

MiSP Simple Machines / Inclined Plane Worksheet #2a L1

Name _____

Date _____

MAKING THE GRADE (AIMS MACHINE SHOP)

Key Question: How much force does it take to lift 400 grams 20 centimeters in height?

Learning Goal: Students will measure and compare the forces needed to lift an object straight up and on an inclined plane.

Problem:

- How does the length of an inclined plane affect the force?

Procedures:

Check off each step as you complete it.

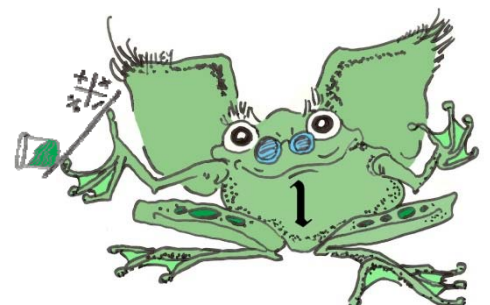
- ☐ Follow the instructions given by your teacher and on the Making the Grade handouts (pp. 191-193).
- ☐ Complete the data chart and graph on the handouts.

Discussion Questions:

Making the Grade Connecting Learning (pp. 195–196, #2–#4, #8)

1. What generalization about the inclined plane can you make from the graphs?

2. How could you use an inclined plane to help you?



3. Why did the force go down as the length of the plane got longer? Did you reach the same height?

4. Theoretically, comparing the amount of force times the distance of pull for each example should give you the same results. In the activity you will find that these are not exactly the same. What causes the difference?

5. Use the graph to predict the force that would be used if the resistance traveled

55 cm: _____

110 cm: _____

6. Look at the line segment on the graph between the 40 cm and 50 cm data points. Complete the sentence, "As the x -values on this graph INCREASE,

the y -values _____."

