed. Details of these are given in the Notes field.

Slides containing examples of mathematical modeling are marked with this stamp.

This icon indicates an opportunity for discussion or group work.

The **Standards for Mathematical Practice** outlined in the Common Core State Standards for Mathematics describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.

These are:

1) Make sense of problems and persevere in solving them.

2) Reason abstractly and quantitatively.

3) Construct viable arguments and critique the reasoning of others.

4) Model with mathematics.

5) Use appropriate tools strategically.

6) Attend to precision.

7) Look for and make use of structure.

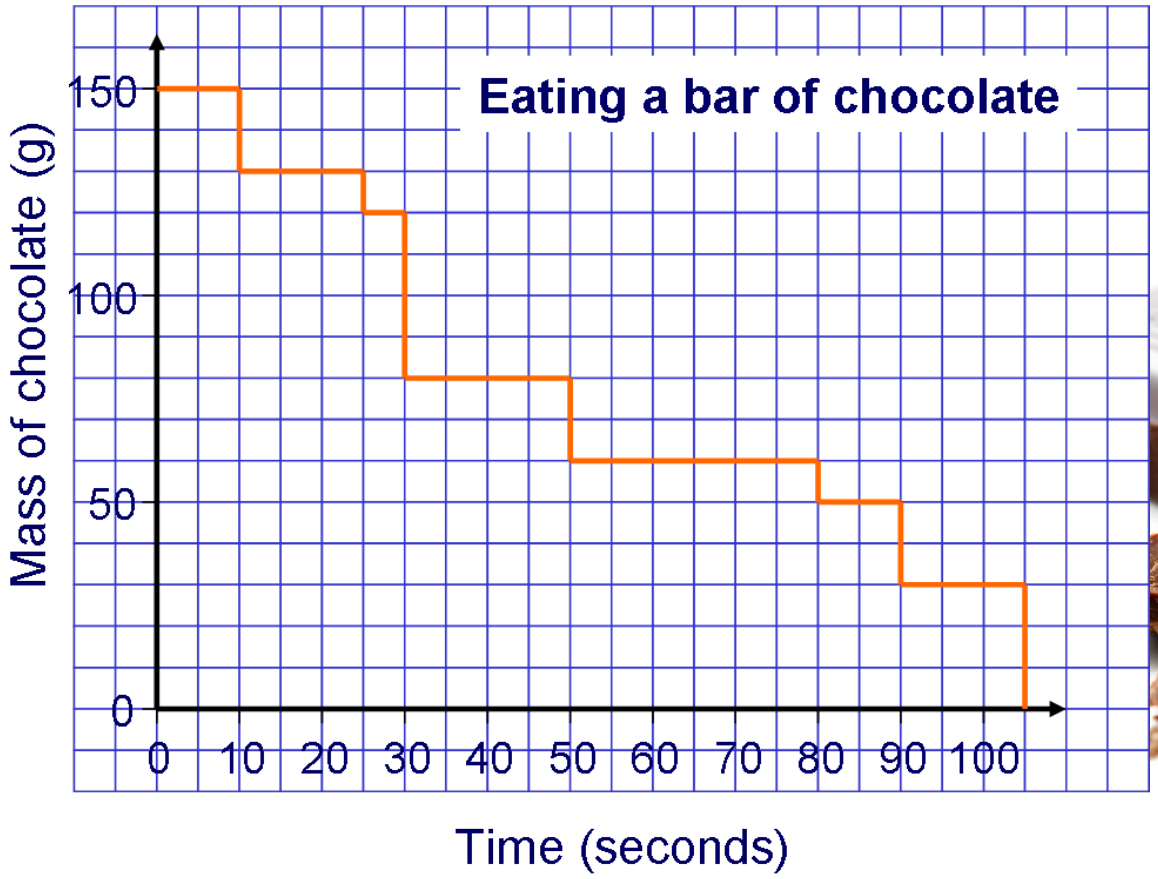
8) Look for and express regularity in repeated reasoning.

