

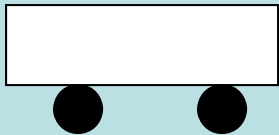
Interactive Animation Project Storyboard

Susan German

Title Screen – This screen will appear for a few seconds before the masking transition to the purpose /goal screen.

An Inquiry Project Using Newton's First Law of Motion

Susan German



I will use a **masking transition**
To move from the **Title Screen**
To the Purpose/Goal screen

Purpose or Goal Screen – This screen allows the user to see the objectives of the interaction. The user will also enter their name to be used in other screens.

Objectives:

1. Given an object in motion, calculate its speed (distance/time)
2. Interpret a line graph representing an object's motion in terms of distance over time (speed) using metric units.
3. Compare the effects of balanced and unbalanced forces on an object's motion.
4. Explain that a change in motion is the result of an unbalanced force acting upon an object

By participating in a guided inquiry, you will leave this animation with a better understanding of motion.

Please enter your name here:

Quit

Next

Users will be requested to **enter their name on this screen**. This input will be used on the other screens as a means to personalize the interaction. There will be a **Next button** for the user to move forward to the diagnostic assessment. I will also include a **Quit button** for user to move to the quit screen.

Diagnostic Assessment – This screen is to activate prior knowledge the student may have. Students need to be thinking about the concept prior to using the information.

1. What is the equation for speed?

2. How do you know motion has occurred?

3. What are the forces acting upon a parked car?

4. What are the forces acting upon a moving car?

5. Which graph shows a car moving at a constant speed?

Your score is out of

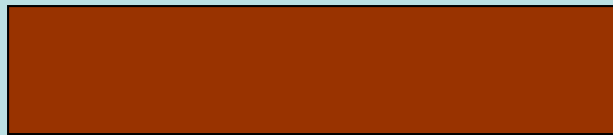
I will probably switch these questions to multiple choice. This way I can give feedback on the score.

Students will need **input boxes** for their responses. A **dynamic box** at the bottom so users can see their scores.

There will be a **Variable button** to move the user to the choosing your variables. There will be a **Quit button** to move the user to the quit screen. There also will be a **Back button** for the user to go back one screen.

Choosing your variables

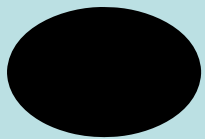
Students will **click on the object and drag to an area** to set up the experiment. I will have a “classroom type” setting with a table for students to set up the experiment. There will be **3 buttons: Investigation button** to move the user to the Investigation screen, **Quit button** to move the user to the quit screen, **Back button** to move the user back one screen.



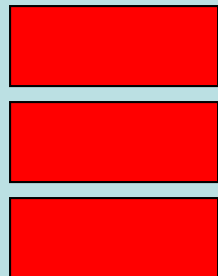
Ramp length



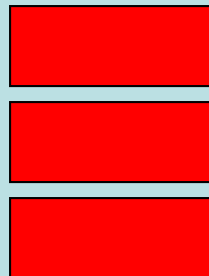
Cart



Mass



blocks



Independent variable:

How will the independent variable be changed?

Dependent variable:

How will the dependent variable be measured?

This is where students will set up their investigation.



Slider to choose mass

The slider will allow students to choose different mass sizes for their experiment.

Quit

Back

Investigation

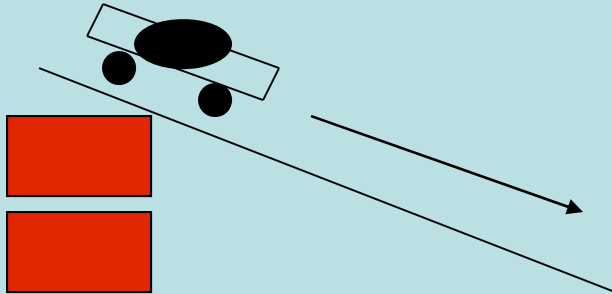
Students will run their investigations on this page. **Items will need to be able to be clicked upon and dragged** to set up the desired variables.

Investigation

The **stopwatch will be controlled with start, stop and reset buttons.**

This is the stopwatch or timer.

The motion tween animation here is more difficult than it seems. I will need to create movie clips that accurately take care of the variables the user chooses.



These are distance markers for measuring the car's distance.

3 buttons: Data button to the data table; Back button to go back one screen. Quit button to quit screen.

The sound effect will be a car moving and horn beeping at the start of the animation.

Quit

Back

Data

After each trial, students will be directed to this page in which **they will enter their data from the trial**. At the end of the experiment, the average will be computed (**need dynamic text box**). Students will make a graph of the data and answer questions about meaning.

