Explore - Distance

1. Click each arrow button on and off. What happens to Ryan?

2. Explain how you determine Ryan's distance from the Blue Flag. How many ways are there to determine his distance?

3. Drag the point on the back wheel of Ryan's skateboard. What do you notice?

Explore - Time

1. How long can we collect data?

2. How does the sketch change as it records time?

3. Start the clock. Move Ryan slowly and quickly between the two flags. What happens to time as Ryan's position changes?

4. Compare the Time model an the Distance model on the previous page. How are they similar? How are they different?

Similar: _____

_____

Different: _____

_____

Distance over a period of time

1. Where does Ryan start his ride?

_____

_____

2. How long does it take for Ryan to reach the blue flag if he moves slowly?

Time to reach blue flag if Ryan moves slowly: ☐

3. How long does it take for Ryan to reach the blue flag if he moves quickly?

Time to reach blue flag if Ryan moves quickly: ☐

Moving Away

1. Explain how the shape of the graph represents Ryan's motion. In your discussion you should use the words *distance*, *direction of motion* and *time*.

_____

_____

_____

_____

_____

There and Back Again

1. Explain how the shape of the graph represents Ryan's motion. In your discussion you should include the following words: *steepness, direction of motion, faster, slower, stopped* and *time*.

Match It 1

Describe the five different parts to the graphical model of Ryan's Motion. In your description you should use the words distance, steepness, direction of motion, faster, slower, stopped and time.

Part 1

Part 2

Part 3

Part 4

Part 5

Match It 2

Describe the seven different parts to the graphical model of Ryan's Motion. In your description you should use the words distance, steepness, direction of motion, faster, slower, stopped and time.

Part 1

Part 2

Part 3

Part 4

Part 5

Part 6

Part 7

Match It 3

Describe the different parts to the graphical model of Ryan's Motion. In your description you should use the words *distance, steepness, direction of motion, faster, slower, stopped* and *time*.

Part	***Description***

Pair Challenge

Follow the instructions on the screen for this part of the sketch.

Match 1 - Revisited

Ryan's speed can be calculated using the slope of a line. The formula for slope of a line is:

$$slope = \frac{rise}{run} = \frac{\Delta y}{\Delta x}$$

Note that Ryan's speed will be ***negative*** when he moves towards the blue flag and ***positive*** when he moves away from the blue flag or toward the red flag. Calculate Ryan's speed at points 1 and 2. *Show all your calculations in the space provided.*

Ryan's speed at point 1 is:		***Ryan's speed at point 2 is:***	

Match 2 - Revisited

Calculate Ryan's speed at points 1, 2 and 3. *Show all your calculations in the space provided.*

Ryan's speed at point 1 is:		***Ryan's speed at point 2 is:***	

Ryan's speed at point 3 is:	

Match 3 - Revisited

Use the coordinate grid to analyse Ryan's motion in the graph. Describe his motion for each of the following time slices. You should use actual values for speed and distance, for example Ryan is moving towards the blue flag at 3 m/s.

Time Slice	***Description***
0 to 8 seconds	
8 to 16 seconds	
16 to 23 seconds	
23 to 26 seconds	
26 to 32 seconds	
32 to 60 seconds	

Analyze This

Follow the instructions on the screen for this part of the sketch.

Water Works

Follow the instructions on the screen for this part of the sketch.

Author a Motion Story

Choose a context with two variables. Determine which variable is dependent and which variable is independent. Author a motion story in the space provided below. Use the grid provided to graph your motion story. Do not forget to label your axes, choose a scale, include a title and graph your motion story.

Independent variable:		***Dependent variable:***	

My Motion Story