This icon indicates that the slide contains activities created in Flash. These activities are not editable.

This icon indicates teacher's notes in the Notes field.

Interpreting graphs

Jessica eats a bar of chocolate. This graph shows how the mass of the chocolate bar changes as it is eaten.

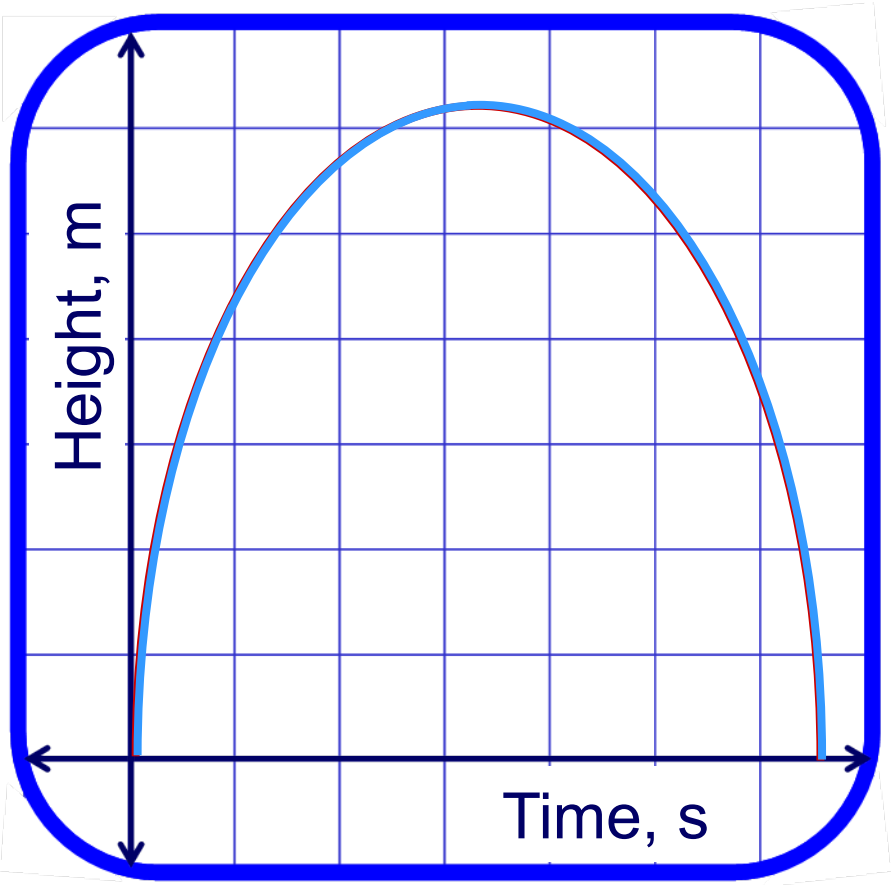


How does the graph relate to the situation?

Interpreting curved graphs

This graph shows the movement of a ball thrown into the air.

Describe the motion of the ball.