Data Table

Independent variable	Trial 1	Trial 2	Trial 3	Average
Change 1				
Change 2				
Change 3				

3 Buttons: Back to go back one screen; Investigation to toggle between the investigation and data table; Quit to go to the quit screen

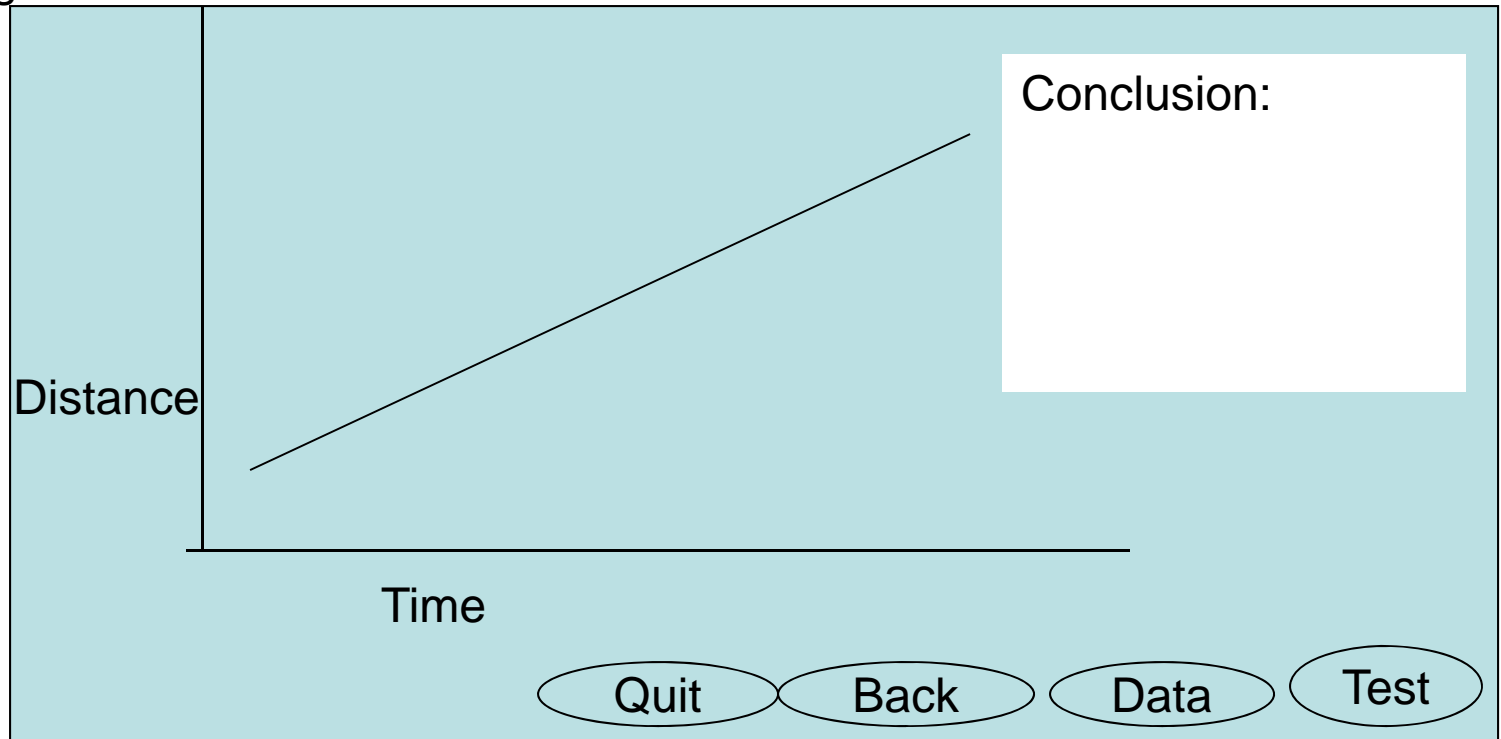
Quit

Back

Investigation

Graph and Conclusion

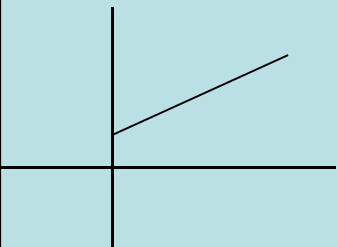
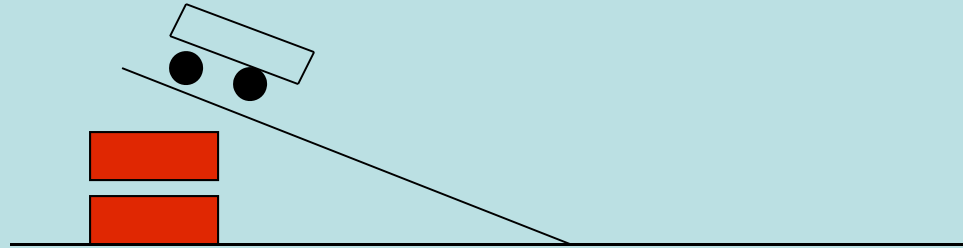
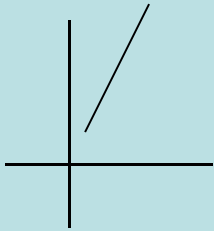
Students will make a graph of their results. I am not certain how to set this up using Flash. If this will not work, I will have the students change their data into Microsoft Excel. Students then will have a **input text box to write a conclusion** for their investigation.



4 Buttons: Data Table to toggle between the data table and the graph; Back to go one screen; Assessment button to go to the final assessment and Quit to go to the quit screen

Final Assessment

Matching: Match the graph to the scene that would produce a graph.



Quit

Back

Variable

Further

