

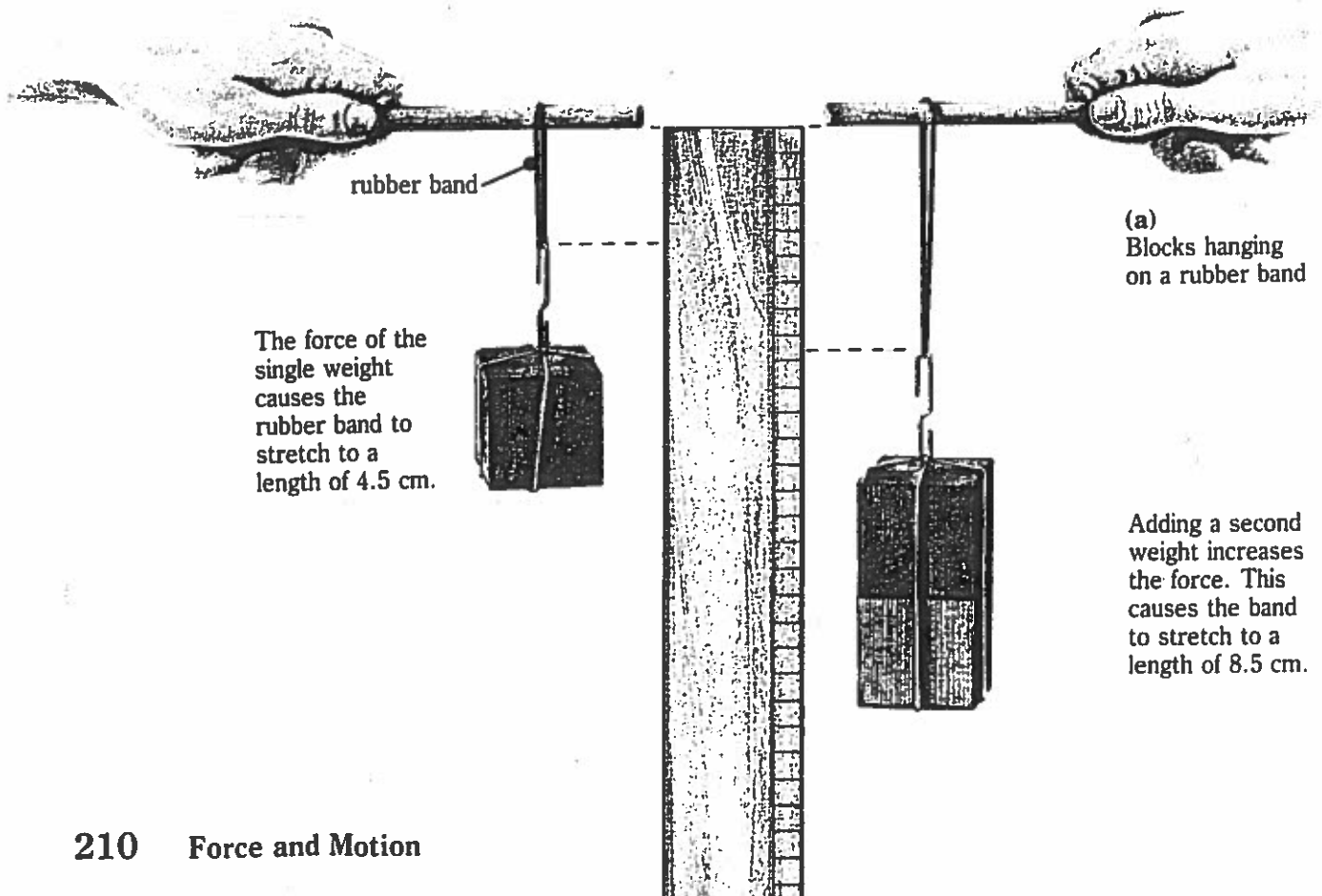
## 4 The Tools to Use

Forces cannot be seen. But there is a way to discover the size of a force—measure the size of its effect. In this section, you will follow a series of Explorations showing you how to make *force meters* and how to use them to measure forces.

