Y8 Forces Homework Grids

Name: _____

Science Teacher: _____

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Grid 1.1	
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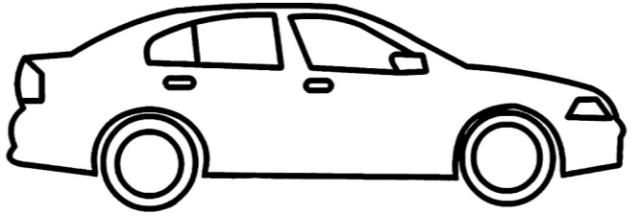
Grid 1.8	

Grid 1.1: Use KO 10-13 Due: _____

Draw and label force arrows for the four forces the car is experiencing:



Jack and Gill travel 75m and it takes them 2 minutes and 30 seconds, what was their average speed in m/s?

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How far in metres would a car travel in 3 minutes going at 16 m/s?

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Higher: Describe **and** explain the motion of the object shown in the graph between each points

A to B ……

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B to C ……

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C to D ……

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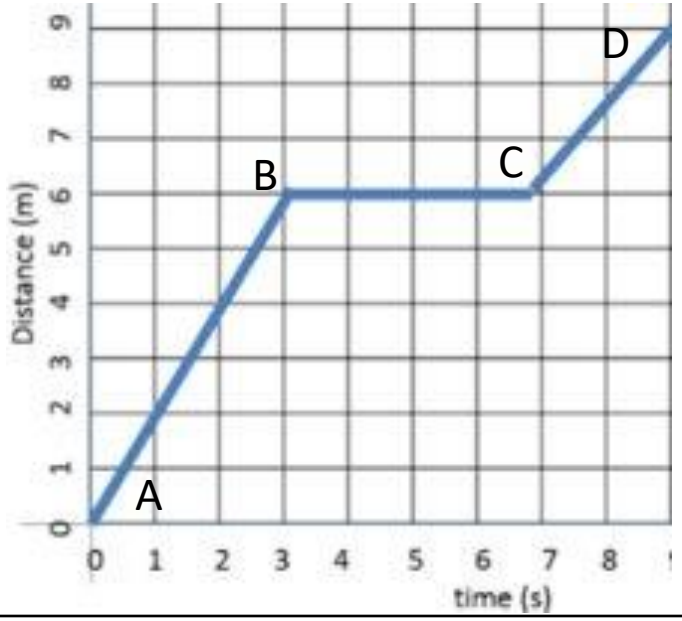

Grid 1.2: Use KO 10-13 Due: _____

What is the difference between mass and weight?

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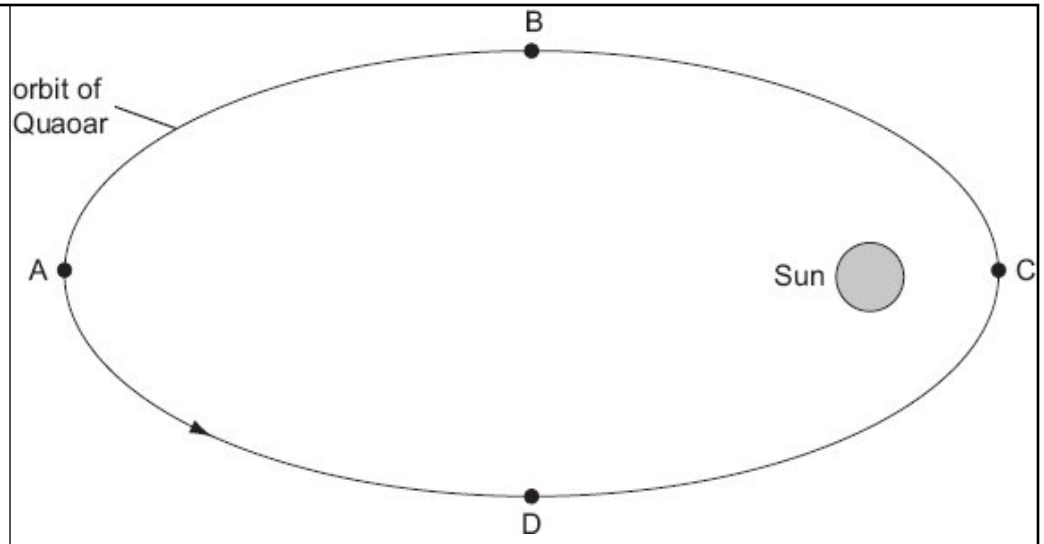

The gravity on Earth is 10N/kg. What is the weight of a person who has a mass of 76kg?