Students **will click and drag the graphs to do the matching or there will be an input box by each picture.** There will be a dynamic box at the bottom that will give the student their score. **4 Buttons:** Back button to go back one scene; Quit to go to the quit screen; Further, which takes students to an extension activity and Choosing your variables button to go to do another experiment.

Going Further

Below is a list of video clips. The clips are of various cans rolling down an incline plane. Choose which can you believe to roll down the plane in the shortest amount of time. Test your prediction by clicking on the video and watching the timer.

Chicken Noodle Soup

Fruit Salad

Dog food

Condensed Cream of Mushroom Soup

Movie Screen

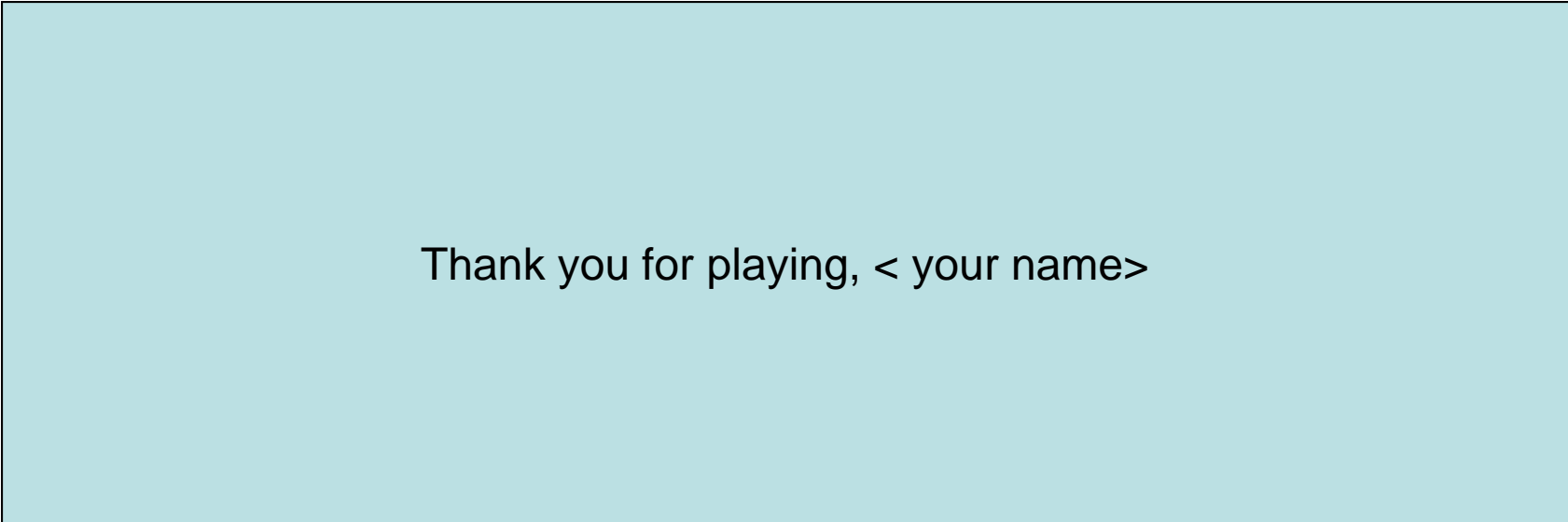
The play button will start the movie clip from the point it was stopped. The stop button will stop the movie clip.

Which can rolls the quickest? How do you know? Why?

Quit Screen

Are you sure you want to quit? or

The Yes button will send the user to the final quit screen. The Cancel button will send the user back to where they left.



Thank you for playing, < your name >