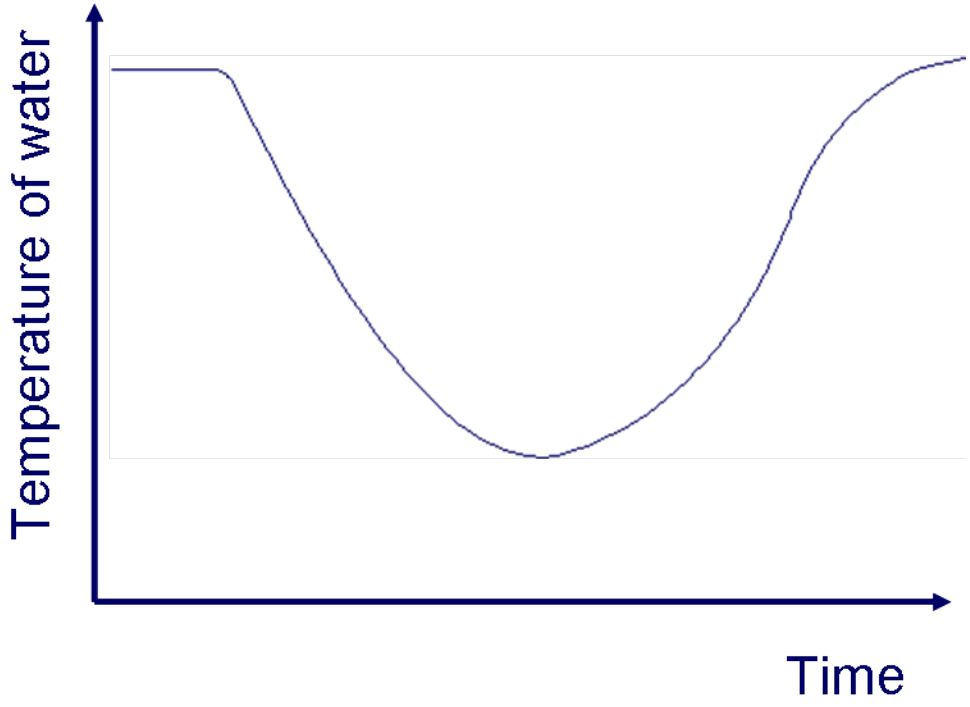
The ball is thrown upwards. It gains a lot of height in a short amount of time.

The ball is slowed by gravity, and eventually stops.

The ball falls to the ground, slowly at first and then more quickly as it gains momentum.

Interpreting graphs

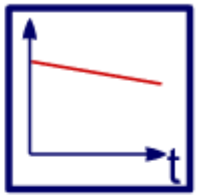
This graphs shows how the temperature of the water in a pan changes when frozen peas are added.

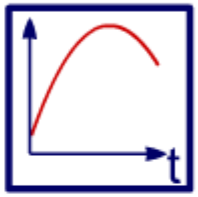


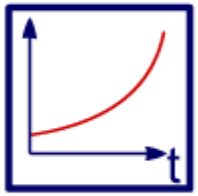
How does the graph relate to the situation?
What is happening when the graph changes slope?

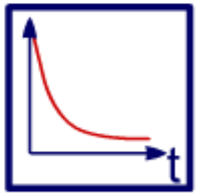
Matching graphs to statements

The price of oil, which was rising steadily at the beginning of the year, is now beginning to fall.	
House prices have been falling steadily over the last year.	
The birth rate was falling rapidly but is now steady.	
Unemployment, which was rising slowly, is now starting to rise rapidly.	









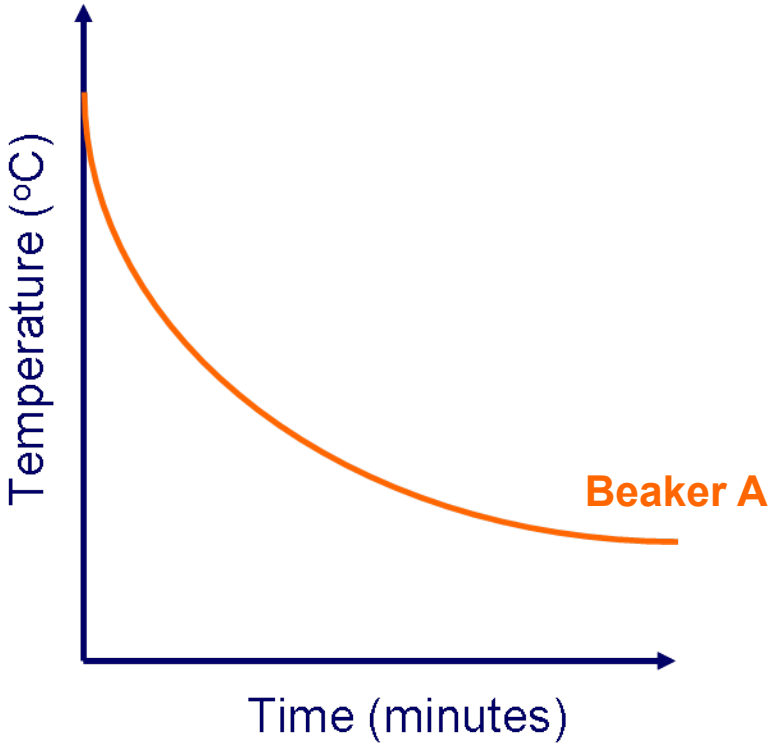
Match the situations with the graphs.

