

Title of Experiment: The Inclined Plane

Purpose: To determine the mechanical advantage of an inclined plane and to compare it to the theoretical mechanical advantage. What does mechanical advantage mean? How is it related to the weight of the load?

Question: What is the mechanical advantage of an inclined plane? How is it related to the weight of the load and the height of the plane?

Materials: What do you think will happen? (Predict the results of your experiment.) _____

Method: How should you set up the inclined plane? How should you measure the force?

Procedure: How do you set up the inclined plane?

1. Lay the board on the table so that the board is inclined. Measure the height of the board.

2. Lay the board on the table so that the board is inclined.

3. Measure the weight of the load and the height of the board. Calculate the theoretical mechanical advantage of the inclined plane.

4. Calculate the actual mechanical advantage of the inclined plane.

Results: What results did you get?

1. What was the theoretical mechanical advantage?

2. What was the actual mechanical advantage?

Conclusions: What do you think?

1. The actual mechanical advantage is less than the theoretical mechanical advantage.

2. The actual mechanical advantage is less than the theoretical mechanical advantage.

3. Final thoughts.

Discussion: How do you think the results of your experiment are related to the theoretical mechanical advantage?

There is a difference between the theoretical and actual mechanical advantage.

When you measure the weight of the load and the height of the board, you will find that the actual mechanical advantage is less than the theoretical mechanical advantage.