# 1/9 Newton's 3 Laws of Motion #9

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**xit Goal**
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able.

In your journal explain what you understand about friction.

*Figure 1*

You can draw diagrams and give examples in your explanation.

Learning target: I can investigate how different surfaces affect the force needed to move a wood block

# Newton's 3 Laws of Motion #9

## Question

How does the type of surface affect the force needed to move a block?

Figure 1

## Hypothesis

Predict which surface will require the most force and which will require the least force to move the block. Give a reason.

## Variables

## Materials

Wood block
+3 masses

4 materials of your choice
spring Scale

Learning target: I can investigate how different surfaces affect the force needed to move a wood block

## Diagram

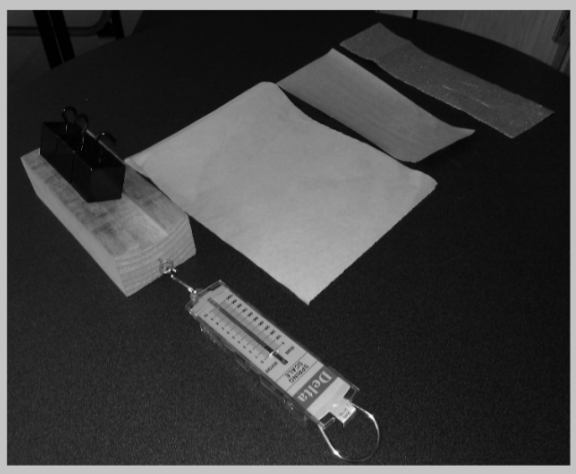
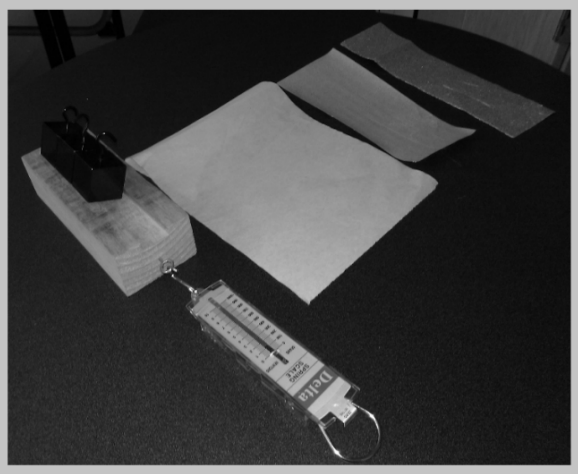


Figure 1

Learning target: I can investigate how different surfaces affect the force needed to move a wood block

## Procedures

Figure 1



Learning target: I can investigate how different surfaces affect the force needed to move a wood block

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# 1/9 Newton's 3 Laws of Motion #9

## Procedures

1. Place the block on the _____ (1st condition)
2. While one person is holding the _____, the other person begin to move the block pulling carefully with the spring scale.
3. Have another person read the amount of Newtons of force need to move the block.
4. Record the force in the data table.
5. Repeat steps 1-4 for a total of 5 trials.
6. Place the block on _____ (2nd condition) and repeat steps 2-5
7. Place the block on _____ (3rd condition ) and repeat steps 2-5
8. Place the block on _____ (4th condition ) and repeat steps 2-5

Learning target: I can investigate how different surfaces affect the force needed to move a wood block

Figure 1

## Data Table

| Force (N) | Material #1 | Material #2 | Material #3 | Material #4 |
|---|---|---|---|---|
| Trial 1 | | | | |
| Trial 2 | | | | |
| Trial 3 | | | | |
| Trial 4 | | | | |
| Trial 5 | | | | |
| Average Force (N) | | | | |

Learning target: I can investigate how different surfaces affect the force needed to move a wood block