

MACHINES CAN MOVE

Name: _____

Unit 5 Diagnostic test

Class:

1. Underline the correct word to complete the sentences about simple machines.

- a. A holds things together.
lever screw wedge
- b. A is used to separate two objects.
lever screw wedge
- c. A is used to lift heavy weight.
lever screw wedge
- d. A is also used to lift or pull heavy weight.
screw pulley wheel
- e. A is used to move people and objects.
lever pulley wheel

2. Match the information about how a plane flies.

- | | |
|---|----------------------------------|
| a. Lift is the force that lets | the plane move forwards. |
| b. Thrust is the force from the engine that makes | on the plane and slows it down. |
| c. Weight is the force of gravity | the plane move upwards. |
| d. Drag is the force that pulls back | on the plane that pulls it down. |

3. Circle *true* or *false*.

- | | |
|---|--------------|
| a. A screw is a simple machine. | true / false |
| b. If a ship weighs less than the water it displaces, it will sink. | true / false |
| c. If a ship weighs more than the water it displaces, it will float. | true / false |
| d. A wheelbarrow has a wheel and levers making it a complex machine. | true / false |
| e. Cargo ships have water tanks to help regulate their weight. | true / false |
| f. Drag is the force of air against a car that makes it move forward. | true / false |
| g. Cars are designed to be aerodynamic. | true / false |
| h. Cars with electric motors use fossil fuels like petrol or diesel. | true / false |

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Name: _____

Unit 5 End-of-unit test

Class: _____

1. Underline *true* or *false*.

- a. A machine is a device that changes a force and makes work easier. true / false
- b. Simple machines have moving parts. true / false
- c. There are six types of simple machines. true / false
- d. A lever and a fulcrum is a complex machine. true / false
- e. A wheelbarrow is a complex machine and consists of three simple machines. true / false

2. Write the names of the machines in the box next to the descriptions a–f.

Lever	Inclined plane	Pulley	Screw	Wedge	Wheel
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- a. With its axle, it moves people, objects or parts of a complex machine.
- b. With its point of support, it lifts heavy weight.
- c. It is used to lift or pull heavy weight.
- d. It holds things together.
- e. It makes it easier to move objects or people from higher to lower surfaces.
- f. It is used to separate two objects.

3. Complete the sentences about flight. You are given the first letter.

- a. The way objects move through air is called **a**
- b. The push that lets a plane move upwards is called **l**
- c. The force that pulls back on a plane and slows it down is called **d**
- d. **W** is the force of gravity on a plane which pulls it towards the centre of the **E**
- e. **T** is the force which pulls a plane forward and is created by the plane's **e**
- f. For **l**, lift must be **l** than weight and **t** must be **l** than drag.

4. Complete the descriptions. Write: *Level flight, The balance of opposing forces or Constant speed.*

- a. When this changes the plane can rise, descend or change speed.
- b. When the size of thrust equals the size of drag, the plane achieves this.
- c. When the size of lift equals the size of weight, the plane achieves this.

5. Choose and underline the correct word.

- a. Archimedes' principle states that an object immersed in water experiences **an upwards / a downwards** force.
- b. Buoyancy pushes the ship **upwards / downwards**.
- c. Buoyancy is **less than / equal to** the weight of the water it displaces.
- d. If a ship weighs more than the water it displaces, it **floats / sinks**.
- e. If a cargo ship has no cargo, it **takes water into / lets water out of** its water tanks.
- f. Ships are filled with air, which makes them **heavier / lighter** than the displaced water.

6. Complete the information with words from the box about how cars move.

action	aerodynamic	Drag	engine	Friction	grip	Thrust	reaction
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- a. is the backward force of air against a moving car.
- b. Cars are designed to be in order to minimise drag, move faster and to save fuel.
- c. is the resistance that the tyres on car's wheels meet when they move on the road.
- d. is the force that pushes the car forwards. A car's makes the wheels turn.
- e. When a car tyre spins, the tyres push the road with an amount of force backwards called force.
- f. The road pushes the car with an equal amount of force forwards called the force.
- g. On icy roads, winter tyres and snow chains improve the car's

MACHINES CAN MOVE

Unit 5 Support

Name: _____

Class: _____

1. Read the sentences. Circle *true* or *false*.

- | | |
|---|--------------|
| a. A machine changes a force to make work easier. | true / false |
| b. Simple machines have moving parts. | true / false |
| c. There are six types of simple machines. | true / false |
| d. A wheel and axle is a complex machine. | true / false |
| e. A complex machine consists of two or more simple machines. | true / false |
| f. A wheelbarrow is an example of a complex machine. | true / false |

2. Complete the sentences. Use words from the box.

Lever	Inclined plane	Pulley	Screw	Wedge	Wheel
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a.



b.



c.



d.



e.



f.