Sketching graphs I

A group of students fill three beakers with boiling water and record the temperature of the water over time.

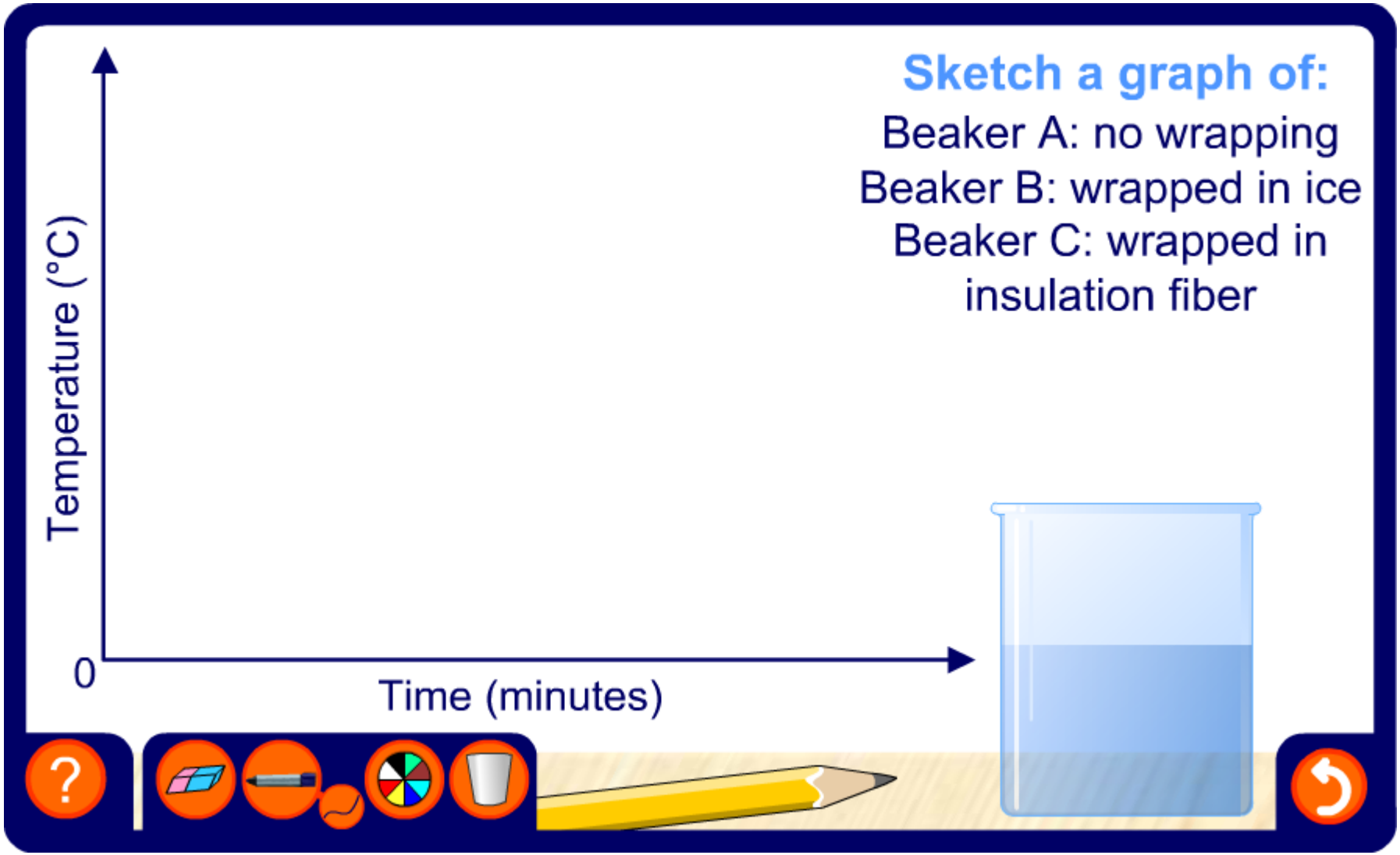
Beaker A has no wrapping, Beaker B is wrapped in ice and Beaker C is wrapped in insulation fiber.