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On the diagram above draw four force arrows to show the effect of the Sun's gravity at the four points A, B, C and D.

Where is the effect of gravity the largest and why?

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Grid 1.3: Use KO 10-13

Due: _____

Higher: The gravity on Earth is 10N/kg.
What is the mass of a person who weighs 964N?

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The gravity on the Moon is 1.6N/kg. How many times less is it than the Gravity on Earth?

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Describe the factors that affect weight?

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Why is gravity different on Mars compared to Earth?

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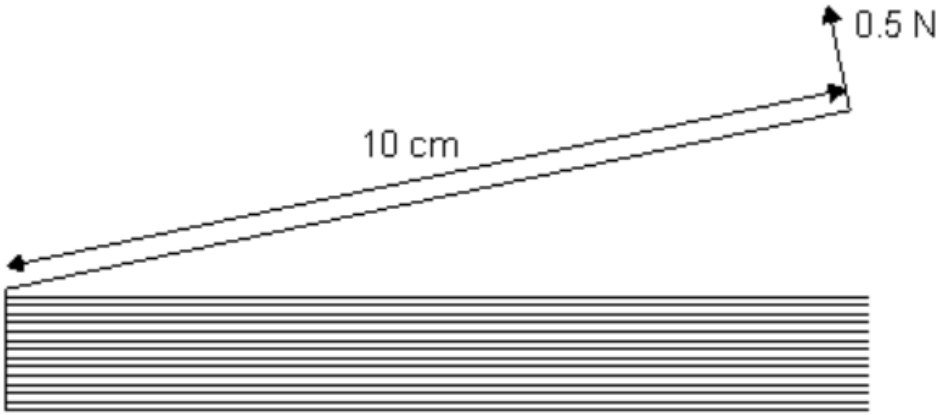
Grid 1.4: Use KO 10-13

Due: _____

Jenny puts a book on her desk.
She lifts the cover up with her finger, using a force of 0.5 N.
The cover is 10 cm wide.



Calculate the turning moment on the cover of the book using the equation below:
Moment = Force x perpendicular distance
Give the unit.

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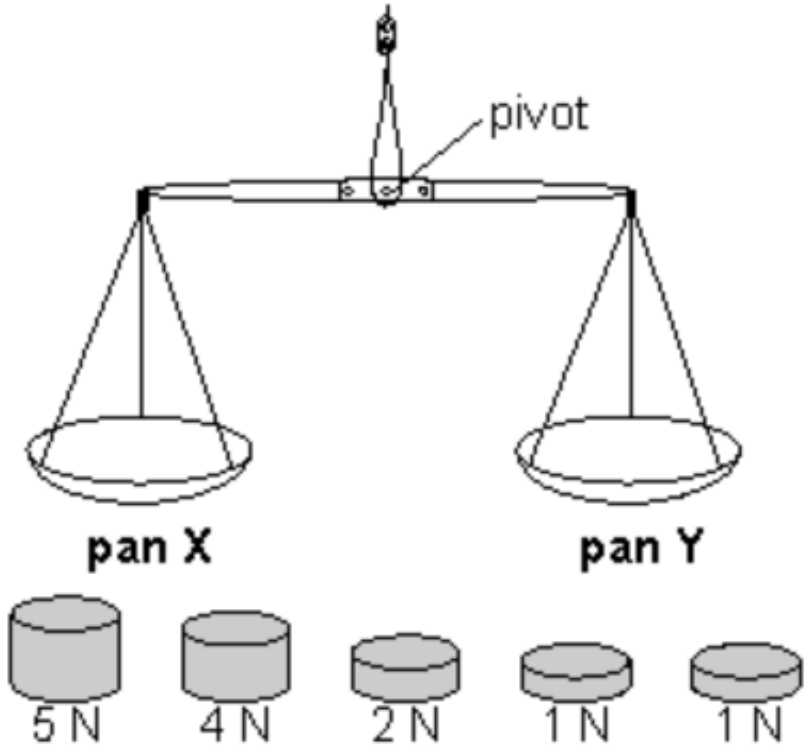

Ellie puts two weights in pan X and one weight in pan Y.
The scales balance.
Which weights could be in pans X and Y? Explain your answer

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Grid 1.5: Use KO 10-13

Due: _____

When a bird flies at a **constant height** above the sea, there is a downward force of 30N on the bird.
What is the size of the upward force on the bird? Explain your answer.

