

Forces Foundation Revision Mat

1. Circle the non-contact forces.
Underline the resistive forces.

friction air resistance

gravitational tension

water resistance magnetic

drag electrostatic upthrust

2. Circle the correct units for measuring forces.

newtons (N)
metres (m)
kilograms (kg)
joules (J)

3. Circle the piece of equipment that is used to measure force.

ammeter
newton meter
slotted masses

4. A paperclip is placed into the magnetic field around a magnet. What happens to the strength of the force experienced by the paperclip as it is moved further away from the magnet? Tick one box.

The force increases.

The force stays the same.

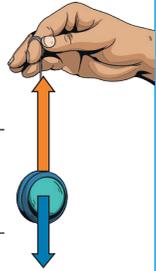
The force decreases.



5. The diagram shows a yo-yo being used.

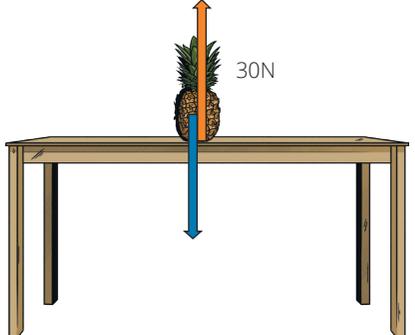
Choose two forces from the list below to label the arrows.

tension weight mass upthrust



A resistive force will also affect the movement of the yo-yo. What is the name of that force?

6. The diagram shows an object on a table.



The reaction force of the table acting on the object is 30N. What is the weight of the object?

7. Circle the correct units for measuring mass.

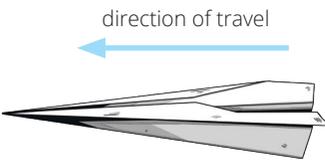
newtons (N)
metres (m)
kilograms (kg)
joules (J)

Circle the correct units for measuring weight.

newtons (N)
metres (m)
kilograms (kg)
joules (J)

8. Write down the equation that links gravitational field strength, mass and weight.

9. The diagram shows a paper aeroplane that has been thrown across the room and is travelling forwards.



Draw an arrow on the diagram to show the direction of the gravitational force on the aeroplane. Label it A.

Draw an arrow on the diagram to show the direction that air resistance acts on the aeroplane. Label it B.

10. An object has a mass of 600g. What is its mass in kilograms (kg)?

11. The mass of an object is 15kg. The gravitational field strength on Earth is 10N/kg.

What is the object's weight on Earth?

The object is taken to Mars. Its mass does not change. Its weight on Mars is 55.5N.

What is the gravitational field strength on Mars?

12. Tick three boxes to show what might happen to an object if the forces on it are unbalanced.

change direction

nothing

accelerate

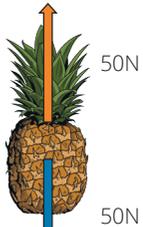
slow down

explode

cool down

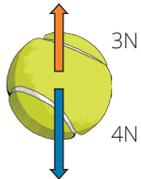
Forces Foundation **Revision Mat**

13. For each of the examples below, tick one box to show whether the forces acting on the object are balanced or unbalanced.



balanced

unbalanced



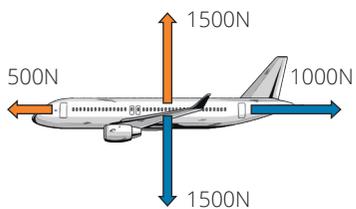
balanced

unbalanced



balanced

unbalanced



balanced

unbalanced



balanced

unbalanced

14. Choose one description from the list below to state what will happen to the motion of each car below as they are moving forwards.

speed up slow down no change







15. The diagram shows two lorries.

lorry A



lorry B



The lorries have the same mass and produce the same thrust force from the engine.

Which lorry will travel the fastest?

Explain why.

16. Write down the equation that links extension, force and spring constant.

A spring has a spring constant of 20N/m and is extended by 0.2m.

Calculate the force applied to the spring.

17. Some students investigate how the extension of a spring is affected by the force applied to the spring. They plot their results on the graph below.

What do the results show about the relationship between the force applied to a spring and the extension of a spring?

