Slippery Slope

In this exploration you will observe the effects of FRICTION on the distance a block travels when it slides down a frictionless ramp onto a table.

**Define FRICTION:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Follow the directions below.

1. Read the introduction and click the continue button.
2. Identify the exploration components.
3. Select each combination of ramp height, block bottom surface, and table surface. Click the play button.
4. Watch as the block slides onto the table top. Note the distance traveled and read the explanation.
5. Record your observations in the data chart below.

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| **DATA CHART** | | | | | |
| **Surfaces** | | **Height of Ramp** | | | **Additional Observations** |
| **Block Bottom** | **Table Top** | **20 cm** | **40 cm** | **60 cm** |  |
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**Questions**

1. Which surface combination resulted in the longest distance traveled? The shortest distance?
2. Which surface combination caused the lowest friction? The highest friction?
3. Explain the relationship between the amount of friction and the distance traveled in a paragraph below.
4. In baseball, remaining upright and running all the way to a base at top speed is generally acknowledged to be the fastest way of reaching the base. Why do you think the runner often uses friction to reduce his/her speed by sliding into the base?