### EXPLORATION 3

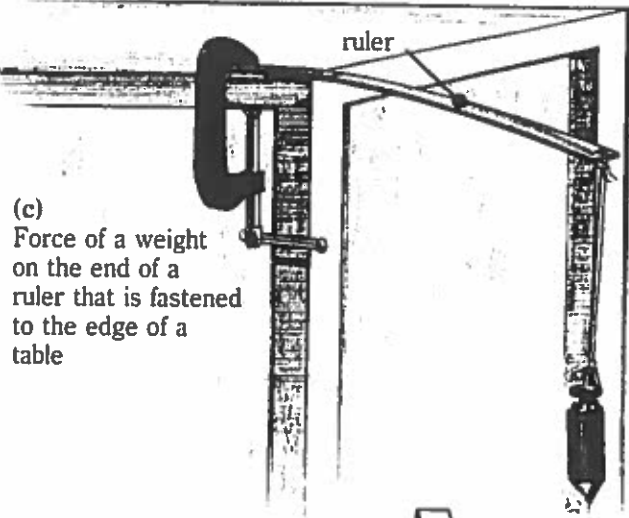
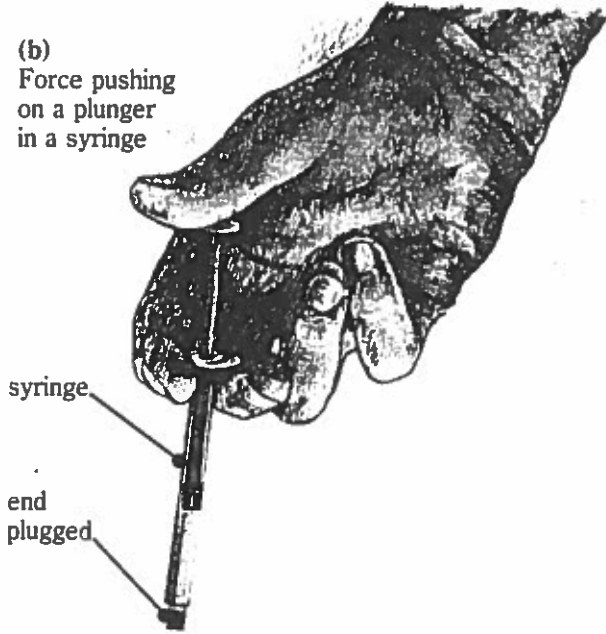
## Force Meters

Carefully study the following examples. In each case, what effect is brought about by the applied force? If the force were increased, how would the effect change? How could you use the effect of the force as a means of measuring the force? The first example has been completed for you. For the remaining examples, draw a diagram in your Journal showing what would happen if there was an increase in force. Your drawing should also show how you would use the effect to measure the size of the force. If you prefer, you may describe in words the increase in force, its effect, and how to measure the size of the force.



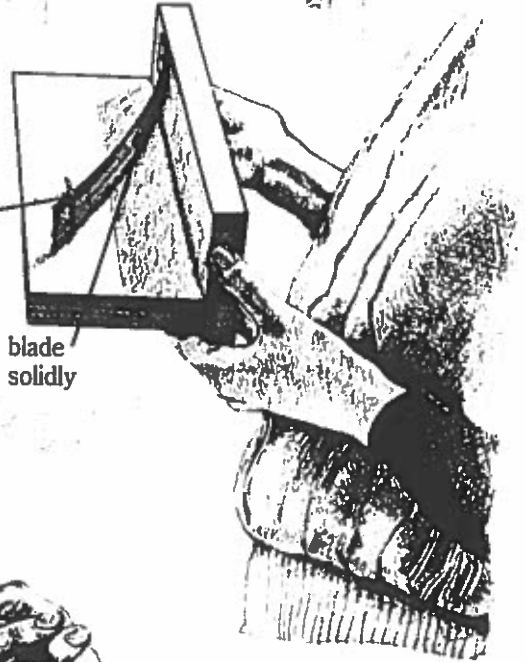
**EXPLORATION 3—CONTINUED**

(b)  
Force pushing  
on a plunger  
in a syringe



(c)  
Force of a weight  
on the end of a  
ruler that is fastened  
to the edge of a  
table

(d)  
Hacksaw blade pulling  
on a book



hacksaw blade  
fastened solidly

(e)  
Weights  
hanging  
from a  
spring