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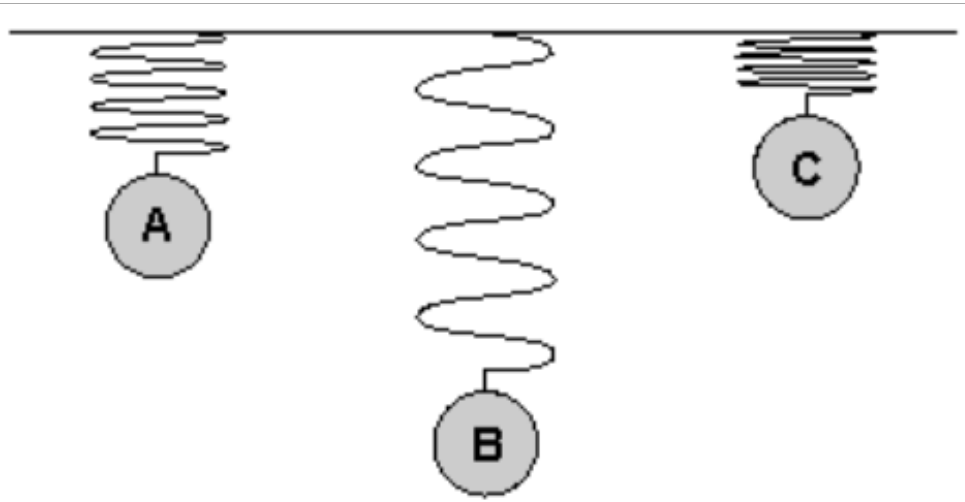

When Jenny writes with a pencil, it exerts a **force** of **5N** on the paper. The **area** of the pencil in contact with the paper is **0.5 mm²**.
Calculate the pressure of the pencil on the paper. Give the unit.

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All 3 springs are identical.
Which ball in the **above diagram** is heaviest? Explain your answer

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Grid 1.6: Use KO 10-13

Due: _____

Higher: Plan an investigation into the factors affecting the movement of objects on ramps.
You can use any objects and any surfaces you like, and any other equipment you need.

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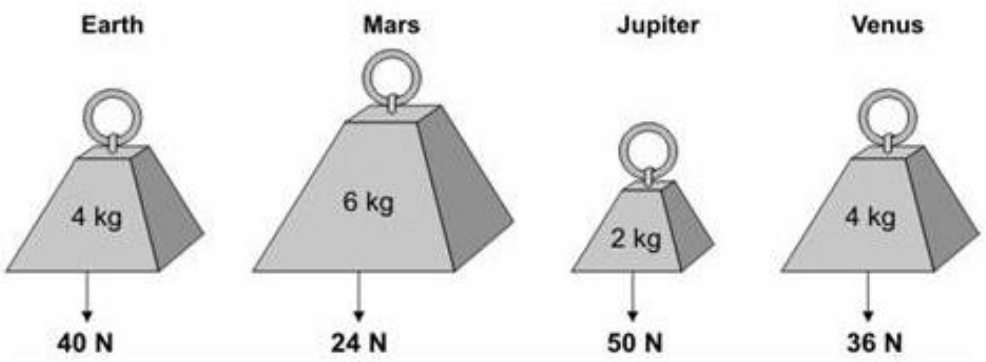

The drawings show the mass and weight of four objects on different planets.
On which of the four planets is the object with the largest mass?

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How can you tell, from the drawings, that gravity is greater on Earth than on Venus?

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Grid 1.7: Use KO 10-13

Due: _____

The **diagram above** shows a snowshoe. How do snowshoes help people to walk in deep snow?

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When someone is ice skating the force of between the skate and the ice is less than when they are walking on a carpet.

