**The National Orthodox School /Shmaisani**

**Subject: Science/ Physics**

**Name: Title: Moments**

**Date: Grade-Section: 7 …… CS**

**Turning Effect:**

The turning effect of a force is called the **moment** of the force.

The moment of the force depends on two things:

* The size of the force
* The distance between the line of the force and the turning point is called the **pivot** or **fulcrum**.

We calculate the moment of force using the following formula:

Moment of a force = force x distance from pivot

Moment = F d

M

Moment is measured in newton meters (Nm)

F= force in newtons (N)

d

F

d= distance in meters (m)

Core: (Solve the following 8 questions)

Test your understanding:

1. What is the moment of this force?



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1. What is the length of this lever if the **moment** is **8 Nm**?
2. Calculate the moment if a force of 5.0 N is applied to a crowbar 15 cm long.
3. A force of 20 N is applied to a door causing a moment of 5 Nm.

Calculate the distance in cm from the hinge axle to the point on the door where the force was applied.

1. What force must be applied to a 30 cm long spanner to generate a moment of 6.0 Nm?
2. What distance should a force of 18N be applied to generate a moment of 142 Nm?
3. What force must be applied to a 0.8m long rod to generate a moment of 250Ncm?