

Distance-time



Graphs

Name _____

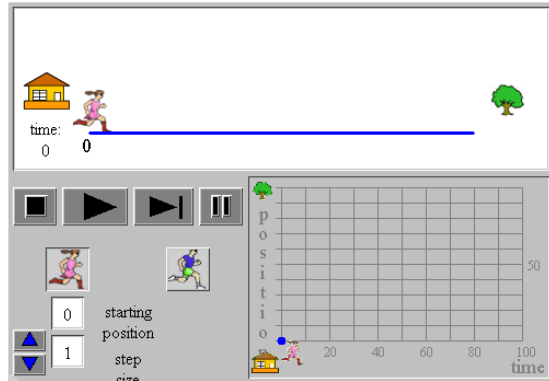
Partner _____

Date _____ Class pd _____

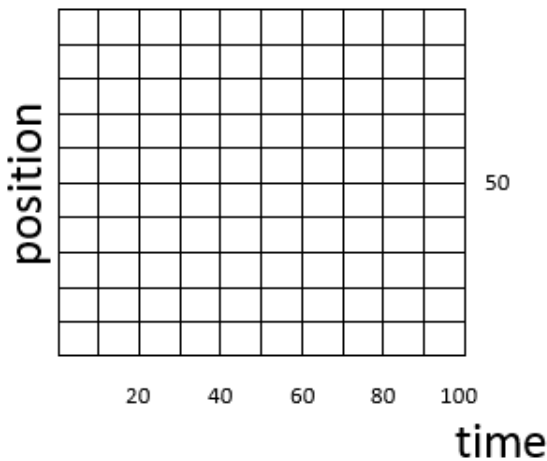
All graphs were generated using the Distance, Speed, & Time Simulation Applet at <http://illuminations.nctm.org/Activity.aspx?id=6641>

One Runner

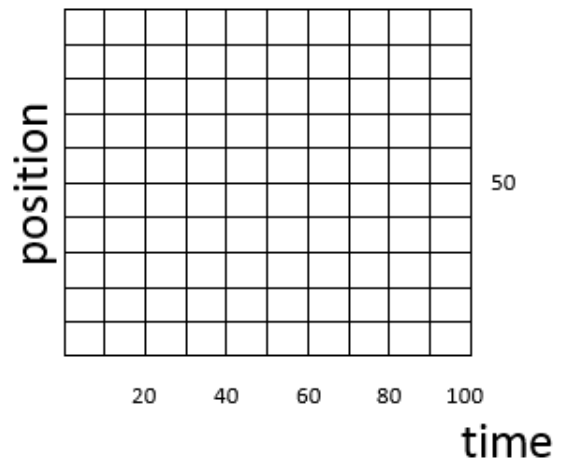
- In the gray area, click on one of the runners to remove it. The illustration shows the pink runner; but you can choose to use the blue runner if you like.
- In the white area, move the runner to the zero position and make sure it is facing the tree.
- Use the reset button to run multiple races.



Set the step size to **1**.
Click play. Sketch the graph.



Set the step size to **2**.
Click play. Sketch the graph.

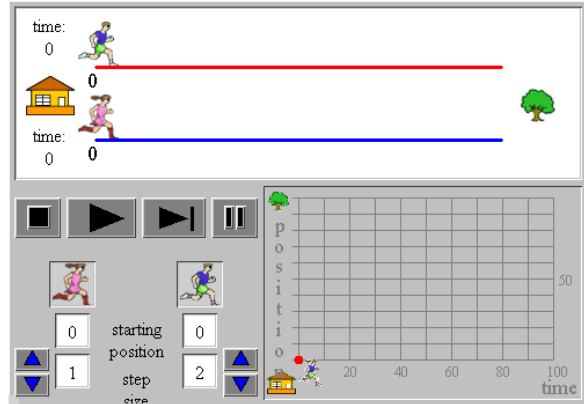


How does changing the step size change the graph? Be sure to include time and speed in your answer.

Two Runners

- In the gray area, click to bring the second runner back to the race.
- In the white area, move each runner to the house at the zero position. Make sure both runners are facing the tree.
- Set the step size for the blue runner at 4.
- Set the step size for the pink runner at 2.

Hit the play arrow and observe the runners. You can hit the reset button as often as you need to in order to answer the questions below.



How much time did it take each runner to reach the tree?