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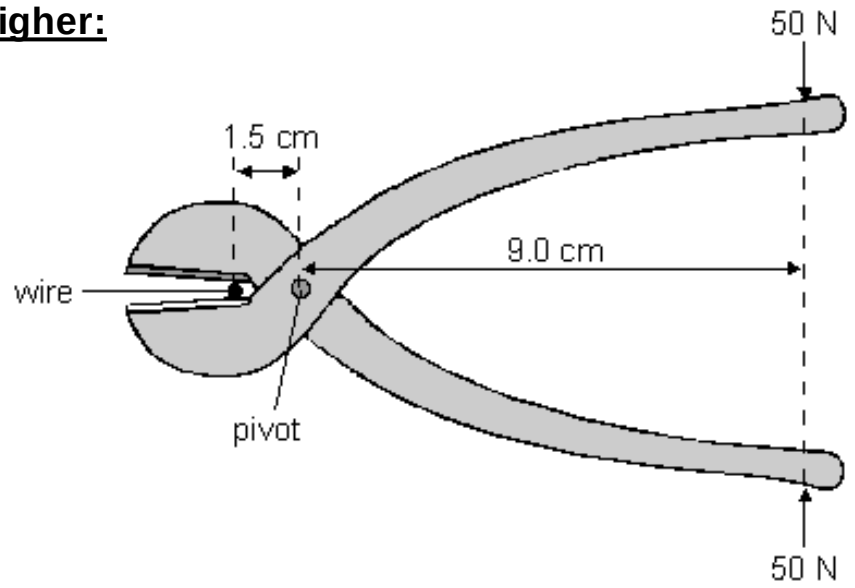
Higher:



What is the turning moment about the pivot, on **each** handle?
Give the unit.

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What force is applied, by **each** blade, on the wire?

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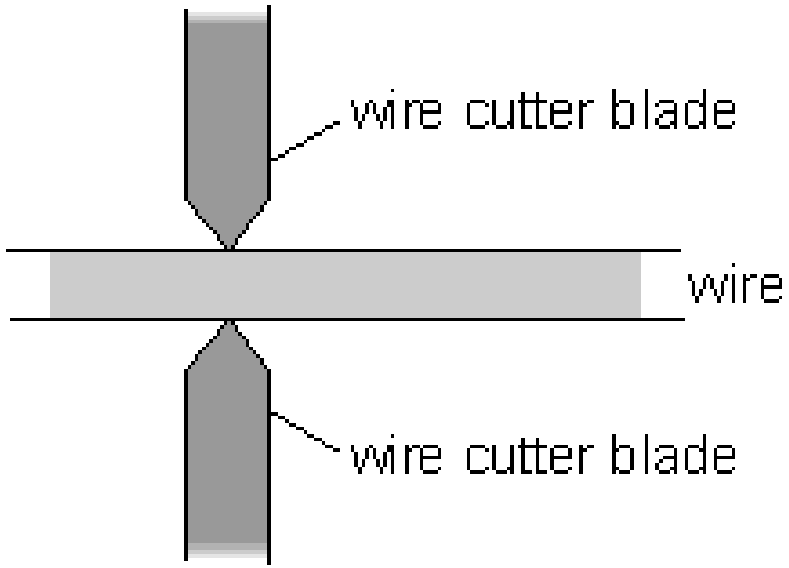
Grid 1.8: Use KO 10-13 Due: _____



Higher: A force of 200 N is exerted on the wire with each blade.
The area of contact of each blade on the wire is 0.0005 cm^2.
What is the pressure of **each** blade on the wire? Give the unit.

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Give the definition for compression.

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Give the definition for friction.

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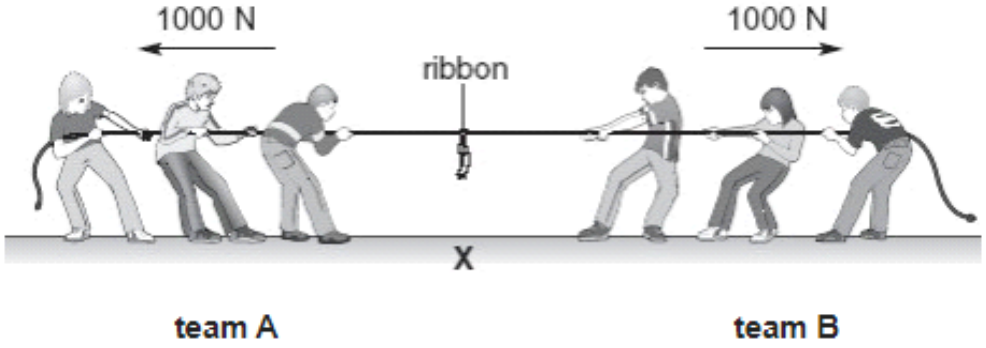

Using the diagram above, explain why the ribbon stays above point X.

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