3. Complete the words in each description about flying.

- a. When the **b _ _ _ n _ e** of **o _ p _ _ g** forces changes the plane can rise, descend or change speed.
- b. **C _ _ s _ _ t s _ _ d** is when the size of thrust equals the size of drag.
- c. **L _ _ _ l f _ _ g _ t** is when the size of lift equals the size of weight.

4. Choose and underline the correct word to complete the sentences.

- a. The way objects move through air is called **aerodynamics** / **flight forces**.
- b. The push that lets a plane move upwards is called **thrust** / **lift**.
- c. The force that pulls back on a plane and slows it down is called **drag** / **gravity**.
- d. **Drag** / **Weight** is the force of gravity on a plane which pulls it towards the centre of the Earth.
- e. **Lift** / **Thrust** is the force that pulls a plane forward created by the plane's engine.
- f. For **taking off** / **landing**, the lift must be greater than the weight and thrust greater than **drag** / **lift**.
- g. For **taking off** / **landing** lift must be less than weight and **gravity** / **thrust** must be less than drag.

5. Complete the information with words from the box about how cars move.

action	Drag	Friction	grip	Thrust	reaction
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- a. is the backward force of air against a moving car.
- b. is the resistance that the tyres on car's wheels meet when they move on the road.
- c. is the force that pushes the car forwards. A car's makes the wheels turn.
- d. When a car tyre spins, the tyres push the road with an amount of force backwards called force.
- e. The road pushes the car with an equal amount of force forwards called the force.
- f. On icy roads a car needs winter tyres to improve its

6. Choose and underline the correct word to complete the sentences.

- a. Buoyancy pushes the ship **upwards** / **downwards**.
- b. Buoyancy is **less than** / **equal to** the weight of the water it displaces.
- c. If a ship weighs less than the water it displaces, it **floats** / **sinks**.
- d. If a cargo ship has cargo, it **takes water into** / **lets water out of** its water tanks.

MACHINES CAN MOVE

Name: _____

Unit 5 Reach higher

Class: _____

1. Read the sentences. Underline *true* or *false*.

- a. A machine is a device that changes a force and makes work easier. true / false
- b. Simple machines usually have moving parts. true / false
- c. There are six types of simple machines. true / false
- d. A lever and a fulcrum is a complex machine. true / false
- e. A wheelbarrow consists of a number of simple machines. true / false
- f. Complex machines are made up of one or more simple ones. true / false
- g. A wheelchair is an example of a pulley type of machine. true / false
- h. A seesaw in a children's playground is a lever with its point of support. true / false

2. Write the names of the machines next to the descriptions a–g.

- a. With its axle, it moves people, objects or parts of a complex machine.
- b. With its point of support, it lifts heavy weight.
- c. It is used to lift or pull heavy weight.
- d. It holds things together.
- e. It makes it easier to move objects or people from higher to lower surfaces.
- f. It is used to separate two objects.
- g. It has levers, an inclined plane, wheel and axle, and is used to carry things,
e.g. in the garden.

3. Answer the questions related to flight forces.

- a. What do changes in the balance of opposing forces allow a plane to do?
.....
- b. How is constant speed achieved?
.....
- c. How is level flight achieved?
.....

4. Complete the sentences about the four forces of flight.

- a. The push that lets a plane move upwards is called
- b. The force that pulls back on a plane and slows it down is called
- c. is the force of gravity on a plane which pulls it towards the centre of the Earth.
- d. is the force which pulls a plane forward and is created by the plane's
- e. For off, the lift must be greater than the and thrust greater than
- f. For landing, must be less than weight and must be less than drag.

5. Choose the correct word and phrases in the box to complete the sentences. There are some extra words.

equal to	downwards	float	heavier	less
lets water out of	lighter	sinks	takes water into	upwards

- a. Archimedes' principle states that an object immersed in water experiences an force.
- b. Buoyancy doesn't push the ship
- c. Buoyancy is Buoyancy is the weight of the water it displaces.
- d. If a ship weighs more than the water it displaces, it
- e. If a cargo ship has no cargo, it its water tanks.
- f. Ships are filled with air, which makes them than the displaced water.

6. Complete the information with words about how cars move.

- a. is the backward force of air against a moving car.
- b. is the resistance that the tyres on car's wheels meet when they move on the road.
- c. On icy roads, winter tyres and snow chains improve the car's