The relationship is...

directly proportional

inversely proportional

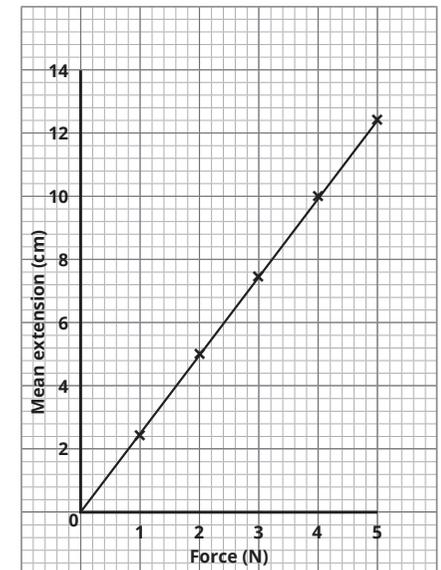
indirectly proportional

Circle the name of the law that describes this relationship.

Newton's third law

Hooke's law

Ohm's law



Forces Foundation Revision Mat Answers

1. Circle the non-contact forces.
Underline the resistive forces.

friction **air resistance**

gravitational tension

water resistance magnetic

drag electrostatic upthrust

2. Circle the correct units for measuring forces.

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The force increases.

The force stays the same.

The force decreases.

5. The diagram shows a yo-yo being used. Choose two forces from the list below to label the arrows.

tension weight mass upthrust

A resistive force will also affect the movement of the yo-yo. What is the name of that force?

air resistance

6. The diagram shows an object on a table.

The reaction force of the table acting on the object is 30N. What is the weight of the object?

30N

7. Circle the correct units for measuring mass.

newtons (N)

metres (m)

kilograms (kg)

joules (J)

Circle the correct units for measuring weight.

newtons (N)

metres (m)

kilograms (kg)

joules (J)

8. Write down the equation that links gravitational field strength, mass and weight.

weight = mass × gravitational field strength

9. The diagram shows a paper aeroplane that has been thrown across the room and is travelling forwards.

Draw an arrow on the diagram to show the direction of the gravitational force on the aeroplane. Label it A.

Draw an arrow on the diagram to show the direction that air resistance acts on the aeroplane. Label it B.

10. An object has a mass of 600g. What is its mass in kilograms (kg)?

0.6kg

11. The mass of an object is 15kg. The gravitational field strength on Earth is 10N/kg. What is the object's weight on Earth?

15kg × 10N/kg

150N

The object is taken to Mars. Its mass does not change. Its weight on Mars is 55.5N. What is the gravitational field strength on Mars?

gravitational field strength = weight ÷ mass

55.5N ÷ 15kg

3.7N/kg

12. Tick three boxes to show what might happen to an object if the forces on it are unbalanced.

change direction

nothing

accelerate

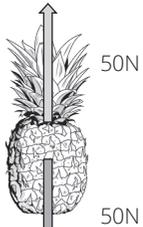
slow down

explode

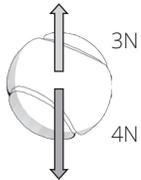
cool down

Forces Foundation **Revision Mat Answers**

13. For each of the examples below, tick one box to show whether the forces acting on the object are balanced or unbalanced.



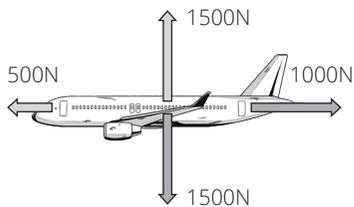
balanced
unbalanced



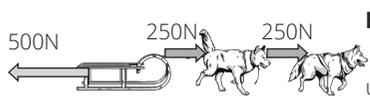
balanced
unbalanced



balanced
unbalanced



balanced
unbalanced



balanced
unbalanced

14. Choose one description from the list below to state what will happen to the motion of each car below as they are moving forwards.

speed up slow down no change



slow down



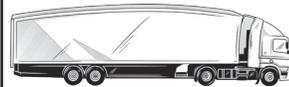
speed up



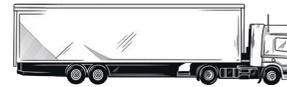
no change

15. The diagram shows two lorries.

lorry A



lorry B



The lorries have the same mass and produce the same thrust force from the engine.

Which lorry will travel the fastest?

lorry A

Explain why.

Lorry A is streamlined which means it has lower air resistance/drag than lorry B so it is slowed down less.

16. Write down the equation that links extension, force and spring constant.

force (N) = spring constant (N/m) × extension (m)

A spring has a spring constant of 20N/m and is extended by 0.2m.

Calculate the force applied to the spring.

20 × 0.2

4N

17. Some students investigate how the extension of a spring is affected by the force applied to the spring. They plot their results on the graph below.

What do the results show about the relationship between the force applied to a spring and the extension of a spring?

The relationship is...

- directly proportional
- inversely proportional
- indirectly proportional

Circle the name of the law that describes this relationship.

Newton's third law

Hooke's law

Ohm's law