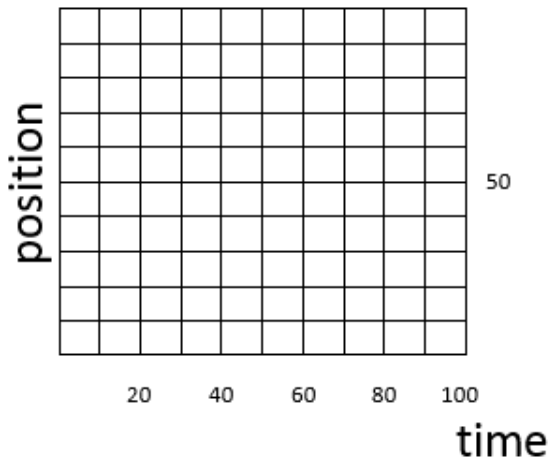
What is the position of each runner at the beginning of the race?

What was the position of each runner at the end of the race?

What was the total distance traveled by each runner?

BLUE RUNNER	PINK RUNNER

Sketch the graph.



What on the graph is the same for both runners?

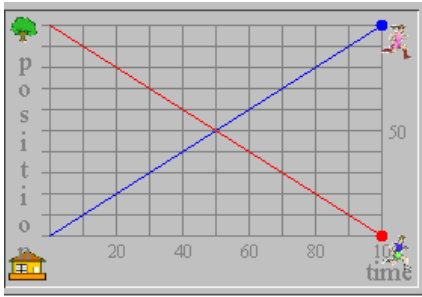
What on the graph is different for both runners?

Who won the race? What evidence does the graph give you to support your answer?

Making Thinking Visible cards

Card 1

- Use the Applet to find and record the settings that match the graph.
- Answer the questions.
- Create your Making Thinking Visible poster.



APPLET SETTINGS	BLUE RUNNER	PINK RUNNER
Step size:		
Position:		
Direction:		

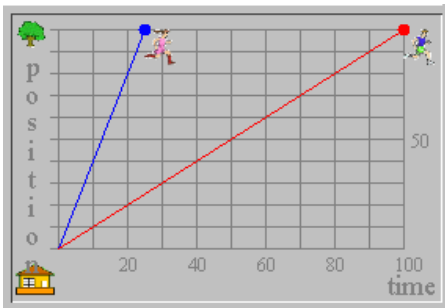
At what time during the race are the runners at the same position?

How far does each run?

How long does it take each to complete the race?

Card 2

- Use the Applet to find and record the settings that match the graph.
- Answer the questions.
- Create your Making Thinking Visible poster.



APPLET SETTINGS	BLUE RUNNER	PINK RUNNER
Step size:		
Position:		
Direction:		

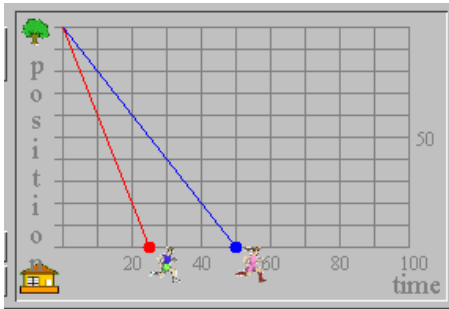
At what time during the race are the runners at the same position?

How far does each run?

How long does it take each to complete the race?

Card 3

- Use the Applet to find and record the settings that match the graph.
- Answer the questions.
- Create your Making Thinking Visible poster.



APPLET SETTINGS	BLUE RUNNER	PINK RUNNER
Step size:		
Position:		
Direction:		

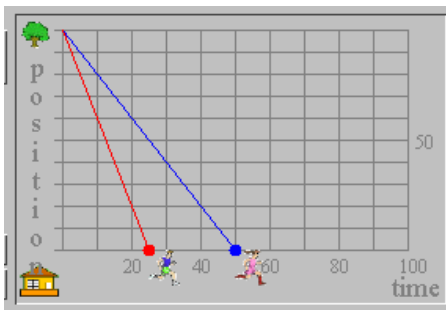
At what time during the race are the runners at the same position?

How far does each run?

How long does it take each to complete the race?

Card 3

- Use the Applet to find and record the settings that match the graph.
- Answer the questions.
- Create your Making Thinking Visible poster.



APPLET SETTINGS	BLUE RUNNER	PINK RUNNER
Step size:		
Position:		
Direction:		

At what time during the race are the runners at the same position?

How far does each run?

How long does it take each to complete the race?