The temperature graph for Beaker A looks as follows:



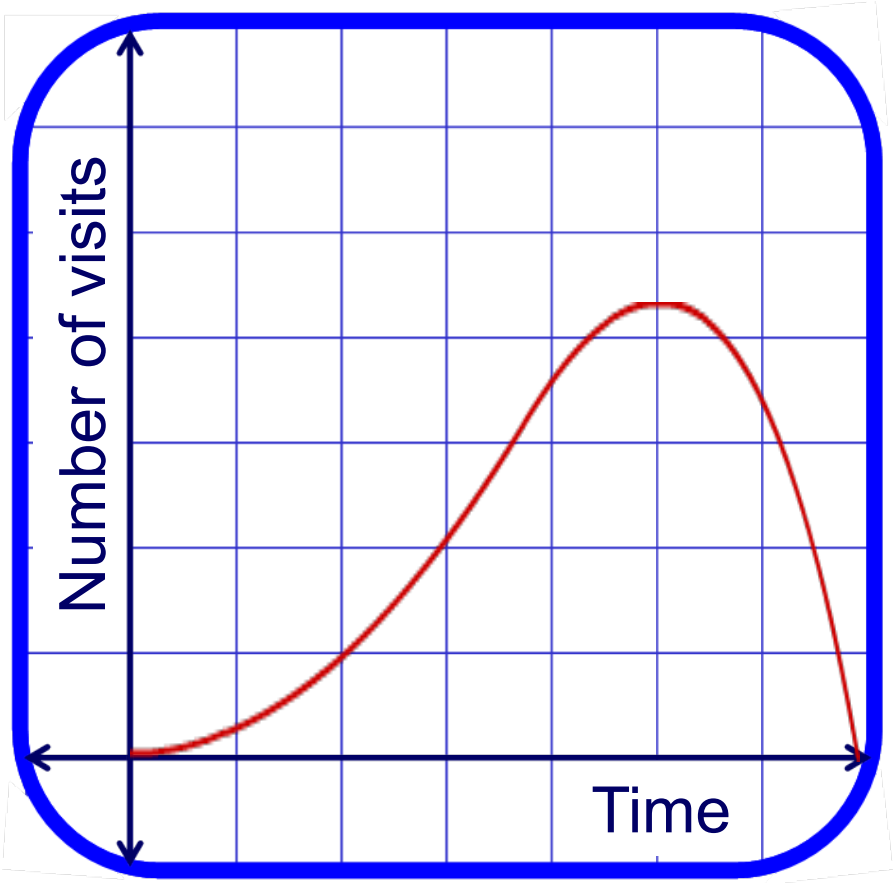
How would the graphs for Beakers B and C compare to this?

Sketching graphs II



Sketching graphs

Nadil has been recording the number of visits to his band's website.



- To begin with, very few people visit Nadil's website.
- The band is booked to play at the prom, causing more people to visit the site.
- After the prom, some people visit to comment on their set.
- The band forget to add any new content to the site, and after a while, people stop visiting.

Sketch a graph to show this situation.